

GEOLOGICAL SURVEY OF NEW JERSEY.

FINAL REPORT

OF THE

STATE GEOLOGIST.

VOL. II.

MINERALOGY. } PART I
BOTANY. }
ZOÖLOGY.

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1889.

PART 1.
—
MINERALOGY.
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State Geologist.

(v)

NEW BRUNSWICK, N. J., July 29th, 1889.

To His Excellency Robert S. Green, Governor of the State of New Jersey, and ex-officio President of the Board of Managers of the State Geological Survey:

SIR—I have the honor herewith to submit the second volume of my final report as State Geologist. Its subject is Natural History, and it contains catalogues of the Minerals, Plants and Animals of the State of New Jersey.

With high respect,

Your obedient servant,

GEO. H. COOK,

State Geologist.

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CATALOGUE OF MINERALS FOUND IN
NEW JERSEY.

BY FREDERICK A. CANFIELD, A.M., E.M.

CATALOGUE OF MINERALS FOUND IN NEW JERSEY.

BY FREDERICK A. CANFIELD, A. M., E. M.

INTRODUCTION.

The great number of species and varieties, the rare chemical combinations, the beauty, and the wonderful crystalline development of the minerals of New Jersey, have made the localities in the State famous throughout the scientific world.

The minerals of New Jersey are to be found in all of the great collections of this country and of Europe.

Particular reference may be made to the collection at Ferrumont, near Dover, N. J., made by the late Frederick Canfield, which in 1865 absorbed the collection of Sussex county minerals made by Samuel Woodruff, of Sparta, New Jersey. Also to the Kunz collections in the University of Minnesota, Minneapolis, Minn.; in Amherst College, Amherst, Mass., and in the New York State Cabinet, at Albany, N. Y.

The author's thanks are due to Geo. F. Kunz, of Hoboken, N. J., for the facts and suggestions kindly furnished by him.

CATALOGUE OF MINERALS.

Actinolite. (Amphibole.) Silicate of calcium, magnesium and iron.

Marble Hill and Harmony, Warren county. Very fine crystals in calcite at Franklin, Sussex county.

Agate. (Quartz.) Silica.

Hoboken, Hudson county. Bound Brook and Liberty Corner, Somerset county.

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Albertite. (?) Resembles asphaltum.

A solid hydrocarbon closely allied to this mineral is found in cavities in amygdaloidal trap at Plainfield, Union county. See I. C. Russell in *Am. J. Sci.* III., XVI., 112.

Algerite. See Wernerite.

Long slender crystals occur in loose pieces of calcite a short distance to the northeast of the Taylor mine at Franklin, Sussex county.

Allanite. Silicate of aluminum, cerium, iron and calcium.

Small crystals imbedded in gneiss at Franklin, Sussex county. A pebble of allanite was found eight feet below the surface, in a shaft sunk near Mount Freedom, Morris county.

Allophane. Hydrous silicate of aluminum.

Weehawken, Hudson county.

Amber. See Succinite.

Amethyst. (Quartz.) Silica.

Weehawken tunnel, Hudson county. Little Falls, Passaic county. Franklin, Sussex county. Abundant in geodes at Lyons Station, Somerset county.

Amphibole. Silicate of magnesium, iron, calcium and aluminum.

Large, brilliant, black crystals and transparent white crystals at Stirling Hill—green and grey crystals at Franklin—brilliant crystals at Roseville—Andover—all in Sussex county. Large rough crystals at Bergen Hill and Bulls Ferry, both in Hudson county.

Phillipsburg, Warren county (*tremolite*). Schooley's Mountain, Morris county. Ringwood, Passaic county. Trenton, Mercer county. This mineral occurs massive at nearly all the iron mines in Sussex, Warren, Morris and Passaic counties. See *actinolite, asbestos, hornblende, mountain cork, mountain leather and tremolite*.

Analcite. Hydrous silicate of sodium and aluminum.

Paterson, Passaic county. Fine brilliant crystals associated with datolite, stilbite and natrolite were found in all of the tunnels through Bergen Hill, Hudson county.

Anomalite. Hydrous sesquioxide of iron. (?)

Stirling Hill, Sussex county.

Anorthite. Silicate of aluminum and calcium.

Greenish crystals were found a short distance to the northeast of the Taylor mine at Franklin, Sussex county.

Pseudomorphs after this mineral, from the above locality, are described by W. T. Roepper in *Am. J. Sci.*, III., XVI., 364.

Anthophyllite. Silicate of magnesium and iron.

Phillipsburg and Harmony, Warren county.

Anthraconite. (Calcite.)

Weehawken, Hudson county.

Apatite. Phosphate of calcium.

Ferromonte (massive)—Hurdstown (yellow crystals in pyrrhotite)—Mount Pleasant—Mount Hope tunnel—Hibernia mines—Golden Corner (a crystal more than two inches in diameter imbedded in pyrite was found at the De Hart mine)—all in Morris county. Andover mine (transparent green crystals). Good crystals at Stirling Hill, at Franklin and at Williams mine—all in Sussex county.

Phillipsburg, Warren county. Abundant in large sub-crystalline nodules in the gneiss of Wanaque Valley, Passaic county.

Apophyllite. Hydrous silicate of calcium and potassium.

Very fine crystals, some measuring three inches across, were found in the tunnels through Bergen Hill—pink crystals were found in the Weehawken tunnel—all in Hudson county.

Aragonite. Carbonate of calcium.

Hoboken and Weehawken tunnel (a seam three inches thick), both in Hudson county. Beautiful blue and green *flos ferri* at Andover, white *ditto* at Franklin, both in Sussex county.

Arsenopyrite. Sulph-arsenide of iron.

Franklin, Sussex county. Said to occur at several of the iron mines in Sussex and Morris counties.

Asbestos. (A fibrous amphibole or pyroxene.)

White, at Franklin—blue, at Andover and at Roseville mine, all in Sussex county. Pequest—in a rock cut on the Warren railroad, Warren county. Dickerson mine and Beach mine, Morris county.

Asphaltum. Carbon, hydrogen and oxygen.

From the Ash Marl of the Cretaceous (a layer of the Upper Marl Bed), at Vincentown, Burlington county. One mass obtained here, weighed 100 lbs. See E. Goldsmith in Am. J. Sci. III., XVII., 410.

Augite. (Pyroxene.) Silicate of iron, calcium and magnesium.

Very large, perfect crystals at Franklin, and at Stirling Hill—Sparta—all in Sussex county. Harmony and Phillipsburg, Warren county.

Automolite. (Gahnite.) Oxide of zinc and aluminum.

Franklin, Sussex county.

Azurite. Hydrous carbonate of copper.

Schuyler mine, E. Belleville, Hudson county. Raritan mine, New Brunswick, Middlesex county. Bridgewater mine, Somerset county. Franklin—Stirling Hill—Andover mine—Sussex county. Passaic Falls, Passaic county. Davis mine, Warren county.

Barite. Sulphate of barium.

Near Newton, Sussex county. New Brunswick, Middlesex county. Hopewell, Mercer county. At a copper mine near Feltville, Union county. Small blue crystals at Mount Pleasant (Penn. R. R. cut), Hudson county.

Bementite. Hydrous silicate of manganese.

Lehigh zinc mine, Franklin, Sussex county. See G. A. König, in Proc. Acad. Nat. Sci., Philadelphia, 1887, 311.

Beryl. Silicate of glucinum and aluminum.

Small green crystals at Franklin, Sussex county. Phillipsburg, Warren county.

Biotite. See Mica.

Blende. Sulphide of zinc.

Franklin [in small, bright, brown, transparent octahedrons, massive silver-white (*cleiophane*), honey-yellow and lemon-yellow]—Stirling Hill—Sussex lead mine—Andover mine—all in Sussex county. Small but beautiful crystals at Bergen Hill, Hudson county. Califon, Hunterdon county. Howell farm and Raub farm, Warren county.

Bog Iron Ore. See Limonite.

Bornite. Sulphide of iron and copper.

Raritan copper mine, New Brunswick, Middlesex county.

Brucite. Hydrate of magnesium.

Hoboken, Hudson county.

Calamine. Hydrous silicate of zinc.

Beautiful blue and white specimens at Noble mine—fine white crystals at Passaic mine, both at Stirling Hill—Andover mine—all in Sussex county.

Calamite. See Tremolite.

Calcite. Carbonate of calcium.

Occurs massive in many parts of the State. Rose color, at Danville, Warren county. Yellowish red, at Franklin and Stirling Hill, Sussex county. Good crystals occur at Hibernia, Morris county, at Franklin, and at the Andover mine, Sussex county. Very fine crystals in the tunnels through Bergen Hill, Hudson county. Cannon mine (small but fine crystals, which show rare planes), Ringwood, Passaic county. Savage's quarry (good crystals), Wilburtha, Mercer county. *Anthraconite* at Weehawken, Hudson county. The variety of calcite from Stirling Hill, containing manganese, has been called *spartaite* by Breithaupt.

Calcozincite. A mixture of zincite and calcite.

Stirling Hill, Sussex county. Described by Shepard, in 1876 (Am. J. Sc. III., XII., 231).

Cerolite. Hydrous silicate of magnesium.

Hoboken, Hudson county.

Chabazite. Hydrous silicate of aluminum, calcium and potassium.

Bergen Hill, Hudson county.

Chalcedony. (Quartz.) Silica.

Hurd mine—Mount Hope tunnel—Dickerson mine (coating Isopyre)—Morris county. Bergen Hill, Hudson county.

Chalcocite. Sulphide of copper.

The grey sulphide of copper found at the Flemington and the Neshanic mines was probably chalcocite. Schuyler mine, Hudson county.

Chalcophanite. Hydrous oxide of manganese and zinc.

Passaic mine, Stirling Hill, Sussex county. Described by G. E. Moore, in the "American Chemist" for July, 1875.

Chalcopyrite. Sulphide of copper and iron.

East Belleville, Hudson county. Raritan mines, New Brunswick, Middlesex county. Bridgewater mine, Somerset county. Andover mine—Franklin—Stirling Hill—Sussex county. Banghart mine and Flemington mine, Hunterdon county. Davis mine, Warren county.

Chert. (Quartz.) Silica.

Of frequent occurrence in the limestone of Sussex county.

Chondrodite. Silicate of magnesium.

Franklin—Lockwood—Vernon—Bierstown—Sparta (one crystal measures $3\frac{5}{8} \times 3\frac{1}{2} \times 2\frac{1}{2}$ inches)—all in Sussex county.

Chromite. Oxide of chromium and iron.

Hoboken (octahedrons in serpentine), Hudson county.

Chrysocolla. Hydrous silicate of copper.

Bridgewater mine and Somerville mine, Somerset county. Schuyler mine, E. Belleville, Hudson county.

Chrysotile. *See* Serpentine.

Montville (in thin seams in precious serpentine), Morris county. De Bows' lime quarry (in seams half an inch in thickness); also at the Kanouse mine, both in Passaic county.

Chrysolite. *See* Røepperite.

Cleiophane. *See* Blende.

Coal, Mineral.

Old Boonton, Morris county. Newark, Essex county. Two miles above Trenton (seam two inches thick in decomposed grey sandstone), Mercer county. Near Milford (in sandstone and flagstone quarries), Hunterdon county. *See* lignite.

Coccolite. (Pyroxene.) Silicate of calcium, magnesium and iron.

Franklin (green, white and black), Sussex county.

Colophonite. (Lime-iron garnet.)

Copper, Native.

Stanhope, Sussex county. New Brunswick and Woodbridge, Middlesex county. Somerville copper mines, Somerset county.

E. Belleville, Hudson county. Flemington copper mines, Hunterdon county. Bergen Hill (in Pennsylvania R. R. cut), Hudson county.

Corundum. Alumina.

Red (ruby) and blue (sapphire) at Franklin and at Stirling Hill. Red (ruby) at Vernon and Drews—blue (sapphire) and white at Newton—blue (sapphire) at Sparta—all in Sussex county.

Cuprite. Oxide of copper.

Pluckamin copper mines—Bridgewater—Franklin copper mine near Griggstown—all in Somerset county. Franklin, Sussex county. New Brunswick, Middlesex county; E. Belleville, Hudson county.

Datolite. Boro-silicate of calcium.

Bergen Hill (fine crystals in all of the railroad tunnels), Hudson county. Paterson, Passaic county.

Diabantite. Hydrous silicate of aluminum, iron and magnesium.

Bergen Hill, Hudson county.

Dog Tooth Spar. See Calcite.

Dolomite. Carbonate of calcium and magnesium.

Massive, in many places in Sussex and Warren counties. Hoboken and Bergen Hill (good crystals), Hudson county. The variety *Gurhofite* occurs in serpentine at Montville, Morris county.

Dufrenite. Hydrous phosphate of iron.

Allentown (Genth), Monmouth county.

Dysluite. (Gahnite.) Oxide of zinc, iron, manganese and aluminum.

A crystal measuring five inches, and another measuring four inches on a side, were found near the deposit of calamine at Stirling Hill. Small, highly modified crystals were found at Franklin, Sussex county.

Enstatite. Silicate of magnesium.

Hibernia, Morris county.

Epidote. Silicate of aluminum, iron and calcium.

Not found in large crystals. Small crystals at Tar mine and Andover mine—good crystals (Kitchell) and massive at Roseville mine—Wawayanda mine—Franklin and Ogdensburg

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(small, perfect crystals and massive)—all in Sussex county. Bush mine and Cannon mine (small but beautiful crystals in calcite), Passaic county. Mount Hope tunnel—Duffy's mine, Ford mine—Scofield mine—all in Morris county. Near Griggstown—Pluckamin copper mine—Rocky Hill—Somerset county. Goat Hill and Mount Airy, near Lambertville (nodules in Triassic sandstone), Hunterdon county. The best specimens were found at Franklin, associated with melanite, pyroxene and zircon.

Epistilbite. Hydrous silicate of aluminum, calcium and sodium.
Bergen Hill, Hudson county.

Erubescite. See Bornite.

Feldspar. See Orthoclase, Oligoclase and Anorthite.
Common in all of the older rocks. Transparent and white at Ogden mine, Sussex county.

Fire Opal. (Opal.) Silica.
Bergen Hill (cut of Pennsylvania railroad), Hudson county.

Fluorite. Fluoride of calcium.
Franklin (purple octahedrons and masses in crystalline limestone, beautiful rose-colored and massive in the Taylor mine)—rose-colored and massive at the Ogden mine—Sussex lead mine—Andover mine—all in Sussex county. Hibernia, Morris county.

Fowlerite. (Rhodonite.) Zinciferous silicate of manganese.
Splendid crystals in the zinc mines at Franklin. Massive at Stirling Hill, Sussex county. *Keatingine* of Shepard from Franklin, Sussex county, is *fowlerite*.

Franklinite. Oxide of iron, zinc and manganese.
Stirling Hill (one crystal measures eight inches on a side)—Franklin (highly modified crystals)—Sparta (boulders)—all in Sussex county.

Gahnite. Oxide of aluminum and zinc. See Automolite and Dysluite.

Galenite. Sulphide of lead.
Andover mine—Sussex lead mine—Stirling Hill—Franklin—all in Sussex county. Califon (with Hematite), Hunterdon county. Bergen Hill, Hudson county.

Garnet. Silicate of aluminum, iron, calcium, etc.

Black (*melanite*) at Franklin (one bright crystal measures twenty-three inches in circumference)—very large crystals, brown, were found at Franklin and at Stirling Hill—small brown crystals at Ogden mine—bright crystals at Tar mine—yellow (*polyadelphite*) in good crystals at Franklin—Roseville mine—all in Sussex county. Cummings iron mine and Inschow farm, Warren county. Hope mine, Ringwood (imperfect crystals abundant), Passaic county. Noland's Point, Lake Hopatcong (imperfect crystals abundant), Morris county. This mineral occurs massive at many of the iron mines in Morris, Sussex and Warren counties. *Colophonite* is found at Franklin.

Glauconite. Hydrous silicate of iron and potassium.

Is found in all of the marl-beds from Red Bank to Delaware bay.

Gmelinite. Hydrous silicate of aluminum, calcium and sodium.

With apophyllite and datolite, Bergen Hill, Hudson county.

Graphite. Carbon.

Mendham and Morristown, Morris county. Franklin (spherical and radiated), massive in many other places in Sussex county. Califon and High Bridge, Hunterdon county. Pottersville and Peapack, Somerset county. Bloomingdale, Morris county, and numerous places in Wanaque Valley, also near Shepard's and Negro Ponds, all in Passaic county. Inschow farm, Warren county.

Greenockite. Sulphide of cadmium.

Hamburg mine, Franklin (compact in limestone), and Stirling Hill (pulverulent on mica), Sussex county. The mineral reported as *greenockite* from Bergen Hill is said to be *blende*.

Gurhoffite. (Dolomite.)

In serpentine at Montville, Morris county.

Gypsum. Hydrous sulphate of calcium. *See* Selenite.

Harringtonite. *See* Mesolite.

Hayesine. Hydrous borate of calcium.

This borate, according to N. H. Darton, occurs sparingly with datolite and calcite at Bergen Hill. *See* Am. J. Sci. III., XXIII., 458.

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Heavy Spar. *See Barite.*

Hematite. *Sesquioxide of iron:*

In Green Pond conglomerate (brilliant crystals), Morris county.
Little Falls, Passaic county. Andover mine, Hamburg and
Franklin, Sussex county. Hoboken (scales in jasperoid rock),
Hudson county.

Hetærolite. *Oxide of manganese and zinc.*

Stirling Hill, Sussex county.

Heulandite. *Hydrous silicate of aluminum and calcium.*

Bergen Hill and Weehawken, Hudson county.

Hornblende. (Amphibole.) *Silicate of aluminum, iron, magnesium and calcium.*

Franklin and Stirling Hill (fine crystals). At most of the
iron mines in Sussex, Warren, Passaic and Morris counties.

Hyalite. (Opal.) *Silica.*

Weehawken, Hudson county.

Hydrofranklinite. *Hydrous oxide of zinc, manganese and iron.*

Stirling Hill, Sussex county.

Hydromagnesite. *Hydrous carbonate of magnesium.*

Hoboken, Hudson county.

Hydrophane. (Opal.) *Silica.*

Bergen Hill (cut of Pennsylvania R. R.), Hudson county.

Idocrase. (Vesuvianite.) *Silicate of aluminum, calcium, magnesium and iron.*

Howell's Mill and Franklin, Sussex county.

Ilmenite. *See Menaccanite.*

Iron, Native.

This rare species occurs in microscopic particles in some of the
trap rocks of the State; also at Piscataway, Middlesex county.
See New Jersey Geological Reports, 1874 and 1883.

Iron Pyrites. *See Pyrite.*

Isopyre. *Silicate of aluminum, iron and magnesium.*

Dickerson mine (occurs in the "side vein" between the mag-
netic ore and the hanging wall), Morris county.

Jade. (?)

Said to occur on Jenny Jump Mountain, Warren county.

Jasper. (Quartz.) Silica.

Bartley, Morris county. Hoboken, Hudson county.

Jeffersonite. (Pyroxene.) Silicate of calcium, iron, magnesium, zinc and manganese.

Stirling Hill (crystals six inches long were found associated with dysluite and brown garnet) and Franklin, Sussex county.

Kaolinite. Hydrus silicate of aluminum.

Woodbridge, Perth Amboy and South Amboy, Middlesex county. Florence and Palmyra, in Burlington county. Fish-House, in Camden county. Billingsport, in Gloucester county.

Keatingine. *See* Fowlerite.

Lancasterite. (A mixture of Brucite and Hydromagnesite.)

Hoboken, Hudson county.

Laumontite. Hydrus silicate of aluminum and calcium.

Bergen Hill and Weehawken, Hudson county.

Lead Ores. *See* Galenite.

Leonhardtite. (?) (Laumontite.)

A mineral resembling this variety was found at Weehawken, Hudson county.

Leucopyrite. Arsenide of iron.

A tin-white metallic mineral imbedded in gahnite crystals from Franklin is stated by Brush to have the pyrognostic characters of leucopyrite. (Am. J. Sci., III., I., 29.)

Lignite. (Mineral Coal.) Carbon, hydrogen and oxygen.

Keyport, Monmouth county. Cheesquakes, Middlesex county. Bloomfield, Essex county. In Middlesex and Mercer counties, and perhaps at Boonton, Morris county.

Lime. *See* Calcite and Dolomite.

Limonite. Hydrus sesquioxide of iron.

Califon and Bird mine, Hunterdon county. Beattystown—Marble Mountain—Shiloh—Warren county. Andover mine—Edsall mine, near Hamburg—Pochuck mine, near McAfee—all in Sussex county. German Valley—from decomposition of pyrite in magnetite at the Green Pond mines—Denmark mine,

Cooper mine—Chester mines—Hacklebarney—all in Morris county. *Bog iron ore*, Weehawken, Hudson county. Also abundant in Monmouth, Ocean, Burlington, Atlantic and Cumberland counties, and in several places in Morris county. *Ochre*, a pulverulent variety of limonite, is found in many iron mines, and in some of the mineral springs in the State.

Lodestone. *See Magnetite.*

Magnesia, Native. *See Brucite.*

Magnesite. Carbonate of magnesium.

Hoboken, Hudson county.

Magnetite. Oxide of iron.

This is the principal mineral product of the State. It is found in many places in Sussex, Warren, Morris, Passaic and Hunterdon counties. The more important deposits were found at the Andover, Franklin and Ogden mines, in Sussex county. Hacklebarney, Dickerson, Byram, Randle Hill, Irondale, Mount Pleasant, Baker, Richard, Allen, Teabo, Mount Hope and Hibernia mines, in Morris county. Ringwood, Passaic county. *Lodestone* is magnetite which possesses sufficient magnetic power to lift small pieces of iron, and which shows polarity; it is found at Ferromonte and at the Byram mine, Morris county.

Magnetic Iron Pyrites. *See Pyrrhotite.*

Magnofranklinite.

Stirling Hill, Sussex county.

Malachite. Hydrrous carbonate of copper.

E. Belleville, Hudson county. Bloomfield, Essex county. Raritan mine, New Brunswick, Middlesex county. Andover mine—Franklin—Stirling Hill—Sussex county.

Manganese, Oxide of. (Pyrolusite?)

One mile southeast of Clinton, Hunterdon county. Stirling Hill—Franklin—Andover mine—Sussex county.

Manganese Spar. *See Fowlerite.*

Marcasite. Sulphide of iron.

Keyport, Monmouth county. Amboy, Middlesex county.

Margarite. (?) Hydrrous silicate of aluminum and calcium.

The talc-like coating on crystals of corundum is probably this species. Sparta, Sussex county.

Marmolite. *See* Serpentine.

Hoboken, Hudson county. Montville, Morris county.

Melanite. *See* Garnet.

Melanterite. Hydrrous sulphate of iron.

Green Pond mines and Chester, Morris county.

Menaccanite. Oxide of titanium and iron.

Franklin, Sussex county. Dell mine and Fichter mine,
Morris county.

Mesolite. Hydrrous silicate of aluminum, calcium and sodium.

Bergen Hill, Hudson county.

Mesotype. *See* Mesolite.

Mica.

For want of sufficient investigation, this name is used to cover the species biotite, muscovite and phlogopite. Large six-sided crystals (some tapering to a point) were found at Franklin, Sussex county. Rhomboidal prisms at Dickerson mine, Morris county. Large sheets (some bent to a right angle) at Broadway, Warren county. Mica is a common mineral at all of the magnetic iron ore mines in this State.

Mispickel. *See* Arsenopyrite.

Molybdenite. Sulphide of molybdenum.

Hude mine, Stanhope—Ogden mine (the prism of one crystal is three by one and a half inches, and is one and one-quarter inches long)—Sussex county. Hibernia, Morris county.

Molybdite. Oxide of molybdenum.

Hude mine, Stanhope (thick coatings on magnetite), Sussex county.

Mountain Cork. *See* Amphibole.

Bergen Hill, Hudson county.

Mountain Green. *See* Malachite.

Mountain Leather. *See* Amphibole.

New Brunswick, Middlesex county. Bergen Hill, Hudson county.

Mullicite. *See* Vivianite.

Muscovite. Silicate of aluminum and potassium.

Occurs at a number of places. *See mica.*

- Natrolite.** Hydrous silicate of aluminum and sodium.
 Bergen Hill (fine specimens found in all of the tunnels), Hudson county.
- Needlestone.** *See* Scolecite.
- Nemalite,** *See* Brucite.
 Hoboken, Hudson county.
- Nuttalite.** *See* Wernerite.
- Ochre.** *See* Limonite.
 Pseudomorphous after a chloritic mineral at Scott's Mountain, Warren county (Røepper).
- Oligoclase.** Silicate of aluminum, calcium and sodium.
 Stirling Hill, Sussex county.
- Opal.** Silica. *See* Fire Opal, Hyalite and Hydrophane.
- Orthoclase.** Silicate of aluminum and potassium.
 Stiff mine, Warren county. Franklin (green crystals)—Stirling Hill (large white crystals)—Andover mine—Green mine—Longcore's mine—all in Sussex county. Common at many of the iron mines in the State. *See* sunstone.
- Pectolite.** Hydrous silicate of calcium and sodium.
 Bergen Hill (terminated crystals and radiations six inches in length in the tunnels), Hudson county.
- Phlogopite.** Silicate of aluminum, potassium and magnesium. *See* Mica.
 Stirling Hill, Franklin, Andover mine, Newton, Lockwood and Sparta—all in Sussex county.
- Phosphorite.** *See* Apatite.
- Plumbago.** *See* Graphite.
- Polyadelphite.** Silicate of calcium and iron. *See* Garnet.
 Franklin and Stirling Hill, Sussex county.
- Prehnite.** Silicate of aluminum and calcium.
 Pluckamin copper mines (very fine), Somerset county. Paterson—Little Falls and Browertown—all in Passaic county. Caldwell and West Orange, Essex county. Bergen Hill (very fine), Hudson county.

Pyrite. Sulphide of iron.

Marble Mountain—Washington—Bald Pate mine—Swayze mine and Harmony—all in Warren county. Williams mine (small perfect crystals)—Franklin (beautifully modified crystals)—Ogden mine (good crystals)—all in Sussex county. Hibernia (good crystals), Morris county. This mineral occurs at nearly all of the mines of magnetic iron ore in this State. Fine crystals at Weehawken, Hudson county. *Niccoliferous pyrite* is reported from Washington, Warren county.

Pyrites. *See* Pyrite.

Pyrites, Copper. *See* Chalcopyrite.

Pyrochroite. Hydrous oxide of manganese.

Franklin Furnace and Stirling, Sussex county.

Pyroxene. Silicate of iron, calcium and magnesium.

Franklin—Stirling Hill (crystals nearly one foot in length)—Longcore's mine—all in Sussex county. Montville (where it is changing to serpentine), Morris county. Near Phillipsburg, Warren county. *See augite, coccolite, jeffersonite and sahlite.*

Pyrrhotite. Magnetic sulphide of iron.

Hurdtown, Morris county. Longcore's mine, Sussex county.

Quartz. Silica.

Longwood Valley (good crystals)—Hibernia (cap crystals), Cary's sandpit (good crystals), and Ferromonte (good crystals)—all in Morris county. Hamburg (good crystals)—Franklin—Stirling Hill and Andover mine—Sussex county. Little Falls (*amethyst*), Passaic county. Bergen Hill (fine milky crystals at all of the tunnels)—Hudson county. In good crystals under the trap-rock at McDowell's quarry, Upper Montclair, Essex county. *Agates* at Hoboken, Hudson county. Bound Brook and Liberty Corner, Somerset county. Massive at all of the magnetic iron ore mines. *See, also, agate, amethyst, chalcedony, chert and jasper.*

Red Hematite. *See* Hematite.

Red Zinc Ore. *See* Zincite.

Retinellite, or Retinasphaltum. Carbon, hydrogen and oxygen.

Said to occur in all of the marl-beds.

B

Rhodochrosite. Carbonate of manganese.

Franklin and Stirling Hill, Sussex county.

Rhodonite. See Fowlerite.

Röepperite, Silicate of iron, manganese, zinc and magnesium.

Stirling Hill, Sussex county. An iron-manganese-zinc chrysolite.

Ruby. See Corundum.

Rutile. Oxide of titanium.

Howell's Mill—Franklin—Sparta (good crystals associated with spinel and corundum)—Canistear (abundant but not well crystallized)—all in Sussex county.

Sahlite. (Pyroxene.) Silicate of calcium, magnesium and iron.

Franklin and Vernon, Sussex county. Ringwood, Passaic county.

Sapphire. See Corundum.

Saussurite. (?) (Zoisite.) Silicate of aluminum and calcium.

Is said to have been found on the Jenny Jump Mountain, in Warren county.

Scapolite. See Wernerite.

Scolecite.

This name has been improperly used to denote a variety of crystallized pectolite from Bergen Hill, Hudson county.

Selenite. (Gypsum.) Hydrous sulphate of calcium.

Hude mine, Stanhope, Sussex county. Hoboken, Hudson county.

Serpentine. Hydrous silicate of magnesium.

Hoboken, Hudson county. Franklin, Sussex county. Split Rock and Montville (very fine), Morris county. Phillipsburg and Jenny Jump Mountain, Warren county. Wanoque, Passaic county. A paper recently published by Geo. P. Merrill in the Proc. of the U. S. Nat. Mus. (pp. 105-111, 1888), gives an interesting description of the New Jersey serpentine, tracing its alteration from the original diopside which is observed in many cases as a nodular nucleus. *Chrysotile* is a fibrous, *marmolite* is a foliated serpentine.

Siderite. Carbonate of iron.

Allen mine, Hibernia and Mount Hope, Morris county.
Franklin and Ogden mine (as pseudomorphs after calcite)—Sussex county.

Silver, Native.

Native silver was noticed at the Somerville copper mine by Dr. Torrey. See Silliman's Jour., Series I, V., p. 401. Silver in combination is found in *Galena*, at Andover mine, Sussex county, and in *copper*, at Schuyler mine, Hudson county. Green Valley mine—Field mine—North Plainfield—Bridgewater mine—Hoffman farm, near Pluckamin—Griggstown mine—all in Somerset county. Flemington, Hunterdon county. New Brunswick, Middlesex county. Hopewell, Mercer county. Howell farm, Warren county.

Smithsonite. Carbonate of zinc.

Franklin and Stirling Hill, Sussex county. Some of the zinc found mixed with limonite, at Califon, Hunterdon county, may have been smithsonite.

Soapstone. See Talc.

Spartaite. See Calcite.

Spathic Iron. See Siderite.

Specular Iron. See Hematite.

Sphalerite. See Blende.

Sphene. See Titanite.

Spinel. Oxide of aluminum and magnesium.

Vernon (pink)—Sparta [grey, clear red (ruby spinel) and jet black]—Newton—Lockwood (green)—Hamburg (grey)—Howell's Mill (grey)—all in Sussex county. The largest crystal of a group found near Sparta measures four and one-quarter inches on a side.

Zinc spinel. See *dyschuite* and *automalite*.

Steatite. See Talc.

Stellite. See Pectolite.

Stilbite. Hydrus silicate of aluminum and calcium.

Little Falls—Paterson—Cannon mine—Ringwood (in small unmodified crystals, in larger stellate incrustations and in cruci-

form groups)—all in Passaic county. Bergen Hill (white, brown and pink), Hudson county.

Succinite. Carbon, hydrogen and oxygen.

In the marl-beds in Monmouth, Ocean, Burlington, Camden, Gloucester and Salem counties. A piece twenty inches long, six inches wide and one inch in thickness was found in Kirby's marl-pit, Harrisonville, Gloucester county.

Sunstone. (Orthoclase.)

Large quantities of very beautiful sunstone were found among the masses of gneiss rock thrown out in sinking one of the shafts of the Ogden mine in Sussex county. See analysis and description by Prof. Leeds in *Am. J. Sci.*, III., IV., 433.

Sussexite. Hydrous borate of manganese and magnesium.

Found *only* in the old Hamburg mine at Franklin, Sussex county. This very interesting borate was described by Prof. Geo. J. Brush in the *Am. J. Sci.* II., XLVI., 140, 240, 1868. An analysis by Messrs. Penfield & Sperry, substantiating Prof. Brush's formula, is given in *Am. J. Sci.* III., XXXVI., p. 323.

Talc. Hydrous silicate of magnesium.

Sparta (green)—Lockwood—Andover mine—Franklin—Newton—all in Sussex county. Marble Mountain and Jenny Jump Mountain (indurated and compact)—Warren county. Bergen Hill (pseudomorphous after apophyllite and pectolite), Hudson county.

Tephroite. Silicate of manganese.

Franklin and Stirling, Sussex county.

Thomsonite. Hydrous silicate of aluminum, calcium and sodium.

Bergen Hill, Hudson county.

Titanite. Silicate of calcium and titanium.

Wawayanda mine—Vernon—Franklin—Stirling Hill—Howell's Mill—all in Sussex county. Reported at King mine, Drakeville, and at Hibernia mines, Morris county. Bergen Hill, Hudson county. This mineral is largely disseminated through the Archæan rocks of New Jersey.

Tourmaline. Boro-silicate of aluminum and magnesium.

Ferromonte (black, with magnetite), and Hortontown (long black crystals in quartz)—Morris county. Stirling Hill—How-

ell's Mill—Franklin (green and brown)—and Hamburg (fine, brown crystals)—all in Sussex county. Marble Mountain, Ragged Ridge and Lower Harmony—Warren county. Griggstown and Rocky Hill, Somerset county. Lambertville, Hunterdon county.

Tremolite. (Amphibole.)

Stirling Hill and Franklin, Sussex county. Phillipsburg, Warren county (so-called *calamite*).

Troostite. See Willemite.

Uranite. (?)

Very doubtful; said to occur at the Mount Olive mines, Morris county.

Vanuxemite. (A mixture of clay and calamine.)

Stirling Hill, Sussex county.

Vesuvianite. See Idocrase.

Vivianite. Hydrous phosphate of iron.

Of frequent occurrence in the marl-beds. Red Bank (very fine radiations), Monmouth county. Mullica Hill (magnificent specimens), Gloucester county. Gove mine (clear, glassy, blue, on magnetite), Morris county. A variety from Mullica Hill has been called *mullicite*, by Thomson.

Wad. Hydrate of manganese.

Weehawken (large masses), Hudson county.

Water. Oxygen and hydrogen.

All parts of State. Hexagonal prisms nearly half an inch long and terminated have been found by the author.

Wernerite. Silicate of aluminum, calcium and sodium.

Franklin (beautiful white and green crystals)—Newton—Sussex county. *Algerite* is an altered *wernerite*.

Willemite. Silicate of zinc.

Stirling Hill (grey, brown, flesh color, reddish, and brilliant transparent green crystals in rhodochrosite, yellow)—Franklin (white, yellow, green, brown and grey, transparent green and yellow crystals)—Andover mine (long, slender crystals)—all in Sussex county.

Zinc Ore. See Franklinites, Calamine, Willemite and Zincite.

Zincite. Oxide of zinc.

Stirling Hill (in large masses, with franklinite and willemite in limestone) and Franklin (abundant, massive, a few fine crystals), Sussex county. These are the only localities where this valuable ore of zinc is found in abundance.

Zircon. Silicate of zirconium.

King mine, Drakeville (in magnetite)—De Hart mine (large crystals)—Byram mine (fine crystals)—Swedes mine—Ironia and Mount Freedom (in quartz boulders)—all in Morris county. Franklin (a group of sixteen brilliant, black crystals associated with epidote and crystals of garnet was found many years ago)—Dunker's pond—Williams mine (abundant in magnetite)—all in Sussex county. Trenton, Mercer county. This mineral is widely distributed throughout the older rocks of the State.

Zoisite. Silicate of aluminum, calcium and iron.

Pluckamin copper mine (with epidote), Somerset county. Vernon, Sussex county. *See saussurite.*

*CLASSIFICATION OF THE MINERAL SPECIES FOUND IN
NEW JERSEY.*

I. NATIVE ELEMENTS.

Silver; Copper; Iron; Graphite.

II. SULPHIDES.

Molybdenite; Galenite; Bornite; Sphalerite; Chalcocite; Pyrrhotite; Greenockite; Pyrite; Chalcopyrite; Marcasite; Arsenopyrite; Leucopyrite.

III. FLUORIDES.

Fluorite.

IV. OXIDES.

A. ANHYDROUS OXIDES.

(a) *Protoxides*:—Cuprite; Water; Zincite.

(b) *Sesquioxides*:—Corundum; Hematite; Menaccanite.

(c) *Protos sesquioxides*:—Spinel; Gahnite; Magnetite; Franklinite; Chromite.

(d) *Peroxiodes*:—Rutile; Hæterolite; Quartz.

(e) *Teroxiodes*:—Molybdate.

B. HYDROUS OXIDES.

Opal; Limonite; Brucite; Pyrochroite; Wad; Hydrofranklinite; Anomalite; Chalcophanite.

V. SILICATES.**A. ANHYDROUS SILICATES.**

- (a) *Bisilicates*:—Enstatite; Pyroxene; Rhodonite; Anthophyllite; Amphibole; Beryl.
- (b) *Unisilicates*:—Roepperite (Chrysolite); Tephroite; Willemite; Garnet; Zircon; Vesuvianite; Epidote; Phlogopite; Biotite; Muscovite; Allanite; Zoisite; Wernerite; Anorthite; Orthoclase; Oligoclase.
- (c) *Subsilicates*:—Chondrodite; Tourmaline; Datolite; Titanite.

B. HYDROUS SILICATES.**GENERAL SECTION.**

- (a) *Bisilicates*:—Pectolite; Laumontite; Chrysocolla.
- (b) *Unisilicates*:—Calamine; Prehnite; Apophyllite.
- (c) *Subsilicate*:—Allophane.

ZEOLITE SECTION.

Thomsonite; Natrolite; Mesolite; Analcite; Chabazite; Gmelinite; Stilbite; Epistilbite; Heulandite.

MARGAROPHYLLITE SECTION.

- (a) *Bisilicates*:—Talc; Glauconite.
- (b) *Unisilicates*:—Serpentine; Cerolite; Diabantite; Kaolinite.
- (c) *Subsilicates*:—Margarite.

VI. PHOSPHATES.**A. ANHYDROUS PHOSPHATES.**

Apatite.

B. HYDROUS PHOSPHATES.

Vivianite; Dufrenite; Uranite. (?)

VII. BORATES.

Sussexite; Hayesine.

VIII. SULPHATES.**A. ANHYDROUS SULPHATES.**

Barite.

B. HYDROUS SULPHATES.

Gypsum; Melanterite.

IX. CARBONATES.**A. ANHYDROUS CARBONATES.**

Calcite; Dolomite; Magnesite; Siderite; Rhodochrosite; Smithsonite; Aragonite.

B. HYDROUS CARBONATES.

Hydromagnesite; Malachite; Azurite.

X. HYDROCARBON COMPOUNDS.

Mineral Coal; Succinite; Retinellite; Asphaltum; Albertite.

SUPPLEMENTAL NOTES TO THE CATALOGUE OF MINERALS FOUND
IN NEW JERSEY.**Allanite.**

Massive at the Ogden mine, Sussex county.

Apatite.

Long, slender, yellow crystals in manganiferous garnet, at the Ogden mine, Sussex county.

Barite.

Small, but beautifully-modified, brilliant, transparent crystals, associated with Siderite and Magnetite, occur at the Ogden mine, Sussex county. These are the only fine crystals of this species that have been noticed in the State.

Beraunite. Hydrous phosphate of iron.

Mullica Hill, Gloucester county. This mineral was labeled "Mullicite" in the collection of minerals in the State exhibit at the Centennial Exhibition, Philadelphia, 1876. *Eleonorite* is a synonym.

De Saullesite. Hydrous silicate of nickel, zinc and iron.

Franklin, Sussex county. This is a new species announced by König. (Proc. Acad. Sci., Phila., 1889.)

Eleonorite. See Beraunite.**Galenite.**

Has lately been found near the railroad station at Newton, Sussex county.

Garnet.

Small, deep-red garnets, rich in manganese, were found at the Ogden mine, Sussex county. A yellow crystal was found at Ironia, Morris county.

Göthite. Hydrous sesquioxide of iron.

The variety *lepidocrocite* occurs in the limonite mines, Middle Valley, Hunterdon county.

Lepidocrocite. See Göthite.

Malachite.

Ogden mine, Sussex county.

Pectolite.

Pseudomorphs of quartz after this mineral occur in the quarries at Paterson, Passaic county.

Pyrite.

Small but brilliant and well-formed crystals are found at the Hurdtown mine, Morris county.

Pyroxene.

Poor crystals near Berkshire Valley, Morris county.

Quartz.

Pseudomorphs of quartz after pectolite and other zeolites are reported by Joseph H. Hunt, M.D., as occurring in the quarries at Paterson, Passaic county.

Rammelsbergite. Arsenide of nickel.

Franklin, Sussex county. The occurrence of this mineral at this locality has recently been announced by König. It is noteworthy that this and the new species De Saullsite are the only nickel minerals yet noticed in this State.

Tephrowillemite.

A variety of Willemite in which 10 per cent. of the oxide of zinc has been replaced by 10 per cent. of the oxide of manganese, was announced by König (*Am. Jour. Sci.*, Vol. XXXVIII., October, 1889) as occurring at Franklin, Sussex county.

Titanite.

Associated with Wernerite and Pyroxene, at Berkshire Valley, Morris county.

Tourmaline.

A large, rough, black crystal was found in 1889, in the Lower Wood mine, Hibernia, Morris county.

Wernerite.

White crystals, well formed but decomposed, occur at Berkshire Valley, Morris county.

CATALOGUE OF PLANTS FOUND IN NEW
JERSEY.

BY N. L. BRITTON, PH.D.

*With the Assistance of the Botanists of the State and Contiguous Territory, and of Specialists in the
Several Departments of the Science.*

CATALOGUE OF PLANTS FOUND IN NEW JERSEY.

BY N. L. BRITTON, PH.D.

INTRODUCTION.

The State of New Jersey is 8,224 square miles in area, lying between the parallels of $38^{\circ} 55' 50''$ and $41^{\circ} 21' 22''$ north latitude, and the meridians $73^{\circ} 55' 28''$ and $75^{\circ} 33' 30''$ of longitude west from Greenwich. Within this area are contained the most varied and diverse conditions of plant growth. In the northern and north-middle counties are many elevated and rocky districts, these counties being crossed from northeast to southwest by the Kittatinny or Shawangunk Mountain, the group of ridges collectively called the Highlands, and the minor ranges of the Newark and Orange Mountains and the Palisades of the Hudson. In these several mountain systems nearly all kinds of rocks are represented, and the ridges are interspersed with and separated by valleys underlain by limestone, slate, sandstone and other rocks, the depressions containing many large tracts of swampy land with numerous and extensive ponds and lakes. The river systems are numerous and very perfect in their drainage, those of the Raritan, the Passaic and the Hackensack lying almost wholly within the northern half of the State, the Delaware bounding the western counties from Port Jervis to the Delaware Bay.

The soils of the northern and north-middle counties are consequently of exceedingly varied character, and are further complicated by the glacial drift—the boulders, gravel, sand, loam and clay brought from the north by the great sheets of ice which overspread the entire northern third of the State at a comparatively recent geological epoch. The area covered wholly or in part by this material is shown on the accompanying map, and it has had a most important effect in moulding the character of the flora of the regions where it is found. The

species of plants are considerably more numerous in these northern districts than farther south, and they are to be associated with those of more northern regions, and of Europe and Asia.

The southern parts of the State are especially characterized by far greater uniformity in the characters of the topography and of the soil. There are broad sandy plains, lying as a whole but slightly above the sea, though locally rising in hills to 300 or 400 feet, containing very few rock outcrops and abundantly supplied with deep swamps. The soil is sandy or loamy throughout almost the entire region, locally enriched by the greensand marl outcrops along a belt a few miles in width, stretching from Keyport and Deal Beach on the northeast to Salem county on the southwest. This sandy and loamy soil is abundantly supplied with beds and local deposits of yellow gravel, and is as a whole of a light color, from which its name of Yellow Gravel has been derived. It is more ancient in deposition than the Glacial Drift, and supports a very characteristic but more limited flora, whose affinity is with that of the more southern Atlantic Plain, of which, indeed, this region is topographically and geologically a northern continuation. This group of plants is characteristically American, very few of its members growing naturally beyond our continent.

Our flora may thus be divided with considerable accuracy into a northern and a southern, whose present distribution has been determined by differences of soil and climate. As would naturally be expected, there is considerable overlapping of these two groups of plants in the portions of the State where they come together, but the conclusion reached at the time the Preliminary Catalogue was written, that they are most naturally separated by the glacial terminal moraine, appears to be substantiated.

Certain species of the northern flora do extend, however, to a considerable distance south of the glacial drift, some of them coming to the southern margin of the Triassic red sandstone, while others are found in greater or less abundance along the outcropping layers of the Cretaceous greensand marls in an area a few miles in width along the lower Delaware river through Mercer, Burlington, Camden, Gloucester and Salem counties. This distribution is undoubtedly determined by soil characters.

Besides these two main divisions of our flora there is another, which may be termed the marine and coast group of plants, species

and varieties especially characteristic of the sea beaches and salt or brackish marshes and meadows. Some of these are plainly forms of upland origin, which have accommodated themselves to their saline surroundings, and been thereby slightly changed in structure and appearance, so as now to be evidently distinct from their inland neighbors and relatives, while others appear to be very distinct from any other living forms. The coast of the State is about 350 miles in length from Jersey City around to the head of Delaware Bay, and the salt marshes overspread 463 square miles. This division of the flora is very uniform in character from one end of the coast line to the other, and is the most distinct and differentiated of all.

We may also make out a fourth group of species of especial western distribution, there being a few plants mainly confined to the Delaware River valley, and reaching their greatest development in point of abundance to the west. These species have no special significance in the consideration of the origin of our flora, and might, perhaps, all be included in one or the other of the two divisions first considered. The detailed statement of the members of each natural order of the flowering plants and fern cohort, and their distribution, which will be found at the end of this catalogue, shows the actual distribution as far as it has been possible to obtain it. The introduced plants—those native of other countries and of portions of the United States beyond our limits—which have established themselves with us and become *naturalized*, and those of the same origin which occasionally or frequently appear in the wild state, as escapes from cultivation or in other ways, and which we may designate as *adventive* or *fugitive*, are given in separate columns, as are those found all over the State, the number of native species in each order, and the total number of each enumerated. The species collected only on the ballast grounds of the great cities are enumerated separately.

I have been fortunate in securing the cordial co-operation of students of all kinds of plants, and the results of their investigations have caused the present work to become the most complete enumeration of plants of any region of as great area in the world. In fact, no such systematic study of a flora has hitherto been attempted. It has proved, however, impossible, at the present time, to work out the geographical distribution of the lower plants. Most of them are doubtless very widely distributed.

LITERATURE OF THE SUBJECT.

Besides the ordinary sources of general botanical information, the following publications refer directly to our flora, either as a whole or in part, and all have been carefully examined :

A Catalogue of Plants growing spontaneously within thirty miles of the city of New York. By John Torrey, M.D. Pamphlet, pp. 100, Albany, 1819.

Compendium Floræ Philadelphicæ; containing a description of the indigenous and naturalized plants found within a circuit of ten miles around Philadelphia. By William P. C. Barton. 2 vols. 8vo., pp. 251 and 234, Philadelphia, 1818.

A Catalogue of Plants growing without cultivation in the counties of Monmouth and Ocean. By P. D. Knieskern. Annual Report of Geological Survey, 1856.

Also reprinted, pamphlet, pp. 41, Trenton, 1857.

A List of Plants and a Catalogue of Marine Algæ collected on the coast of Egg Harbor. By Samuel Ashmead. In Geol. Rep. Cape May County, pp. 149-154, Trenton, 1857.

Bulletin of the Torrey Botanical Club. 8vo., New York, 1870-1889+. Contains in volumes I.-VI. a revision and enlargement of Dr. Torrey's list of 1819, and numerous notes and papers on New Jersey plants in the more recent volumes.

Catalogue of Plants growing without cultivation in the State of New Jersey. By O. R. Willis, Ph.D. 8vo., pp. xxi.+71, New York, 1874. Revised Edition, pp. xxviii.+88, New York, 1878.

A Preliminary Catalogue of the Flora of New Jersey. Compiled for the Geological Survey. By N. L. Britton. 8vo., pp. 233, New Brunswick, 1881.

HERBARIA ILLUSTRATING THE FLORA.

It has been my endeavor to accumulate an herbarium which should contain as nearly as possible a complete representation of our plants in so far as they can be illustrated by dried and mounted

specimens, and to serve as a voucher for the correctness of the work. Lists of plants made from published statements alone are from their very nature no addition to knowledge, and just in proportion to the amount of such material admitted is their value decreased. The present work is based, so far as the flowering-plants, ferns and fern-allies are concerned, on specimens actually seen and examined by myself, and contained either in the State Herbarium above alluded to or in other collections of repute. The lists of lower plants have been supplied by specialists of high reputation and authority. The distribution of the species and varieties has necessarily been partly made up from correspondence and citation of published lists, but all such citations have been excluded if open to reasonable doubt. A few have been collected but once, and these many years ago; of all but these I have been enabled, through the courtesy of numerous valued correspondents, to secure specimens for the State collection, which contains over 5,000 mounted sheets, bearing 10,000 or 12,000 specimens.

ARRANGEMENT AND NOMENCLATURE.

In the orders and genera of flowering-plants I have followed the sequence adopted by Bentham and Hooker in their "Genera Plantarum," with the exception that the class *Gymnospermæ* has been moved into its more natural position, at the extreme end of the flowering-plant series, and immediately before the fern-allies, with which it has more affinity than with the willows and poplars, next to which it has generally been placed. The classes and orders of the lower sub-kingdoms have been grouped mainly as in recent treatises on their several divisions, but not without certain modifications. The species have been arranged according to their botanical alliances, following recent authors.

The names adopted for the members of the first two sub-kingdoms are for the most part those of the "Preliminary Catalogue of Anthophyta and Pteridophyta reported as growing within one hundred miles of New York City," issued by the Torrey Botanical Club during the past year. Wherever these differ from those used in the several manuals and class-books of botany, the latter are given as synonyms in italics. The names adopted are based strictly on the principle of priority of publication, the oldest specific or varietal name available being retained in whatever genus the plant is located,

or whatever its rank as species or variety. Many of our plants have originally been described in genera other than those now accepted, and many were at first supposed to be species which are now regarded as varieties, or the reverse of this. The method adopted of citing the original author of the specific or varietal name—the only permanent portion of the binomial—in a parenthesis, tells us who first named the plant, while the added name behind the parenthesis, shows who first brought the names together in their present combination. This method has, with slight modifications, been generally adopted by zoölogists, and by students of fungi, algæ, lichens and mosses, and its general use in botany tends to bring all biological nomenclature into harmony. A few examples will suffice to indicate the method. Our mistletoe was first described by Pursh, who called it *Viscum flavescens*, not regarding it generically distinct from the mistletoe of Europe, *Viscum album* of Linnaeus. Subsequently Nuttall detected certain well-marked differences, and founding a new genus *Phoradendron*, called our plant *Phoradendron flavescens*. We therefore write *Phoradendron flavescens* (Pursh), Nutt. The younger Michaux named the black-barked sugar maple *Acer nigrum*; Torrey and Gray, determining that it was but a variety of the ordinary sugar or rock maple, described it, in their Flora of North America, as *Acer saccharinum*, L., var. *nigrum*, which we write, *Acer saccharinum*, L., var. *nigrum* (Michx. f.), T. & G. In ordinary parlance we do not attempt to recall the authors of the names, but use only the Latin designations. It is, however, quite essential for exactness that the authors' names be published. The names used in the last three sub-kingdoms are determined in the same way, and the catalogue is, therefore, uniform in this respect.

CATALOGUE OF PLANTS.

SUB-KINGDOM I.—ANTHOPHYTA.

Class 1.—ANGIOSPERMÆ.

Sub-Class 1.—*Dicotyledonæ*.

Series 1.—Polypetalæ.

RANUNCULACEÆ.

CLEMATIS, L.

Virgin's Bower. Clematis.

C. verticillaris, DC. Mountain Clematis.

Union: Plainfield, sparingly, but abundant on First Mountain, three miles north—Tweedy. Somerset: Frequent on rocky banks one mile east of Peapack—Miss R. C. Perry. Passaic: Preakness Mt.—W. L. Fischer. Hunterdon: On hills bordering the Delaware, not common—Best. Warren: Water Gap—W. M. Wolfe; Marble Hill—Porter; and frequent in the Highlands.

C. Virginiana, L. Virgin's Bower. Clematis.

Salem: Salem—Stowell. Gloucester: Mullica Hill—Britton; frequent along streams—B. Heritage. Atlantic: Mays Landing, rare—Peters. Camden: Along river banks—Parker; Kirkwood—F. L. Bassett. Burlington: Wrightstown and Cookstown—Stowell; frequent about Pemberton—Miss H. M. Willmarth. Ocean: New Egypt—Rudkin; and common along water-courses in the middle and northern counties.

ANEMONE, L.

Wind-flower. Anemone.

A. cylindrica, Gray.

Sussex: On limestone rocks at the zinc mines Franklin Furnace and Stirling Hill—Austin; Britton.

A. Virginiana, L. Thimble-weed.

Gloucester: One mile west of Mickleton, rare—B. Heritage. Camden: Rare—Parker. Burlington: Pemberton, frequent—

Lighthipe. Ocean: New Egypt—Knieskern. Monmouth: Middletown—Knieskern. Middlesex: Chesquakes—R. W. Brown; Cranbury—W. S. Lee; and common in open woods, middle and northern counties.

The form or variety with large white sepals, making a flower over an inch across, has been observed by me at Lake Hopatcong and on the Hamburg Mountain.

A. dichotoma, L. (*A. Pennsylvanica*, L.)

Gloucester: Banks of the Delaware, near Red Bank—Parker. Bergen: Woodridge—B. Vreeland; Carlstadt—Schrenk; rare.

A. nemorosa, L. Wood Anemone.

In woods and along shaded water-courses; rather common throughout the State, not abundant in the pine barrens.

Forma quinquefolia (L.), Britt.

Hudson: New Durham swamp—Austin. Hunterdon: Frequent—Best.

A. Hepatica, L. Liver-wort. Liver-leaf. Hepatica. (*Hepatica triloba*, Chaix.)

Salem: Mannington—Mrs. M. A. Lawrence. Gloucester: Woodbury—Mrs. W. McGeorge; Mullica Hill—Britton; on hillsides facing north—B. Heritage. Camden: Little Timber Creek—Parker; Haddonfield—J. Stokes. Burlington: Pemberton—Lighthipe; Bordentown—A. C. Stokes. Ocean: Two or three specimens near Point Pleasant—W. S. Lee; and common in woods, middle and northern counties.*

ANEMONELLA, Spach.

Rue Anemone.

A. thalictroides (L.), Spach. (*Thalictrum anemonoides*, Michx.)

Salem: Sparingly near Marlboro—Britton. Cumberland: Bridgeton—Miss A. B. Rich. Atlantic: Near Mays Landing, rare—Peters. Gloucester: Common—B. Heritage. Camden: In woods, quite frequent—Martindale. Burlington: Frequent about Moorestown—J. Stokes; and common in low woods, middle and northern counties.

**Anemone acutiloba* (DC.), Lawson, reported from Montclair in the Preliminary Catalogue, on the authority of Wm. Churchill, proves to be *A. Hepatica*, L.

THALICTRUM, L.

Meadow Rue.

T. dioicum, L. Early Meadow Rue.

Burlington: Along Coppuck's Run, near Pemberton—Miss H. M. Willmarth. Mercer: Near Trenton—H. Roberson; Princeton—Peters. Union: Near Plainfield—Tweedy. Middlesex: New Brunswick—Lockwood. Hudson: Weehawken—Rudkin; and frequent on shaded rocky banks in the northern counties.

T. purpurascens, L. Purplish M. (Including *var. ceriferum*, Austin, the extremely waxy form.)

Atlantic: Mays Landing, very sparingly—Peters. Camden: Cooper's Creek, specimen in Herb. Phila. Acad., not recently met with—Martindale. Middlesex: Near Morgan's Station—Britton. Mercer: Near Trenton—L. Schumacher. Hunterdon: Lambertville—Appar; frequent about Rosemont—Best; and frequent in woods in the northern counties.

T. polygamum, Muhl. Common M. (*T. Cornuti*, Amer. authors, not L.)

Low meadows and along water-courses. Common throughout the State.

RANUNCULUS, L.

Buttercup. Crowfoot.

R. circinatus, Sibth. (*R. aquatilis*, L., *var. stagnatilis*, DC.; *R. divaricatus*, Schrank.) Stiff White Water Crowfoot.

Monmouth: Squan and Shark Rivers, rare—Knieskern. Bergen: Hackensack River—Austin. Morris: Dover—Appar. Passaic: Little Falls—W. M. Wolfe. Sussex: Swartswood Lake—Porter.

R. aquatilis, L., *var. trichophyllus*, Chaix. Slender White Water Crowfoot.

Gloucester: Ditches in Repaupo meadows—B. Heritage. Camden: Quite abundant—Parker. Mercer: Trenton—A. C. Stokes. Union: Cedar Brook—Plainfield—Tweedy. Passaic: Wanaque River—Britton. Sussex: Andover—Porter. Warren: Frequent in the Delaware River—Britton; more common than the last.

R. multifidus, Pursh. Yellow Water Crowfoot.

Sussex: Swartswood Lake—Porter; Morris Pond—Britton; Newton—Garber. Bergen: Closter—Austin; Saddle River—Leggett. Union: Springfield—W. M. Wolfe. Monmouth: Freehold—Lockwood.

R. ambigens, S. Wats. (*R. alismæfolius*, Gray, not Geyer.) Spearwort.

Gloucester: Repaupo meadows—Heritage. Camden: Frequent—Parker. Mercer: Near Trenton—E. Volk. Middlesex: Woodbridge—Lighthipe. Hudson: Bull's Ferry and Rochelle Park—Rudkin. Bergen: Closter—Austin. Morris: Parsippany—Rusby. Sussex: Stillwater—Porter; Panther Pond—Britton.

R. reptans, L. Creeping Spearwort. (*R. Flammula*, L., var. *reptans*, Meyer.)

Mercer: Trenton—Conrad in Herb. Phila.; Hopewell—Apgar. Warren: Shore of the Delaware River above Philipsburg—Porter; Flatbrookville—Britton. Sussex: In bog meadows near Sparta—Garber.

R. pusillus, Poir.

Morris: Boonton—Austin. Essex: Verona—Rusby. Union: Plainfield—Tweedy. Middlesex: Woodbridge, and west of Monmouth Junction—Lighthipe. Mercer: Princeton—Torrey; Trenton—Apgar. Burlington: Taunton and Moorestown—J. Stokes; Camden—Parker.

R. Cymbalaria, Pursh. Sea Side Crowfoot.

Monmouth: Along Perch Pond, Ocean Grove—W. S. Lee; along Shark River, abundant toward its mouth—Burk; near Brielle and Manasquan—Lighthipe. Ocean: Head of Barnegat Bay, near Point Pleasant—Knieskern. Atlantic: Borders of salt marsh, Atlantic City—F. L. Bassett.

R. abortivus, L. Small-flowered Crowfoot.

Camden: Frequent in woods—Martindale. Salem: Near Marlboro—Britton. Gloucester: Common—B. Heritage; and very common in woods, middle and northern counties.

Var. micranthus (Nutt.), Gray.

Bergen: Palisades—Austin; Ramapo Mt.—Britton. Essex: Montclair—W. M. Wolfe. Hudson: West Hoboken—Leggett. Hunterdon: Stockton—Best.

R. sceleratus, L. Cursed Crowfoot.

Bergen: Frequent along the marshes—Rusby. Essex: Bloomfield and elsewhere—W. M. Wolfe; and frequent in wet grounds in the middle and southern counties, specially abundant along the junction of salt marsh with the upland.

R. recurvatus, Poir. Hooked Crowfoot.

Salem: Elsinboro, abundant—Mrs. M. A. Lawrence; Marlboro—Britton. Camden: Occasional in rich woodlands—Martindale. Gloucester: Two miles west of Mullica Hill—B. Heritage. Burlington: Pemberton—Lighthipe. Monmouth and Ocean: Rare—Knieskern; and common in woods, northern and middle counties.

R. Pennsylvanicus, L. Bristly Crowfoot.

Gloucester: Repaupo meadows, very rare—Heritage. Camden: Wharf at the water-works—Parker. Burlington: Pemberton—Miss Willmarth. Monmouth: Freehold—Willis. Mercer: Trenton—Conrad; and Princeton—Willis. Somerset: Black Swamp—Tweedy. Hunterdon: Near Stockton, rare—Best. Hudson: Newark meadows—W. M. Wolfe; and frequent in swamps in the northern counties.

R. fascicularis, Muhl. Early Buttercup.

Gloucester: In woods two miles west of Mullica Hill—Heritage. Camden: Merchantville—Parker. Burlington: Taunton—J. Stokes. Monmouth: Near Squan and Freehold—Knieskern; near Hightstown—Willis; Sea Bright—Britton; and common in woods in the middle and northern counties.

R. septentrionalis, Poir. Buttercup.

In swamps and wet grounds. Camden: Banks of the Delaware, a large upright form—Burk. Gloucester: Mickleton—B. Heritage. Union: Plainfield—Tweedy. Hudson: New Durham—Leggett. Bergen: Little Ferry—Britton; and frequent throughout the northern counties.

R. REPENS, L. Creeping Crowfoot.

Camden: Abundant in ballast and spreading to other waste places—Martindale. Hudson: Guttenberg—Leggett. Passaic: Passaic Bridge—Leggett. Bergen: Fort Lee—Britton; double-flowered forms at Dover—Schuh; and in Salem Co.—Commons. Adventive from Europe.

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R. BULBOSUS, L. Bulbous Crowfoot. Buttercup.

In old fields and along roadsides, throughout the State, most abundant near towns and villages. Naturalized from Europe.

R. ACRIS, L. Tall Buttercup.

In fields and pastures throughout the State, not common in the southern counties and most abundant in the northern. Naturalized from Europe.

R. ARVENSIS, L.

Ocean: Near Toms River—Rudkin, 1884. Hudson: In ballast, Communipaw—A. Brown. A fugitive from Europe or Asia.

CALTHA, L.

Marsh Marigold.

C. palustris, L.

Salem: Mannington—Mrs. M. A. Lawrence. Gloucester: Abundant along branches of Mantua Creek—B. Heritage; Mickleton—Mrs. W. McGeorge. Camden: Cooper's Creek—Conrad. Burlington: Abundant near Bordentown—Apgar. Monmouth: Freehold, Perrineville and Keyport—Lockwood. Middlesex: Monmouth Junction—Lighthipe; and common in swamps, middle and northern counties.

A partially-double form was observed near Lodi, Passaic Co., by Mr. Geo. C. Woolson.

C. flabellifolia, Pursh.

Sussex: In a swamp near High Point—Britton.

TROLLIUS, L.

Globe Flower.

T. laxus, Salisb. (*T. Americanus*, Muhl.)

Sussex: Vernon—Miss Isabel Mulford; Sparta—Britton; Andover—J. D. Reynolds. Warren: Swamp on Jenny Jump Mt., near Green's Pond—Britton. Morris: Budd's Lake—Porter. Passaic: Rutherford—Schuh; abundant near Lodi—G. C. Woolson. Bergen: Closter—Austin; Ramseys—Stowell. Hudson: Near junction of Erie and N. R. R.—Hyatt; near Carlstadt—O. Frank.

HELLEBORUS, L.

Hellebore.

H. VIRIDIS, L. Green Hellebore.

Warren:—Knighton; Bloomsbury—Porter. Essex: West Orange—W. M. Wolfe. Monmouth: Freehold—Lockwood. Adventive from Europe.

COPTIS, Salisb.

Goldthread.

C. trifolia (L.), Salisb.

Sussex:—Garber. Passaic: Swamp on west side of Bearfort Mt.—Britton; Preakness—W. L. Fischer. Bergen: Closter—Austin; swamps along Hackensack River—G. C. Woolson. Hudson: New Durham—Leggett. Morris: Budd's Lake and Succasunna—Porter; Port Oram—L. Schumacher; Mt. Hope—Britton. Warren: Swamps on Blockade Mt., Delaware Water Gap—S. W. Knipe. Mercer: Trenton—W. M. Wolfe.

AQUILEGIA, L.

Columbine.

A. Canadensis, L. Wild Red Columbine. Cluk-yu.

Salem: Along the headwaters of Salem Creek, near Course's Landing—A. Robinson. Atlantic: Shaded sand-hills, Atlantic City—Parker. Monmouth: Squan, rare—Knieskern; Freehold and Keyport—R. W. Brown; Sea Bright—Britton. Gloucester: Sandy woods on bank of the Delaware—Parker; banks of Raccoon Creek—B. Heritage; Bridgeport—Mrs. McGeorge. Camden: Banks of Little Timber Creek—Martindale. Burlington: Bordentown—A. C. Stokes; Pemberton and Vincentown—Lighthipe; and frequent on rocky banks in the northern and middle counties.

A. flaviflora (Tenney), Britt. Wild Yellow Columbine.

Monmouth: Abundant on bank of Navesink River, near Sea Bright—Britton.

A. vulgaris, L. Blue Columbine.

Warren: Belvidere—Knighton. Bergen: Ramseys—Stowell. Somerset: West Millington—L. Schumacher. Morris: Near Butzville—Britton. Middlesex: Woodbridge—Lighthipe. Hunterdon: Frequent—Best. Adventive from Europe.

DELPHINIUM, L.

Larkspur.

D. CONSOLIDA, L. Field Larkspur.

Atlantic: Mays Landing, very abundant—Peters. Monmouth: Long Branch—Parker. Camden: On ballast grounds—Martindale. Mercer: Trenton—W. S. Lee. Union: Plainfield—Tweedy. Bergen: Closter—Austin; Carlstadt—O. Frank. Hudson: Pamrapo and Communipaw—A. Brown. Hunterdon: Bull's Island—Schuh; Rosemont—Best. Adventive, or locally naturalized from Europe.

HYDRASTIS, L.

Orange-root.

H. Canadensis, L.

Warren:—Knighton; Sussex: Along the Delaware river—Austin, in Willis' Catalogue. The specimens in the Austin Herbarium, at Princeton College, were collected near Port Jervis, but in New York State.

ACTÆA, L.

Baneberry.

A. spicata, L., var. rubra, Ait. Red Baneberry.

Monmouth: Near Keyport—R. W. Brown; Cream Ridge—Willis. Mercer: Princeton and Lawrenceville—Willis. Essex: Franklin—Rusby. Passaic: Preakness—W. L. Fischer. Morris: Morristown—L. Schumacher; and occasional in wood in the northern counties.

A. alba, Bigel. White Baneberry.

Gloucester: Near Clarksboro—Martindale; occasional on hillsides facing north—B. Heritage; and common in woods throughout the middle and northern counties.

CIMICIFUGA, L.

Bugbane.

C. racemosa (L.), Nutt. Black Snake Root. Squaw Root.

Camden: Frequent—Martindale. Burlington: Bordentown—Apgar. Mercer: Near Trenton—E. Volk; Lawrenceville

Lanning; Somerset: Rocky Hill—Lighthipe. Middlesex: Chesquakes Creek—R. W. Brown; New Brunswick—Lockwood; and frequent in woods in the middle counties, apparently less common in the northern parts of the State.

MAGNOLIACEÆ.

MAGNOLIA, L.

Magnolia.

M. glauca, L. Sweet Bay. Laurel Magnolia.

Bergen: Woodridge—Schub. Hudson: New Durham—Austin. Essex: Short Hills—W. M. Wolfe. Middlesex: Near New Brooklyn—Tweedy; Woodbridge—Lighthipe; Metuchen—Miss L. N. Estabrook; and common in swamps in the southern parts of that county, as in Monmouth; and in all the southern counties.

LIRIODENDRON, L.

Tulip Tree.

L. Tulipifera, L. Tulip Tree. Whitewood. White Poplar. Yellow Poplar.

Common in woods throughout the State. Our largest forest tree.

ANONACEÆ.

ASIMINA, Adans.

North American Papaw.

A. triloba (L.), Dunal. Common Papaw.*

Mercer: Abundant along Crosswicks Creek—C. C. Abbott. Hunterdon: Ridge's Island, Delaware River—Best. Atlantic: Thompsettown, near Mays Landing—F. L. Bassett; these points mark its most northeastern natural habitat.

*The plant from Bridgeton, noted in the Preliminary Catalogue as the papaw on the authority of Mr. Martindale, proves to be *Chionanthus Virginica*, the determination being first from leaf specimens only.

MENISPERMACEÆ.

MENISPERMUM, L.

Moonseed.

M. Canadense, L. Common Moonseed.

Salem: Woodstown—Britton. Camden: Along the Delaware—Parker. Mercer: De Cou's bank, near Trenton—Apgar. Monmouth: Near Holmdel—R. W. Brown; in the old forest on Sandy Hook—Professor Cook; and common in woods and along shaded water-courses, northern and middle counties.

BERBERIDEÆ.

BERBERIS, L.

Barberry.

B. vulgaris, L. Common Barberry.

Bergen: Closter—Austin. Hudson: Weehawken—Leggett. Middlesex: Woodbridge—Lighthipe. Monmouth: Red Bank—Knieskern; near Matteawan and on Sandy Hook—R. W. Brown; near Oceanic and Sea Bright—S. W. Knipe. Escaped from cultivation. Adventive from Europe.

CAULOPHYLLUM, Michx.

Pappoose-root.

C. thalictroides (L.), Michx. Blue Cohosh.

Bergen: Pascaek—Austin. Sussex: Andover—J. D. Reynolds. Morris: Near Taylortown—Britton. Passaic: Preakness—W. L. Fischer. Essex: Milburn—Rusby. Union: Plainfield—Tweedy.

PODOPHYLLUM, L.

May Apple. Mandrake.

P. peltatum, L. May Apple.

Salem: Elsinboro—Mrs. M. A. Lawrence. Cumberland: About Shiloh—A. Robinson. Camden: Locally abundant—Martindale. Gloucester: Common along borders of swamps—B. Heritage. Ocean: In woods near Ocean House—W. S. Lee.

Burlington: Bordentown—A. C. Stokes. Monmouth: Cream Ridge—Willis; Holmdel—R. W. Brown; and common in woods, middle and northern counties.

NYMPHÆACEÆ.

BRASENIA, Schreb.

Water-shield.

B. peltata (Thunb.), Pursh. Water-shield.

Sussex: Swartswood and Lake Hopatcong—Rusby; Stag Pond, near Andover—Britton. Passaic: Passaic River above Paterson—Rusby; Little Falls—W. M. Wolfe. Bergen: Closter—Austin. Morris: Budd's Lake—Porter. Mercer: In still water near Trenton—Apgar; and common in ponds and slow streams, middle and southern counties.

NELUMBO, Adans.

Sacred Bean.

N. lutea (Willd.), Pers. Yellow Nelumbo. Lotus. Duck's Acorns. Water Chinquepin. Can Dock.

Sussex: Swartswood Lake—Porter. Salem: Ponds at Woodstown and Sharptown. Bergen: Abundant near Ridgefield, where it was planted some years since—Woolson.

N. NUCIFERA, Gærtn. (*Nelumbium speciosum*, Willd.) Indian Lotus.

Burlington: Naturalized in ponds about Bordentown—E. D. Startevant, C. C. Abbott. Adventive from Asia.

CASTALIA, Salisb.

Water Lily.

C. odorata (Dryand.), Greene. (*Nymphæa odorata*, Ait.) Common White Water Lily.

Ponds and slow streams. Common throughout the State.

Var. minor (Sims), B. S. P. Small White Water Lily.

Morris: Budd's Lake—Porter. Sussex: Stag Pond, near Andover—Britton; and frequent in ponds in the southern counties, where it is sometimes more plentiful than the type.

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Forma rosea, Britton. Wild Pink Water Lily.

Cape May:—A. Commons. Salem: Woodstown, and Ocean:
Manchester—Lockwood.

C. tuberosa (Paine), Greene. (*Nymphaea tuberosa*, Paine.) Tuberous
White Water Lily.

Mercer: Poeatquissing's Creek, a small-flowered form—Dr.
C. C. Abbott.

NYMPHÆA, L.

Yellow Pond Lily.

N. advena, Soland. (*Nuphar advena*, Ait.) Common Yellow Pond Lily.
Golden Watches. Can Dock.

Ponds and ditches. Common throughout the State.

N. microphylla, Pers. (*Nuphar Kalmianum*, Pursh.) Small Yellow
Water Lily.

Bergen: Common in the Hackensack River, near Closter—
Austin. Warren: In the Delaware, below Van Campen's
Creek—Britton. Mercer: Abundant in Watson's Creek, near
Trenton—Dr. A. C. Stokes; sparingly in Assanpink Creek—
Apgar. Burlington: Barrack Creek—Conrad; pond at Atsion
—A. Commons.

SARRACENIACEÆ.

SARRACENIA, L.

Side Saddle Flower.

S. purpurea, L. Pitcher Plant.

Common in cedar swamps, in the pine barrens, and frequent
or occasional in peat bogs throughout the State.

PAPAVERACEÆ.

PAPAVER, L.

Poppy.

P. dubium, L. Smooth-fruited Corn Poppy.

Camden: Cultivated ground, between Camden and White
Horse—Parker; ballast, Kaighn's Point—Burk. Hudson:
Ballast, Communipaw—Tweedy. Adventive from Europe.

P. SOMNIFERUM, L. Common Poppy.

Union: Escaped into waste grounds at Plainfield—Tweedy.
Fugitive from Europe.

ARGEMONE, L.

Prickly Poppy.

A. MEXICANA, L.

Ocean and Monmouth: In waste places—Knieskern. Mercer: Trenton—L. Schumacher. Burlington: Along the Delaware River, below Riverton—J. Stokes. Camden: Ballast and waste places—Parker. Adventive from tropical America.

SANGUINARIA, L.

Blood-root.

S. Canadensis, L.

Cumberland: Rare—Dr. J. B. Potter. Gloucester: Woodbury—Lockwood; west of Mullica Hill, not common—B. Heritage. Camden: Little Timber Creek—Parker. Burlington: Abundant at Bordentown—Sturtevant. Ocean: New Egypt, very rare—Knieskern. Monmouth: Holmdel—Lockwood; and Keyport—R. W. Brown; and common on shaded banks in the middle and northern counties.

GLAUCIUM, Juss.

Horn Poppy.

G. LUTEUM, Scop.

Mercer: Princeton, rare—Willis. Hudson: Ballast grounds at Communipaw—A. Brown. Fugitive from Europe.

CHELIDONIUM, L.

Celandine.

C. MAJUS, L.

Waste grounds and roadsides, frequent throughout the State. Naturalized from Europe.

DICLYTRA, Borkh.

Dutchman's Breeches.

D. Cucullaria (L.), DC. Dutchman's Breeches.

Monmouth: Keyport—R. W. Brown. Middlesex: New Brunswick—Prof. Cook. Mercer: De Cou's bank, near Trenton

—Apgar; and common or frequent in rocky woods, middle and northern counties.

D. *Canadensis* (Goldie), DC. Squirrel Corn.

Sussex:—Austin, in Willis' Catalogue; not since reported, and not contained in Mr. Austin's herbarium.*

ADLUMIA, Raf.

Climbing Fumitory.

A. *fungosa* (Ait.), Greene. (*A. cirrhosa*, Raf.) Alleghany Vine.

In rocky woods. Bergen: Palisades—Austin. Passaic: Near Greenwood Lake—W. M. Wolfe. Sussex: Pochuck Mountain, east of Decker Pond—Britton; Andover—J. D. Reynolds. Warren: Belvidere—F. Knighton. Morris: Near Dover—L. Schumacher. Somerset: Near Peapack, abundant—Miss E. Apgar.

FUMARIA, L.

Fumitory.

F. *OFFICINALIS*, L.

Atlantic: Mays Landing—Peters. Salem: In old gardens—Mrs. M. A. Lawrence. Gloucester: Waste places near dwellings—B. Heritage. Camden: On ballast grounds—Parker. Burlington: Spontaneous around Pemberton—Miss Willmarth; Moorestown—Miss Anna M. Kaign. Mercer: Hightstown and Princeton—Willis; Mercerville—W. S. Lee; Mount Rose—Apgar. Hudson: Ballast grounds at Communipaw—A. Brown. Bergen: Carlstadt—Otto Frank. Adventive from Europe.

CORYDALIS, DC.

Corydalis.

C. *flavula* (Raf.), DC.

Cape May: Along the Delaware Bay—Austin. Camden: Banks of the Delaware River—Parker, C. E. Smith. Mercer: De Cou's bank, near Trenton—Apgar; Princeton†—Peters.

* *Diclytra eximia*, DC., admitted into the Preliminary Catalogue because reported by Mr. Austin growing near the Delaware Water Gap, probably does not grow naturally within the State. The plant so called by Mr. Austin proved to be something else.

† *Corydalis aurea* (Michx.), Willd., admitted into the Preliminary Catalogue on account of the statement of Dr. Torrey to Dr. Willis that it had been found at Princeton, was at the time of Dr. Torrey's report confused with *C. flavula*. *C. aurea* is not yet known as a New Jersey plant.

Hunterdon: Below Holland Station—Porter; Milford and Raven Rock—Best; and frequent or occasional in the Highland Ranges.

C. sempervirens (L.), Pers. (*C. glauca*, Pursh.)

Somerset: Rocky Hill—Lighthipe; and frequent in rocky woods in the northern counties.

CRUCIFERÆ.

NASTURTIUM, R. Br.

Water Cress.

N. OFFICINALE, R. Br. True Water Cress.

Salem: Near Marlboro—Britton. Camden: Rare—Parker. Cumberland: Stoe Creek—A. Robinson; and frequent in brooks, middle and northern counties. A form with three-celled pods, at Trenton—Apgar. Naturalized from Europe.

N. SYLVESTRÆ (L.), R. Br. Yellow Cress.

Camden: Banks of the Delaware, near the water-works, and in ballast—Parker. Mercer: Princeton—Peters. Essex: Bloomfield—Rusby. Adventive from Europe.

N. palustre (L.), DC. Marsh Cress.

Salem: Gravelly banks of the Delaware River, at Pennsgrove—Commons. Hunterdon: Rosemont—Best. Hudson: Near Weehawken—Britton. Essex: Franklin, a very large form—Rusby. Gloucester: Rare—B. Heritage.

Var. hispidum (Desv.), F. & M.

Salem: Pennsgrove—Commons. Camden: Occasional—Parker. Mercer: Trenton—Apgar; Princeton—Peters. Union: Plainfield—Tweedy. Essex: Bloomfield—W. M. Wolfe. Bergen: Carlstadt—Schuh. Hunterdon: Rosemont—Best. Passaic: Greenwood Lake—Rudkin. Warren: Along the Delaware—Porter. More frequent than the type.

N. lacustre, Gray. Lake Cress.

Sussex: Swartswood Lake—Porter.

N. ARMORACIA (L.), Fries. Horseradish.

Escaped from gardens into wet places in many parts of the State. Adventive from Europe.

BARBAREA, R. Br.

Winter Cress.

B. VULGARIS, R. Br. Yellow Rocket.

Common in fields and along roadsides, preferring damper situations, throughout the northern and middle counties; less abundant in the southern counties. Naturalized from Europe.

B. PRÆCOX (Smith), R. Br.

Camden: In ballast—Parker. Hudson: Newark Neck—W. M. Wolfe; in ballast at Communipaw—A. Brown. Hunterdon: Frequent at Rosemont—Best. Adventive from Europe.

ARABIS, L.

Rock Cress.

A. lyrata, L.

Rocky or sandy soil; frequent in all parts of the State.

A. hirsuta (L.), Scop.

Rocky places, northern and middle counties; not common. Sussex:—Austin, Garber; Newton—Hollick; Sparta—Britton. Warren: Below Phillipsburg—Porter. Passaic: Ringwood—Britton. Mercer: Near Hightstown—Willis.

A. lævigata (Muhl.), Poir.

Mercer: Near Trenton—L. Schumacher. Union: On First Mountain, north of Plainfield—Tweedy. Hunterdon: Brookville—Best. Essex: First Mountain—Rusby; and frequent in rocky places in the northern counties.

A. Canadensis, L. Sickle Pod.

Hunterdon: Rocky woods, frequent—Best. Mercer: Near Trenton, not common—E. Volk. Gloucester: On a hillside two miles northwest of Mullica Hill—B. Heritage; frequent in the northern parts of the State.

A. GLABRA (L.), Bernh. (*A. perfoliata*, Lam.) Tower Mustard.

Sussex: Near Hamburg—Britton. Passaic: West Rutherford—Schuh. Cape May: Near the landing on the bay side—Commons. Adventive or fugitive from Europe or the northwest.

CARDAMINE, L.

Bitter Cress.

C. diphylla (Michx.), Wood. (*Dentaria diphylla*, Michx.) Pepper-root.
 Along water-courses in the northern counties; rare. Bergen :
 —Norwood and Tappen; and Sussex:—Austin. Passaic:
 Lyndhurst—Schuh.

C. heterophylla (Nutt.), Wood. (*D. heterophylla*, Nutt.)
 Hunterdon: Near Stockton—Theo. Green, Schuh.

C. laciniata (Muhl.), Wood. (*D. laciniata*, Muhl.) Pepper-root. Tooth-
 wort.
 Salem: Acton's Station—Mrs. M. A. Lawrence. Gloucester:
 South of Mullica Hill—B. Heritage. Camden:—Canby. Bur-
 lington: Near Bordentown—A. C. Stokes. Monmouth: Free-
 hold—Willis. Mercer: Common at Trenton—Apgar; and
 frequent in moist woods, middle and northern counties.

C. pratensis, L. Cuckoo Flower.
 Bergen: In the cedar swamp at New Durham—Austin,
 Leggett.

C. hirsuta, L.
 Salem: Elsinboro—Mrs. M. A. Lawrence. Gloucester: Near
 Mickleton and Mullica Hill—B. Heritage. Camden: Near
 Camden and Atco—Parker. Burlington: Pemberton—Light-
 hipe; Taunton—J. Stokes; common in wet woods and swamps,
 middle and northern counties.

C. flexuosa, With. (*C. hirsuta*, L., var. *sylvatica*, Gray).
 Rocky places, middle and northern counties. Hunterdon:
 Raven Rock—Best. Hudson: Hoboken, and Bergen: Pali-
 sades—Leggett; Ramapo Mountains—Britton. Somerset:
 Rocky Hill—Lighthipe.

C. bulbosa (Schreb.), B. S. P. (*C. rhomboidea*, DC.) Spring Cress.
 Burlington: Taunton—J. Stokes. Ocean and Monmouth:
 Rare—Knieskern; Allentown—A. Robinson. Middlesex:
 Near Monmouth Junction—Lighthipe. Camden: Abundant
 along the river—Martindale. Gloucester: Penn's Neck—B.
 Heritage; and frequent in swamps, middle and northern counties.

D

C. Douglassii (Torr.), Britt. (*C. rhomboidea*, var. *purpurea*, Torr.)

Morris: In springy ground south of Newfoundland—Britton.

C. rotundifolia, Michx. Mountain Water Cress.

Monmouth: Cool, shaded springs, Middletown, very rare—Knieskern. Warren: On wet, sloping rocks, three miles above the Delaware Water Gap—Britton.

ALYSSUM, L.

Alyssum.

A. MARITIMUM, L. Sweet Alyssum.

Camden: Ballast—Martindale. Middlesex: In waste places, South Amboy—Britton. Mercer: In waste places, Trenton—W. S. Lee. Gloucester: Sparingly, escaped from cultivation—B. Heritage. Escaped from gardens; rare. Adventive from Europe.

A. CALYGINUM, L.

Morris: Morristown—L. Schumacher. Hudson: Ballast, at Communipaw—A. Brown. Fugitive from Europe.

DRABA, L.

Whitlow Grass.

D. Caroliniana, Walt.

Gloucester:—C. E. Smith. Camden:—Parker. Burlington: Burlington—Burk. Middlesex: South Amboy—Northrop. Hunterdon: Bull's Island—Moyer.

D. verna, L. Shad Flower.

Common in sandy fields throughout the State, generally appearing as if introduced, though probably native in the northern counties.

HESPERIS, L.

Sweet Rocket.

H. MATRONALIS, L.

Escaped from gardens into waste places. Essex: Milburn, Verona, Roseland—Rusby. Hudson: Weehawken—Rudkin. Bergen: Palisades—R. J. Southworth. Hunterdon: Occasional—Best. Adventive from Europe.

SISYMBRIUM, L.

Hedge Mustard.

- S. OFFICINALE (L.), Scop. Common Hedge Mustard.

Along roadsides and in waste places; common throughout the State. Naturalized from Europe.

- S. THALIANA (L.), Gay. Mouse-ear Cress.

In sandy fields and along roadsides; frequent in the northern counties and excessively abundant in the southern. Naturalized from Europe.

- S. CANESCENS, Nutt. Tansy Mustard.

Cape May: Shore of Delaware Bay—Austin, 1859. Hunterdon: Rosemont—Schuh. Probably waifs, fugitive from the West.

- S. SOPHIA, L.

Camden: In ballast—Parker. Hudson: Communipaw, in ballast and waste places—A. Brown; Hoboken—Martindale. Fugitive from Europe.

ERYSIMUM, L.

Treacle Mustard.

- E. CHEIRANTHOIDES, L. Worm-seed Mustard.

Bergen: Banks of the Hackensack—Austin; meadow land at Ramseys—Stowell; also in ballast at Communipaw—A. Brown. Fugitive from Europe or the West.

CAMELINA, Crantz.

False Flax.

- C. SATIVA (L.), Crantz.

In fields and waste grounds; occasional. Adventive from Europe.

BRASSICA, L.

Mustard. Turnip.

- B. ALBA (L.), Boiss. White Mustard.

Ocean and Monmouth: Waste places, rare—Knieskern. Camden: Ballast and waste grounds—Parker. Hudson: Jersey City—Britton. Fugitive from Europe.

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B. NIGRA (L.), Koch. Black Mustard.

In fields and waste places; common. Naturalized from Europe.

B. ARVENSIS (L.), B. S. P. (*B. Sinapistrum*, Boiss.) Charlock.

Fields and waste places; common. Naturalized from Europe.

B. CAMPESTRIS, L. Turnip.

Occasionally persistent in cultivated fields.

CAPSELLA, Mœnch.

Shepherd's Purse.

C. BURSA-PASTORIS (L.), Mœnch.

In fields and waste places; common. Naturalized from Europe.

LEPIDIUM, L.

Peppergrass.

L. VIRGINICUM, L. Wild Peppergrass.

In fields and along roadsides; common throughout the State.

L. RUDERALE, L.

Burlington: Moorestown—J. Stokes. Mercer: About Trenton—W. S. Lee. Camden: In ballast—Martindale. Hudson: In ballast and waste places, Jersey City—A. Brown. Adventive from Europe.

L. CAMPESTRE (L.), R. Br. Field Peppergrass.

In waste and cultivated ground frequent or common, and in places a troublesome weed. Naturalized from Europe.

THLASPI, L.

Pennycress.

T. ARVENSE, L. Mithridate Mustard.

Camden: In ballast—Martindale. Mercer: Trenton—Apgar. Hudson: Ballast, at Communipaw—A. Brown. Fugitive from Europe.

CAKILE, Gærtn.

Sea Rocket.

C. Americana, Nutt.

Common on the sea-beaches, along the whole coast.

RAPHANUS, L.

Radish.

R. RAPHANISTRUM, L. Wild Radish. Jointed Charlock. Rape.

In cultivated fields frequent, and in places a troublesome weed.
Naturalized from Europe.

R. SATIVUS, L. Garden Radish.

Occasionally persistent for a year or two in cultivated fields
and waste places, hardly deserving a place in this Flora.

CAPPARIDEÆ.

CLEOME, L.

C. PUNGENS, Willd. Spider Flower.

Camden: In mud dredged from the Delaware river, abundant,
1882—Parker; still quite plenty, 1887—Martindale. Burlington:
Burlington—J. Stokes. Adventive from the South.

POLANISIA, Raf.

Clammy-weed.

P. dodecandra (Michx.), B. S. P. (*P. graveolens*, Raf.)

Bergen:—P. V. Leroy. Monmouth: Long Branch—I. H. Hall.

CISTINEÆ.

HELIANTHEMUM, Pers.

Rock-rose.

H. majus (L.), B. S. P. (*H. Canadense*, Michx.) Frost-weed.

Dry, sandy or gravelly soil; common throughout the State.
In the Herbarium of the Academy of Natural Sciences of Philadelphia,
is a specimen from Quaker Bridge, with large, narrowly-elliptical
leaves, very hoary.

H. corymbosum (Poir.), Michx. Frost-weed.

Sandy soil, in the middle and southern counties; rare. Ocean
and Monmouth: Near the coast—Knieskern. Camden: Between
Camden and Longacoming—C. E. Smith; Haddonfield—Difffenbaugh.

HUDSONIA, L.

Hudsonia.

H. ericoides, L. Heath-like Hudsonia.

In sandy fields, middle and southern counties. Middlesex: Near Metuchen—Miss L. N. Estabrook. Burlington: New Lisbon—Lighthipe. Cumberland: Bridgeton—Britton; and common in the pine-barren districts.

H. tomentosa, Nutt. Woolly Hudsonia.

Common in the sands of the sea-shore along the whole coast, and frequent in pine-barren districts.

LECHEA, L.

Pin-weed.

L. minor, L. (*L. major*, Michx.)

In dry fields; common throughout the northern and middle counties, less abundant in the pine barrens.

L. thymifolia, Michx. (*L. Novæ-Cæsariæ*, Austin.)

In dry fields; frequent. Bergen: Closter—Austin. Middlesex: South Amboy—Torrey. Monmouth: Red Bank and Long Branch—Leggett. Ocean: Toms River—Parker; pine barrens—Leggett. Camden:—Parker; Atco—Canby.

L. maritima, Leggett. (*L. thymifolia*, Pursh.)

Burlington: Quaker Bridge—Leggett; and occasional elsewhere in the pine barrens. Common in sands of the sea-shore from Sandy Hook to Cape May.

L. racemulosa, Michx.

Sussex: Kittatinny Mountain and Culver's Gap; Warren: Near the Water Gap; and Morris: Near Charlotteburg—Britton; and common in the southern and middle counties on the Yellow Drift.

L. Leggettii, Britton & Hollick. (*L. minor*, Lam.)

In dry soil; frequent in the northern, middle and western counties, rare on the Yellow Drift.

Var. intermedia (Legg.), Brit. & Holl. (*L. intermedia*, Leggett, mss.)

Middlesex: South Amboy—Austin. Sussex: Pimple Hills and High Point—Britton.

Var. pulchella (Raf.), Brit. & Holl. (*L. pulchella*, Raf.)

Pine barrens. Burlington: Pleasant Mills and Quaker Bridge—Leggett. Ocean: Manchester—Britton. Atlantic: Egg Harbor—Redfield.

L. tenuifolia, Michx.

Monmouth: Phalaux—Leggett.

VIOLARIEÆ.

VIOLA, L.

Violet.

V. pedata, L. Bird-foot Violet.

Sussex: On hills facing the Delaware River, in Montague township—Britton. Essex: Soho Station—Chas. H. Fuller. Union: Springfield—W. M. Wolfe. Somerset: Northern part of the county—Miss R. C. Perry. Warren: Marble Hill, near Phillipsburg—Porter. Hunterdon: Frequent about Rosemont—Best; and common in dry, sandy soil, middle and southern counties.

Forma bicolor (Pursh.), Britt. Pansy Violet.

Warren: Marble Hill, near Phillipsburg—Porter; Belvidere—Miss M. E. Campbell; Oxford—Apgar.

Forma alba (Thurber), Britt.

Occasional with the type. Cumberland: Bridgeton—Miss A. B. Rich. Mercer: Mercerville—W. S. Lee. Middlesex: Near South Amboy—Britton.

V. palmata, L. (*V. cucullata*, Ait., *var. palmata*, Gray.) Hand-leaved Violet.

In damp or wet grounds, rather common throughout; occurring also in dryer situations. The most palmatifid specimens seen are from the tide-water districts of Monmouth, Salem and Atlantic counties.

Forma striata, Willis.

On dry hillsides, middle and northern counties; occasional.

V. cucullata, Ait. Common Blue Violet.

In various moist situations; most luxuriant in wet woods and along shaded streams. Common throughout the State.

Forma albiflora, Britt.

In low grounds; occasional.

Var. cordata (Walt.), Gray.

Warren: Marble Hill, above Phillipsburg—Porter. Morris: Newfoundland—Britton; near Succasunna—Rusby. Hunterdon: Common—Best. Essex: Franklin—Rusby. Passaic: Preakness—W. L. Fischer. Union: Plainfield—Tweedy.
Mercer: Trenton—Apgar.

V. sagittata, Ait. Arrow-leaved Violet.

In dry fields and woods; common throughout the northern and central parts of the State, frequent or occasional in the southern counties.

Var. ovata (Nutt.), T. & G.

In sandy fields, middle and southern counties; frequent.

V. blanda, Willd. Sweet White Violet.

In swamps; rather common throughout the State; most abundant in the northern counties.

Var. amœna (Le Conte), B. S. P.

Sussex: High Point; and Morris: Boonton—Britton.

V. ODORATA, L. English Violet.

Hudson: Escaped from cultivation and established near Weehawken—Schrenk. Adventive from Europe.

V. primulæfolia, L. Primrose-leaved Violet.

Bergen: Closter—Austin. Union: Plainfield—Tweedy. Hudson: Shore of Newark Bay—W. M. Wolfe; and frequent in wet soil, middle and southern counties.

V. lanceolata, L. Lance-leaved Violet.

Warren: Along the Delaware River, below Flatbrookville—Britton; above Phillipsburg—Porter. Bergen: Closter—Austin. Essex: Franklin—Rusby. Hunterdon: Along the Delaware—Theo. Green; near Rosemont, rare—Best; and common in wet grounds, middle and southern counties.

V. rotundifolia, Michx. Round-leaved Violet.

Monmouth: In rich woods, three miles south of Keyport—Lockwood. Essex: Verona—Rusby. Bergen: Closter—Austin; woods back of Tenafly—Leggett. Passaic: Near Passaic

and Lodi—Woolson. Morris: Morristown—Leggett; Dover—L. Schumacher; Stanhope—Austin. Warren: Marble Hill and Low's Hollow—Porter; Delaware Water Gap—Britton. Hunterdon: Near Rosemont, rare—Best.

V. pubescens, Ait. Yellow Violet. (Including *var. eriocarpa*, Nutt.)

Monmouth: Open woods—Knieskern; Cream Ridge—Willis; and frequent in woods throughout the northern counties.

Var. scabriuscula, T. & G.

Bergen:—Austin; Ramseys—Stowell. Hudson: Weehawken—Rudkin; Hoboken—Schrenk. Essex: Franklin—Rusby. Hunterdon: Rosemont—Best. Mercer: Trenton—Apgar; Lawrence—Stowell.

V. Canadensis, L. Canada Violet.

Warren:—Knighton. Bergen: Palisades—Austin. Rare and not recently collected.

V. striata, Ait. Pale Violet.

Bergen: Closter—Austin. Essex: Verona—Rusby; Newark—Rudkin. Union: Plainfield—Tweedy. Hunterdon: Sandy river bank, Holland Station—Porter; Stockton, frequent—Best; Lambertville—Apgar. Somerset:—Somerville; and Mercer: Washington's Crossing—Apgar; Trenton—Stowell.

V. canina, L., *var. Muhlenbergii* (Torr.), Gray. (*Var. sylvestris*, Gray, Manual.) Dog Violet.

Salem: Marlboro—Miss A. B. Rich. Gloucester: In a meadow west of Mullica Hill—B. Heritage. Burlington: Pemberton Junction—Lighthipe. Monmouth: Freehold—Lockwood; and frequent or common in low woods and swamps, middle and northern counties.

V. rostrata, Muhl. Long-spurred Violet.

Warren: Marble Hill—Porter. Passaic: Little Falls—W. M. Wolfe; Rutherford, frequent—Schuh. Bergen:—Austin. Essex: Hemlock Falls, South Orange—Leggett; Watchung—Wolfe. Union: Plainfield—Tweedy. Somerset: Liberty Corner—L. Schumacher. Hunterdon: Locktown—Best; Lambertville—Apgar; near Raven Rock—Theo. Green. Mercer: Near Trenton—Miss R. C. Perry.

V. tenella, Muhl. (*V. tricolor*, L., var. *arvensis*, DC.)

In dry fields and on rocks. Cape May:—Austin. Cumberland: Bridgeton—Miss A. B. Rich; Vineland—Mrs. Treat. Gloucester: Woodbury—Mrs. W. McGeorge; frequent—B. Heritage. Camden: Near the mouth of Cooper's Creek—Conrad; roadsides and in ballast—Parker. Burlington: Moorestown—J. Stokes. Ocean: Near New Egypt—Britton. Mercer: Island in the Delaware—Lanning; Trenton and Somerset Junction—Stowell. Hunterdon: Abundant along the Delaware, between Prallsville and Raven Rock—Best. Warren: Limestone bluffs below Phillipsburg—Porter. Hudson: On rocks, Weehawken—Leggett; in ballast at Communipaw—A. Brown.

V. TRICOLOR, L. Johnny-jumper. Pansy.

Sussex: Escaped from gardens, Montague township—Britton. Hudson: In ballast at Communipaw—A. Brown. Fugitive from Europe.

SOLEA, Ging.

Green Violet.

S. concolor (Forst.), Ging.

Hunterdon: On cliffs along the Delaware, above Milford—Porter; Bull's Island—I. S. Moyer. Very rare.

POLYGALÆ.

POLYGALA, L.

Milkwort.

P. lutea, L. Yellow Milkwort. Bachelor's Button.

In wet, sandy swamps. Monmouth: Common—Knieskern. Burlington: Burlington—Conrad; Pemberton and New Lisbon—Lighthipe. Gloucester: Near Mickleton—B. Heritage. Salem: Elmer—Parker; and common in pine-barren districts of the southeastern counties.

P. incarnata, L.

Sandy ground, southern parts of the State; rare. Camden:—Parker; Haddonfield—Canby. Cumberland: Bridgeton—Britton. Gloucester: Half mile east of Mickleton, rare—B. Heritage.

P. sanguinea, L. Red Milkwort.

Sussex: Near Sparta—Britton. Bergen: Palisades—Austin; and common in fields, middle and southern counties.

P. fastigiata, Nutt.

Pine-barren districts—Nuttall. Ocean: Rare—Knieskern. Camden: Longcoming—C. E. Smith.

P. Nuttallii, T. & G. Nuttall's Milkwort.

In swampy places. Bergen: Closter—Austin. Somerset: Rocky Hill—Lighthipe. Mercer: Lawrence—Peters. Middlesex: Sayreville—Britton. Monmouth: Long Branch—T. F. Allen; North Spring Lake—Lighthipe; Farmingdale—Wm. Bower; and frequent in the southern counties.

P. cruciata, L.

Hudson: Hackensack marshes—Leggett; base of Snake Hill—Britton. Middlesex: South Amboy—T. F. Allen. Mercer: Near Princeton Junction—Peters; and frequent in the southern counties. Abundant along the borders of salt marshes with the upland.

P. brevifolia, Nutt.

Hudson: Secaucus swamp—T. F. Allen; and frequent in pine-barren swamps, southeastern parts of the State.

P. verticillata, L. Whorled-leaved Milkwort.

Dry soil. Common throughout the State.

Var. ambigua (Nutt.), Britton. (*P. ambigua*, Nutt.)

In dry soil. Frequent throughout the State and grading into the type, the extreme forms appearing quite distinct. Both appear to have either green or purple flowers.

P. Senega, L. Seneca Snake-root.

Rare, and now nearly exterminated. "In open woods and on hills"—Torrey Catalogue, 1819. Camden: Griffith's swamp—C. E. Smith.

P. paucifolia, Willd. Gay-wings. Fringed Polygala.

In moist, rich woods. Monmouth: Near Freehold—Willis. Hudson: New Durham Swamp—Torrey. Essex: Franklin—Rusby. Somerset: Along north branch of the Raritan—Miss Emeline Apgar; Peapack—Miss R. C. Perry; and frequent in

the northern counties. A white-flowered form is reported from woods near Hackettstown, Warren county, by Mr. J. D. Reynolds.

P. polygama, Walt.

In dry fields. Bergen: Closter—Austin. Sussex: Summit of Kittatinny Mountains, south side of Culver's Gap—Britton. Morris: Millington—L. Schumacher; mountain east of Lake Hopatcong—Britton. Monmouth: Frequent; and frequent in the southern counties.

CARYOPHYLLÆ.

DIANTHUS, L.

Carnation. Pink.

D. ARMERIA, L. Deptford Pink.

Sandy fields and roadsides; rather common throughout the State. Adventive from Europe.

D. PROLIFER, L.

Camden: Roadside, near Haddonfield—Parker. Fugitive from Europe.

SAPONARIA, L.

Soap-wort.

S. OFFICINALIS, L. Bouncing Bet.

Roadsides and waste places; common throughout the State. Naturalized from Europe.

S. VACCARIA, L. Cow-herb. (*Vaccaria vulgaris*, Host.)

Monmouth and Ocean: Rare—Knieskern. Passaic: Near Passaic—Woolson. Hudson: In ballast at Communipaw—A. Brown. Burlington: Pemberton—Miss Willmarth. Camden: In ballast—Parker. Bergen: Near Carlstadt—Otto Frank. Atlantic: Mays Landing—Peters. Hunterdon: Rosemont, rare—Best. Mercer: Trenton—Apgar. Adventive from Europe.

SILENE, L.

Catchfly. Champion. Pink.

S. stellata (L.), Ait. Starry Champion. Federal Twist.

Gloucester: Not common—B. Heritage. Camden: Abundant about Camden—Martindale. Burlington: Banks of Cop-

puck's Run, Pemberton—Miss Willmarth; Moorestown, rare—J. Stokes; Bordentown—E. D. Sturtevant. Mercer: Near Trenton—A. C. Stokes; Princeton—Peters. Monmouth: Banks of Shark River, rare—Knieskern; and frequent in woods, middle and northern counties.

S. INFLATA, Smith. Bladder Campion.

In fields and waste places. Bergen: Closter—Austin; common at Ramseys—Stowell. Passaic: Little Falls—W. M. Wolfe; very abundant at Butler and Bloomingdale—Britton. Essex: Montclair—Rusby. Hudson: New Durham and Secaucus—Rudkin; in ballast at Communipaw—A. Brown. Camden: In ballast—Parker. Mercer: Trenton—Apgar. Naturalized from Europe.

S. Virginica, L.

Camden: Near Camden—Canby. Warren:—F. Knighton, in Willis' Catalogue. Very rare in the State.

S. Pennsylvanica, Michx. Wild Pink.

Burlington: Common at Pemberton, Birmingham and Evansville—Lighthipe. Hudson: Arlington—Rusby. Mercer: Abundant near Lawrence Station—Peters. Camden: Abundant about Camden—Martindale. Gloucester: One mile south of Mantua—B. Heritage. Monmouth and Ocean: Sandy woods, not common—Knieskern.

S. ARMERIA, L. Sweet William Catchfly.

Escaped from gardens to waste places; frequent. Adventive from Europe.

S. antirrhina, L. Sleepy Catchfly.

Sussex: Montague and Wawayanda Mt.—Britton. Bergen: Closter—Austin. Passaic: On the rocky sides of Bearfort Mt., Greenwood Lake—Britton. Essex: Verona—Rusby. Hunterdon: Abundant near Milford—Porter; Rosemont and Stockton—Best; and frequent in waste places, middle and southern counties. Probably in part introduced from Europe.

S. NOCTIFLORA, L. Night-flowering Catchfly.

Sussex: Newton—Britton. Warren: F. Knighton. Morris: Mount Freedom—Schuh. Burlington: Abundant at Moores-

town—J. Stokes. Camden: In ballast—Parker. Adventive from Europe.

S. RACEMOSA, Otth.

Mercer: Trenton—E. Volk. Fugitive from Europe.

LYCHNIS, L.

Cockle.

L. VESPERTINA, Sibth.

Waste places; rare. Hudson: Newark meadows, along N. J. C. R. R.—W. M. Wolfe; in ballast, at Communipaw—A. Brown. Mercer: Trenton—Apgar. Monmouth: Long Branch—Miss O. M. Ewing. Camden: In ballast—Parker. Adventive from Europe.

L. DIURNA, L.

Mercer: On Round Mt., near Pennington, and near Trenton—Apgar. Camden: In ballast—Parker. Fugitive from Europe.

L. GITHAGO (L.), Lam. Corn Cockle.

In wheat fields and waste places; frequent. Adventive from Europe.

CERASTIUM, L.

Mouse-ear Chickweed.

C. VULGATUM, L.

Rare. Bergen: Near Closter—Austin. Hudson: Hoboken—Leggett; along N. R. R. of N. J.—T. F. Allen. Ocean and Monmouth: Not common—Knieskern. Cumberland: Roadstown—A. Robinson. Naturalized from Europe.

C. SEMIDECANDRUM, L.

Atlantic: On sandy slopes, near Mays Landing, 1887—Peters. Naturalized from Europe.

C. VISCOSUM, L.

In fields and woods; common, and often appearing as if native. Naturalized from Europe.

C. arvense, L. Large-flowered Chickweed.

Camden: Banks of the Delaware—Parker. Burlington: Bordentown—A. C. Stokes. Mercer: Trenton—Apgar. Mon-

mouth: Banks of Shrewsbury River, near Red Bank—Britton; and frequent in rocky places in the northern counties, especially abundant on the Palisades and in the valley of the Delaware.*

C. nutans, Raf. Sticky Chickweed. Powder Horn.

Monmouth: Moist places—Kueskern. Camden:—Miss C. A. Boice. Mercer: Trenton—E. Volk. Union: Plainfield—Tweedy; and frequent in woods in the northern parts of the State.

STELLARIA, L.

Chickweed. Starwort.

S. MEDIA (L.), Smith. Common Chickweed.

Cultivated and waste grounds; very common. Naturalized from Europe.

S. pubera, Michx. Great Chickweed.

Mercer:—Dr. Torrey in manuscript list to Dr. Willis; not since collected.

S. GRAMINEA, L. English Starwort.

Rare. Essex: Orange Mountain, near Montclair—Randall Spaulding, 1882. Bergen: Roadside, near Little Ferry, abundant, 1887—Miss Maria O. Steele. Adventive from Europe.

S. longifolia, Muhl. Long-leaved Starwort.

In swampy ground. Camden: Atco—H. A. Green. Burlington: Pemberton—Miss H. A. Willmarth. Mercer: Trenton—Apgar; Princeton—Peters. Gloucester: Rare—B. Heritage; and frequent in the northern counties.

S. uliginosa, Murr.

In springy places; rare. Burlington: Along the banks of a brook, near Riverton—Dr. Joseph Stokes, 1882. Hunterdon: Byram Station and Sergeantsville, 1886—Schuh. Apparently confined to the Delaware valley.

S. borealis, Bigel. Mountain Starwort.

Sussex: In brook along roadside, western slope of High Point, and on the Kittatiny Mountains near Walpack Centre—Britton.

* *C. arvense*, L., var. *oblongifolium* (Torr.), Hollick & Britton, reported from the Palisades on the authority of Austin and Le Roy, has not recently been collected there, and no specimens are extant to prove its former occurrence.

ARENARIA, L.

Sandwort.

- A. SERPYLLIFOLIA, L. Thyme-leaved Sandwort.
In fields and waste places; common.* Naturalized from Europe.
- A. Caroliniana, Walt. (*A. squarrosa*, Michx.) Pine Barren Sandwort.
Frequent in the pine-barren districts of the southeastern counties.
- A. Michauxii (Fenzl), Hook.f. (*A. stricta*, Michx.) Michaux's Sandwort.
In rocky places; rare. Warren: Cooper's Furnace, Phillipsburg—Garber. Hunterdon:—Porter.
- A. lateriflora, L.
In low woods and meadows. Atlantic: Atlantic City—Parker. Cape May: Anglesea—J. B. Brinton. Passaic: Rutherford, not common—Schuh; near Newfoundland—Britton. Morris: Budd's Lake; and Sussex: In swamps, rare—Porter.
- A. peploides, L. Sea-side Sandwort.
In sandy sea-beaches; frequent.

SAGINA, L.

Pearlwort.

- S. procumbens, L.
Damp places. Camden: Sidewalks of the city—Parker; in ballast—Martindale. Mercer: Sidewalks of Princeton—W. M. Rankin. Hudson: New Durham, and Bergen: Palisades—Austin. Monmouth and Ocean: Not common—Knieskern.
- S. apetala, L.
Damp, sandy places. Camden: Eastern part of the county, abundant—C. E. Smith; in ballast—Martindale. Burlington: Hanover—Apgar. Mercer and Monmouth: Torrey. Passaic: Abundant along road from Hewitt's to Sterling—Britton.

*A slender form of this plant was mistaken by Austin for *Holosteum umbellatum*, L., and published as this in Willis' Catalogue.

S. decumbens (Ell.), T. & G. (*S. subulata*, Gray, Manual.)

Salem: Low grounds, mouth of Game Creek—Commons.
Gloucester:—C. E. Smith. Camden: Gloucester—C. E. Smith;
in ballast—Parker. Atlantic: Atlantic City—Martindale;
common about Mays Landing—Peters. Monmouth: Deal—
Conrad.

Var. *Smithii* (Gray), S. Wats.

Atlantic: Atlantic City and Somers Point—C. E. Smith.
Cape May: In damp soil along W. J. R. R.—Commons.

SPERGULA, L.

Spurrey.

S. ARVENSIS, L.

In cultivated fields and waste places; occasional. Adventive
from Europe.

TISSA, Adans.

Sand Spurrey.

T. rubra (L.), Britton. (*Spergularia rubra*, Presl; *Lepigonum rubrum*, Fr.)

In sandy soil; rare. Middlesex: New Brunswick—Prof.
Geo. H. Cook. Somerset: Peapack—Miss E. Apgar. Glou-
cester: Mickleton—Heritage. Perhaps not native.

T. marina (L.), Britton. (*S. media*, Presl; *L. medium*, Fr.)

In salt or brackish meadows; common.

PORTULACÆ.

PORTULACA, L.

Purslane.

P. OLERACEA, L. Purslane. Pig Pursley.

In cultivated and waste grounds; common. Naturalized from
Europe.

P. GRANDIFLORA, Hook. Portulaca.

In waste places; escaped from gardens. Burlington: Moores-
town—J. Stokes. Mercer: Trenton—W. S. Lee. Sussex:
Along railroads, near Sparta—Britton. Fugitive from South
America.

E

CLAYTONIA, L.

Spring Beauty.

C. Virginica, L.

In moist woods. Salem: Common about Salem—Mrs. M. A. Lawrence; Marlboro—Miss A. B. Rich. Cumberland: Along Stoe Creek—A. Robinson. Gloucester: Frequent—B. Heritage. Camden: Along the Delaware River—Parker; Haddonfield—J. L. Pennypacker. Burlington: Near Moorestown—Miss A. M. Kaighn; abundant at Bordentown—E. D. Sturtevant; Burlington—Stowell; Pemberton—Lighthipe. Ocean: In shady copses, near New Egypt—Knieskern. Monmouth: Near Keyport—R. W. Brown; and common in the middle and northern counties.

ELATINEÆ.

ELATINE, L.

Water-wort.

E. Americana (Pursh), Arnott.

Camden: Delaware River, in tidal mud—Parker. Ocean: Shore of Ferrago Pond—Austin. Passaic: Paterson—Leggett; Banks of the Passaic River—T. F. Allen. Morris: Lake Hopatcong—Porter.

HYPERICINEÆ.

ASCYRUM, L.

St. Peter's-wort.

A. Crux-Andree, L. St. Andrew's Cross.

In dry, sandy fields. Hudson: Bergen Point—Leggett. Middlesex: Near South Amboy—Britton. Monmouth: Near Keyport—R. W. Brown; and frequent in the southern parts of the county. Mercer: Lawrence Station—Peters; and common in the southern counties, especially abundant in the pine-barren districts.

A. stans (Pers.), Michx.

Monmouth: In thick patches, near Hamilton—Lockwood. Gloucester: Occasional about Mickleton—B. Heritage; and common in damp, sandy places in the pine barrens.

HYPERICUM, L.

St. John's-wort.

H. Ascyron, L. (*H. pyramidatum*, Ait.) Great St. John's-wort.

Burlington: Near Bordentown—Stowell. Mercer: Trenton and Lambertville—Apgar. Hunterdon: Along the Delaware, near Bull's Island—Best; below Tumble Station—Porter; near Stockton—Theo. Green. Warren: Near Phillipsburg—Garber; Belvidere—Miss M. E. Campbell. Apparently confined to the valley of the Delaware.

H. prolificum, L. Shrubby St. John's-wort.

Ocean: In swamps, Manchester—Knieskern. Monmouth: Near the turnpike, three miles south of Freehold—Lockwood; near Shark River station—R. W. Brown. Middlesex: Old Bridge—Miss C. A. Boice. Burlington: In pine woods at Taunton—Miss A. M. Kaighn; Rancocas Creek, near Pemberton—Miss Willmarth. Atlantic: Pleasant Mills, abundant—Peters.

H. densiflorum, Pursh. (*H. prolificum*, L., var. *densiflorum*, Gray.) Shrubby St. John's-wort.

In wet places in the pine-barren regions. Common, and confined to the southeastern counties. Much more abundant than the last.

H. adpressum, Bart.

Rare. Bergen: Closter—Austin; Tenafly—Schrenk; Cresskill—Leggett. Monmouth: Freehold—Willis. Burlington: Near Burlington—Conrad; and "borders of swamps in the pine barrens"—Torrey & Gray, *Flor. N. A.* i. 159.

H. ellipticum, Hook.

Camden: In a sphagnous swamp near Camden—E. Diffenbaugh. Burlington: In a meadow near Burlington—Parker. Hunterdon: Stockton—Best. Warren: Along the Delaware, near Carpentersville and Phillipsburg—Porter; Water Gap and Belvidere—Britton. Apparently confined to the valley of the Delaware.

H. virgatum, Lam., var. *ovalifolium*, Britt. (*H. angulosum*, Michx., in part.)

Hudson: In the cedar swamp at Weehawken—Torrey Cata-

logue, 1819. Monmouth: Spring Lake—Lighthipe. Ocean: Pine barrens—Knieskern. Burlington: Quaker Bridge—Conrad; Pleasant Mills—Leggett. Cumberland: Main Road Station—C. A. Gross; and occasional in pine-barren swamps.

H. PERFORATUM, L. Common St. John's-wort.

In fields and meadows; common. Naturalized from Europe.

H. maculatum, Walt. (*H. corymbosum*, Muhl.)

Mercer: Abundant about Princeton—Peters; near Trenton—E. Volk. Monmouth and Ocean: Not common—Knieskern. Gloucester: Occasional about Mickleton—B. Heritage; and frequent in low grounds, middle and northern counties; most abundant northward.

H. mutilum, L.

Low grounds; common throughout the State.

H. Canadense, L.

Wet, sandy ground; common throughout the eastern and southern counties, but less abundant in the northwestern parts of the State.

Var. majus, Gray.

Hudson: Hoboken—Torrey. Sussex: Shore of Morris Pond—Britton. Camden:—Parker (?). A very well-marked variety.

H. gymnanthum, Engelm. & Gray.

Gloucester: Mickleton—B. Heritage, 1887.

H. gentianoides (L.), B. S. P. (*H. Sarothra*, Michx.) Pine-weed. Orange-grass.

In sandy fields and along roadsides; common throughout the State.

H. Virginicum, L. (*Elodes Virginica*, Nutt.) Marsh St. John's-wort.

Common in swamps throughout the State.

H. petiolatum, Walt.

"Swamps, New Jersey"—Torrey & Gray, *Flor. N. A.* i. 168. Camden: Near Camden—J. K. Potts in *Herb. Phila. Acad. Nat. Sciences.*

MALVACEÆ.

ALTHÆA, L.

Marsh Mallow.

A. OFFICINALIS, L.

Ocean and Monmouth: "Salt marshes, common"—Knieskern; apparently not seen within the State by any other botanist. Adventive from Europe.

MALVA, L.

Mallow.

M. ROTUNDIFOLIA, L. Common Mallow. Mallard. Cheese.

Waste and cultivated grounds; common. Naturalized from Europe.

M. SYLVESTRIS, L. High Mallow.

Sparingly introduced along roadsides, etc. Ocean and Monmouth: Rather rare—Knieskern; near Cliffwood—Lockwood. Morris: Long Hill—Leggett. Camden: In ballast—Parker. Hunterdon: A single plant, near Rosemont—Best. Gloucester: A single plant, near Mickleton—B. Heritage. Adventive from Europe.

M. CRISPA, L. Curled Mallow.

Hunterdon: Locktown—Best. Fugitive from Europe.

M. MOSCHATA, L. Musk Mallow.

Sparingly escaped from gardens. Sussex:—Austin; roadsides at McAfee—Britton. Passaic: Stonetown—F. J. H. Merrill; Hewitts—Britton. Essex: Franklin—Rusby. Union: Waste soil at Plainfield—Tweedy. Hunterdon: Baptisttown H. Roberson; Everittstown—Schuh; Rosemont—Best. Adventive from Europe.

M. ALCEA, L.

Warren: Roadsides at Broadway—Porter. Fugitive from Europe.

SIDA, L.

Sida.

S. SPINOSA, L.

Roadsides and waste places. Hunterdon: Along roadsides near Stockton and Rosemont—Best. Mercer: Trenton—Stowell.

Hudson: In ballast at Communipaw—A. Brown. Ocean: New Egypt—Knieskern. Monmouth: Cream Ridge—Britton; and frequent in the southwestern counties. Adventive or naturalized from further south.

ABUTILON, Gærtn.

Indian Mallow.

- A. AVICENNÆ, Gærtn. Velvet Leaf. American Jute. Cotton-weed.
In waste places; common. Naturalized from India.

KOSTELETZKYA, Presl.

Kosteletzkya.

- K. Virginia (L.), Gray.

In salt marshes; not common. Hudson: Hackensack meadows—T. F. Allen. Middlesex: South Amboy—Miss C. A. Boice. Monmouth and Ocean:—Knieskern; Island Heights and Waretown—E. H. Day. Atlantic: Brigantine Beach—C. E. Smith. Cape May:—Canby. Camden: In ballast—Parker.

HIBISCUS, L.

Rose Mallow.

- H. Moscheutos, L. Swamp Rose Mallow. Wild Althæa.

Bergen: Near Closter—Dr. Milton Turnure. Middlesex: Near Rocky Hill—Lighthipe; Rahway—Britton. Union: In swamps at Plainfield—Tweedy. Mercer: Very abundant in Bear Swamp, Lawrenceville—Lockwood; abundant along the Assanpink—Apgar. Hunterdon: Hopewell—Theo. Green; Rosemont, very rare—Best; and very common in salt or brackish marshes along the coasts and rivers. Flowers white or pink, or partly of each color.

- H. TRIONUM, L. Bladder Ketmia.

Escaped from gardens. Monmouth and Ocean:—Knieskern; New Egypt—Britton. Camden: In ballast—Parker. Burlington: Georgetown—Stowell. Somerset: Pleasant Plains—Stowell. Warren: Washington—Britton. Bergen: Ramseys—Stowell. Mercer: Near Trenton—Volk. Hunterdon: Not rare—Best. Gloucester: Near Mullica Hill—B. Heritage. Adventive from Europe.

H. SYRIACUS, L. Shrubby Althæa. Rose of Jericho.

Sparingly escaped from gardens. Salem: Frequent—Mrs. M. A. Lawrence. Burlington: Near Moorestown—J. Stokes. Mercer: Hightstown—C. M. Norton. Hunterdon:—Frequent at Rosemont—Best. Adventive from Syria.

TILIACEÆ.

TILIA, L.

Linden. Basswood.

T. Americana, L. Basswood.

Salem: Banks of the Delaware—Commons. Monmouth: Banks of Squan River—Knieskern; Cliffwood—Lockwood. Camden:—Miss C. A. Boice; and frequent in woods, middle and northern counties.

T. pubescens, Ait. (*T. Americana*, L., var. *pubescens*, Gray.)

Hudson: On the high hills, near Weehawken—Torrey Catalogue, 1819. Bergen: Lyndhurst—Schuh, 1887; possibly not native. Hunterdon: Rosemont, rare—Best.

LINEÆ.

LINUM, L.

Flax.

L. Virginianum, L. Wild Flax.

Dry, sandy woods; common throughout the State.

L. striatum, Walt.

In low, swampy ground; frequent in most sections of the State, but not abundant in the pine-barren districts. Atlantic: Mays Landing—Peters.

L. sulcatum, Riddell.

Rare. Bergen: Palisades, and Sussex:—Austin; not recently collected.

L. USITATISSIMUM, L. Cultivated Flax.

In ballast and waste grounds; frequent. Fugitive from Europe.

GERANIACEÆ.

GERANIUM, L.

Geranium. Cranesbill.

G. maculatum, L. Wild Geranium.

Gloucester: Common about Mickleton—B. Heritage. Monmouth and Ocean: Common—Knieskern. Burlington: Vincentown and Pemberton—Lighthipe; and common in woods, middle and northern counties; not reported from the pine barrens.

G. Carolinianum, L. Cranesbill.

In sandy soil and waste places; quite common throughout the State; most abundant in the southern counties.

G. DISSECTUM, L.

Waste places; rare. Passaic: Little Falls—W. M. Wolfe. Hudson: In ballast at Communipaw—A. Brown. Camden: In ballast—Parker. Gloucester: Woodbury—B. Heritage. Adventive from Europe.

G. COLUMBINUM, L.

Morris: Chatham—Leggett. Essex: Milburn—Rusby. Burlington: Vincentown—Miss H. M. Willmarth. Adventive from Europe.

G. PUSILLUM, L.

Hudson: In ballast, Communipaw—A. Brown. Middlesex: South Amboy—Leggett. Monmouth: Keyport—R. W. Brown. Union: Plainfield—Tweedy. Burlington: Moorestown—Miss A. M. Kaighn; Pemberton—Lighthipe. Mercer: Princeton—Peters; Trenton—E. Volk. Camden: Roadside, near Cooper's Point—E. Diffenbaugh; in ballast and waste places—Parker; Gloucester—Miss C. A. Boice. Cape May:—B. Heritage. Adventive from Europe.

G. Robertianum, L. Herb Robert.

Atlantic: Atlantic City—Parker. Monmouth: In the old forest, Sandy Hook—Britton. Hudson: Weehawken—Leggett; Hoboken and Snake Hill—Britton. Passaic: Paterson—D. S. Martin. Hunterdon: Near Prallsville and Sergeantsville—Best; and frequent in wet, rocky places in the Highlands.

ERODIUM, L'Her.

Storksbill.

E. CICUTARIUM (L.), L'Her. Alfilaria.

In fields and waste places. Essex: Franklin—Rusby. Hudson: In ballast, Communipaw—M. Ruger. Middlesex: College farm, New Brunswick—Professor Cook. Burlington: Near Borton's Landing, Rancocas Creek—Miss A. M. Kaighn. Camden: In ballast—Parker. Gloucester: Woodbury—Canby. Adventive from Europe.

FLCERKEA, Willd.

False Mermaid.

F. proserpinacoides, Willd.

Marshes; rare. Bergen: Closter and Pascack—Austin; Lyndhurst—Schuh. Essex: Franklin—Rusby. Hunterdon: Stony Brook, above Moore's Station—Theo. Green. Rare.

OXALIS, L.

Wood Sorrel.

O. violacea, L. Violet Wood Sorrel.

Moist woods. Monmouth: Near Squan and Shark Rivers, rare—Knieskern. Burlington: Near Pemberton, not common Miss Willmarth. Cumberland: In woods near Bridgeton—Miss A. B. Rich. Mercer: About Trenton—E. Volk; and common or frequent in woods in the northern counties.

O. CORNICULATA, L.

Hudson: In ballast at Communipaw—A. Brown; also, occasionally seen as a weed in green-houses. Fugitive from Europe.

Var. stricta (L.), Sav. Common Yellow Wood Sorrel.

In woods and fields. Common throughout the State.

IMPATIENS, L.

Balsam. Jewel-weed.

I. aurea, Muhl. (*I. pallida, Nutt.*) Yellow Touch-me-not.

In rich, wet soil; not common. Bergen: Base of Palisades, opposite Riverdale, N. Y.—E. P. Bicknell. Hudson: Wee-

hawken—Leggett; Snake Hill—T. F. Allen. Hunterdon: Sparingly in the southwestern parts of the county—Best. Burlington: Moorestown—Miss A. M. Kaighn. Warren: Common along the Delaware—Porter.

I. *biflora*, Walt. (*O. fulva*, Nutt.) Spotted Touch-me-not.

In swampy ground. Common throughout the State. Dr. Knieskern reports a form with white flowers growing near Toms River, Ocean Co.

RUTACEÆ.

XANTHOXYLUM, L.

Prickly Ash.

X. *Americanum*, Mill. Toothache Tree.

Bergen: Closter—Austin, abundant; and Saddle River, near Arcola, and near its junction with the Passaic—Woolson. Passaic: Hills above Ringwood—Britton. Sussex: Franklin Furnace—Britton. Warren: Abundant along the road from Blairstown to Stillwater—Porter; above Belvidere—Mrs. W. McGeorge. Morris: Near Dover—Britton. Monmouth: Near Freehold—Willis. Hunterdon: Rosemont, rare—Best.

RUTA, L.

Rue.

R. *GRAVEOLENS*, L.

Hunterdon: Frequent about Rosemont, escaped from gardens—Best. Fugitive from Europe.

PTELEA, L.

Hop Tree.

P. *trifoliata*, L.

Hunterdon: On Ridge's Island, Delaware River—Best. Mercer: Banks of Crosswicks Creek—C. C. Abbott; and elsewhere escaped from cultivation.

SIMARUBEÆ.

AILANTHUS, Desf.

Ailanthus.

A. *GLANDULOSUS*, Desf. Tree of Heaven. Tallow Tree.

Along roadsides, etc.; common. Naturalized from China.

ILICINEÆ.

ILEX, L.

Holly.

I. opaca, Ait. American Holly.

Warren : Mountain-ridge below Carpentersville—Porter.
Mercer : Trenton—Martindale. Monmouth : Abundant and very large in the old forest on Sandy Hook—Britton. Middlesex : Sparingly on the sand-hills north of the Raritan, near Woodbridge—Lighthipe; and common in woods in the southern counties.

I. verticillata (L.), Gray. Black Alder. Winterberry.

Swamps and low grounds. Common throughout the State.

I. lævigata (Pursh), Gray.

Bergen : Closter—Austin. Hudson : Secaucus—Leggett.
Morris : Chatham—Leggett. Monmouth : Keyport—R. W. Brown. Mercer : Princeton Junction—Peters; Trenton—Volk; and frequent in swamps in the southern counties.

I. glabra (L.), Gray. Inkberry.

Hudson : New Durham and Secaucus—Leggett. Gloucester : Mickleton, rare—B. Heritage; and common in low grounds in the pine-barren districts of the southeastern counties.

NEMOPANTHES, Raf.

Mountain Holly.

N. mucronata (L.), Trelease. (*N. Canadensis*, DC.)

Ocean : Rare—Knieskern. Hudson : Secaucus swamp—Leggett. Atlantic : Hammonton—F. L. Bassett. Camden : Parker. Morris : Budd's Lake—Porter. Sussex :—Garber; western slope of High Point—Britton.

CELASTRINEÆ.

EUONYMUS, L.

Spindle-tree.

E. atropurpureus, Jacq. Burning-bush.

Passaic : Near Paterson, on the road to Hamburg—W. L. Fischer; near Lyndhurst—Schuh; near Little Falls—Rusby.

Sussex: Milton—Britton. Hunterdon: River bank, below Holland Station—Porter; frequent from Frenchtown to Lambertville—Schuh; Rosemont, frequent—Best. Burlington: Moorestown—Miss A. M. Kaighn. Salem: Mannington and Elsinboro—Mrs. M. A. Lawrence. Gloucester: In a wood two miles west of Mullica Hill—B. Heritage.

E. Americanus, L.

Bergen: Closter—Austin. Essex: Milburn—Britton. Passaic: Kingsland—Schuh. Hunterdon: Hills along the Delaware River from Stockton to Frenchtown—Best. Monmouth: Freehold—Willis; Keyport—R. W. Brown. Mercer: Trenton—Apgar; Hamilton Square and Baker's Basin—W. S. Lee. Middlesex: Sand Hills, north of the Raritan—Lighthipe; and common in the southwestern counties.

Var. obovatus, T. & G.

Essex: *Franklin—Rusby. Somerset: Near Rocky Hill—Lockwood. Bergen: Near Woodridge—Schuh. Hunterdon: Rosemont—Best.

CELASTRUS, L.

False Bitter-sweet.

C. scandens, L.

Camden: Banks of the Delaware—Parker. Atlantic: Atlantic City—H. A. Green. Monmouth: Spring Lake—Lighthipe; and frequent in low woods and copses, middle and northern counties.

RHAMNEÆ.

RHAMNUS, L.

Buckthorn.

R. CATHARTICA, L. European Buckthorn.

Camden: Near Haddonfield—Parker. Hunterdon: Pittstown—Henry Race. Sussex: Montague Township—Britton. Adventive from Europe.

R. alnifolia, L'Hér.

Hudson: Along the railroad, near New Durham—Leggett, T. F. Allen.

R. Caroliniana, Walt. (*Frangula Caroliniana, Gray.*)

, Hudson: Secaucus and New Durham—Leggett.

CEANOTHUS, L.

New Jersey Tea.

C. Americanus, L.

In open woods. Common throughout the State.

AMPELIDEÆ.

VITIS, L.

Grape.

V. Labrusca, L. Northern Fox Grape.

Moist thickets. Common, except in the southeastern counties, where it is of less frequent occurrence.

V. æstivalis, Michx. Summer Grape. Chicken Grape.

Thickets. Common throughout the State.

V. cordifolia, Michx. Frost Grape.

Gloucester: Common—B. Heritage. Ocean and Monmouth: Common—Knieskern; Holmdel—Britton; Keyport—R. W. Brown. Mercer: Princeton—Peters; and common in thickets, middle and northern counties.

V. riparia, Michx. (*V. cordifolia*, Michx., var. *riparia*, Gray.)

Morris: Summit—Leggett. Sussex: Newton and Stirling Hill—Britton. Warren: Common along rocky banks of the Delaware—Porter. Hunterdon: Locktown and along the Delaware—Best.

V. quinquefolia (L.), Lam. (*Ampelopsis quinquefolia*, Michx.) Virginian Creeper. American Ivy. Five Finger.

In woods and moist thickets. Common throughout the State.

SAPINDACEÆ.

ACER, L.

Maple.

A. Pennsylvanicum, L. Striped Maple.

Passaic: West side of Bearfort Mountain—Britton. Sussex: —Austin; bank of stream in woods near High Point—Britton. Warren: Delaware Water Gap—Rusby.

A. spicatum, Lam. Mountain Maple.

In rocky woods. Union: Three miles north of Plainfield, rare—Tweedy. Somerset: Peapack—Apgar. Essex: On First Mountain—Rusby. Hunterdon: Stockton—Best. Warren: Along the Delaware below Carpentersville, and at Low's Hollow—Porter. Sussex: Near Newton, and on High Point—Britton.

A. saccharum, Marsh. (*A. saccharinum*, Wang., not L.) Sugar Maple. Rock Maple.

Hudson: Weehawken—Ruger. Mercer: Abundant about Princeton—Peters; bank of Assanpink Creek, two miles east of Trenton, now destroyed—Abbott; and frequent in rocky woods in the northern counties.

Var. nigrum (Michx.f.), Britt. (*A. nigrum*, Michx.f.) Black Maple.

Hunterdon: Locktown—Best.

A. saccharinum, L. (*A. dasycarpum*, Ehrh.) Silver Maple.

Sussex: Waterloo and along the Delaware River—Britton. Warren: Very abundant from above the Water Gap to Riegelsville—Porter. Hunterdon: Common along the Delaware—Best.

A. rubrum, L. Red Maple. Swamp Maple.

Swamps and low grounds. Common throughout the State.

NEGUNDO, Mœench.

Box Elder.

N. aceroides, Mœench. Ash-leaved Maple.

Gloucester: Abundant along streams, near Mullica Hill—Britton; near Mantua—B. Heritage. Burlington: Banks of Coppuck's Run, near Pemberton—Miss H. M. Willmarth. Monmouth and Mercer: Abundant along Crosswicks Creek—C. C. Abbott. Union: Along Green Brook—Tweedy. Bergen: Banks of the Hackensack River, west of Closter—Austin. Passaic: Paterson—Leggett. Hunterdon: Bull's Island—Best.

STAPHYLEA, L.

Bladder-nut.

S. trifolia, L.

Monmouth: Banks of Squan River, rare—Knieskern. Camden: Banks of the Delaware—Parker. Mercer: Near

Baker's Basin, Lawrence and Titusville—W. S. Lee; Princeton Peters. Union: Plainfield—Tweedy. Middlesex: New Brunswick—Professor Cook. Hudson: Snake Hill and Weehawken—Ruger. Hunterdon: Between Stockton and Lambertville, and along the Delaware below Frenchtown—Best; Moore's Station and near Hopewell—Theo. Green; and frequent in rocky woods in the northern counties.

ANACARDIACEÆ.

RHUS, L.

Sumach.

R. typhina, L. Staghorn Sumach.

Gloucester: Near Mickleton—B. Heritage. Burlington: Bordentown—A. C. Stokes. Mercer: Near Trenton—E. Volk. Essex: Along Orange Mt.—Rusby. Hudson: Little Snake Hill—Britton; and frequent in rocky places in the northern counties.

R. glabra, L. Smooth Sumach. "Spanish" Sumach.

In dry soil. Common or frequent throughout the State.

R. copallina, L. Dwarf Sumach. Upland Sumach.

In poor soil. Frequent throughout the State; most abundant in the southern counties.

R. venenata, L. Poison Sumach. Poison Dogwood. Swamp Sumach.

In swamps. Sussex: Sparta meadows, and abundant in Germany Flats—Britton. Morris: Sparingly in the bog at Budd's Lake—Porter; and common in the eastern, middle and southern counties.

R. radicans, L. (*R. Toxicodendron*, L.) Poison Ivy. Poison Vine. Poison Oak. Climuth.

Thickets and fence-rows. Common throughout the State. The erect form is more abundant in the hilly or mountainous districts of the northern counties.

LEGUMINOSÆ.

BAPTISIA, Vent.

False Indigo.

B. tinctoria (L.), R. Br. Wild Indigo.

Dry, sandy soil. Common throughout the State; most abundant in the southern counties.

B. LEUCOPHÆA, Nutt.

Gloucester: Spontaneous in a yard at Newfield, and persistent for several years—J. B. Ellis. Fugitive from the West.

CROTALARIA, L.

Rattle-box.

C. sagittalis, L.

Warren: Marble Hill, above Phillipsburg—Porter. Hunterdon: A few patches near Pittstown—Henry Race; common about Rosemont and Stockton—Best. Passaic: Near Wanaque—Britton; and common in sandy fields, middle and southern counties.

LUPINUS, L.

Lupine.

L. perennis, L.

In sandy fields, rarely in rocky places. Sussex: High Point, Hamburg, and abundant at Sparta—Britton; and common or frequent in sandy fields, middle and southern counties.

Forma rosea, Britt.

Atlantic: Mays Landing—Peters.

MEDICAGO, L.

Medick.

M. SATIVA, L. Lucerne Clover.

In waste places and ballast. Camden: Stockton township—Martindale; in ballast—Parker. Hunterdon: Rosemont, rare—Best. Gloucester: Mickleton—B. Heritage. Occasionally cultivated for fodder. With yellow flowers at Everittstown, Hunterdon Co., Schuh, 1886. Fugitive from Europe.

M. LUPULINA, L. Black Medick. Nonesuch.

In waste or cultivated grounds; common. Naturalized from Europe.

M. MACULATA, Willd. Spotted Medick.

In waste places. Essex: Franklin and near Little Falls—Rusby. Hudson: In ballast, Communipaw—A. Brown. Camden: In ballast and waste places—Parker. Adventive from Europe.

M. DENTICULATA, Willd.

Camden: In ballast and waste places—Parker. Mercer: Trenton—E. Lanning. Fugitive from Europe.

MELILOTUS, Juss.

Melilot. Sweet Clover.

M. OFFICINALIS (L.), Lam. Yellow Melilot.

Waste places; frequent. Adventive from Europe.

M. ALBA, L. White Melilot.

Waste places; common. Adventive from Europe.

TRIFOLIUM, L.

Clover. Trefoil.

T. ARVENSE, L. Rabbit-foot Clover. Poverty Clover. Cape May Clover. Poverty Grass.

Barren, sandy fields; common; most abundant in the southern counties. Naturalized from Europe.

T. PRATENSE, L. Red Clover.

Fields and pastures; common. Naturalized from Europe.

T. REPENS, L. White Clover. Dutch Clover. Shamrock.

Fields, woods and waste places; common. Naturalized from Europe.

T. HYBRIDUM, L. Alsike. Swedish Clover.

Essex: On Orange Mountain, near St. Cloud, probably introduced in seed—Miss Isabel Mulford. Camden: In ballast—Martindale. Hudson: In ballast at Communipaw—A. Brown. Passaic: Rutherford, frequent—Schuh. Bergen: Near Fort Lee—Miss Millie Timmerman. Gloucester: Mullica Hill—B. Heritage. Adventive from Europe.

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T. REFLEXUM, L.

Mercer: De Cou's bank, near Trenton—Apgar. Probably adventive from the West.

T. INCARNATUM, L.

Burlington: Shamong—Canby; Bordentown—Apgar. Gloucester: Mickleton—B. Heritage. Fugitive from Europe. Occasionally cultivated.

T. AGRARIUM, L. Yellow Clover. Hop Clover.

In fields and on banks; common. Naturalized from Europe.

T. PROCUMBENS, L. Low Yellow Clover.

Essex: Franklin—Rusby. Hudson: Weehawken—Leggett. Hunterdon: Common—Best; and common in fields and waste places in the middle and southern counties. Naturalized from Europe.

T. DUBIUM, Sibth. (*T. procumbens*, L., var. *mimus*, Koch.)

Atlantic: Fields, Hammonton—F. L. Bassett. Atlantic: Mays Landing—Peters. Hunterdon: White Hill—Best. Adventive from Europe.

AMORPHA, L.

False Indigo.

A. FRUTICOSA, L.

Essex: Escaped from gardens, near Belleville—Rusby. Passaic: Rutherford—Schuh. Hudson: Near Arlington—Mrs. Britton. Fugitive from the West.

TEPHROSIA, Pers.

Hairy-pea.

T. Virginiana (L.), Pers. Goat's-rue. Catgut.

Rocky and sandy places. Sussex: Frequent on the Kittatinny Mts., also on Hamburg Mt., Pochuck Mt. and Pimple Hills—Britton. Warren: Along the Delaware—Porter. Passaic: Western shore of Greenwood Lake and on Bearfort Mt.—Rudkin; abundant near Passaic—Woolson; Monk's Station—Britton. Hunterdon: Rosemont and Bull's Island—Best; and common in the middle and southern counties.

ROBINIA, L.

Locust.

R. PSEUDACACIA, L. Common Locust.

Extensively planted and escaped from cultivation. Naturalized from the West.*

R. VISCOSA, Vent. Clammy Locust.

Escaped from cultivation. Hunterdon: Sparingly—Best. Morris: Chatham—Leggett; near Dover—Britton; Mt. Freedom and Madison—Schuh. Essex: Franklin—Rusby; Belleville—Schuh. Somerset: Black Swamp—Tweedy. Mercer: Princeton—Willis. Ocean: Toms River—Britton. Salem: About Salem—Mrs. M. A. Lawrence. Adventive or naturalized from the Southwest.

R. HISPIDA, L. Rose Acacia.

Atlantic: Mays Landing, and between Elwood and Pleasant Mills, naturalized in woods and along roadsides—Peters. Adventive from the southern mountains.

CORONILLA, L.

Coronilla.

C. VARIA, L.

Sparingly escaped from cultivation. Essex: Bloomfield—Rusby. Union: Plainfield—Tweedy. Somerset: Somerville—Apgar. Hunterdon: Lambertville—Apgar. Hudson: Guttenburg—Wilbur; in ballast, Communipaw—Rudkin. Camden: In ballast—Martindale. Ocean: Near Waretown—J. Stokes. Naturalized from Europe.

ÆSCHYNOMENE, L.

Sensitive Joint Vetch.

Æ. Virginica (L.), B. S. P. (*Æ. hispida*, Willd.)

Camden: "Banks of the Delaware, below Kaighn's Ferry, very rare"—Barton. Gloucester: Near Bridgeport—Win. Trimble, 1882. Salem: Tidal muddy banks of the Delaware—Commons, 1882.

* Dr. C. C. Abbott thinks that some of the large, old trees below Trenton could not have been brought from any great distance.

STYLOSANTHES, Sw.

Pencil-flower.

S. biflora (L.), B. S. P. (*S. elatior*, Sw.)

Warren: Shore of the Delaware, scarce—Porter; east side of Jenny Jump Mt., near Green's Pond, and on Scott's Mt., near Washington—Britton. Hunterdon: Bull's Island and Rosemont—Best. Essex: Near Milburn—Rusby; and common in sandy fields, middle and southern counties.

ARACHIS, L.

Peanut.

A. HYPOGÆA, Willd.

Salem: Sandy banks of the Delaware, occasional—Commons. Fugitive from the South.

DESMODIUM, Desv.

Tick Trefoil.

D. nudiflorum (L.), DC.

Dry woods. Gloucester: Common about Mickleton—B. Heritage. Camden: Near Camden—Parker. Monmouth: Middletown, rare—Knieskern; and common in woods, middle and northern counties.

D. grandiflorum (Walt.), DC. (*D. acuminatum*, DC.)

Hudson: Snake Hill—Britton. Essex: Frequent—Rusby. Hunterdon: Frequent—Best; and frequent in the northern parts of the State, in rocky woodlands.

D. humifusum (Muhl.), Beck.

Morris: Long Hill—Leggett, 1867. Hunterdon: Beagle's Corner—Best, 1887.

D. rotundifolium (Michx.), DC.

In sandy or rocky woods. Gloucester: Rare about Mickleton—B. Heritage; and frequent in the middle and northern counties.

D. canescens (L.), DC.

Swampy grounds; not common. Camden: Banks of the Delaware, near Gloucester—Parker. Hunterdon: Along the

Delaware, between Bull's Island and Point Pleasant—Best; cliffs above Milford—Porter. Essex: Along First Mountain—Rusby.

D. cuspidatum (Muhl.), Hook.

Rocky woods; rare. Morris: Chatham and Long Hill—Leggett. Warren: Along Pohatecong Creek, near Stewartsville—Britton. Bergen: On the Palisades, an ascending or trailing form, possibly a hybrid with one of the procumbent species—Bicknell. Hunterdon: Frequent at Rosemont—Best. Gloucester: Mickleton, rare—B. Heritage.

D. lævigatum (Nutt.), DC.

Sandy woods, middle and southern counties; not common. Morris: Long Hill—Leggett. Mercer: Princeton Junction—Peters. Hudson: Bergen Point—Leggett. Ocean: Pine barrens—Knieskern. Burlington: Along Crosswicks Creek—Conrad.

D. viridiflorum (L.), Beck.

Hunterdon: Rosemont—Best; Baptisttown—H. Roberson. Morris: Long Hill—Leggett. Burlington: Vincentown—Britton. Camden: Near Spring Garden—Canby; Tomlinsons—C. E. Smith.

D. Dillenii, Darl.

In open woods. Frequent or common throughout the State.

D. paniculatum (Nutt.), DC.

Woods and copses. Common throughout the State.

D. strictum (Pursh), DC.

Sandy woods. Confined to the area of the Yellow Drift. Ocean and Monmouth: Rare—Knieskern. Gloucester: Malaga—Parker; Woodbury—C. E. Smith. Cumberland: Bridgeton—Britton.

D. Canadense (L.), DC.

In wet woods and borders of swamps and streams. Common in the northern and middle counties, exceedingly abundant along the Delaware River, less frequent in the southern parts of the State.

D. rigidum (Ell.), DC.

Gloucester: Near Woodbury, rare—C. E. Smith. Camden:—Martindale. Morris: Long Hill—Leggett; Chester—Miss E. Apgar. Hunterdon: Rosemont—Best. Warren: Limestone bluffs, below Phillipsburg—Porter. Mercer: Near Trenton—Volk.

D. ciliare (Muhl.), DC.

Essex: Franklin—Rusby. Hunterdon: Stockton and Bull's Island—Best; frequent or occasional in the middle and southern counties.

D. Marylandicum (L.), Boott.

Morris: Long Hill—Leggett. Hunterdon: Common—Best. Mercer: About Trenton—Volk; frequent or common in the middle and southern counties.

LESPÉDEZA, Michx.

Bush Clover.

L. repens (L.), Bart. (Includes *L. procumbens*, Michx.)

Dry, sandy woods. Common throughout the State.

L. violacea (L.), Pers.

Dry fields and copses. Apparently frequent or occasional throughout the State.

L. reticulata (Muhl.), Pers. (*L. violacea*, Pers., var. *sessiliflora*, Don.)

In dry, open woods and fields. Essex: Franklin—Rusby. Morris: Long Hill—Leggett. Hunterdon: Common about Rosemont—Best. Camden: Near Camden—Martindale; and frequent in the southern parts of the State.

Var. angustifolia (Hook.), Maxim.

In dry woods and fields. Frequent throughout the State. This may perhaps best be regarded as a distinct species.

L. Stuvei, Nutt.

Hunterdon: Rosemont—Best; Baptisttown—H. Roberson. Somerset: Peapack—Apgar. Monmouth: "Along fences on hillsides, common"—Willis; Sea Girt—A. Brown; Asbury Park—Peters. Camden: Near Spring Garden—Canby.

L. hirta (L.), Ell.

In sandy or rocky woods. Sussex: Frequent on the Kittatinny Mountains, also at Hamburg—Britton. Warren: Belvidere—Miss M. E. Campbell; along the Delaware, above Phillipsburg—Porter. Hunterdon: Near Prallsville, scarce—Best. Essex: Franklin—Rusby; and frequent in the middle and southern counties.

L. frutescens (Willd.), Ell. (*L. capitata*, Michx.)

Dry soil. Common throughout the State.

L. angustifolia (Pursh), Ell. (*L. capitata*, Michx., var. *angustifolia*, Pursh.)

Camden and Atlantic: Egg Harbor City—Martindale; abundant at Mays Landing—Peters. Gloucester: Mickleton, rather rare—B. Heritage. Ocean: Forked River, and elsewhere in the pine barrens—Britton.

VICIA, L.

Vetch. Tare.

V. SATIVA, L. Common Vetch or Tare.

In waste or cultivated places; common. Adventive from Europe.

Var. ANGUSTIFOLIA (Roth), Ser.

Camden: Camden—Burk, Parker. Adventive from Europe.

V. TETRASPERMA (L.), Lois.

Hudson: Hoboken—Torrey; in ballast at Communipaw—A. Brown. Monmouth: Keyport—Lockwood. Mercer: Lawrenceville and Trenton—Apgar. Hunterdon: Lambertville—W. S. Lee. Burlington: Florence—Apgar. Camden: In ballast—Parker. Salem: Near Auburn—B. Heritage. Adventive from Europe.

V. HIRSUTA (L.), Koch.

Gloucester: Parkville—B. Heritage. Camden: In ballast and waste places—Parker. Mercer: Trenton—Apgar. Monmouth: About dwellings—Willis. Hudson: Jersey City, in waste places—Tweedy; Communipaw—A. Brown; Bergen Point—Leggett. Adventive from Europe.

V. *Cracca*, L.

Warren :—Knighton. Hunterdon : Lambertville—Apgar. Kingwood, Rosemont and Sergeantsville—Schuh ; Fairmount—Peters. Passaic : Near Paterson—Rusby. Morris : Budd's Lake—E. A. Rau. Mercer : Mt. Rose—Apgar ; also in ballast at Camden and Communipaw. Hunterdon : Flemington—Schuh.

V. *Caroliniana*, Walt.

Warren : In woods on limestone bluffs, below Phillipsburg, scarce—Porter. Hunterdon : Holland Station—Garber ; Somerset Junction—Apgar.

V. *Americana*, Muhl.

Warren : Shore of the Delaware, below Flatbrookville—Britton ; below Phillipsburg—Porter. Hunterdon : Kingwood—Best. Mercer : Between Trenton and Bordentown—Apgar. Apparently confined to the valley of the Delaware.

LATHYRUS, L.

Vetchling.

L. *maritimus* (L.), Bigel. Beach Pea.

Monmouth : Ocean Beach—Lighthipe ; Sea Bright—Ruger ; Sandy Hook—Britton.

L. *palustris*, L. Marsh Vetchling.

Rare. Camden : Banks of the Delaware—Parker. Hudson : New Durham—Austin. Essex : Along the Passaic River—Rusby. Mercer : Trenton—Volk.

Var. myrtifolius (Muhl.), Gray.

Swamps ; more common than the type. Camden : Bank of Cooper's Creek—Conrad. Mercer : Near Trenton—E. Volk. Essex : Kingsland—Rusby. Bergen : Hackensack meadows—Leggett. Hudson : Secaucus—Ruger. Passaic : Meadows near Cherry Ridge—Britton ; Lyndhurst—Schuh. Warren : Near Phillipsburg—Garber. Hunterdon : Milford—Best.

L. *venosus*, Muhl.

Warren : Shore of the Delaware, below Phillipsburg, and Hunterdon : A large patch above Milford—Porter.

L. glaucifolius, Beck. (*L. ochroleucus*, Hook.)

Middlesex: "Rocky banks of the Raritan River, near New Brunswick"—Rev. John De Witt, *vide* Beck, Bot. p. 90. Not since collected. Possibly the preceding species, but referred to *L. ochroleucus*, Hook., by Watson, Bibl. Index i. 229. Beck's name is older than that of Hooker.

CLITORIA, L.

Butterfly Pea.

C. Mariana, L.

Pine barrens, 1833, Gray, in Torrey Herb. Ocean: Toms River—Knieskern. Hudson: Little Snake Hill—Leggett, 1871. Rare, and not recently collected.

AMPHICARPÆA, Ell.

Hog Pea-nut.

A. comosa (L.), Ridd. (*A. monoica*, Ell.)

In woods. Common throughout the State. With white flowers at Trenton—E. Volk.

APIOS, Mœnch.

Ground-nut.

A. tuberosa, Mœnch.

Low grounds. Common throughout the State.

GALACTIA, P. Br.

Milk Pea.

G. regularis (L.), B. S. P. (*G. glabella*, Michx.)

Sandy soil, southern counties. Ocean: Open pine barrens, common—Knieskern. Burlington: Ewansville—Britton. Camden: Frequent about Camden—Martindale; Atco, common—H. A. Green. Atlantic: Mays Landing, and generally frequent—Peters. Gloucester: Near Berkley—B. Heritage.

PHASEOLUS, L.

Wild Bean.

P. polystachyus (L.), B. S. P. (*P. perennis*, Walt.)

Hudson: Little Snake Hill—T. F. Allen. Hunterdon: Cliffs above Milford—Porter; Byram—Best. Gloucester: Mullica Hill—Heritage. Rare.

P. helvolus, L. (*P. diversifolius*, Pers.)

In sandy places. Middlesex: Morgans and South Amboy—Britton. Hudson: Shore at Hoboken—Torrey Herb. Mercer: Trenton—Apgar; and common in the southern counties along the sea-beaches, and in sands of the Yellow Drift.

P. umbellatus (Muhl.), Britt. (*P. helvolus*, Gray's Man., not L.)

Sandy fields. Bergen: Along Northern railroad—Leggett; and common in sandy fields, middle and southern counties.

GLEDITSCHIA, L.

Honey Locust.

G. TRIACANTHOS, L.

Commonly planted, and sparingly escaped from cultivation. Adventive from the Southwest.

CASSIA, L.

Senna.

C. Marylandica, L. Wild Senna.

Camden: Quite abundant along the Delaware—Parker. Gloucester: In a few localities along streams—B. Heritage. Burlington: Bridgeboro—Miss A. M. Kaighn. Monmouth: Alluvial soil, not common—Knieskern; two miles north of Freehold—Lockwood; and frequent in swamps, middle and northern counties.

C. Chamæcrista, L. Partridge Pea.

Sandy fields. Hunterdon: Frequent—Best. Warren: Along the Delaware as far north as Marble Hill—Porter; and common in fields, middle and southern counties.

C. nictitans, L. Wild Sensitive Plant.

Sandy fields. Warren: Along the Delaware, common—Porter; Jenny Jump Mt., near Green's Pond—Britton. Hunterdon: Frequent—Best. Essex: Montclair—W. M. Wolfe; and common in fields, middle and southern counties.

CERCIS, L.

Red-bud. Judas Tree.

C. Canadensis, L.

"Woods, New Jersey"—Torrey Catalogue, 1819. Camden: In damp woods on bank of the Delaware, between Camden and

Gloucester—Parker. Burlington: Bordentown—A. C. Stokes. Mercer: Banks of the Delaware, north of Trenton—Apgar. Hunterdon: Common at Rosemont—Best. Somerset: Rocky Hill—Lighthipe. Also, escaped from cultivation at other places.

ROSACEÆ.

PRUNUS, L.

Plum. Cherry.

P. Americana, Marsh. Wild Yellow or Red Plum.

Cumberland: Near Bridgeton—Dr. J. Barron Potter. Gloucester: Abundant near Mullica Hill—B. Heritage. Mercer: Near Titusville—W. S. Lee. Camden: Along the Delaware, below the city—Martindale. Monmouth: Banks of streams, not common—Knieskern; and frequent along water-courses, middle and northern counties.

P. maritima, Wang. Beach Plum.

Burlington: Pemberton—Miss H. M. Willmarth. Ocean: New Egypt—Britton. Atlantic: Hammonton—F. L. Bassett; frequent in the pine barrens, and common on the sea-beaches.

Var. pygmæa (Willd.), B. S. P.

Cape May: Scarce—Commons; "New Jersey"—Torrey & Gray, Flor. N. A. i. 408.

P. CHICASA, Michx. Chickasaw Plum.

Salem: On banks of the Delaware River, in loose drifting sands, three miles south of Pennsgrove—Commons. Adventive from the Southwest.

P. SPINOSA, L. Sloe. Black-thorn.

Warren:—Knighton. Sussex: Carpenter's Point—Britton. Hunterdon: Frequent about Rosemont—Best. Union: Plainfield—Tweedy. Mercer: Near Trenton—E. Volk; escaped from cultivation. Adventive from Europe.

P. CERASUS, L. Common Black Cherry.

Commonly escaped from cultivation into woods and thickets. Adventive from Europe.

P. pumila, L.

Rocky or gravelly places in the northern counties. Sussex: High Point, and elsewhere on the Kittatinny Mts.—Britton. Warren: Islands and shores of the Delaware—Porter. Hunterdon: Bull's Island—Best; shore of the river opposite Lambertville—Theo. Green. Passaic: Mountain east of Stonetown—Britton.

P. Pennsylvanica, L. Wild Red Cherry.

Rocky woods. Union: Plainfield—Tweedy. Essex: Franklin—Rusby. Hudson: Weehawken—I. H. Hall; and frequent in the northern counties.

P. Virginiana, L. Choke-cherry.

Rocky woods and along water-courses. Hunterdon: Frequent—Best. Hudson: Snake Hill and Weehawken—Britton. Somerset: Near Peapack—Miss R. C. Perry; and frequent in the northern parts of the State.

P. serotina, Ehrh. Wild Black Cherry.

In open woods and along fence-rows. Common throughout the State.

PHYSOCARPA, Raf.

Nine-bark.

P. opulifolia (L.), Raf. (*Spiræa opulifolia*, L.)

Camden: Banks of Cooper's Creek—Parker. Burlington: Bordentown, and along Crosswicks Creek—Apgar. Mercer: Along the Delaware—Stowell. Hunterdon: Lambertville—J. Stokes; Kingwood—Best. Warren: Banks of the Delaware—Porter. Sussex: Banks of the Delaware—Britton. Morris: Along Black River—Miss E. Apgar.

SPIRÆA, L.

Meadow-sweet.

S. betulifolia, Pall. (*S. corymbosa*, Raf.)

Morris: Near Chester—Austin; not recently collected.

S. lobata, Jacq.

Sussex: Andover, escaped from cultivation—Britton. Adventive from the West.

S. salicifolia, L. Common Meadow-sweet.

In swamps and wet meadows. Rather common throughout the northern and middle counties. Rare or occasional in the southern parts of the State.

S. tomentosa, L. Hardhack. Steeple-bush.

In swamps or low grounds. Rather common or frequent in most sections of the State. Not reported from Hunterdon Co.

GILLENIA, Mœnch.

Bowman's Root.

G. trifoliata (L.), Mœnch.

Rich woodlands. Sussex: Abundant on the west slope of the Kittatinny Mountains, Hamburg and Franklin Furnace—Britton; Vernon—Miss Isabel Mulford. Warren: Along the Delaware, below Flatbrookville—Rusby; on limestone bluffs, below Phillipsburg—Porter. Passaic: Greenwood Lake—Schrenk. Bergen: Palisades—Austin. Morris: Near Wallace Corner—Britton. Hunterdon: Rosemont, rare—Best.

RUBUS, L.

Raspberry. Blackberry.

R. odoratus, L. Purple-flowering Raspberry. Thimble Berry.

Union: Rocky woods, Plainfield—Tweedy. Hudson: Snake Hill—Ruger; Weehawken and Hoboken—Wilbur. Hunterdon: Locktown—Best; Pittstown—Henry Race; and frequent in the northern parts of the State.

R. triflorus, Richards. Dwarf Raspberry.

In swamps. Monmouth:—Torrey. Union: Plainfield—Tweedy. Hudson: New Durham—Leggett. Bergen:—Austin. Morris: Budd's Lake—Porter. Sussex: Near Swartswood Lake—Hollick. Passaic: Rutherford and Lyndhurst—Schuh.

R. strigosus, Michx. Wild Red Raspberry.

Warren: Bank of the Delaware, below Phillipsburg—Porter. Essex: Near Franklin—Rusby. Bergen:—Austin. Hunterdon: Rosemont, rare—Best.

R. occidentalis, L.

Gloucester: Occasional—B. Heritage; and common in woods and thickets, middle and northern counties.

R. villosus, Ait. High Blackberry.

In fields and thickets. Common throughout the State. A form with double flowers at Franklin, Essex Co.—Rusby.

Var. humifusus, T. & G.

Union: Plainfield—Tweedy. Hunterdon: Rosemont, frequent—Best.

R. Canadensis, L. Low Blackberry.

In rocky places and sandy fields. Common throughout the State.

R. hispidus, L. Running Swamp Blackberry.

In shaded swamps. Common throughout the State.

R. cuneifolius, Pursh. Sand Blackberry. Knee-high Blackberry.

In sandy woods and fields. Middlesex: South Amboy—Leggett. Hunterdon: Near Rosemont—Best. Monmouth: —Common; and common in the southern counties.

GEUM, L.

Avens.

G. album, Gmel.

In woods and thickets. Camden: Winslow—F. L. Bassett; Kirkwood—H. A. Green. Burlington: Moorestown—J. Stokes; Pemberton—Miss H. M. Willmarth; and common in the middle and northern counties.

Var. flavum, Porter.

Warren: Above Phillipsburg—Porter.

G. Virginianum, L.

Gloucester: Near Mickleton, not common—B. Heritage; frequent or occasional in the middle and northern counties.

G. strictum, Ait.

In swampy ground. Gloucester: Mickleton, rare—B. Heritage. Camden: Near Camden—Martindale. Ocean and Monmouth: Damp shaded places, not common—Knieskern; Freehold—Willis in Torrey Herb. Mercer: Trenton—Stowell.

Somerset: Peapack—Miss Emeline Apgar; and frequent in the northern counties.

G. rivale, L.

Boggy places in the northern counties. Bergen: Near Closter—Austin; Ramseys—Stowell. Passaic: Meadows east of Cherry Ridge—Merrill. Sussex: Ogdensburg and Sparta—Britton. Morris: Budd's Lake—Porter.

G. VERNUM (Raf.), T. & G.

Mercer: Along roadside near Princeton—Peters. Adventive from the West.

WALDSTEINIA, Willd.

Barren Strawberry.

W. fragarioides (Michx.), Tratt.

Sussex: Near Andover—Austin. Not recently collected.

FRAGARIA, L.

Strawberry.

F. Virginiana, Duchesne. Common Wild Strawberry.

In fields and woods. Common throughout the State.

Var. ILLINOENSIS (Prince), Gray.

Hunterdon: Rosemont—Schuh. An escape of some cultivated form.

F. vesca, L. Northern Wild Strawberry.

In shaded woods. Monmouth and Ocean: Not common—Knieskern. Camden: Scarce—Martindale. Frequent or occasional in the northern counties.

Var. pallida, Wood.

Hunterdon: Rosemont, and Morris: Near Mount Freedom—Schuh.

F. INDICA, Andr. Indian Strawberry.

In cultivated and waste grounds; rare. Ocean:—Austin. Burlington: Moorestown—J. Stokes. Mercer: Trenton—Apgar. Hudson: Guttenberg—Ruger; Weehawken—Rudkin. Adventive from India.

POTENTILLA, L.

Cinquefoil. Five Finger.

P. Norvegica, L.

In fields and waste places. Common throughout the State.

P. Canadensis, L.

Dry fields and woods. Common throughout the State.

Var. simplex (Michx.), T. & G.

In meadows and wet places. Common.

P. argentea, L.

In barren fields and waste places. Gloucester: Mullica Hill—Britton. Camden: In ballast—Martindale. Monmouth: Phalanx—Leggett. Mercer: Along the Delaware, near Trenton—Apgar. Hunterdon: Lambertville—W. S. Lee; and frequent in the northern counties.

P. arguta, Pursh.

Rocky places in the northern counties. Hunterdon: Along the Delaware, near Lambertville—Apgar; Rosemont—Best. Warren: Below Phillipsburg—Porter. Sussex: Pochuck Mt., near Hamburg, and on the summit of Wawayanda Mt.—Britton.

P. RECTA, L.

Bergen: Palisades—Wilbur in Bull. Torr. Club, i. 26. Fugitive from Europe.

P. fruticosa, L.

Boggy grounds, and rarely on dry hillsides, in the northern counties. Bergen: Tenafly—A. Brown. Hudson: In meadows, Weehawken—Torrey Catalogue, 1819. Morris: Budd's Lake Porter; Shippenport—Rusby. Warren: Abundant on Great Meadows—Prof. Cook; White Pond—Porter. Sussex: Morris Pond, extremely abundant on Germany Flats from Andover to Franklin Furnace, and near Sparta—Britton; Newton—Garber.

P. Anserina, L. Silver-weed.

Hudson: Shore of Newark Bay, at Bergen Point—Leggett. Camden: In ballast—Parker. Rare.

P. tridentata, Soland.

Sussex: On the summit of High Point—Austin, 1858; Britton, 1884.

P. palustris (L.), Scop.

Morris: In the bog at Budd's Lake—Porter.

AGRIMONIA, L.

Agrimony.

A. *Eupatoria*, L.

Monmouth and Ocean: Borders of woods, rare—Knieskern. Burlington; Vincentown—Lighthipe. Gloucester: Mickleton, not common—B. Heritage; and common in woods, middle and northern counties.

A. *parviflora*, Ait.

Woodlands; not common. Bergen: Closter—Austin; near Carlstadt—Otto Frank. Passaic: Sparingly near Lodi—Woolson. Sussex: Sparta—Britton. Warren: Great Meadows, near Danville—Britton. Essex:—Rusby. Hunterdon: Kirkwood, and near Locktown—Best; near Ringoes—Theo. Green. Mercer: Princeton—Peters; Trenton—Miss Isabel Mulford. Middlesex: South Amboy—Miss C. A. Boice; and frequent or occasional in the southern counties.

POTERIUM, L.

Burnet.

P. Canadense (L.), Gray.

In swamps and wet meadows. Gloucester: Two miles west of Mullica Hill—B. Heritage. Camden: Near Camden—Parker. Burlington: Burlington—Conrad; Moorestown—J. Stokes. Mercer: Hightstown—Willis; Trenton, abundant—Apgar; Princeton—Peters. Monmouth: Freehold—Knieskern. Middlesex: Sand Hills—Lighthipe; South Amboy—Britton; and frequent in the northern counties.

P. SANGUISORBA, L.

Burlington: Moorestown—Burk. Camden: On ballast—Parker. Adventive from Europe.

G

ROSA, L.

Rose.

R. Carolina, L. Swamp Rose.

In swamps. Common throughout the State.

R. humilis, Marsh. Dwarf Wild Rose.

In dry soil. Common throughout the State.

Var. lucida (Ehrh.), Best. (*R. lucida*, Ehrh.) Larger Wild Rose.

In various situations. Frequent in the northern and middle counties. Gloucester: Seven miles south of Mickleton—B. Heritage.

Var. villosa, Best.

Hunterdon: Near Rosemont—Best.

R. blanda, Ait. Early Wild Rose.

Hunterdon: Sergeantsville—Schuh. Sussex: On Stirling Hill, Ogdensburg—Britton. Both specimens referred to this species with some hesitation. Monmouth: "Damp meadows, Freehold"—Willis (?).

R. RUBIGINOSA, L. (Including *R. micrantha*, Smith.) Sweet-brier.

Roadsides and thickets; frequent. Naturalized from Europe.

R. CANINA, L. Eglantine.

Warren: Very common along the Delaware, from Phillipsburg to Carpentersville, also at Broadway, D., L. & W. R. R.—Porter; above the Water Gap—Britton. Morris: Along the road from Hopatcong to Berkshire Valley—Britton. Hunterdon: Below Tumble Station—Porter; sparingly near the Delaware—Best. Naturalized from Europe.

R. SETIGERA, Michx.

Hunterdon: Escaped from cultivation at Raven Rock—Best. Fugitive from the West.

PYRUS, L.

Apple. Pear.

P. oconaria, L. American Crab Apple.

In copses, northern part of the State. Warren:—Parker. Morris:—Austin; near Millington and Dover—L. Schumacher. Hunterdon: Near Hopewell—Theo. Green; occasional about

Pittstown—Henry Race; Rosemount, frequent—Best. Somerset: Peapack—Miss R. C. Perry. Mercer: Near Trenton—Stowell. Commonly planted, and occasionally escaped.

P. MALUS, L. Apple.

Spontaneous in woods and copses; frequent. Adventive from Europe.

P. angustifolia, Ait.

Cape May: Abundant—Commons.

P. arbutifolia (L.), L. f. Red Chokeberry.

In swamps and damp thickets. Frequent throughout the State.

Var. melanocarpa (Willd.), Hook. Black Chokeberry.

In similar situations. Common throughout the State.

P. Americana (Marsh.), DC. Mountain Ash.

Northern counties; rare. Sussex: High Point—Britton. Morris: Budd's Lake—Porter; mountain side, near Piccatinny—S. D. Tompkins. Hunterdon: Near Lambertville—Apgar; frequently planted.

CRATÆGUS, L.

Hawthorn. White-thorn.

C. CORDATA (Mill.), Ait. (*C. populifolia*, Walt.) Washington Thorn.

Salem: Hedge-rows—Commons. Adventive from further South.

C. OXYACANTHA, L. English Hawthorn.

Frequently planted and occasionally spreading. Adventive from Europe.

C. coccinea, L. Scarlet-fruited Thorn.

Ocean and Monmouth: In thickets and old fields, not rare—Knieskern; Matawan—Rudkin. Burlington: Arneytown—Britton. Atlantic: Mays Landing—Peters. Gloucester: Mullica Hill—B. Heritage; and common or frequent in thickets, middle and northern counties.

C. tomentosa, L. Black Thorn. Pear Thorn.

In thickets; not very common. Burlington: Pemberton—Miss Willmarth. Monmouth: Near Keyport—R. W. Brown. Union: Plainfield—Tweedy. Essex: Verona and Caldwell—

Rusby. Hunterdon: Kingwood—Best. Morris: Hills north of Whitehall—Britton. Sussex: Ogdensburg—Britton.

C. Crus-galli, L. Cockspur-thorn.

Salem: Bank of the Delaware above Pennsgrove, a tree twenty feet high—Commons. Ocean and Monmouth: Thickets, not rare—Knieskern. Burlington: Bordentown—Apgar. Atlantic: Near Barnegat—Britton; and frequent in the middle and northern counties.

C. parvifolia, Ait. Dwarf Thorn.

Warren: On limestone bluffs above Phillipsburg—Porter. Hunterdon: Frequent along the Delaware—Best. Bergen: Palisades—Austin. Union: Plainfield—Tweedy. Somerset: Peapack—Miss R. C. Perry; and common on the Yellow Drift, middle and southern counties.

AMELANCHIER, Lindl.

June Berry.

A. Canadensis (L.), Medic. (Including *var. Botryapium, Gray.*) May Cherry. Shad-bush.

Swamps and wet woods throughout the State. Most abundant in the northern counties. Rare in the pine barrens.

Var. obovalis (Michx.), B. S. P. (*Var. oblongifolia, T. & G.*)

In similar situations. Burlington: Pemberton—Miss Willmarth; and frequent in the northern and middle counties.

SAXIFRAGEÆ.

SAXIFRAGA, L.

Saxifrage.

S. Virginiensis, Michx. Early Saxifrage.

Dry or rocky banks. Salem: Mannington, rare—Mrs. Mary A. Lawrence; near Daretown—E. E. Hackett. Gloucester: Common at Mickleton—B. Heritage. Cumberland: Bridgeton—Miss A. B. Rich. Camden: Frequent—Martindale. Burlington: Common at Pemberton—Miss H. M. Willmarth; Bordentown—E. E. Sturtevant. Monmouth and Ocean: Not

common—Knieskern; and common in the middle and northern counties. A double-flowered form at Ridgewood—Miss Hales.

S. Pennsylvanica, L. Swamp Saxifrage.

Monmouth: Middletown—R. W. Brown. Burlington: Birmingham—Miss Willmarth. Mercer: Trenton and Greensburg—Apgar. Union: Plainfield—Tweedy. Gloucester: Near Mullica Hill, rare—B. Heritage. Camden: Scarce—Martindale; and frequent in swamps in the northern counties.

TIARELLA, L.

False Mitre-wort.

T. cordifolia, L.

Shaded bogs in the northern counties; rare. Passaic: "Among rocks at Passaic Falls"—Torrey Catalogue, 1819. Morris: Along a stream near Charlotteburg—G. M. Wilbur. Sussex: Swamp on Alamuche Mt.—Britton.

MITELLA, L.

Mitre-wort.

M. diphylla, L.

In swampy places. Union: Plainfield—Tweedy. Essex: Verona—Rusby. Somerset: Near Peapack—Miss R. C. Perry. Hunterdon: Lambertville—Apgar; Sergeantsville—Best. Sussex: Near Newton—Britton; Vernon—Miss Isabel Mulford. Bergen: Palisades and Closter—Austin.

HEUCHERA, L.

Alum-root.

H. Americana, L.

Ocean: Shady banks, rare—Knieskern. Burlington: Vincentown—Lighthipe. Mercer: Trenton—Apgar. Salem: Auburn—B. Heritage; and frequent in woods, middle and northern counties.

CHRYSOSPLENIUM, L.

Golden Saxifrage.

C. Americanum, L.

In swampy places. Salem: Marlboro—Britton. Gloucester: Rare—B. Heritage. Camden: Frequent—Martindale. Mon-

mouth and Ocean: Cool, damp places, rare—Knieskern; and common in the middle and northern counties.

PARNASSIA, L.

Grass of Parnassus.

P. Caroliniana, Michx.

In swamps. Ocean: Near marl-banks, New Egypt, rare—Knieskern. Hudson: Little Snake Hill—Leggett. Bergen: Closter—Austin. Passaic: Abundant in meadows near Spring Valley and Passaic—Woolson; Rutherford—Schuh. Morris: Newfoundland—Rusby. Warren: Great Meadows—Prof. Cook; White Pond—Porter. Sussex: Common throughout the county.

HYDRANGEA, L.

Hydrangea.

H. arborescens, L. Wild Hydrangea.

Burlington: Bordentown—A. C. Stokes. Hunterdon: Lambertville, Mt. Gilboa—Apgar; Raven Rock—Best. Warren: Marble Hill—Porter; Delaware Water Gap—Rusby. Sussex: Frequent along the Delaware—Britton.

ITEA, L.

Itea.

I. Virginica, L.

Swamps in the southern counties. Gloucester: In a cedar swamp near Bridgeport—B. Heritage. Burlington: Between Pemberton and New Lisbon—Lighthipe. Camden: Near Longacoming, rare—C. E. Smith; and frequent in the pine barrens.

RIBES, L.

Gooseberry. Currant.

R. Cynosbati, L. Wild Gooseberry.

Rocky places in the northern counties; rare. Bergen: Closter—Austin. Passaic: Preakness Mt.—W. L. Fischer.

R. oxycanthoides, L. (*R. hirtellum*, Michx.) Wild Gooseberry.

In similar situations. Bergen: Closter—Austin. Sussex: Montague township—Britton. Union: Plainfield—Tweedy. Warren: Water Gap—Rusby.

R. rotundifolium, Michx. Wild Gooseberry.

Monmouth: Sea Bright—Britton; and frequent or common in rocky woods throughout the northern parts of the State.

R. GROSSULARIA, L. Gooseberry.

Sparingly escaped from cultivation. Bergen: Fort Lee—Leggett. Fugitive from Europe.

R. prostratum, L'Hér. Fetid Currant.

Bergen: Closter—Austin. Not recently collected.

R. floridum, L'Hér. Wild Black Currant.

In open woods. Mercer: Princeton—Torrey; Along Assanpink Creek—W. S. Lee. Somerset: Near Peapack—Miss Perry. Hudson: Snake Hill—Ruger. Bergen: Demarest—Rudkin; Fort Lee—Leggett. Morris:—Austin. Warren:—Knighton. Sussex: Near Morris Pond—Britton. Passaic: Frequent about Rutherford—Schuh.

R. RUBRUM, L. Red Currant.

Sparingly escaped from cultivation into woods and thickets. Hudson: New Durham—T. F. Allen. Bergen: Base of Palisades—Rudkin. Essex: Franklin—Rusby. Sussex: Near Newton—Britton. Warren: Base of a mountain two miles south of Carpentersville—Porter. Union: Plainfield—Tweedy. Monmouth: In woods south of Keyport—Lockwood. Camden:—Parker. Hunterdon: Sergeantsville—Schuh. Professor Porter regards it as probably native in Warren county.

CRASSULACEÆ.

SEDUM, L.

Stone-crop.

S. ACRE, L. Mossy Stone-crop.

Sparingly escaped from gardens to waste places. Sussex: Newton and Franklin Furnace—Britton. Ocean: Waretown—J. Stokes. Hunterdon: Rosemont, rare—Best. Adventive from Europe.

S. TERNATUM (Haw.), Michx.

Bergen: Roadsides near Rockland—Austin. Hunterdon: Escaped from gardens at Rosemont, rare—Best. Adventive from the South.

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S. TELEPHIUM, L. Live-for-ever.

Commonly escaped from cultivation into meadows and even into woods.* Naturalized from Europe.

PENTHORUM, L.

Ditch Stone-crop.

P. sedoides, L.

In wet places. Ocean: Near New Egypt, rare—Knieskern. Camden: Frequent—Martindale. Gloucester: Repaupo Meadows—B. Heritage; and common in swamps and ditches, middle and northern counties.

DROSERACEÆ.

DROSERA, L.

Sundew.

D. rotundifolia, L.

In bogs. Locally common or frequent throughout the State.

D. intermedia, Drev. & Hayne, var. Americana, DC. (*D. longifolia*, Michx., not L.)

Passaic: Greenwood Lake—Britton. Mercer: Lawrence Station—Peters. Middlesex: South Amboy—Britton. Mercer: Near Trenton—E. Volk. Burlington: Banks of the Delaware, at Florence Heights—Abbott. Camden: Rare—C. E. Smith; and common in bogs in the pine barrens.

D. filiformis, Raf.

Camden: Very scarce—Martindale; and frequent in sandy pine-barren swamps throughout the southeastern parts of the State.

HAMAMELIDEÆ.

HAMAMELIS, L.

Witch-hazel.

H. Virginica, L.

Camden: Sparingly about Camden—Martindale. Gloucester: Bank of Raccoon Creek—B. Heritage. Monmouth and Ocean:

*The plant rarely flowers in New Jersey, but has become widely spread, probably through its great tenacity of life, its joints taking root wherever scattered by the plough or in other manner, as was first suggested to me by Professor Porter.

Swamps and damp woods, rare—Knieskern; Freehold—A. C. Stokes. Mercer: Trenton—Apgar. Union: Plainfield—Tweedy; and frequent in damp woods in the northern counties.

LIQUIDAMBAR, L.

Sweet Gum.

L. styraciflua, L. Bilsted. Ling. Alligator-wood.

Morris: Lake Hopatcong—R. Palm. Hunterdon: Common in forests at Pittstown—Henry Race; Rosemont, rare—Best. Bergen: Frequent on the Palisades—Britton. Mercer: Frequent about Trenton—Abbott; and common in woods, middle and southern counties.

HALORAGÆ.

PROSERPINACA, L.

Mermaid-weed.

P. palustris, L.

In swamps. Sussex: Near Cranbury reservoir—Britton. Union: Near New Brooklyn—Tweedy. Mercer: Princeton Junction—Apgar. Essex: Franklin—Rusby; and frequent in the middle and southern counties.

P. pectinata, Lam.

Camden: Longacoming—C. E. Smith; and frequent in sandy swamps in the pine barrens.

MYRIOPHYLLUM, L.

Water-milfoil.

M. pinnatum (Walt.), B. S. P. (*M. scabratum*, Michx.)

In ponds; rare. Cape May:—Canby. Monmouth: Near Freehold—Willis.

M. spicatum, L.

Passaic: In Greenwood Lake—Britton, 1884. Presumably this species.

M. heterophyllum, Michx.

Atlantic: Ponds, Hammonton, very rare—F. L. Bassett, 1882.

M. ambiguum, Nutt.

Monmouth: In water, rare—Knieskern; Keyport—Lockwood. Burlington: Pemberton—Canby. Gloucester: Westville—C. E. Smith. Camden:—Martindale.

Var. capillaceum, T. & G.

Atlantic: Egg Harbor City—Parker; Landisville—C. A. Gross. Camden: Gloucester—Diffenbaugh.

Var. humile (Raf.), B. S. P. (*Var. limosum*, Torr.)

Gloucester:—C. E. Smith. Monmouth: Freehold—Lockwood.

M. tenellum, Bigel.

Ocean: Sandy swamp at Point Pleasant—Prof. E. H. Day, 1882.

CALLITRICHE, L.

Water-starwort.

C. Austini, Engelm.

On shaded damp soil. Bergen: Closter—Austin; Palisades—Leggett. Passaic: Frequent along wood roads near Hewitts—Britton. Mercer: Trenton—Apgar. Regarded by Hegelmeier as a variety of the South American *C. deflexa*.

C. verna, L.

In streams. Bergen: Closter—Austin. Warren: In the Delaware above Flatbrookville—Britton. Hunterdon: Rosemont—Best. Apparently scarce.

C. heterophylla, Pursh.

In ponds and brooks; common.

Var. linearis (Pursh), Austin.

Bergen: Immersed and forming large floating masses in the Hackensack River—Austin. Hunterdon: Rosemont—Schuh.

MELASTOMACEÆ.

RHEXIA, L.

Meadow-beauty.

R. Virginica, L.

In sandy swamps. Bergen: Closter—Austin. Union: Plainfield—Tweedy. Hunterdon: Stockton, frequent—Best; and common in the middle and southern counties.

R. Mariana, L.

In sandy swamps. Ocean: Rare—Knieskern; Point Pleasant—Lighthipe. Burlington: Near Moorestown—Miss A. M. Kaighn; Pemberton—Lighthipe; Medford—H. A. Green; Burlington—Martindale. Camden: Griffith's Swamp—C. E. Smith; Kirkwood—H. A. Green. Gloucester: Frequent about Mickleton—B. Heritage. Cumberland: Bridgeton—Britton; and frequent in the pine barrens, southeastern counties.

R. aristosa, Britton.

Atlantic: In a swamp near Egg Harbor City, 1888—J. C. Gifford.

LYTHRARIÆ.

AMMANNIA, L.

Ammannia.

A. ramosior, L. (*A. humilis*, Michx.)

Wet places. Bergen: Closter—Austin; Hackensack meadows—Torrey Catalogue, 1819. Burlington: Near Burlington—Conrad. Camden:—Parker.

A. coccinea, Rottb.

Hudson: New Durham Swamp—Leggett.

LYTHRUM, L.

Loosestrife.

L. hyssopifolia, L.

"Marshes, coast of New Jersey"—Gray Manual, p. 183.
Not recently collected.

L. alatum, Pursh.

Mercer: Near Pennington—Theo. Green, 1887.

L. lineare, L.

In brackish marshes. Bergen: Hackensack marshes—Leggett. Hudson: Secaucus—Schuh; near Little Snake Hill—J. W. Congdon. Monmouth, Ocean and Middlesex: Borders of salt marshes—Willis.

L. SALICARIA, L.

Passaic: Sparingly on the bank of the Passaic River, near Paterson—Woolson. Hudson:—Austin; Granton—Canby.

Union: Plainfield—Tweedy. Hunterdon: Below Tumble Station—Theo. Green; Bull's Island—Porter. Camden: Bank of the Delaware, Pavonia, and in ballast—Parker. Naturalized from Europe.

NESŒA, Commers.

Swamp Loosestrife.

N. verticillata (L.), H. B. K.

Swamps. Common throughout the State.

CUPHÆA, P. Br.

Cuphea.

C. petiolata (L.), Kœhne. (*C. viscosissima*, Jacq.)

In dry soil. Warren: About Phillipsburg—Porter. Bergen: Closter—Austin. Essex: Franklin—Rusby. Mercer: Hopewell and Pennington—Theo. Green; rather common in the southwestern part of the county—Best. Mercer: Near Trenton, rare—Volk; and frequent in the middle and southern counties.

ONAGRARIÆ.

EPILOBIUM, L.

Willow-herb.

E. spicatum, Lam. (*E. angustifolium*, Gray's Manual.)

In dry woods and clearings. Gloucester: Near Bridgeport and Mickleton—B. Heritage. Camden: Frequent about Camden—Martindale; Atco—H. A. Green. Burlington: Ewansville—Britton; New Lisbon—Lighthipe. Monmouth and Ocean: Not common—Knieskern; and common in the middle and northern counties.

Forma albiflorum, Britt.

Monmouth: North Spring Lake—Lighthipe.

E. palustre, L., *var. oliganthum* (Michx.), B. S. P. (*Var. lineare*, Gray.)

In swamps, northern counties. Essex: Franklin—Rusby. Bergen: Closter—Austin. Passaic: Near Passaic—Rusby. Morris: Budd's Lake—Porter. Warren: Swamp on Jenny Jump Mt., near Green's Pond—Britton. Sussex:—Austin.

E. strictum, Muhl. (*E. molle*, Torr.)

Swamps; not common. Burlington: Pemberton—Lighthipe. Morris: Morristown and Chatham—Leggett; Budd's Lake—Porter. Warren: Swamp on Jenny Jump Mt., near Green's Pond—Britton. Sussex: Abundant in swamp along L. & H. R. R., south of Lake Grinnell—Britton.

E. coloratum, Muhl.

In wet ground. Common throughout the State.

E. TETRAGONUM, L.

Hunterdon: Very abundant about Junction Station, 1885—Britton. A fugitive from Europe.

LUDWIGIA, L.

False Loosestrife.

L. alternifolia, L. Seed-box.

In swamps. Frequent throughout the State.

L. hirtella, Raf.

Sandy swamps in the pine barrens. Burlington: Atsion—Canby; Batsto and Quaker Bridge—Leggett. Atlantic: Hammonton—F. L. Bassett; Main Road Station—C. A. Gross.

L. sphaerocarpa, Ell.

In swamps. Bergen: Closter—Austin. Burlington: Atsion—Parker. Atlantic: Common at Hammonton—F. L. Bassett. Salem: Sparingly at Mannington—Mrs. M. A. Lawrence.

L. linearis, Walt.

Bogs in the pine barrens. Atlantic: Egg Harbor City—Parker; Hammonton—Bassett. Burlington: Atsion—Parker.

L. palustris (L.), Ell.

Ditches and ponds. Common throughout the State.

CENOTHERA, L.

Evening Primrose.

CE. biennis, L.

Dry fields. Common throughout the State.

Var. grandiflora (Ait.), Lindl.

Hunterdon: Rosemont, frequent—Best.

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Var. muricata (L.), Lindl.

Dry fields ; common.

Æ. humifusa, Nutt.

Cape May : On drifting sands—Parker.

Æ. sinuata, L.

Gloucester : Near Mickleton—B. Heritage. Ocean : New Egypt—Britton. Burlington : Pemberton—Miss H. M. Willmarth ; and frequent in the pine barrens.

Var. minima (Pursh), Nutt.

Occasional with the type.

Æ. fruticosa, L. Sundrops.

In dry fields. Monmouth and Ocean : Not common—Knieskern ; quite abundant all through the southern counties—Martindale ; and frequent in the middle and northern counties.

Var. linearis (Michx.), S. Wats.

Cape May and Ocean :—Parker ; Absecum—F. L. Bassett. Burlington : Quaker Bridge—Dr. Gray ; Pemberton—Light-hipe. Camden :—Canby. Monmouth : Near Deal—A. H. Smith. Union : In meadows near Plainfield—Tweedy. Gloucester : Mickleton, rare—B. Heritage. Salem : Near Canton, not uncommon—A. Robinson.

Var. humifusa, T. F. Allen.

Monmouth : Ocean Grove—Burk.

Æ. pumila, L.

In dry fields, middle and northern counties. Middlesex : Near Old Bridge—R. W. Brown. Mercer : Trenton—G. V. Stryker. Union : Plainfield—Tweedy. Essex : Franklin and Verona—Rusby. Bergen : North of Closter—Austin. Morris : Long Hill—Leggett. Warren : Marble Hill—Porter ; along the Delaware below Flatbrookville—Britton. Sussex : Base of High Point—Britton. Hunterdon : Frequent—Best.

GAURA, L.

Gaura.

G. biennis, L.

Banks. Camden : Along the Delaware—Parker. Mercer : Trenton, abundant—Apgar ; Princeton—Peters. Hunterdon :

Bull's Island—Porter; along sandy shore of the Delaware near Raven Rock—Best. Warren: Below Carpentersville—Porter; along Pohatcong Creek near Stewartsville—Britton. Hunterdon: Flemington—H. Roberson.

CIRCÆA, L.

Enchanter's Nightshade.

C. Lutetiana, L.

In dry woods. Camden: Frequent—Martindale. Gloucester: Northern exposures of hillsides about Mickleton—B. Heritage; and common in the middle and northern counties.

C. alpina, L.

In cold, boggy places in the northern counties. Warren: Low's Hollow—Porter. Sussex: In woods near the base of High Point; on the Kittatinny Mt. near Walpack Centre; swamp east side of Wawayanda Mt. and on Sparta Mt.—Britton.

CUCURBITACEÆ.

MICRAMPELES, Raf.

Wild Balsam Apple.

M. echinata (Muhl.), Raf. (*Echinocystis lobata*, T. & G.)

Burlington: Burlington—Burk. Bergen: Alpine, and Passaic: Rutherford, probably escaped from cultivation—Schuh. Hunterdon: Raven Rock, rare—Best.

SICYOS, L.

One-seeded Star Cucumber.

S. angulatus, L.

Frequent along river banks and fence-rows. Especially abundant along the Delaware.

CACTEÆ.

OPUNTIA, Mill.

Prickly Pear.

O. vulgaris, Haw. (Including *O. Rafinesquii*, Engelm., in part.)

Bergen: Frequent on the Palisades—Austin. Passaic: On rocks near Hewitts—Rudkin; Pompton and Bearfort Mt.—

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Britton. Morris: Near Montville—Schrenk. Hunterdon: On red sandstone above Milford—Porter; and frequent in sand, middle and southern counties. I completely fail to separate the two supposed eastern species.

FICOIDEÆ.

SESUVIUM, L.

Sea Purslane.

S. maritimum (Walt.), B. S. P. (*S. pentandrum*, Ell.; *S. Portulacastrum*, Gray, not L.)

Frequent on the sea-beaches.

MOLLUGO, L.

Carpet-weed.

M. verticillata, L.

Waste and cultivated grounds. Common in most sections of the State; not yet abundant in the northwestern counties. Naturalized from the South.

UMBELLIFERÆ.

HYDROCOTYLE, L.

Water Pennywort.

H. Americana, L.

Gloucester: Occasional—B. Heritage; Mullica Hill—Britton. Burlington: Pemberton—Miss Willmarth. Monmouth: Banks of Squan River, rare—Knieskern; Keyport—R. W. Brown; Freehold—Lockwood. Camden: Along water-courses—Martindale; and common in the middle and northern counties.

H. umbellata, L.

Southern and middle counties. Atlantic: Atlantic City—Parker. Cape May and Camden:—Parker. Burlington: Burlington—Conrad. Ocean: Point Pleasant—Knieskern. Monmouth: Along muddy shore of the Navesink River, near Red Bank—Leggett. Gloucester: Common—B. Heritage.

H. ambigua (Gray), B. S. P. (*H. umbellata*, L., var. (?) *ambigua*, Gray;
H. Canbyi, Coulter & Rose.)

Cape May:—Parker. Cumberland: Low grounds near Delaware Bay—Commons.

H. verticillata, Thunb. (*H. interrupta*, Muhl.)

Monmouth: Red Bank—Leggett. Cape May:—Canby.

ERYNGIUM, L.

Eryngo.

E. aquaticum, L. (*E. yuccæfolium*, Michx.)

Burlington: In dry sand, between Atsion and Quaker Bridge—Canby.

E. Virginianum, Lam.

Hudson: Borders of salt marsh near Hoboken—Torrey Catalogue, 1819. Monmouth: Spring Lake and Sea Girt—A. Brown. Ocean: Toms River and Squan Village, rare—Knieskern; Bay Head—Lighthipe; and frequent along the coast in the southeastern counties.

SANICULA, L.

Sanicle. Black Snake-root.

S. Canadensis, L.

In woodlands. Camden: Frequent near Camden—Martindale; and common in the middle and northern counties.

S. Marylandica, L.

Burlington: Vincentown—Lighthipe. Monmouth: Meadow woods near Squan—Knieskern. Camden: Frequent near Camden—Martindale. Gloucester: On northern exposures about Mickleton—B. Heritage; and common in the middle and northern counties.

CONIUM, L.

Poison Hemlock.

C. MACULATUM, L.

In waste places. Sussex:—Austin. Warren: Belvidere—Britton; Phillipsburg—Porter. Hunterdon: Bull's Island, Delaware River—Moyer. Mercer:—Torrey. Burlington: Pemberton—Lighthipe. Camden: In ballast—Martindale. Union: Plainfield—Tweedy. Essex:—Rusby. Naturalized from Europe.

H

BUPLEURUM, L.

Thorough-wax.

B. ROTUNDIFOLIUM, L.

Mercer:—Torrey; Trenton—Apgar. Gloucester: Wood-bury—Canby. Adventive from Europe.

APIUM, L.

Celery.

A. nodiflorum (L), S. Wats. (*Heliosciadium nodiflorum*, Koch.)

Monmouth: In a swamp near Eatontown, 1864, determined by Asa Gray; also, Camden: In ballast—Martindale.

CICUTA, L.

Water Hemlock.

C. maculata, L.

In swamps. Camden: Frequent near Camden—Martindale. Atlantic: Occasional—Peters. Gloucester: Common about Mickleton—B. Heritage; and common in the middle and northern counties.

C. bulbifera, L.

Camden:—Parker. Union: Plainfield—Tweedy. Hudson: Salt marshes at Hoboken—Torrey Catalogue, 1819. Essex: Franklin—Rusby. Mercer: Princeton Junction—Peters. Hunterdon: Rosemont, frequent—Best; and frequent in swamps in the northern counties.

SIUM, L.

Water Parsnip.

S. cicutæfolium, Gmel. (*S. lineare*, Michx.)

Gloucester: Mickleton, not common—B. Heritage. Camden: Frequent near Camden—Martindale; and frequent in swamps, middle and northern counties.

ÆGOPODIUM, L.

Æ. PODAGRARIA, L.

Hudson: In waste places, Weehawken and Guttenberg—Leggett. Fugitive from Europe.

PIMPINELLA, L.

Pimpinella.

P. integerrima (L.), Benth. & Hook.

Monmouth and Ocean: Shady banks and open woods, rare—Knieskern. Middlesex: Bank of the Raritan River, near Perth Amboy—Britton. Somerset: Rocky Hill—Lighthipe. Union: Plainfield—Tweedy. Hunterdon: Above Milford—Porter; Rosemont, frequent—Best. Hudson: English Neighborhood—Austin; and frequent in rocky places in the northern counties.

P. SAXIFRAGA, L., *var. MAJOR*, Koch.

Warren: Rocky shores of the Delaware below Phillipsburg, "bidding fair to become thoroughly naturalized"—Porter. Adventive from Europe.

CRYPTOTÆNIA, DC.

Honewort.

C. Canadensis (L.), DC.

In woods. Burlington: Banks of Coppuck's Run, near Pemberton—Miss H. M. Willmarth. Camden: Frequent in woods near Camden—Martindale. Gloucester: Occasional about Mickleton—B. Heritage; and common in the middle and northern counties.

OSMORHIZA, Raf.

Sweet Cicely.

O. longistylis (Torr.), DC.

Monmouth: Keyport—R. W. Brown. Mercer: Trenton—Apgar. Essex: Franklin—Rusby. Hunterdon: Frenchtown, frequent—Best. Camden: In rich woods, rare—Martindale; and frequent in the northern parts of the State.

O. Claytoni (Michx.), B. S. P. (*O. brevistylis*, DC.)

Monmouth: Rich woods, Middletown, rare—Knieskern. Camden: In rich woods, not common—Martindale; and common in woods, middle and northern counties.

CHÆROPHYLLUM, L.

Chervil.

C. procumbens (L.), Crantz.

Hudson: Hoboken Hills—Torrey Catalogue, 1819. Mercer:

Trenton, and northward for five miles along the river—Apgar. Camden: Banks of the Delaware—Parker. Also, "South Jersey, rare"—Austin.

FENICULUM, Adans.

Fennel.

F. VULGARE, Gærtn.

Roadsides and waste places. Cape May: Commons. Atlantic: Egg Harbor—Martindale. Camden: In ballast—Parker. Hudson: Guttenberg—Rudkin; in ballast at Communipaw—A. Brown. Hunterdon: Rosemont, escaped from gardens—Best. Adventive from Europe.

CRANTZIA, Nutt.

Crantzia.

C. lineata (Michx.), Nutt.

Atlantic: "Abundant in a salt marsh near Egg Harbor";—Nuttall in Herb. Phil. Not recently collected.

DISCOPLEURA, DC.

Mock Bishop-weed.

D. major (Walt.), B. S. P. (*D. capillacea*, DC.)

Common along the coast, in salt or brackish marshes. Occasionally in fresh-water swamps.

ÆTHUSA, L.

Fool's Parsley.

Æ. CYNAPIUM, L.

In waste places. Bergen: Near Pleasant Valley and Fort Lee—Leggett. Union: Plainfield—Tweedy. Camden: Hadonfield, and in ballast at Camden—Parker. Adventive from Europe.

THASPIUM, L.

Meadow Parsnip.

T. aureum (L.), Nutt.

In low meadows. Monmouth and Ocean: Rare—Knieskern. Gloucester: Banks of the Delaware—Parker. Camden: Quite frequent—Martindale. Mercer: Trenton—Apgar; and frequent in the middle and northern counties.

Var. cordatum (Walt.), B. S. P. (*T. trifoliatum*, Gray, in part.)

Hunterdon: Rosemont—Best.

Var. trifoliatum (L.), B. S. P. (*T. trifoliatum*, *var. atropurpureum*, Gray.)

Union: Plainfield—Tweedy. Hunterdon: Frequent about Rosemont—Best. Middlesex: Metuchen—Miss Estabrook. Mercer: Princeton—Peters; Trenton—Apgar; Hightstown—W. S. Lee. Burlington: Common in the western part of the county—Lighthipe; and frequent in the southwestern counties.

T. barbinode, Nutt.

Hunterdon:—Garber. The other localities given in the Preliminary Catalogue are not verified.

ZIZIA, Koch.

Zizia.

Z. cordata, Koch. (*Thaspium trifoliatum*, Gray Manual, in part, and *var. apterum*, Gray.)

Middlesex: Morgan's Station—Britton. Union: Plainfield—Tweedy. Mercer: Trenton—Apgar; and common on hill-sides in the middle counties.

Z. aurea, Koch.

Warren: Along the Delaware River, below Van Campen's Creek—Britton, 1884. Hunterdon: Rosemont, common—Best.

CONIOSELINUM, Fisch.

Milk Parsley.

C. Chinense (L.), B. S. P. (*C. Canadense*, T. & G.)

Bergen: Closter—Austin. Sussex: In a swamp west of Sparta—Britton.

ANGELICA, L.

Angelica.

A. villosa (Walt.), B. S. P. (*Archangelica hirsuta*, T. & G.)

In dry woods. Sussex: High Point and southward along the Kittatinny Mountain, and near Sparta—Britton. Warren: Jenny Jump Mountain—Merrill. Essex: Frequent—Rusby; and frequent in the middle and southern counties.

A. atropurpurea, L. (*Archangelica atropurpurea*, Hoffm.)

In swamps. Salem: Heron Swamp, near Salem—Mrs. M. A. Lawrence. Cumberland: Vineland—Mrs. Mary Treat.

Burlington: Moorestown—J. Stokes; and frequent or occasional in the middle and northern counties.

PASTINACA, L.

Parsnip.

P. SATIVA, L.

Fields and roadsides; common. Naturalized from Europe.

TIEDEMANNIA, DC.

Cowbane.

T. rigida (L.), Coulter & Rose. (*Archemora rigida*, DC.)

Swamps and low grounds. Bergen: Along the Northern Railroad—T. F. Allen; Fairfield—Torrey Catalogue, 1819. Middlesex: New Brooklyn—Tweedy. Mercer: Princeton Junction—Peters; and common in the southern parts of the State.

Var. longifolia (Pursh), B. S. P. (*Archemora rigida*, DC., var. *ambigua*, T. & G.)

In similar situations. Ocean: Toms River—W. Beutenmuller. Atlantic: Hammonton—F. L. Bassett. Burlington: Quaker Bridge—Parker. Camden: Tomlinsons—C. E. Smith. Atlantic: Mays Landing—Peters.

HERACLEUM, L.

Cow Parsnip.

H. lanatum, Michx.

Camden:—Parker. Burlington: Bank of Crosswicks Creek, near Bordentown—A. C. Stokes. Mercer:—Torrey; along the Delaware, below Trenton—Apgar. Hunterdon: Stockton—Best. Hudson: Borders of salt marsh, Hoboken—Torrey Catalogue; Bergen Point—Poggenburg; and frequent in swamps in the northern counties.

DAUCUS, L.

Carrot.

D. CAROTA, L.

In fields; very common. Naturalized from Europe.

ARALIACEÆ.

ARALIA, L.

Wild Sarsaparilla.

A. SPINOSA, L. Angelica Tree. Hercules' Club.

Sparingly escaped from cultivation. Passaic: Rutherford—Schuh. Union: Plainfield—Tweedy. Monmouth: Keyport—Lockwood. Camden: Ancora—Parker. Hunterdon: Byram—Best. Gloucester: Escaped from cultivation, near Mantua—B. Heritage. Adventive from the Southwest.

A. racemosa, L. Spikenard.

Camden:—Parker. Monmouth: Near Holmdel—R. W. Brown; and frequent in woods, middle and northern counties.

A. hispida, Vent. Bristly Sarsaparilla.

Monmouth and Ocean: "Sandy pine barrens, rare"—Knieskern. Hudson: Near Secaucus—Leggett. Passaic: Near Lodi Junction—Rudkin; along west side of Bearfort Mt.—Britton. Sussex: Near High Point, and elsewhere on the silicious soils of the Kittatinny Mountain—Britton. Hunterdon: Stockton, scarce—Best.

A. nudicaulis, L. Wild Sarsaparilla.

In rich woods. Rather common throughout the State. Most abundant in the northern counties.

Forma prolifera (A. C. Apgar), Britt,

Hunterdon: Lambertville—Apgar.

A. quinquefolia (L.), Decne. & Planch. Ginseng.

Rich woodlands; very rare. Sussex:—Austin. Union: Plainfield—Tweedy. Not recently collected.

A. trifolia (L.), Decne. & Planch. Dwarf Ginseng.

In low woods. Salem: Marlboro—Miss A. B. Rich. Camden:—Parker; Haddonfield—J. L. Pennypacker. Gloucester: Frequent about Mickleton—B. Heritage. Burlington: Banks of Coppuck's Run, Pemberton—Miss Willmarth. Mercer: Trenton and vicinity—Apgar. Monmouth: Freehold—Willis; and frequent in the middle and northern counties.

CORNACEÆ.

CORNUS, L.

Dogwood. Cornel.

C. Canadensis, L. Dwarf Cornel.

In cold, wet woods; rare. Hudson: New Durham Swamp—Torrey Catalogue, 1819, and Austin, 1861. Mercer: A single specimen near Trenton, 1879—Miss Isabel Mulford. Sussex: Abundant in a swamp on west side of High Point—Britton.

C. florida, L. Dogwood.

In open woods. Common throughout the State. Not very abundant in the pine barrens.

C. circinata, L'Hér. Round-leaved Cornel.

In rocky woods. Union: Plainfield—Tweedy. Hunterdon: Byram—Best. Bergen: Closter—Austin; near Mahwah—Schuh; and frequent in the northwestern parts of the State.

C. sericea, L. Kinnikinnik.

Along streams. Camden: Kirkwood and Clementon—H. A. Green; abundant about Camden—Martindale. Burlington: Vincentown—Britton. Gloucester: Mullica Hill—Britton; not common—B. Heritage; and common in the middle and northern counties.

C. stolonifera, Michx. Red-osier Cornel.

In swamps, northern counties. Bergen: Closter—Austin. Passaic: Greenwood Lake—Britton. Sussex: Newton and on the Wallkill Marshes east of Quarryville—Britton. Warren: In a swamp on Jenny Jump Mountain near Green's Pond—Merrill. Hunterdon: Not rare in the northern parts of the county—Best.*

C. candidissima, Marsh. (*C. paniculata*, L'Hér.)

In dry soil. Burlington: Near Pemberton—Lighthipe. Camden: Near the mouth of Rancocas Creek—Martindale; and frequent or common in the middle and northern counties.

*This species is recorded in Dr. Knieskern's Catalogue of the plants of Ocean and Monmouth counties as common along wet banks of streams. *C. sericea* is probably intended.

C. alternifolia, L. f.

Camden: Kirkwood—F. L. Bassett. Burlington: Pember-ton—Miss Willmarth; banks of the Delaware—Martindale. Gloucester: Mickleton, not common—B. Heritage; and frequent or occasional in the middle and northern counties.

NYSSA, L.

Tupelo. Pepperidge. Sour or Black Gum.

N. sylvatica, Marsh. (*N. multiflora*, Wang.)

In swamps and low grounds. Occasionally in dry soil. Common throughout the State, except in the mountainous portions of Sussex and Warren counties. Most abundant and luxuriant in the southern counties.

SERIES 2.—GAMOPETALÆ.

CAPRIFOLIACEÆ.

SAMBUCUS, L.

Elder.

S. Canadensis, L. Common Elder.

Rich soil in open places. Common throughout the State, but not very abundant in the pine barrens.

Var. laciniata, Gray.

Atlantic: In waste places, Egg Harbor—Mrs. Mary Treat.

S. racemosa, L. Red-berried Elder. (*S. pubens*, Michx.)

In rocky places. Hudson: Snake Hill—Rudkin: Weehawken—Britton. Union: Plainfield—Tweedy. Essex: On First Mountain—Randall Spaulding. Hunterdon: Bull's Island—Moyer; Byram—Best; and frequent in the northern counties.

VIBURNUM, L.

Arrow-wood. Laurestinus.

V. Lentago, L. Sheep-berry.

In dry soil in open places. Sussex: Near Newton—Britton. Passaic: Butler—Merrill. Camden: Frequent—Martindale. Not common.

V. prunifolium, L. Black Haw. Nanny Berry.

Gloucester: Near Mickleton, rare—B. Heritage. Camden: Frequent on the bank of the Delaware River and along the larger streams—Martindale. Burlington: Along the Delaware River—Lighthipe. Mercer: Along the Delaware and Crosswicks Creek—E. Volk; common in copses, middle and northern counties.

V. nudum, L. (Including *var. Claytoni*, Gray.)

In swamps. Warren: Sunfish Pond, above Delaware Water Gap—Britton. Morris: Succasunna—Rusby. Bergen: Hackensack Swamps—Leggett. Mercer: Trenton—Apgar; and common in the southern counties. Blossoming as late as August 30th, at Trenton, in 1888—E. Volk.

Var. cassinoides (L.), T. & G.

Sussex: Along the shores of Lake Marcia, near High Point—Britton.

V. dentatum, L. Arrow-wood.

In swamps, and also in dry soil. Common throughout the State.

V. molle, Michx.

Monmouth: In the old forest on Sandy Hook, and Gloucester: Mullica Hill—Britton.

V. pubescens, Pursh.

In rocky places. Mercer: Hills near Princeton—Willis. Hunterdon: Lambertville—Apgar. Passaic: Preakness—W. L. Fischer; abundant on the Ramapo Mt., and on mountain east of Lake Hopatcong—Britton. Bergen: Closter—Austin; Palisades, frequent—Leggett.

V. acerifolium, L. Maple-leaved Viburnum.

Camden: Mt. Ephraim—Parker; near Clementon—Britton; Camden—Martindale. Atlantic: Absecum—F. L. Bassett. Burlington: Birmingham—Lighthipe; near Bordentown—A. C. Stokes; and common in woods in the middle and northern counties.

V. Opulus, L. Cranberry Tree.

Sussex:—Garber; Franklin Furnace and near Ogdensburg—Britton. Warren: Mutton Hill, Knowlton township—Miss M. E. Campbell.

TRIOSTEUM, L.

Fever-wort. Horse Gentian.

T. perfoliatum, L. Wild Coffee.

Cumberland: In low woods at Sea Breeze—Commons. Monmouth and Ocean: Borders of woods, rare—Knieskern. Gloucester: Red Bank—B. Heritage; and frequent or occasional in the middle and northern counties.

SYMPHORICARPOS, Juss.

Snowberry.

S. orbiculatus, Mœench. (*S. vulgaris*, Michx.)

Atlantic: Escaped from gardens and thoroughly established at Hammonton—C. D. Fretz; also at Mays Landing, a bad weed—Peters. Hunterdon: Rosemont—Best. Naturalized from the North.

S. RACEMOSUS, Michx.

Warren: Escaped from cultivation along the Delaware below Carpentersville—Porter; Riegelsville—Britton. Hunterdon: Rosemont—Best. Adventive from the West.

LINNÆA, Gronov.

Twin-flower.

L. borealis, L.

Hudson: New Durham Swamp—L. Menard in Torrey Herb.; Austin. Passaic: Near Paterson—Wm. Bower. Not recently collected.

LONICERA, L.

Woodbine. Honeysuckle.

L. sempervirens, Ait. Trumpet Honeysuckle.

Hudson: New Durham Swamp—Leggett. Union: Plainfield—Tweedy. Hunterdon: Lambertville—Apgar; Rosemont—Best. Mercer: Princeton—Peters. Burlington: Moorestown—J. Stokes; very common at Burlington—Stowell; and frequent in woods in the southwestern counties; commonly cultivated and escaping from cultivation in other parts of the State.

L. glauca, Hill. (*L. parviflora*, Lam.)

Burlington: In sandy soil near Birmingham—Lighthipe.
 Union: Swamp at Plainfield—Tweedy. Essex:—Rusby. Hudson: Secaucus—Britton; and frequent in damp, rocky places in the northern counties.*

L. ciliata, Muhl.

Warren:—F. Knighton in Willis Catalogue. Not seen by me from the State and not recently collected.

L. TATARICA, L. Tartarian or Bush Honeysuckle.

Occasionally escaped from cultivation. Warren: Remote from habitations, on a limestone bluff below Phillipsburg—Porter. Passaic:—Schub. Adventive from Asia.

L. JAPONICA, Thunb. Chinese or Japanese Honeysuckle.

Frequently escaped from planting and remaining persistent for many years. Hudson: Schuyler's Hill—Rusby. Cape May:—Commons. Cumberland: Very abundant about Bridge-ton—Britton; near Taunton—Commons. Adventive from Eastern Asia.

DIERVILLA, Tourn.

Bush Honeysuckle.

D. trifida, Mœnch. "Specific."

In rocky woods. Union: Near Plainfield, in one locality—Tweedy. Hunterdon: Lambertville—Apgar; Pittstown, frequent—Henry Race; Rosemont—Best. Somerset: Peapack and Bernardsville—Miss R. C. Perry. Essex: Verona and Montclair—Rusby; and frequent in the northern counties.

RUBIACEÆ.

CEPHALANTHUS, L.

Button Bush.

C. occidentalis, L.

In swamps. Common throughout the State.

*The *L. grata*, Ait., admitted into the Preliminary Catalogue, proves to be this species. The real *L. grata* is in all probability nothing but *L. Caprifolium*, L., of Europe, occasionally planted.

OLDENLANDIA, L.

Oldenlandia.

O. uniflora, L. (*O. glomerata*, Michx.)

In low grounds, mainly near the coast. Bergen: Near Closter—Austin. Monmouth: North Spring Lake, Lake Como and Brielle—Lighthipe. Ocean: Manchester—Austin. Burlington: Union Hall cedar swamp and near Burlington—Conrad. Camden:—Diffenbaugh; bank of the Delaware—C. E. Smith. Atlantic: Atlantic City—Parker. Cumberland: Near Sea Breeze—Commons. Salem: Elsinboro—Mrs. M. A. Lawrence.

HOUSTONIA, L.

Houstonia.

H. purpurea, L.

“New Jersey”—Torrey Catalogue, 1819. Not since reported.

Var. longifolia (Gærtn.), Gray.

Ocean: Manchester—J. W. Chickering, Jr., 1877.

H. cærulea, L. Bluets. Quaker Girl. Modesty.

Cumberland: Stoe Creek township—A. Robinson. Camden:—Canby. Burlington: Vincentown—Lighthipe. Mercer: Frequent—Lockwood. Monmouth: Near Shark River, rare—Knieskern; Allentown, in large patches—A. Robinson; and frequent in open, moist places, middle and northern counties.

MITCHELLA, L.

Partridge-berry.

M. repens, L.

In woods. Common throughout the State.

DIODIA, L.

Button-weed.

D. Virginiana, L.

Cape May:—Parker.

D. teres, Walt.

In dry, sandy places. Warren: Delaware Water Gap—Parker; shore of the Delaware below Carpentersville—Porter. Hunterdon: Rosemont and Raven Rock—Best; Bull's Island

—Porter. Passaic: In sandy fields, near Passaic and Lodi—Woolson. Union: Near Plainfield—Tweedy; and frequent in the middle and southern counties.

GALIUM, L.

Bedstraw. Cleavers.

G. MOLLUGO, L.

Passaic: Newfoundland—Poggenburg. Atlantic: Mays Landing—Peters. Adventive from Europe.

G. Aparine, L. Goose-grass.

Moist thickets and roadsides. Salem: Elsinboro—Mrs. M. A. Lawrence. Gloucester: Common about Mickleton—B. Heritage. Camden:—Parker. Burlington: Pemberton—Miss Willmarth; and common in low grounds, middle and northern counties.

G. asprellum, Michx.

In moist thickets. Camden:—Martindale. Monmouth: Near Farmingdale—Britton. Gloucester: Mickleton, not common—B. Heritage; and frequent in the middle and northern counties.

G. concinnum, T. & G.

Camden: "New Jersey near Philadelphia"—Thos. P. James.

G. trifidum, L.

In swamps. Common throughout the State.

Var. latifolium, Torr.

In swamps. Morris: New Providence—Leggett; Lower Longwood—Britton. Bergen: Pleasant Valley—Britton.

G. triflorum, Michx.

In dry woods. Burlington: Moorestown—J. Stokes; and common in the middle and northern counties.

G. pilosum, Ait.

In sandy woods. Sussex: On the Kittatinny Mountain at Culver's Gap—Britton. Warren: Above Phillipsburg—Porter. Passaic: Little Falls—Rusby; Wallace Corner—Britton. Morris: Long Hill—Leggett. Hunterdon: Raven Rock and Rosemont—Best; near Moore's Station—Theo. Green; and common in the middle and southern counties.

Var. punctulosum (Michx.), T. & G.

Atlantic: Egg Harbor City—Martindale.

G. peregrinum (Walt.), B. S. P. (*G. hispidulum*, Michx.)

Cape May: Near the landing—Commons.

G. circæzans, Michx. Wild Liquorice.

In woods. Rather common throughout the State. Less abundant in the pine barrens.

G. lanceolatum, Torr.

“Monmouth: Freehold, and Mercer: Hightstown”—Willis. Union: Plainfield—Tweedy. Essex: Verona—Rusby. Morris: Long Hill—Leggett; Brook Valley—Britton. Hunterdon: Rosemont, frequent—Best; and frequent in rocky woods in the northern counties.

G. boreale, L.

In rocky woods. Mercer: Princeton—Torrey; Ewing—Apgar. Hunterdon: Locktown, rare—Best; Bull's Island—Apgar. Morris: Chatham—Leggett. Essex: Franklin—Rusby. Warren: Along the Delaware above and below Phillipsburg—Porter; Delaware Water Gap—Rusby; Flatbrookville—Britton.

VALERIANEÆ.

VALERIANA, L.

Valerian.

V. OFFICINALIS, L.

Morris: Escaped to roadsides near Newfoundland—Britton; and Parsippany—J. T. Benedict. Fugitive from Europe.

VALERIANELLA, Tourn.

Corn-salad.

V. OLITORIA, Poll. (*Fedia olitoria*, Vahl.) Lamb-lettuce.

Hunterdon: Along canal bank between Stockton and Bull's Island—Best. Mercer: Common all about Trenton—Apgar. Gloucester:—Parker. Naturalized from Europe.*

* *Fedia radiata*, admitted into the Preliminary Catalogue, proves to be this species.

DIPSACEÆ.

DIPSACUS, L.

Teasel.

D. SYLVESTRIS, Mill.

Roadsides and waste places; frequent. Naturalized from Europe.

D. FULLONUM, L. Fuller's Teasel.

Essex: Along the Passaic River, 1879—Rusby. Fugitive from Europe.

COMPOSITÆ.

VERNONIA, Schreb.

Iron-weed.

V. Noveboracensis (L.), Willd.

In swamps and wet meadows. Common throughout the State.

Forma albiflora, Britt.

In similar situations; occasional.

SCLEROLEPIS, Cass.

Sclerolepis.

S. uniflora (Walt.), B. S. P. (*S. verticillata*, Cass.)

Pine-barren swamps. Ocean, Burlington and Cape May:—Parker. Atlantic: Quaker Bridge—Leggett; Hammonton—F. L. Bassett.*

EUPATORIUM, L.

Thoroughwort.

E. purpureum, L. Joe-Pye Weed. Gravel Weed.

Low grounds. Common throughout the State.

Var. maculatum (L.), Darl.

In similar situations; common.

E. hyssopifolium, L.

Monmouth: Keyport and Clarksburg—Lockwood; Sea Bright—Leggett; and frequent in sandy fields in the southern counties. Apparently confined to the Yellow Drift area.

* In Comp. to Bot. Mag. i. 46, this plant is referred to as *Hippurus vulgaris*.

E. leucocolepis, T. & G.

In wet places in pine-barren districts. Ocean: Manchester—Tweedy; Forked River—Britton. Burlington: Quaker Bridge—Pickering. Atlantic: Egg Harbor City—Redfield; Mullica River—C. E. Smith; Hammonton—F. L. Bassett. Cape May: —Parker.

E. album, L.

In dry, sandy woods and fields. Middlesex: South Amboy—Miss C. A. Boice; South River—Leggett. Monmouth: Highlands—A. Brown; near Keyport—R. W. Brown; North Spring Lake—Lighthipe; and frequent in the pine barrens.

Var. subvenosum, Gray.

"New Jersey"—Gray in Syn. Flora N. A. 198. Atlantic: Pancoast Mills—Peters.

E. teucriifolium, Willd.

In low grounds. Morris: Budd's Lake—Porter. Bergen: Rather common at Rutherford—Schuh. Essex: Franklin—Rusby. Hudson: Snake Hill—W. M. Wolfe; Bergen Point—Leggett. Union: Plainfield—Tweedy. Mercer: Princeton—Peters; and common in the middle and southern counties. A plant with leaves in threes, from Keyport—Britton.

E. rotundifolium, L.

In dry, sandy fields and woods. Essex: Franklin—Rusby. Monmouth: Common—Knieskern; and frequent in the pine barrens.

Var. pubescens (Muhl.), B. S. P. (*E. pubescens*, Muhl.)

In similar situations. Monmouth: Sea Girt—A. Brown. Cumberland: Bridgeton, and Salem: Jericho; and frequent in the pine barrens.

E. sessilifolium, L.

In rocky places, middle and northern counties. Bergen: Palisades—Austin; Rutherford—Schuh. Hudson: Weehawken—Rudkin; Snake Hill—Britton. Essex: Along First Mountain—Rusby. Warren: Along Pohatcong Creek near Stewartsville—Merrill. Sussex: Sparta—Britton. Hunterdon: Rosemont—Best; below Tumble Station—Porter; Lambertville, with stem leaves in threes—Best.

E. resinosum, Torr.

Bogs in the pine barrens. Monmouth: Near Ocean Beach—Lockwood. Ocean: Manchester, rare—Knieskern; Whitings Rudkin. Camden: Atco, rare—H. A. Green. Atlantic: Mays Landing—C. A. Gross. Gloucester: Malaga—Parker.

E. perfoliatum, L. Boneset.

Low grounds. Common throughout the State.

Forma purpureum, Britt.

Morris: Budd's Lake—Porter.

Var. truncatum, Gray.

Hunterdon: Rosemont, rare—Best.

E. ageratoides, L. White Snake-root.

Camden: Cooper's Creek—Martindale; Little Timber Creek—Parker. Gloucester: On northern hillsides about Mickleton—B. Heritage. Burlington: Vincentown—Lighthipe; and common in rocky woods, middle and northern counties.

E. aromaticum, L. White Snake-root.

In open, sandy woods. Monmouth: Near Squan Village, rare—Knieskern; Freehold—Willis. Union: Near Plainfield—Tweedy. Burlington: Near Burlington—Conrad; Pemberton—Miss Willmarth; Medford—J. Stokes. Camden:—Parker. Atlantic: Ashland—F. L. Bassett. Hunterdon: Rare—Schuh.

E. coelestinum, L. (*Conoclinium coelestinum*, DC.) Mist-flower.

Rare. Cape May:—Parker. Gloucester: A single patch near Swedesboro—B. Heritage.

MIKANIA, Willd.

Climbing Hemp-weed.

M. scandens (L.), Willd.

In low woods and thickets. Sussex: Swartswood Lake, but rare in the northwestern counties—Porter. Bergen: Frequent along the Ramapo River—Britton; common in the middle and southwestern counties; not very abundant in the pine barrens.

KUHNIA, L.

Kuhnia.

K. eupatorioides, L.

Rocky or sandy woods. Sussex: On limestone rocks—Austin. Warren: On limestone rocks below Phillipsburg—Porter.

Middlesex: "Pine barrens and hillsides below New Brunswick"—Torrey Herb. Burlington: Birmingham—Lighthipe. Camden:—Canby.

LIATRIS, Schreb.

Button Snake-root.

L. scariosa (L.), Willd.

"Swamps, N. J."—Eddy in Torrey Catalogue, 1819. Monmouth: Near Keyport—R. W. Brown. Passaic: Along Midland R. R., east of Newfoundland—Rudkin. Evidently rare.

L. spicata (L.), Willd.

In low woods. Ocean: Point Pleasant—Knieskern. Gloucester: In one locality west of Mickleton—B. Heritage. Camden: Griffith's Swamp—Parker. Monmouth: Near Squan—Knieskern. Middlesex: Near Perth Amboy—Lighthipe; Brownsville—R. W. Brown; Woodbridge—Britton. Bergen: Hackensack Meadows—W. M. Wolfe; west of Norwood—Austin. Passaic: East of Newfoundland—Rudkin. Morris: Great Swamp—Leggett; Chester—W. M. Rankin; Near Dover—J. D. Reynolds; Berkshire Valley—Britton. Hunterdon: Near Kingwood, frequent—Best. Sussex: Near the west base of High Point—Britton.

Forma albiflora, Britt.

Ocean: Near Bay Head—Lighthipe.

L. graminifolia, Pursh.

Burlington: Brown's Mills—J. Stokes. Ocean: Toms River—W. Beuttenmueller.

Var. dubia (Bart.), Gray.

Frequent in sandy woods in the pine barrens.

CHRYSOPSIS, Nutt.

Golden Aster.

C. falcata (Pursh), Ell.

Dry pine barrens; not common. Ocean: Toms River—Knieskern. Burlington: Quaker Bridge—Canby; Batsto—Parker. Atlantic: Pleasant Mills—F. L. Bassett.

C. Mariana (L.), Nutt.

In dry, sandy fields. Morris: Near Morristown—Apgar. Middlesex: South Amboy and Woodbridge—Britton; Sand Hills—Lighthipe. Mercer: Princeton Junction and Trenton—Apgar; and common in the southern counties.

BIGELOVIA, DC.*Bigelovia.***B. nudata** (Michx.), DC.

Monmouth: Near Blue Ball—Willis; “low pine barrens”—Gray. Rare, and not seen by me from the State.

Var. virgata (Nutt.), T. & G.

“New Jersey to Texas”—Gray. Not seen by me from the State.

SOLIDAGO, L.

Golden-rod.

S. squarrosa, Muhl.

In rocky woods. Bergen: Palisades—Austin; Ramapo Mts.—Stowell. Sussex: Sparta, Lake Grinnell and on the Kittatinny Mountains near High Point—Britton. Warren: Limestone bluffs below Phillipsburg—Porter. Hunterdon: Above Milford—Porter; Prallsville—Best; Lambertville—Apgar.

S. bicolor, L.

In woods and fields. Common throughout the State.

S. hirsuta, Nutt. (*S. bicolor, var. concolor*, T. & G.)

Union: Plainfield—I. H. Hall. Ocean: Toms River—Martindale. Atlantic: Frequent in pine barrens near Hamonton—F. L. Bassett; Mays Landing—Peters. Hunterdon: Rosemont—Best.

S. latifolia, L.

In low, rich woods. Camden:—Parker. Mercer: Princeton—Peters. Union: Plainfield—Tweedy. Essex: Frequent—Rusby. Hudson: New Durham—Leggett. Hunterdon: Brookville and Rosemont—Best; and common in the northern counties.

S. cæsia, L.

In woods. Rather common throughout the State; not very plentiful in the pine barrens.

S. stricta, Ait. (*S. virgata*, Michx.)

In wet places in the pine-barren districts. Ocean: "Common"—Knieskern. Burlington: Quaker Bridge—Martindale. Atlantic: Egg Harbor—Parker; Atsion and Hammonton—Martindale. Camden: Near Winslow—C. A. Gross.

S. puberula, Nutt.

In open, sandy woods. Sussex: High Point, Culver's Gap and elsewhere along the Kittatinny Mountain—Britton. Morris: Big Swamp—Leggett; on silicious conglomerate near Careys—Britton; and frequent on the Yellow Drift soils in the middle and southern counties.

S. speciosa, Nutt.

In rich, rocky woods and open places. Essex: Montclair Heights—Rudkin. Bergen: Palisades—E. P. Bicknell. Sussex: Frequent about Sparta—Britton. Warren: On the Delaware below Phillipsburg—Porter. Hunterdon: Near Stockton—Best.

Var. angustata, T. & G.

Sparingly in pine-barren regions. Atlantic: Egg Harbor—Martindale; Atsion—Parker; Hammonton—J. Stokes; also Hunterdon: Stockton, rare—Schuh.

S. rigida, L.

In dry, rocky places. Hudson: Little Snake Hill—Leggett. Bergen: Near Garfield—Schuh; Palisades—Austin. Morris: East of Lake Hopatcong—Britton. Hunterdon: Lambertville—Apgar. Warren: Limestone bluffs below Phillipsburg—Porter. Sussex: In a field near Sparta—Britton.

S. sempervirens, L.

In salt or brackish marshes, and on the beaches along the coast; common. Extends up the Delaware to Camden—Martindale.

S. neglecta, T. & G.

In swampy places. Camden:—Parker. Middlesex: South River—Leggett; South Amboy—Britton. Morris: Budd's Lake—Austin. Bergen: Hackensack Marshes—Leggett; Mahwah—Britton.

Var. uniligulata (Nutt.), B. S. P. (*S. linoides*, T. & G.)

In pine-barren bogs; not common. Ocean: Toms River—Knieskern; Ferago—Austin.

S. arguta, Ait. (*S. Muhlenbergii*, T. & G.)

In rich woods. Morris: Chatham and New Providence—Leggett. Warren: Delaware Water Gap—Martindale; Marble Hill—Porter; Phillipsburg—Garber. Sussex:—Austin; Sparta and Lake Grinnell—Britton. Hunterdon: Sergeantsville—Schuh; frequent—Best. Gloucester: Two miles northwest of Mullica Hill—Heritage.

S. juncea, Ait. (*S. arguta*, T. & G.)

In fields and open woods. Common through the northern and middle counties.

A curious state of this species, with a much contracted panicle, is found on the rocky shore of the Delaware, below Phillipsburg, by Dr. Porter.

S. patula, Muhl.

In swamps. Bergen: Closter—Austin; Carlstadt—Leggett; Rutherford—Schuh. Hudson: New Durham—Ruger. Monmouth: Freehold—Willis. Essex: Franklin—Rusby. Morris: Budd's Lake—Porter; Chatham—Leggett. Warren: White Pond—Porter. Sussex: Waterloo, Sparta and near Long Pond—Britton. Gloucester: Mickleton—Heritage.

S. uliginosa, Murr. (*S. stricta*, T. & G., not Ait.)

In swamps in the northern counties. Warren: White Pond—Porter. Sussex: Sparta, near Andover, and abundant in swamps along L. & H. R. R. R. from Sparta Junction to Franklin Furnace—Britton. Passaic: Near Lodi—Woolson.

S. rugosa, Mill. (*S. altissima*, T. & G.)

In fields and thickets. Common throughout the State.

S. ulmifolia, Muhl.

In fields. Monmouth and Ocean: "Low places, common"—Knieskern. Hudson: Bergen Neck—Leggett; Snake Hill—Britton; and frequent in the northern counties.

S. Elliottii, T. & G. (*S. elliptica*, T. & G.)

Mercer: Near Trenton, 1887—E. Volk. Bergen: Hackensack Meadows—Carey. Burlington: Brown's Mills—Parker. Hudson: Secaucus—Leggett.

S. pilosa, Walt.

In pine-barren swamps. Gloucester: Malaga—Parker; near Clarksboro—B. Heritage. Ocean: Toms River—Eaton; Bay Head—Miss Willmarth; and common in the southeastern counties.

S. odora, Ait.

In dry woods. Sussex: Near High Point and Two Bridges—Britton. Warren: Marble Hill—Porter. Hunterdon: Rosemont—Best. Union: Plainfield—Tweedy. Bergen: Cresskill—Rudkin; Bergen Hill—Austin; and common on the Yellow Drift soils of the middle and southern counties.

Forma inodora (Gray), Britt.

Burlington: Quaker Bridge—Leggett.

S. nemoralis, Ait.

In dry fields. Very common throughout the State, sometimes assuming the aspect of *S. caesia*.

S. Canadensis, L.

In fields and thickets. Common throughout the State.

Var. scabra, T. & G.

Bergen: Closter—Austin.

S. serotina, Ait. (*S. gigantea*, Gray.)

In fields and thickets. Apparently common.

Var. gigantea (Ait.), Gray. (*S. serotina*, Gray.)

In similar situations; common.

S. lanceolata, L.

In fields. Common throughout the State.

S. Caroliniana (L.), B. S. P. (*S. tenuifolia*, Pursh.)

Hudson: New Durham—Austin. Mercer: Frequent about Trenton—Volk; and common on the Yellow Drift, middle and southern counties.

SERICOCARPUS, Nees.

White-topped Aster.

S. linifolius (L.), B. S. P. (*S. solidagineus*, Nees.)

In dry, open woods. Bergen: Closter—Austin. Middlesex: South Amboy—Miss C. A. Boice. Hunterdon: Baptisttown—H. Roberson. Mercer: Princeton—Peters. Monmouth and Ocean: Dry thickets, not rare—Knieskern. Camden:—Parker. Atlantic: Egg Harbor—Redfield; Hammonton—J. Stokes; Atsion—Leggett; Richland and Weymouth, but not noticed on the white sand—Peters. Gloucester: Mickleton, common—B. Heritage.

S. asteroides (L.), B. S. P. (*S. conyzoides*, Nees.)

Dry woods. Common throughout the State.

BOLTONIA, L'Her.

B. ASTEROIDES (L.), L'Hér.

Sussex: Along the L. & H. R. R. R., near Lake Grinnell—Porter and Britton, 1887. Adventive from the West.

ASTER, L.

Aster. Starwort.

A. corymbosus, Ait.

In rich woods. Camden: Little Timber Creek—Parker. Burlington: Frequent in woods at Pemberton—Miss Willmarth. Gloucester: Frequent about Mickleton—B. Heritage; and common in the northern and middle counties.

A. macrophyllus, L.

In rich woods. Camden: Timber Creek—Parker. Monmouth: Colt's Neck—Willis. Hunterdon—Prallsville and Stockton—Best. Morris: Chatham—Leggett. Essex: Montclair Heights—Rudkin; and frequent in the northern counties.

A. radula, Ait.

In sandy woods. Morris: Near Madison—Schuh. Monmouth: Southburg—O. E. Pearce. Ocean: Lakewood—A. Brown. Mercer:—Willis; Trenton—A. C. Stokes. Camden: Merchantville—Parker.

A. surculosus, Michx.

Middlesex: South River—Leggett; and in pine-barren regions. Scarce.

A. gracilis, Nutt. (*A. surculosus*, Michx., var. *gracilis*, Gray.)

Burlington: Sandy pine barrens near Shamong—Parker. Atlantic: Pleasant Mills and Egg Harbor City—Parker; Ham-
mouton, very rare—F. L. Bassett. Ocean: Forked River—
Britton.

A. spectabilis, Ait.

Morris: Madison—Schuh. Mercer: Near Trenton—Volk. Middlesex: South Amboy—Britton. Gloucester: Woodbury—Martindale; Mickleton—B. Heritage; and common in the pine barrens.

A. concolor, L.

In dry, sandy woods and fields. Salem: Near Jericho—Britton. Gloucester: Malaga—Parker; Mickleton—B. Heritage. Monmouth: Southburg—O. E. Pearce; and frequent in the pine barrens.

A. patens, Ait.

Dry soil. Common throughout the State.

Var. *phlogifolius* (Muhl.), Nees.

Morris: Long Hill—Leggett; Chester—Britton. Hudson: Weehawken—Leggett. Camden:—Parker; Atco—H. A. Green. Hunterdon: Rosemont, frequent—Best.

A. lævis, L.

In rich, moist places. Camden: Sparingly—Martindale; and frequent in the northern and middle counties. Very variable in the breadth of leaves.

A. undulatus, L.

In dry woods. Common throughout the State.

A. cordifolius, L.

Woodlands. Common throughout the State.

Var. *lævigatus*, Porter.

Apparently at least as abundant as the species.

A. sagittifolius, Willd.

In dry, open places ; rare. Morris :—Austin. Mercer :
Princeton—Torrey. Hunterdon : Near Locktown and Ser-
geantsville—Best.

A. ericoides, L.

In dry fields. Common throughout the State.

A. multiflorus, Ait.

Camden :—Parker. Monmouth : Monmouth Beach Centre
—A. Brown. Hudson : Communipaw—Leggett. Bergen :
Cresskill—Rudkin. Hunterdon : Common—Best. Warren :
Below Phillipsburg—Porter.

A. dumosus, L.

Sussex : Morris Pond—Britton ; and frequent in the middle
and southern counties.

Var. coridifolius (Michx.), T. & G.

Ocean : Manchester—A. Brown in Herb. Columbia College.

A. lateriflorus (L.), Britt. (*A. miser*, Gray Manual ; *A. diffusus*, Ait.)

In various situations. Common throughout the State.

A. Tradescanti, L.

In dry, open places ; common.

A. vimineus, Lam.

In similar situations. Warren : River shore above Phillips-
burg — Porter. Passaic : Paterson — Leggett. Hunterdon :
Rosemont, common—Best.*

A. paniculatus, Lam. (*A. simplex*, Willd.)

In low grounds. Common throughout the northern counties. †
Atlantic : Mays Landing—Peters.

A. salicifolius, Ait.

Warren : Phillipsburg—Porter.

A. Novi-Belgii, L. (*A. longifolius*, Gray Manual.)

In swamps and low grounds. Frequent throughout the State ;
most plentiful in the northern counties.

* I fail to distinguish well between this and *A. Tradescanti*.

† *A. tenuifolius*, of the Preliminary Catalogue, is this species.

Var. elodes (T. & G.), Gray.

In marshes along the coasts. Frequent.

Var. litoreus, Gray.

In salt marshes. Not uncommon.

A. puniceus, L.

In swamps. Camden:—Miss C. A. Boice. Gloucester: Common in swamps and along streams about Mickleton—B. Heritage; and common in the middle and northern counties.

A. junceus, Ait.

Sussex: Bogs near Ogdensburg and Lake Grinnell—Britton.

A. prenanthoides, Muhl.

Sussex:—Austin. Hunterdon: Bull's Island, Delaware River—Best.

A. Novæ-Angliæ, L. New England Aster.

In fields and meadows. Salem: Mannington—Mrs. M. A. Lawrence; Daretown—E. E. Hackett. Camden:—Parker. Burlington: Scarce at Pemberton—Miss Willmarth; New Lisbon—Lighthipe. Atlantic: Atsion—Martindale. Ocean: Toms River—Parker; and common in the middle and northern counties.

A. acuminatus, Michx.

In cold, wet woods. Bergen: Near Closter—Austin. Essex:—Rusby. Sussex: Near the western base of High Point—Britton. Warren: Near the Water Gap—Parker; Sunfish Pond, Kittatinny Mountain—Britton.

A. nemoralis, Ait.

In sandy swamps. Hudson: New Durham—Torrey Catalogue, 1819; and frequent in pine-barren districts.

A. tenuifolius, L. (*A. flexuosus*, Nutt.)

In salt marshes. Frequent along the coasts.

A. subulatus, Michx. (*A. linifolius*, Gray Manual.)

Common in salt marshes.

A. linariifolius, L. (*Diplopappus linariifolius*, Hook.)

Sandy or rocky ground. Common throughout the State.

A. umbellatus, Mill. (*Diplopappus umbellatus*, T. & G.)

In swamps. Camden: Atco, rare—H. A. Green; near Camden—Miss C. A. Boice. Gloucester: Common about Mickleton—B. Heritage. Burlington: Occasional about Pemberton—Miss Willmarth; and common in the middle and northern counties.

Var. humilis (Willd.), B. S. P. (*Diplopappus amygdalifolius*, T. & G.)

In swamps. Ocean and Monmouth:—Knieskern. Sussex: Near High Point—Britton. Atlantic: Mays Landing—Peters.

A. cornifolius, Muhl.

In dry woodlands. Gloucester: Mickleton, rare—B. Heritage. Ocean and Monmouth: "Common"—Knieskern. Mercer: Near Trenton—Volk. Morris: Long Hill—Leggett. Essex: Franklin—Rusby. Bergen: Fort Lee—Rudkin. Warren: Marble Hill—Porter; Delaware Water Gap—Parke. Sussex: High Point, Two Bridges and Andover—Britton; Waterloo—Porter. Hunterdon: Rosemont, frequent—Best.

ERIGERON, L.

Fleabane.

E. Canadensis, L. Horseweed. Butterweed.

In various situations. Very common throughout the State.

E. bellidifolius, Muhl. Robin's Plantain.

In fields and open woods. Union: Plainfield—Tweedy. Camden: Common about Camden—Martindale. Gloucester: Frequent about Mickleton—B. Heritage; and frequent in the middle and northern counties.

E. Philadelphicus, L.

Morris: Chatham—Leggett. Warren: Below Phillipsburg—Porter. Hunterdon: Pittstown—Henry Race; Rosemont, frequent—Best.

E. annuus (L.), Pers.

Fields and roadsides. Common throughout the State.

E. ramosus (Walt.), B. S. P. (*E. strigosus*, Muhl.)

In similar situations; common.

BACCHARIS, L.

Groundsel-Tree.

B. halimifolia, L.

Along the borders of salt marshes. Common along the coasts, extending also to fresh-water marshes a few miles inland in the southern counties, especially up the valleys of Great Egg Harbor River and its tributary streams.

PLUCHEA, Cass.

Marsh-fleabane.

P. camphorata (L.), DC.

In salt marshes. Very common along the coast.*

P. foetida (L.), B. S. P. (*P. bifrons*, DC.)

Cape May:—Martindale.

FILAGO, L.

Cotton-rose.

F. GERMANICA, L. Herba Impia.

Monmouth: Neversink Hills, near Shrewsbury, Sept. 10th, 1832—Torrey Herb.; dry, barren fields, rare—Knieskern.
Camden: In ballast—Martindale. Adventive from Europe.

ANTENNARIA, Gærtn.

Everlasting.

A. plantaginifolia (L.), Hook. Cats-paw. Mouse-ear.

In dry soil. Common throughout the State.

ANAPHALIS, DC.

Pearly Everlasting.

A. margaritacea (L.), Benth. & Hook. (*Antennaria margaritacea*, B. Br.)

In dry soil. Gloucester: Near Swedesboro and Mickleton—B. Heritage. Burlington: Near Shamong—Parker. Atlantic: Hammonton—F. L. Bassett. Camden: Atco—H. A. Green. Ocean and Monmouth: Along the coast, rare—Knieskern;

* This includes *P. foetida*, DC., of Gray's Manual. A form answering the description of this was collected at Landisville, Atlantic Co., by C. A. Gross.

North Spring Lake—Lighthipe; Keyport—R. W. Brown; Sandy Hook—Britton; and frequent in the middle and northern counties.

GNAPHALIUM, L.

Cud-weed.

G. decurrens, Ives.

Moist places in the northern counties; rare. Warren: Marble Hill—Porter. Morris: Chatham—Leggett. Essex:—Rusby.

G. obtusifolium, L. (*G. polycephalum*, Michx.) Everlasting.

In dry fields. Apparently common throughout the State.

G. uliginosum, L. Low Cud-weed.

In low grounds, especially along roadsides. Common or frequent throughout the State; less abundant southward.

G. purpureum, L.

In dry soil. Bergen: Closter—Austin; Rutherford Cemetery—Schuh. Morris: Chatham—Leggett. Union: Plainfield—Tweedy; and frequent on the Yellow Drift soils, middle and southern counties.

INULA, L.

Elecampane.

I. Helenium, L.

Roadsides and waste places. Escaped from cultivation. Frequent. Naturalized from Europe.

POLYMNIA, L.

Leaf-cup.

P. Uvedalia, L.*

Hudson: Foot of cliffs near Weehawken Ferry, 1864—T. F. Allen. See Bull. Torr. Club, i. 4.

IVA, L.

Marsh Elder. High-water Shrub.

I. frutescens, L.

Borders of ditches, etc., on the salt marshes; common.

* Reported first as *P. Canadensis*, L., in Gray's Manual, p. 248.

AMBROSIA, L.

Rag-weed.

A. trifida, L. Great Rag-weed. Horse-weed.

In low grounds. Rather common throughout the State.

Var. integrifolia (Muhl.), T. & G.

Camden :—Martindale. Hunterdon : Rosemont—Best.
Salem : Woodstown—B. Heritage.

A. artemisiæfolia, L. Rag-weed.

In fields and waste places. Very common throughout the State.

XANTHIUM, L.

Cocklebur. Clotbur.

X. Canadense, Mill., *var. echinatum* (Murr.), Gray. (*X. strumarium*, L., *var. echinatum*, Gray.)

In sandy soil. Frequent along the sea-beaches.

X. STRUMARIUM, L.

Occasional in waste places. Adventive from Europe.

X. SPINOSUM, L.

In waste places in the towns and villages; frequent. Naturalized from Tropical America.

HELIOPSIS, Pers.

Ox-eye.

H. helianthoides (L.), B. S. P. (*H. lævis*, Pers.)

In fields and copses. Camden :—Parker. Monmouth and Ocean : Common—Knieskern. Burlington : Crosswicks Creek—Apgar; and frequent in the middle and northern counties. Specimens showing transition to the next were collected by Dr. G. N. Best, at Sergeantsville.

H. scabra, Dunal. (*H. lævis*, *var. scabra*, Gray.)

Middlesex : South Amboy—T. F. Allen in Bull. Torr. Club, ii. 4. Warren : Delaware Water Gap—Parker; rare, and not recently collected.

ECLIPTA, L.

Eclipta.

E. ALBA (L.), Hassk. (*E. procumbens* and *E. erecta*, Michx.)

In waste places. Gloucester: Mantua, Mickleton, Mullica Hill—B. Heritage. Salem: Banks of the Delaware—Commons. Camden: Banks of the Delaware—Parker. Atlantic: Atlantic City—H. A. Green. Monmouth: Red Bank—Leggett. Middlesex: New Brunswick—Britton. Mercer: Trenton, and Hunterdon: Lambertville—Apgar. Bergen: Fort Lee—Leggett. Adventive from the South.

RUDBECKIA, L.

Cone-flower.

R. laciniata, L.

In low grounds. Gloucester: Banks of Raccoon Creek, rare—B. Heritage. Camden:—Parker. Monmouth and Ocean: Not common—Knieskern. Burlington: Crosswicks Creek—Apgar; and frequent in the middle and northern counties.

R. SPECIOSA, Wender.

Cumberland: Three miles west of Fairton—Commons, 1881. Fugitive from the West.

R. fulgida, Ait.

Hunterdon: Rosemont—Best, 1885.

R. TRILOBA, L.

Union: Plainfield—Tweedy. Sussex: Andover—Britton. Probably escaped from cultivation. Fugitive from the Southwest.

R. HIRTA, L. Yellow Daisy.

Common throughout the State. Naturalized from the West.

HELIANTHUS, L.

Sunflower.

H. ANNUUS, L. Common Sunflower.

Waste places. Sparingly escaped from gardens. Adventive from Tropical America.

H. angustifolius, L.

In swamps. Gloucester: Near Mickleton, not common—B. Heritage. Camden: Griffith's Swamp—C. E. Smith. Mercer: Near Trenton—E. Volk. Monmouth: Sea Bright—A. Brown; and frequent in the pine barrens.

H. giganteus, L.

In swamps. Frequent throughout the State.

Var. ambiguus, T. & G.

Hudson: Secaucus—Leggett. Atlantic: Atlantic City—Martindale. Cape May:—Parker.

H. strumosus, L.

In dry woods. Gloucester: Mickleton, rare—B. Heritage. Camden:—Parker; Atco—H. A. Green. Monmouth: Near Keyport—R. W. Brown; and common in the middle and northern counties.

H. divaricatus, L.

Dry fields and thickets. Frequent or common throughout the State.

H. decapetalus, L.

In rich, open woods. Camden: Banks of the Delaware near Riverton—J. Stokes. Hunterdon: Frequent—Best. Gloucester: Mullica Hill—B. Heritage. Essex: Verona—Rusby. Hudson: Weehawken and New Durham—Leggett; and frequent in the northern counties.

H. tuberosus, L. (*H. doricoides*, T. & G.) Jerusalem Artichoke.

Commonly escaped from gardens. Also, certainly native in the valley of the Delaware in Warren and Hunterdon counties, and distinguishable from the cultivated forms—Porter.

ACTINOMERIS, Nutt.*Actinomeris.***A. ALTERNIFOLIA (L.), DC. (*A. squarrosa*, Nutt.)**

"In meadows, N. J."—Torrey Catalogue, 1819. Essex: Belleville—Rudkin; Montclair—A. Brown. Passaic: Pater-

son—J. C. Hornblower. Burlington: Along the Delaware River below Burlington, perhaps native—Martindale. Adventive from the West.

COREOPSIS, L.

Tickseed.

C. rosea, Nutt.

In swamps, middle and southern counties. Mercer: Near Hightstown—Willis. Monmouth: Near Freehold—Martindale. Atlantic: Main Road Station—C. A. Gross: Egg Harbor City—Redfield. Cumberland: Vineland—Mrs. Treat. Gloucester: Clayton and Franklinville—Parker. Burlington: Burlington—Martindale. Ocean: Forked River—Britton.

C. VERTICILLATA, L.

Camden: Kaighn's Point—C. E. Smith. Fugitive from the West.

C. trichosperma, Michx.

In swamps. Sussex: Very abundant on the Sparta Meadows, growing over five feet high, also in Germany Flats—Britton. Morris: Budd's Lake—Porter. Bergen: Hackensack Meadows—W. M. Wolfe. Hudson: "In the cedar swamp at New Durham"—Torrey Catalogue. Mercer: Trenton—A. C. Stokes; and common in the middle and southern counties.

C. discoidea, T. & G.

In swampy places. Morris: Budd's Lake—Porter. Camden: Shores of the Delaware—Canby, C. E. Smith. Salem: Tidal banks—A. Commons. Gloucester: Rare—B. Heritage.

C. bidentoides, Nutt.

Camden: Muddy shore of the Delaware—Parker. Gloucester: Bridgeport—Wm. Trimble. Salem: Shore of the Delaware—Commons.

BIDENS, L.

Beggar Ticks.

B. frondosa, L.

Waste and cultivated grounds. Common throughout the State.

B. connata, Muhl. (Including *var. comosa*, Gray.)

In swamps and low grounds. Common in the middle and northern counties, and southward along the Delaware. Apparently not abundant in the pine barrens.

B. cernua, L.

In swampy places. Morris: Budd's Lake—Porter. Essex: Franklin—Rusby; Bergen: Rutherford, rare—Schuh; Woodside—Leggett. Hunterdon: Bull's Island—Best. Burlington: Pemberton—Miss Willmarth. Monmouth: Marshes along Swimming River, a form four feet high—Britton. Middlesex: South Amboy—Britton. Camden: In river dredgings—Parker.

B. lævis (L.), B. S. P. (*B. chrysanthemoides*, Michx.) Bur-marigold.

Swamps. Common throughout the State.

B. Beckii, Torr.

Sussex: Swartswood Lake—Garber, Porter.

B. bipinnata, L.

Dry soil. Common throughout the State.

GALINSOGA, Ruiz & Pav.

Galinsoga.

G. PARVIFLORA, Cav.

Waste places, especially in towns and villages; frequent. Naturalized from South America.

HELENIUM, L.

Sneeze-weed.

H. autumnale, L.

Swamps and low grounds. Rather common throughout the State.

ACHILLEA, L.

Yarrow. Milfoil.

A. MILLEFOLIUM, L.

Dry soil; common throughout the State. With rose-colored flowers at Phillipsburg—Porter; Belvidere—Miss Campbell; and Waterloo—Britton. Naturalized from Europe, or perhaps native in the mountains.

ANTHEMIS, L.

Chamomile.

A. ARVENSIS, L.

In fields and waste places; frequent. Naturalized from Europe.

A. TINCTORIA, L.

Sussex: Abundant on a hillside at Carpenter's Point, 1884—Britton. Adventive from Europe.

A. COTULA, L. (*Maruta Cotula*, DC.) Mayweed.

In fields and waste places; common. Naturalized from Europe.

CHRYSANTHEMUM, L.

Ox-eye Daisy.

C. LEUCANTHEMUM, L. (*Leucanthemum vulgare*, Lam.) Ox-eye Daisy.
White-weed.

In fields and meadows; very common. Naturalized from Europe.

C. PARTHENIUM (L.), Pers. Feverfew.

In waste places; escaped from gardens. Warren: Phillipsburg—Porter. Hunterdon: Pittstown—Henry Race; Rosemont—Best. Mercer: Trenton—Apgar; Princeton—Peters. Hudson: Communipaw—A. Brown. Burlington: Moorestown—J. Stokes. Adventive from Europe.

MATRICARIA, L.

Wild Chamomile.

M. INODORA, L.

In waste places and ballast; occasional. Fugitive from Europe.

TANACETUM, L.

Tansy.

T. VULGARE, L.

Roadsides and waste places; frequent. Adventive from Europe.

ARTEMISIA, L.

Wormwood.

A. caudata, Michx.

In sandy fields. Especially along the coast. Middlesex: Morgans and South Amboy—Britton. Monmouth: Keyport—

R. W. Brown; Sandy Hook—Merrill. Burlington: Pember-ton—Lighthipe; Mount Holly—I. Burk. Gloucester: Below Woodbury—Parker; Berkley—B. Heritage. Cumberland: Bridgeton—Britton; and frequent in the pine barrens and on the sea-beaches.

A. BIENNIS, Willd.

In waste places and in ballast; occasional. Adventive from the West.

A. VULGARIS, L. Mugwort.

In waste places; frequent. Adventive from Europe.

A. STELLERIANA, Besser.

Monmouth: Sea-beaches, Sandy Hook—Britton; Highlands—E. H. Day. Ocean: Sea-beach near Toms River—Rudkin. Also cultivated in gardens along the coast under the name Dusty Miller, which in foliage it greatly resembles, and has been taken for by several botanists. Adventive from the North.

A. PONTICA, L.

Hunterdon: On a railway embankment below Tumble Station—Porter, 1885. A fugitive from Central Europe.

A. LACINIATA, Willd.

Hunterdon: Near Lambertville—Apgar, 1887. A fugitive from Central Europe.

TUSSILAGO, L.

Coltsfoot.

T. FARFARA, L.

Ocean and Monmouth: "Wet places, rare"—Knieskern. Hudson: In ballast at Communipaw—A. Brown. Camden: In ballast—Parker. Fugitive from Europe.

ERECOTHITES, Raf.

Fireweed.

E. hieracifolia (L.), Raf.

In low grounds and in clearings. Common throughout the State.

SENECIO, L.

Groundsel.

S. VULGARIS, L.

In waste places; frequent. Adventive from Europe.

S. aureus, L. Golden Ragwort.

Low grounds. Camden: Cedar Lake—Wm. F. Bassett; Atco, rare—H. A. Green. Burlington: Birmingham—Light-hipe. Gloucester: Mickleton, not common—B. Heritage; and common in the northern and middle counties.

Var. Balsamitæ (Muhl.), T. & G.

In rocky places: Middle and northern counties; frequent.

Var. obovatus (Muhl.), T. & G.

Camden: River swamp—Parker. Morris: Shongum Lake—Schuh.

S. tomentosus, Michx. Wooly Ragwort.

Atlantic: Landisville—C. A. Gross, 1881. Cape May: Ocean View Station, at the edge of the marsh—Commons, 1882; above the steamboat landing—I. Burk.

CACALIA, L.

Indian Plantain.

C. suaveolens, L.

Mercer: Princeton, 1838—B. Jäger in Torrey Herb. Monmouth: "Rich fence-rows, Freehold"—Willis.

C. reniformis, Muhl.

Camden: Banks of the Delaware, near the city—Parker.

C. atriplicifolia, L.

Camden: Damp meadow and hillside near Haddonfield—Parker. Burlington: Palmyra—J. Stokes. Monmouth: Walnford—Britton. Mercer: Trenton—P. H. Van Cleve. Hunterdon: Stockton, Raven Rock and Bull's Island—Best. Warren: Along the Delaware below Phillipsburg—Porter. Apparently confined to the Delaware River valley.

ARCTIUM, L.

Burdock.

A. LAPPA, L. (*Lappa officinalis*, All.)

Waste places; common. Naturalized from Europe.

CARDUUS, L.

Musk Thistle.

C. NUTANS, L.

Hudson: On hills back of Hoboken—Schrenk; in ballast at Communipaw—A. Brown. Camden: In ballast—Martindale. Adventive from Europe.

CNICUS, L. (*Cirsium*, DC.)

Thistle.

C. ARVENSIS (L.), Hoffm. Canada Thistle.

Fields and roadsides. Frequent, notwithstanding its legal exclusion. Adventive from Europe.

C. LANCEOLATUS (L.), Willd.

Fields and roadsides; common. Naturalized from Europe.

C. altissimus (L.), Willd., var. discolor (Muhl.), Gray. (*Cirsium discolor*, Spreng.)

Meadows and low grounds. Common throughout the State.*

Forma albiflora, Britt.

Bergen: Carlstadt—Schuh.

C. muticus (Michx.), Pursh. Swamp Thistle.

Gloucester: Two miles west of Mullica Hill—B. Heritage. Mercer: Princeton—Willis; Trenton—Apgar. Union: Plainfield—Tweedy; and frequent in the northern counties.

C. odoratus (Muhl.), B. S. P. (*Cirsium pumilum*, Spreng.) Pasture Thistle.

In pastures. Frequent throughout the State.

C. spinosissimus (Walt.), Darl. (*Cirsium horridulum*, Michx.) Yellow Thistle.

Burlington: Pemberton—Miss Willmarth. Hunterdon: A single plant near Rosemont—Best; and frequent along the junction of salt or brackish marsh with the upland, eastern and southern counties.

*This is the *Cirsium altissimum* of the Kniekern and Willis Catalogues. I have not been able to establish the occurrence of the real *C. altissimum* in the State, and the same statement applies to the *Cirsium Virginianum* recorded by Dr. Willis from Monmouth Co.

ONOPORDON, L.

Cotton or Scotch Thistle.

O. ACANTHIUM, L.

In waste places. Passaic: Roadside near Paterson—Leggett. Hudson: Ballast at Hoboken—Martindale. Mercer: Near the State House at Trenton—W. S. Lee; Princeton—Rankin. Camden: In ballast—Parker. Adventive from Europe.

CENTAUREA, L.

Star Thistle.

C. CYANUS, L. Bluebottle.

Escaped from gardens; occasional. Adventive from Europe.

C. NIGRA, L. Knapweed.

Waste places. Essex: Bloomfield—Rusby. Middlesex: Woodbridge—Lighthipe. Hudson: In ballast at Communipaw A. Brown. Gloucester: Mickleton—Heritage. Mercer: Trenton—Apgar. Camden: In ballast—Parker. Adventive from Europe.

C. CALCITRAPA, L. Star Thistle.

Camden: Waste places and ballast—Canby. Mercer: Trenton—Apgar; Princeton—Peters. Adventive from Europe.

CICHORIUM, L.

Chicory.

C. INTYBUS, L.

Roadsides and waste places. Rather common throughout the State. Very abundant in some sections. Naturalized from Europe.

KRIGIA, L.

Dwarf Dandelion.

K. Virginica (L.), Willd.

In dry soil. Bergen: Ramseys—Stowell. Sussex: Sparta, and on the Kittatinny Mts.—Britton. Hunterdon: Rosemont, frequent—Best; Lambertville—Apgar. Essex: Newark Mts.—Miss Isabel Mulford; and common on the Yellow Drift soils, middle and southern counties.

K. amplexicaulis (Michx.), Nutt. (*Cynthia Virginica*, Don.)

In moist meadows. Frequent throughout the State.

LAPSANA, L.

Nipple-wort.

L. COMMUNIS, L.

Mercer: Roadside at Princeton—Peters. Camden: In ballast—Martindale. Hudson: Ballast at Communipaw—A. Brown. Fugitive from Europe.

PICRIS, L.

P. HIERACIOIDES, L.

Atlantic: Mays Landing—Peters. Fugitive from Europe.

HIERACIUM, L.

Hawkweed.

H. Canadense, Michx.

Dry, open places in the northern counties. Bergen: Closter—Austin. Morris: Island in Lake Hopatcong—Porter; Drakesville—Britton. Essex:—Rusby. Sussex: Sparta and Andover—Britton.

H. scabrum, Michx.

Dry, open woods. Rather common throughout the State.

H. Gronovii, L.

In dry, open woods. Bergen: Alpine—Schub. Hunterdon: Rosemont—Best. Morris: Long Hill—Leggett; and frequent in the middle and southern counties.

H. Marianum, Willd.

Hunterdon: Frequent near Rosemont—Best.

H. venosum, L. Rattlesnake-weed.

Dry woods. Common throughout the State.

H. paniculatum, L.

In dry, open woods. Common throughout the State, but not very abundant in the pine barrens.

LEONTODON, L.

Fall Dandelion.

L. AUTUMNALE, L.

In waste places; rare. Monmouth: Freehold—Willis. Camden: In ballast—Parker. Adventive from Europe.

TARAXACUM, Hall.

Dandelion.

T. OFFICINALE, Web. (*T. Dens-leonis*, Desf.)

In various situations. Very common throughout the State.
Naturalized from Europe.

LACTUCA, L.

Lettuce.

L. Canadensis, L.

In moist places. Common throughout the State.

Narrow-leaved plants, varying towards *L. graminifolia*, Michx., of the South, are sent by Mr. Commons from river banks, Salem Co.

L. integrifolia, Bigel. (*L. Canadensis*, L., var. *integrifolia*, Gray.)

Morris: Long Hill—Leggett. Monmouth: Sandy Hook—Britton. Hunterdon: Rosemont, common—Best. Gloucester: Mickleton, not common—B. Heritage.

L. hirsuta, Muhl. (*L. Canadensis*, L., var. *sanguinea*, T. & G.)

Hunterdon: Scarce—Best. Bergen: Sparingly at Rutherford—Schuh. Burlington: Vincentown—Lighthipe. Camden:—Martindale. Atlantic: Atlantic City—Parker. Monmouth: Spring Lake—Lighthipe. Plant often entirely glabrous.

L. leucophæa (Willd.), Gray. (*Mulgedium leucophæum*, DC.)

In low woodlands. Apparently frequent throughout the State.

L. villosa, Jacq. (*Mulgedium acuminatum*, DC.)

Hudson: Weehawken—Torrey Catalogue, 1819; Arlington—W. M. Wolfe. Bergen: Closter—Austin. Somerset: Rocky Hill—Lighthipe. Hunterdon: Rosemont, frequent—Best.

L. Floridana (L.), Gærtn. (*Mulgedium Floridanum*, DC.)

Hunterdon: Rosemont, and frequent on hills bordering the Delaware River from Bull's Island to Frenchtown—Best. Mercer:—Torrey. Burlington: Bordentown—Apgar. Bergen: Alpine, at base of Palisades—Britton.

PRENANTHES, L. (*Nabalus*, Cass.)

Rattlesnake-root.

P. alba, L.

In dry woods. Salem: Mannington—Miss Mary A. Lawrence; and frequent in the middle and northern counties.

P. altissima, L.

Burlington: Vincentown—Lighthipe; and frequent in the middle and northern counties.

P. Serpentaria, Pursh. (*Nabalus Fraseri*, DC.)

In dry woods. Common throughout the State.

P. autumnalis, Walt. (*Nabalus virgatus*, DC.)

In sandy meadows, pine-barren regions. Ocean: Manchester—Rudkin. Burlington: Near Quaker Bridge, Batsto and Pleasant Mills—Canby. Atlantic: Egg Harbor City—Martindale; Mays Landing, common—Peters. Camden: Winslow and Jackson—Parker.

P. racemosa, Michx.

Bergen: Near Closter—Austin; Hackensack Marshes—Leggett; Cresskill—Rudkin. Hudson: New Durham and near Snake Hill—W. M. Wolfe.

Var. *pinnatifida*, Gray.

Hudson: Hackensack Meadows—Carey, Rusby.

SONCHUS, L.

Sow Thistle.

S. OLERACEUS, L.

In waste places; common. Naturalized from Europe.

S. ASPER, Vill.

Waste places. Warren: Phillipsburg—Porter. Hunterdon: Milford—Best. Hudson: New Durham—Leggett. Camden: —Parker. Salem: Abundant about Salem—Mrs. M. A. Lawrence. Adventive from Europe.

S. ARVENSIS, L.

In waste places. Hudson: Bergen Point—Leggett. Monmouth: Atlantic Highlands—Britton; Scobeyville—Apgar. Camden: Waste grounds and ballast—Parker. Naturalized from Europe.

TRAGOPOGON, L.

Salsify.

T. PORRIFOLIUS, L.

Occasionally escaped from gardens. Sussex: Newton—E. H. Day; Andover—Britton. Bergen: Rutherford—Schuh. Hunterdon: Rosemont, rare—Best. Monmouth: Freehold—Apgar. Fugitive from Europe.

T. PRATENSIS, L.

Monmouth: Long Branch—Miss O. M. Ewing. Fugitive from Europe.

CAMPANULACEÆ.

LOBELIA, L.

Lobelia.

L. cardinalis, L. Cardinal-flower.

Wet grounds. Frequent throughout the State.

L. syphilitica, L. Great Lobelia.

In low grounds. Burlington: Crosswicks Creek—Willis; near Bordentown—W. S. Lee. Monmouth: Keyport—R. W. Brown; and common in the middle and northern counties.

Forma albiflora, Britt.

Passaic: Passaic—Woolson. Bergen: Lyndhurst—Schuh; Carlstadt—O. Frank. Sussex: Franklin Furnace—Britton.

L. puberula, Michx.

Wet places. Monmouth: Freehold, and Mercer: Lawrenceville Landing—Willis. Salem: Mannington—Mrs. M. A. Lawrence; near Course's Landing—B. Heritage. Cumberland: Near Haleyville—Britton. Cape May:—Parker.

L. inflata, L. Indian Tobacco.

Fields and roadsides. Common throughout the State.

L. spicata, Lam.

In fields. Frequent throughout the State, except in the pine barrens.

L. Nuttallii, Roem. & Schult.

In moist thickets. Middlesex: Sayreville—Britton; and common in the southern counties. Most abundant in the pine barrens.

L. Kalmii, L.

Limestone swamps in the northern counties. Sussex: Franklin Furnace, Sparta and on Germany Flats—Britton. Warren: White Pond—Porter.

L. Canbyi, Gray.

In sandy swamps in the pine barrens; frequent.

L. Dortmanna, L.

In shallow water on the sandy bottoms of lakes in the northern counties. Morris: Northern shore of Green Pond—Rudkin. Warren: Sunfish Pond, Kittatinny Mountains—S. W. Knipe. Sussex: Decker Pond, Pochuck Mt.—Britton.

CAMPANULA, L.

Bellflower.

C. Americana, L.

Warren: Delaware Water Gap—Martindale. Hunterdon: Near Stockton—Best.

C. rotundifolia, L. Harebell.

In rocky places. Mercer: Trenton—Apgar; Princeton—Torrey. Hudson: Weehawken—Merriam; common on the Palisades—Austin. Sussex: On the white limestone at McAfee, and common along the Delaware—Britton. Warren: Common along the Delaware from Flatbrookville southward—Porter. Hunterdon: Above Milford—Porter; Frequent—Best.

C. aparinoides, Pursh.

Swamps and wet meadows. Frequent or occasional throughout the State, though apparently not very abundant in the pine barrens.

C. RAPUNCULOIDES, L.

Morris: Well naturalized on Long Hill, near Chatham—Leggett. Somerset:—Apgar. Sussex: Andover—Britton. Bergen: Alpine—Schuh. Hunterdon: Rosemont, rare—Best. Adventive from Europe.

SPECULARIA, Heist.

Venus' Looking-glass.

S. perfoliata (L.), A. DC.

Dry woods. Common throughout the State.

VACCINIACEÆ.

GAYLUSSACIA, H. B. K.

Huckleberry.

G. dumosa (Andr.), T. & G. Dwarf Huckleberry.

Monmouth and Ocean: Shady swamps, not very rare—Knieskern; and frequent in the southern parts of the State.

Var. hirtella (Ait.), Gray.

Monmouth: Near Squan—Leggett. Atlantic: Atsion and Egg Harbor—Martindale.

G. frondosa (L.), T. & G. Dangleberry.

Dry woods. Frequent throughout the State.

G. resinosa (Ait.), T. & G.

Dry woods. Common throughout the State.

Forma leucocarpa (Porter), Britt.

Sussex: Montague township—B. W. Westbrook.

OXYCOCCUS, Pers.

Cranberry.

O. palustris, Pers. (*Vaccinium Oxycoccus*, L.) Small Cranberry.

In cold sphagnum bogs in the northern counties. Hudson: New Durham Swamp—Torrey Catalogue, 1819. Bergen: Otter Pond, Closter—Austin; Carlstadt—O. Frank. Morris: Budd's Lake—Porter. Sussex: In Little Pond, on mountain southeast of Ogdensburg—Britton.*

O. macrocarpus, Pers. (*V. macrocarpon*, Ait.) Common Cranberry.

Bergen: Closter, scarce—Austin. Essex: Verona—Rusby. Hudson: Secaucus—Leggett; and very common in bogs in the southern and middle counties. Extensively cultivated.

VACCINIUM, L.

Blueberry.

V. stamineum, Deerberry.

Dry, open woods. Frequent throughout the State.

* Stated by Dr. Willis as formerly frequent in Monmouth and Ocean counties, probably following Dr. Knieskern's statement to the same effect. Not recently reported from that region.

V. Pennsylvanicum, Lam. Dwarf Blueberry.

Salem: Elsinboro—Mrs. Lawrence. Gloucester: Common about Mickleton—B. Heritage. Camden: Atco, rare—H. A. Green. Burlington: Pemberton—Miss Willmarth. Ocean and Monmouth: Dry hills and woods, common—Knieskern; and frequent or occasional in the middle and northern counties, especially abundant on the Kittatinny Mountains.*

V. vacillans, Soland. Low Blueberry.

Dry woods. Common throughout the State.

V. corymbosum, L. Swamp or High-bush Blueberry.

In swamps. Common throughout the State. With white fruit at Mays Landing—Peters.

Var. amœnum (Ait.), Gray.

Hudson: New Durham and Secaucus Swamps—Leggett.

V. disomorphum, Bigel. (*V. corymbosum*, var. *atrocoecum*, Gray.)

Bergen: Carlstadt—Britton. Hudson: Abundant at Secaucus—Leggett. Burlington: Burlington—Martindale; Pemberton—Miss Willmarth. Camden:—Parker. Hunterdon: Rosemont—Best. Ocean: Forked River and Toms River—Britton.

CEIOGENES, Salisb.

Creeping Snowberry.

C. hispidula (L.), T. & G.

Hudson: In the cedar swamp at New Durham—Cooper in Torrey Catalogue; Austin. Not recently collected, and probably extinct at this station.

ERICACEÆ.**ARCTOSTAPHYLOS**, Adans.

Bearberry.

A. Uva-ursi (L.), Spreng. "Uversa."

Bergen: Palisades, scarce—Austin. Passaic: Paterson Falls—Cooper in Torrey Catalogue; Bearfort Mt., near Uttertown, a

**V. Canadense*, Kalm, reported in the Preliminary Catalogue from Budd's Lake on the authority of Dr. Porter, is probably correct, but the specimens have been lost, and as the plant has turned up nowhere else I think it best to omit it, and this is Dr. Porter's conclusion as well.

large patch—Britton. Middlesex: South Amboy—Miss A. B. Rich; and frequent or occasional on the sands of the Yellow Drift in the southern counties.

GAULTHERIA, L.

Wintergreen.

G. procumbens, L. Ground Birch. Teaberry.

In dry woods. Common throughout the State, except where locally eradicated. Most abundant in the pine barrens and on the Kittatinny Mountains.

EPIGÆA, L.

Trailing Arbutus.

E. repens, L. Mayflower. Ground Laurel.

In dry, sandy woods. Frequent throughout the State. Most abundant on the Yellow Drift soils of the southern and middle counties, and on the Kittatinny and Green Pond mountain ranges.

CASSANDRA, Don.

Leather-leaf.

C. calyculata (L.), Don.

In swamps. Bergen: Closter—Austin. Hudson: Secaucus—Leggett. Morris: Budd's Lake—Porter. Passaic: Near southern end of Greenwood Lake—Britton. Camden: Kaighn's Point and Longacoming—C. E. Smith; and frequent in the pine barrens.

LEUCOTHOË, Don.

Leucothoë.

L. racemosa (L.), Gray.

In swamps. Bergen: Closter—Austin; abundant on the marshes near Carlstadt—Woolson; Rochelle Park—Rudkin. Essex: Montclair and Verona—Rusby. Hudson: Secaucus and New Durham—Leggett. Morris: Budd's Lake—Porter. Union: Plainfield—Tweedy. Hunterdon: Kingwood—Best; and frequent in the middle and southern counties.

ANDROMEDA, L.

Andromeda.

A. Polifolia, L.

Morris: In the bog at Budd's Lake—Porter; near Morristown—Rusby.

A. ligustrina, Muhl.

In swamps and moist thickets. Frequent throughout the State.

A. Mariana, L. Stagger-bush.

In dry, sandy soil. Bergen: Closter—Austin. Passaic: Abundant near Lodi—Woolson. Hunterdon: Rosemont, "common"—Best. Essex: Franklin—Rusby; Short Hills—Tweedy. Middlesex: Metuchen—Miss L. N. Estabrook; Sand Hills, north of the Raritan River—Lighthipe; and frequent southward on soils of the Yellow Drift.

KALMIA, L.

Laurel.

K. latifolia, L. Calico-bush. Spoon-wood.

Hillsides and thickets in both dry and moist soil. Common throughout the State.

K. angustifolia, L. Sheep-laurel. Lamb-kill.

In sandy bogs, occasionally also on the upland. Frequent in the northern and middle counties. Common in the southern.

K. glauca, Ait.

Morris: Budd's Lake—Porter.

LEIOPHYLLUM, Pers.

Sand Myrtle.

L. buxifolium (Berg.), Ell.

Frequent in wet, sandy places in the pine barrens, and apparently confined to such regions.

RHODODENDRON, L.

Rose-bay. Azalea.

R. mazimum, L. Great Laurel.

Along streams and lakes, occasionally forming dense thickets. Camden: Sicklerville—H. A. Green. Burlington: Florence

and Kinkora—Lighthipe; and frequent all through the Delaware River valley northward. Hudson: New Durham and Secaucus—Leggett. Passaic: Greenwood Lake, Hewitts, and very abundant in the gorge near West Milford—Rudkin; common along the western base of Bearfort Mountain—Britton. Morris: Great Swamp near Chatham—Leggett; near Green Pond—Britton. Hunterdon: High Bridge—Apgar. Warren: Along Musconetcong near Hackettstown—Frank M. Cook. Somerset: Mountainville—Miss R. C. Perry.

R. viscosum (L.), Torr. (*Azalea viscosa*, L.) White Swamp Honey-suckle.

Sandy swamps and borders of ponds. Sussex: Near High Point—Britton. Warren: Sunfish Pond, Kittatinny Mt.—Northrop. Morris: Budd's Lake—Miss R. C. Perry; Green Pond and Mt. Hope—Britton. Hunterdon: Frequent—Best. Essex: Franklin—Rusby; and frequent in the middle and southern counties.

Var. nitidum (Pursh), Gray.

Morris: Near Mt. Hope—Britton. Essex: Franklin—Rusby. Bergen: Carlstadt—Miss Knight.

Var. glaucum (Lam.), Gray.

Sussex: Swamp near Panther Pond—Britton. Passaic: Greenwood Lake and near West Milford—Britton. Morris: Succasunna, with flowers rose-color—Rusby. Bergen: Carlstadt—Miss Knight. Monmouth: North Spring Lake—Lighthipe. Hunterdon: Frequent—Best.

R. nudiflorum (L.), Torr. (*Azalea nudiflora*, L.) Wild Azalea.

Damp woods. Common or frequent throughout the State, except in the pine barrens, where it is but occasional.

R. Canadense (L.), B. S. P. (*Rhodora Canadensis*, L.) Rhodora.

Morris: In a bog at Succasunna, 1881—Porter.

PYROLA, L.

False Wintergreen. Shinleaf.

P. rotundifolia, L.

In dry woods. Cumberland: Bridgeton—Britton. Atlantic: Hammonton—F. L. Bassett. Camden:—C. E. Smith; Atco—H. A. Green. Gloucester: Mickleton, rare—B. Heritage.

Ocean and Monmouth: Common—Knieskern; and frequent in the middle and northern counties.

P. elliptica, Nutt.

In dry woods. Cumberland: Bridgeton—Martindale. Camden:—C. E. Smith. Burlington: Moorestown, scarce—J. Stokes. Monmouth: Phalanx—Leggett; and frequent in the middle and northern counties.

P. chlorantha, Sw.

In dry woods. Camden: Near Camden—Parker. Atlantic: Hammonton—F. L. Bassett. Burlington: Pemberton—Miss Willmarth; Moorestown—J. Stokes. Monmouth: Fair Haven—Apgar. Warren:—Knighton. Bergen: Closter—Austin. Sussex: Montague Township—Britton.

P. secunda, L.

Bergen: Closter—Austin. Sussex: Pochuck Mt., Two Bridges, Sparta, and Alamuche Mt.—Britton. Monmouth: Freehold—Willis. Camden:—Parker. Morris: Near Lake Hopatcong—Poggenburg.

CHIMAPHILA, Pursh.

Pipsissewa.

C. umbellata (L.), Nutt. Prince's Pine.

Dry woods. Frequent throughout the State.

C. maculata (L.), Pursh. Spotted Wintergreen.

In similar situations. Common throughout the State.

CLETHRA, L.

Sweet Pepperbush. White Alder.

C. alnifolia, L.

In wet woods and swamps. Morris: Budd's Lake and Lake Hopatcong—Porter. Hudson: New Durham and Secaucus—Leggett. Union: Plainfield—Tweedy. Middlesex: Metuchen—Miss L. N. Estabrook; and frequent in the middle and southern counties.

MONOTROPEÆ.

MONOTROPA, L.

Indian Pipe.

M. uniflora, L.

In dark, rich woods. Frequent throughout the State.

HYPOPITYS, L.

Pine-sap.

H. Monotropa, Crantz. (*Monotropa Hypopitys*, L.)

In dry woods. Frequent throughout the State. A specimen seventeen inches high, from Long Hill, Morris Co.—Leggett.

DIAPENSIACEÆ.

PYXIDANTHERA, Michx.

Pyxie. Flowering Moss.

P. barbulate, Michx.

In dry sand. Middlesex: Near Woodbridge and Sand Hills—Lighthipe; near Metuchen—Miss Estabrook; abundant near Old Bridge—Miss C. A. Boice; South Amboy—Miss Rich. Camden: Near Haddonfield—J. L. Pennypacker; and common in the pine barrens.

PLUMBAGINEÆ.

STATICE, L.

Marsh-rosemary.

S. Limonium, L., var. *Caroliniana*, Gray.

On salt meadows; common.

PRIMULACEÆ.

HOTTONIA, L.

Water-violet. Featherfoil.

H. inflata, Ell.

Bergen: Closter—Austin; Fort Lee—Leggett; near Pleasant Valley and Guttenberg—Rudkin; east of Woodridge—Woolson. Monmouth: Eatontown—Willis.

LYSIMACHIA, L.

Loosestrife.

L. thyrsoflora, L.

Bergen: Hackensack marshes—Austin; near Little Ferry—Britton. Hudson: New Durham: Leggett. Morris: Budd's Lake—Porter. Sussex: Swartswood Lake—Rudkin. Hunterdon: Stockton—Best.

L. terrestris (L.), B. S. P. (*L. stricta*, Ait.)

Swamps. Frequent throughout the State.

L. quadrifolia, L.

In open woods and clearings. Common throughout the State.

L. NUMMULARIA, L. Money-wort.

Escaped from gardens to roadsides and waste places; frequent. Adventive from Europe.

STEIRONEMA, Raf.

Loosestrife.

S. ciliatum (L.), Raf. (*Lysimachia ciliata*, L.)

Low grounds and thickets. Frequent throughout the State.

S. lanceolatum (Walt.), Gray. (*Lysimachia lanceolata*, Walt.)

Low grounds. Frequent throughout the northern and middle counties. Gloucester: On the road from Camden to Glassboro—C. E. Smith; Mickleton, rare—B. Heritage.

Var. hybridum (Michx.), Gray.

Hudson: Newark meadows—Torrey Catalogue. Essex: Franklin—Rusby.

Var. angustifolium (Lam.), Gray.

Gloucester: Very rare—C. E. Smith. Essex: Franklin—Rusby.

TRIENTALIS, L.

Star-flower.

T. Americana (Pers.), Pursh.

In low woods. Salem: Near Quinton, rare—A. Robinson. Cumberland: Vineland—Mrs. Treat. Gloucester: Near Gloucester, very rare—C. E. Smith; Woodbury—Mrs. W. McGeorge.

Camden: Near Camden—Parker. Atlantic: Pleasant Mills—C. A. Gross; Atlantic City—Parker; Absecon and Hammon-ton—F. L. Bassett. Burlington: Moorestown—J. Stokes; Pemberton—Miss Willmarth. Monmouth and Ocean: Not rare—Knieskern; and frequent in the middle and northern counties.

GLAUX, L.

Sea Milkweed.

G. MARITIMA, L.

Monmouth: Deal Beach—A. H. Smith. Fugitive from further north.

ANAGALLIS, L.

Poor Man's Weather-glass.

A. ARVENSIS, L.

In waste places; frequent. Adventive from Europe.

SAMOLUS, L.

Water Pimpernel.

S. VALERANDI, L.

Camden: Introduced in ballast—Parker. Fugitive from Europe.

Var. floribundus (H. B. K.), B. S. P. (*Var. Americanus*, Gray.)

Hunterdon: Near Rosemont—Schuh; three miles north of Hopewell—Theo. Green; and frequent along the borders of salt or brackish marshes.

EBENACEÆ.

DIOSPYROS, L.

Persimmon.

D. Virginiana, L. Date-plum.

Morris: Summit—Leggett. Hunterdon: White House—Austin; Stockton, frequent—Best; Pittstown—H. Race; Baptisttown and Frenchtown—H. Roberson. Somerset: Near Peapack—Miss R. C. Perry. Essex: Franklin—Rusby. Union: Plainfield, Evona and Washington Rock—Tweedy. Hudson: Bergen Point—Leggett. Mercer: Princeton—Peters; and common southward on the Yellow Drift soils.

OLEACEÆ.

FRAXINUS, L.

Ash.

F. Americana, L. White Ash.

Moist woods. Camden: Atco—H. A. Green. Gloucester: Quite common about Mickleton—B. Heritage; and common in the middle and northern counties.

F. pubescens, Lam. Red Ash. Black Ash.

Gloucester: Banks of the Delaware, Pennsgrove, also the glabrate form—Commons; not common about Mickleton—B. Heritage; and common in the middle and northern counties.

F. viridis, Michx.f. Green Ash.

Monmouth and Ocean: "Near streams, not rare"—Knieskern; but surely rare in the eastern parts of those counties. Gloucester: Mullica Hill—Britton. Hunterdon: Stockton—Schuh. Mercer: Along the Delaware below Trenton—Abbott.

F. sambucifolia, Lam. Black Ash.

In wet woods. Bergen: Closter—Austin; Lyndhurst—Schuh. Essex: Common—Rusby. Morris: Boonton—Britton. Hunterdon: Rosemont—Schuh; Pittstown—Henry Race. Sussex: Waterloo—Britton. Monmouth: Freehold—Willis.

CHIONANTHUS, L.

Fringe-tree.

C. Virginica, L.

Union: "Near Port Elizabeth, a tree thirty feet high"—Pursh, *Flora N. A.* i. 7; Plainfield, escaped from cultivation—Tweedy. Atlantic: Buena Vista—C. A. Gross. Cumberland: Bridgeton—Martindale; near Vineland—J. B. Harrison; Millville, quite common—Apgar.

LIGUSTRUM, L.

Privet. Prim.

L. VULGARE, L.

Escaped from cultivation into copses and waste places; frequent. Adventive from Europe.

SYRINGA, L.

Lilac.

S. VULGARIS, L.

Sussex : Escaped from cultivation, and well established along the railroad at Andover—Britton ; and occasional elsewhere in the State. Adventive from Persia.

APOCYNACEÆ.

VINCA, L.

Periwinkle.

V. MINOR, L.

In waste places and copses. Commonly escaped from cultivation. Naturalized from Europe.

APOCYNUM, L.

Dogbane. Indian Hemp.

A. androsæmifolium, L.

Fields and borders of thickets. Ocean and Monmouth : Not rare—Knieskern. Gloucester : Quite common about Mickleton—B. Heritage ; and frequent or common in the middle counties.

A. cannabinum, L.

Warren : In a swamp on Jenny Jump Mountain near Green's Pond—Britton. Probably occurs elsewhere in the State, but the typical form is certainly rare.

Var. pubescens (R. Br.), DC.

Low grounds and borders of streams. Common throughout the State.

Var. hypericifolium (Ait.), Gray.

Salem : Banks of the Delaware River—Commons.

Var. glaberrimum, DC.

Sussex : Shores of Lake Hopatcong—Britton ; and very common on gravelly shores throughout the valley of the Delaware River.

ASCLEPIADEÆ.

ACERATES, Ell.

Green Milkweed.

A. viridiflora (Raf.), Ell.

In open places. Bergen: Closter—Austin; Carlstadt—Schrenk. Passaic: Near Pompton—Britton. Warren: Limestone bluffs below Phillipsburg, and near Blairstown—Porter; Stewartsville—Britton. Hunterdon: Near Barbertown and Kingwood—Best; High Bridge,—P. H. Murray; Holland—Merrill. Morris: Chester—Britton. Somerset: Pleasant Plains—Stowell. Mercer: Pennington—Apgar. Middlesex: Franklin Park—Stowell. Monmouth: Dry pine woods—Willis; Black's Mills—Lockwood.

ASCLEPIAS, L.

Milkweed.

A. Syriaca, L. (*A. Cornuti*, Decne.)

Fields and roadsides. Common in the middle and northern counties. Frequent in the southwestern counties. Apparently not abundant in the pine barrens.

A. exaltata (L.), Muhl. (*A. phytolaccoides*, Pursh.)

Burlington: Roadside near Moorestown—Miss Anna M. Kaighn; and frequent or occasional throughout the middle and northern counties.

A. purpurascens, L.

Salem: Elsinboro—Mrs. Mary A. Lawrence. Camden: Frequent about Camden—Martindale; and frequent or occasional in the middle and northern counties.

A. variegata, L.

Cumberland: Vineland—Mrs. Treat. Gloucester: Occasional about Mickleton—B. Heritage. Camden: Near Camden, 1863—Parker. Burlington: Burlington—Conrad; Moorestown—J. Stokes; Birmingham—Lighthipe. Atlantic: Sparingly at Hammonton—F. L. Bassett. Mercer: Princeton—Torrey. Middlesex: South Amboy—Miss C. A. Boice. Monmouth: Near Smithville—Willis. Passaic: Sparingly in Lodi and

Union townships—Woolson. Bergen: Closter—Austin. Sussex: In woods near the Delaware River, Montague township—Britton. Somerset: Near Peapack—Miss R. C. Perry.

A. quadrifolia, L.

In dry woods. Camden: Along Little Timber Creek—Martindale. Mercer: Trenton—Apgar; and frequent in the northern counties.

A. incarnata, L.

Wet grounds. Occasional in the northern counties. Passaic: Pompton, and Sussex: Waterloo—Britton. Hunterdon: Frequent about Rosemont—Best.

Var. pulchra (Ehrh.), Pers.

Swamps and low grounds. Common throughout the State.

A. obtusifolia, Michx.

In sandy soil. Sussex: Sparta and Newton—Britton. Warren: Above Phillipsburg—Porter. Bergen: Lyndhurst and Rutherford—Schuh. Essex: Franklin—Rusby. Hunterdon: Near Rosemont, rare—Best; and abundant in the middle and southern counties.

A. rubra, L.

Swamps in the southern counties. Ocean: Waretown and Barnegat—J. Stokes. Burlington: Pemberton—Lighthipe; Shamong—Parker; Burlington—Conrad; Quaker Bridge—Leggett. Camden: Griffith's Swamp—Parker. Atlantic: Batsto—Wm. Bower; Atsion—Canby; Egg Harbor—Parker; Hospitality Bridge—C. A. Gross. Gloucester: Mickleton, occasional—B. Heritage.

A. lanceolata, Walt. (*A. paupercola*, Michx.)

In sandy swamps. Ocean: Manahawken—Conrad; "salt marshes, not common"—Knieskern. Cape May:—Parker; wet pine barrens, near Anglesea—Mrs. Treat.

A. tuberosa, L. Butterfly-weed. Indian Posy.

In dry, open places. Common or frequent throughout the State.

A. verticillata, L.

Bergen: Palisades—Austin; Ramapo Mt.—Stowell. Passaic: "On the rocks at Passaic Falls"—Torrey Catalogue. Sussex:

Culver's Gap and near Hamburg—Britton. Essex: Montclair Heights—Rudkin; First Mt. near Verona—Rusby. Monmouth: Near Holmdel—Lockwood; Red Bank—Leggett; near Leedsville—Britton; Freehold—Willis. Burlington: Birmingham—Lighthipe. Camden: Kaighn's Point—Conrad. Gloucester: Glassboro—Commons; Clarksboro—Burk. Cumberland: Bridgeton—Commons.

GENTIANEÆ.

ERYTHRÆA, Rich.

Centaury.

E. RAMOSISSIMA, Pers.

Bergen: Closter, 1858—Austin; not recently collected. Fugitive from Europe.

SABBATIA, Adans.

American Centaury.

S. lanceolata (Walt.), T. & G.

Sandy swamps in the pine barrens from Ocean county southward; frequent. With four-parted corollas at Mays Landing—Peters.

S. angularis (L.), Pursh.

Cumberland: Near Sea Breeze—Commons. Atlantic: In a damp meadow, Absecon—F. L. Bassett. Cape May:—Parker. Burlington: Burlington—Martindale. Monmouth: Keyport—R. W. Brown; and frequent or occasional on hillsides, middle and northern counties.

S. stellaris, Pursh.

On salt meadows; common. Also in a fresh-water marsh at Main Road Station, Atlantic Co.—C. A. Gross.

Forma albiflora, Britt.

Atlantic City—Martindale; at Woodbridge and Brielle—Lighthipe; and commonly at Mays Landing—Peters.

S. gracilis (Michx.), Salisb.

Brackish meadows; rare. Monmouth: Near Ocean Grove—Parker; Ocean Beach—Miss Isabel Mulford; Spring Lake—

Miss Apple. Burlington: Burlington—Conrad in Herb. Acad. Nat. Sci. Phila. Cape May:—Parker; Cape May Court House—Burk.

S. dodecandra (L.), B. S. P. (*S. chloroides*, Pursh.)

Brackish meadows. Bergen: Hackensack Marshes—Leggett; Carlstadt—Otto Frank. Monmouth and Ocean: Not rare—Knieskern; Forked River—Britton. Atlantic: Banks of Mullica River near Pleasant Mills—Leggett; Absecon—F. L. Bassett; Mays Landing—Peters. Cape May:—Parker.

GENTIANA, L.

Gentian.

G. quinquefolia, L. (*G. quinqueflora*, Lam.)

In damp, open woods and clearings. Monmouth: Freehold, and Mercer: Hightstown—Willis. Union: Elizabeth—Eddy in Torrey Catalogue. Morris: moist hills, and Warren: Marble Hill—Porter. Sussex: Frequent about Sparta and Lake Grinnell—Britton.

G. crinita, Frœl. Fringed Gentian.

In low grounds. Burlington: Pemberton—Lighthipe. Monmouth: Sparingly—Willis; near Keyport—R. W. Brown; and frequent in the middle and northern counties.

G. Andrewsii, Griseb.

In low grounds. Atlantic: Absecon and Wecksville—F. L. Bassett. Burlington: Pemberton—Lighthipe; Monmouth: Shark River, not rare—Knieskern; Keyport—R. W. Brown. Gloucester: Mickleton—B. Heritage; and common in the middle and northern counties.

Forma albiflora, Britt.

Bergen: Tenafly—Dr. Milton Turnure.

G. Saponaria, L. Soapwort Gentian.

In low grounds. Bergen: Cresskill—I. H. Hall; sparingly on the Hackensack marshes—Woolson. Essex: Brookdale—Rusby. Passaic: Near Paterson—Miss S. J. Knight. Morris: Mt. Olive—Britton. Hunterdon: Rosemont, frequent—Best. Union: Plainfield—Tweedy. Mercer: Trenton—Apgar; Princeton—Peters. Monmouth: Swimming River—Britton; Shark

River, rare—Knieskern; and frequent in the southwestern counties. Atlantic: Mays Landing—Peters.

G. villosa, L. (*G. ochroleuca*, Frœl.)

Cumberland: A single specimen near Bridgeton—Dr. J. B. Potter and N. L. B., 1881.*

G. linearis, Frœl.

Morris: Budd's Lake—Porter.

G. angustifolia, Michx.

In pine-barren swamps. Ocean: Very rare—Knieskern. Burlington: In meadows and swamps in many places along Batsto and Atsion Creeks—Canby. Atlantic: Mullica River—C. E. Smith; Egg Harbor City—C. A. Gross; Hammonton—F. L. Bassett; Mays Landing, occasionally with white flowers—Peters.

OBOLARIA, L.

Pennywort.

O. Virginica, L.

Salem: Near Salem—B. Heritage. Camden: Near Haddonfield—C. E. Smith. Mercer: Asylum—Apgar; near Princeton and Lawrenceville—Willis. Hunterdon: Bloomsbury—Garber; Lambertville—Apgar; Rosemont, rare—Best. Somerset: Rocky Hill—Lighthipe. Essex: Montclair—Rusby; sparingly all along First Mt., from Milburn to Little Falls—W. M. Wolfe.

BARTONIA, Muhl.

Bartonia.

B. Virginica (L.), B. S. P. (*B. tenella*, Muhl.)

In wet ground. Frequent or occasional throughout the State.

MENYANTHES, L.

Buckbean.

M. trifoliata, L.

In swamps. Bergen: Near Closter—Austin; abundant on the Hackensack marshes—Woolson; bank of Oberpeck Creek

**G. alba*, Muhl., reported by Dr. Knighton in Willis Catalogue, from Hunterdon county, is not confirmed nor authenticated. As recently pointed out by Dr. Porter, the name of this species is *G. flavida*, Gray.

near Little Ferry—Rudkin; along the Northern Railroad—Leggett; Carlstadt—Otto Frank. Hudson: New Durham—Le Roy. Morris: Budd's Lake—Porter. Sussex:—Garber; Little Pond, on mountain south of Ogdensburg—Britton.

LIMNANTHEMUM, Gmel.

Floating Heart.

L. lacunosum (Vent.), Michx.

In ponds. Mercer: Princeton Junction—A. C. Stokes. Ocean and Monmouth: Rare—Knieskern; Point Pleasant—E. H. Day; Spring Lake—Lighthipe; and common in the southern counties.

L. aquaticum (Walt.), Britt. (*L. trachyspermum*, Michx.)

Cumberland: In a pond near Bridgeton—Apgar, 1886.

POLEMONIACEÆ.

PHLOX, L.

Phlox.

P. PANICULATA, L. Common Phlox.

Escaped from gardens to roadsides and waste places; frequent. Adventive from the West.

P. maculata, L. Wild Sweet William.

In meadows. Cape May:—Austin. Salem: Occasional near Salem—Mrs. M. A. Lawrence. Gloucester: Occasional about Mickleton—Heritage. Camden: Near Griffith's Swamp—Parker. Burlington: Burlington—Conrad; near Birmingham—Miss Willmarth; Bordentown—A. C. Stokes; Vincentown—Lighthipe. Mercer: Abundant at Trenton—Apgar; Princeton—Peters. Hunterdon: Rosemont, common—Best.

P. pilosa, L.

In fields. Gloucester: Woodbury—Canby. Burlington: Burlington—Conrad; Moorestown—Miss A. M. Kaighn. Ocean: Not common—Knieskern. Middlesex: Near New Brunswick—Lockwood. Union: Plainfield—Tweedy. Mercer: Princeton—Peters. Hunterdon: Lambertville—Apgar;

Rosemont—Best; near Hopewell—Theo. Green. Warren: Above Phillipsburg, sparingly—Porter. Morris: Chatham—Leggett. Essex: Milburn—Britton. Passaic: Near Passaic—Thurber.

P. subulata, L. Ground Pink. Moss Pink.

In sandy or rocky places. Gloucester: Occasional—B. Heritage. Camden:—Parker. Burlington: Vincentown, Ewansville and Birmingham—Lighthipe; Moorestown—J. Stokes. Mercer: Trenton—Apgar. Monmouth: Red Bank—Leggett. Middlesex: New Brunswick—Lockwood. Union: Plainfield—Tweedy. Essex: Montclair Heights—Miss Knight. Passaic: First Mt.—W. M. Wolfe; near Oakland, and on mountain east of Stonetown—Britton; Passaic Falls—Stowell; Paterson—Leggett. Hunterdon: Abundant above Milford—Porter; Rosemont—Best. Warren: Along the Delaware below Flatbrookville—Rusby. Bergen: Ramapo Mt.—Stowell.

Forma albiflora, Britt.

Hunterdon: Lambertville—Apgar.

POLEMONIUM, L.

Greek Valerian.

P. cæruleum, L. Jacob's Ladder.

Warren: In a swamp near Washington—Garber, Porter.

P. reptans, L.

Warren: Belvidere—Knighton. Mercer: Near Bordentown—Apgar. Camden: Between Camden and Haddonfield—C. E. Smith.

HYDROPHYLLACEÆ.

HYDROPHYLLUM, L.

Water-leaf.

H. Virginicum, L.

In rich woods. Monmouth: Freehold—Willis. Mercer: Trenton—G. V. Stryker; Somerset:—Stowell; near Brookville—W. S. Lee. Union: Plainfield—Tweedy. Somerset: Peapack—Miss Perry. Hudson: Weehawken—Leggett; New

Durham—Ruger; Snake Hill—Schuh; and frequent in the northern counties.

ELLISIA, L.

Ellisia.

E. Nyctelea, L.

Mercer: Banks of the Delaware near Trenton—Canby; on an island opposite Trenton—W. S. Lee; below Moore's Station—Apgar. Hunterdon: Flemington—Apgar.

ASPERIFOLIÆ.

HELIOTROPIUM, L.

Heliotrope.

H. EUROPEUM, L.

Camden: In waste places and ballast—Parker. Hudson: Ballast at Communipaw—A. Brown. Fugitive from Europe.

CYNOGLOSSUM, L.

Hound's-tongue.

C. OFFICINALE, L.

In fields and waste places. Monmouth: Freehold—Lockwood. Gloucester: Mickleton, rare—B. Heritage. Camden: —Miss Boice. Mercer: Trenton—Apgar. Somerset: Near Peapack—Miss R. C. Perry. Hunterdon: Frequent—Best. Hudson: Weehawken—Britton; and frequent in the northern counties. Naturalized from Europe.

O. Virginicum, L. Wild Comfrey.

In rocky woods. Union: Plainfield—Tweedy. Somerset: Rocky Hill—Lighthipe. Essex: First Mt.—Randall Spaulding. Hudson: Weehawken—Leggett; Hoboken—Schrenk. Bergen: Fort Lee—Ruger; Pleasant Valley—Britton; Palisades—Austin. Passaic:—E. A. Rau. Hunterdon: In woods near Locktown and Rosemont—Best.

ECHINOSPERMUM, Sw.

Stickseed.

E. LAPPULA (L.), Lehm.

Hudson: Hoboken, and in ballast at Communipaw—A. Brown. Mercer: Trenton—Apgar. Camden: In ballast—

Parker. Monmouth : Freehold—Willis. Adventive from Europe.

E. Virginianum (L.), Lehm. (*Cynoglossum Morisonii*, DC.)

In woods and copses. Monmouth : Freehold—Willis. Gloucester : Two miles west of Mullica Hill, a single plant—B. Heritage; and frequent in the northern counties.

SYMPHYTUM, L.

Comfrey.

S. OFFICINALE, L.

In waste places. Escaped from cultivation; frequent. Adventive from Europe.

LYCOPSIS, L.

Bugloss.

L. ARVENSIS, L.

Bergen :—Leggett. Camden :—Martindale; in ballast—Parker. Fugitive from Europe.

MERTENSIA, Roth.

Virginian Cowslip.

M. Virginica (L.), DC.

In low meadows. Burlington : Meadows between Bordentown and Lambertown—Herb. Acad. Phila.; banks of Crosswicks Creek, above Bordentown—Abbott. Monmouth : Waldford—Lockwood. Hunterdon : Lambertville—Apgar. Somerset : In great abundance along the Raritan River—Miss L. Veghte; New Germantown—Miss Perry.

MYOSOTIS, L.

Forget-me-not.

M. PALUSTRIS (L.), Relh. True Forget-me-not.

Occasionally escaped from cultivation. Adventive from Europe.

M. laxa, Lehm. (*M. palustris*, var. *laxa*, Gray.)

In wet places. Salem : Edges of cranberry swamps, Mannington—Mrs. M. A. Lawrence. Gloucester : Quite common about Mickleton—B. Heritage. Camden :—Martindale. Bur-

lington: Pemberton Junction—Lighthipe. Ocean and Monmouth: Not rare—Knieskern; and common in the middle and northern counties.

M. Virginica (L.), B. S. P. (*M. verna*, Nutt.) Scorpion Grass.

Dry hills. Frequent or occasional, except in the pine barrens.

M. ARVENSIS (L.), Willd.

Bergen: Closter, 1858—Austin. Atlantic: Mays Landing, 1889—Peters. Fugitive from Europe.

ONOSMODIUM, Michx.

False Gromwell.

O. Virginianum (L.), DC.

Gloucester: Sandy woods near Iona—Parker. Camden:—Martindale. Burlington: Near Birmingham—Miss Willmarth. Atlantic: Hammonton—F. L. Bassett. Monmouth: Brown's Point, Keyport, and Middlesex: South side of Chesquakes Creek—R. W. Brown. Hunterdon: Raven Rock—Best; Bull's Island—Porter; Lambertville—Apgar.

LITHOSPERMUM, L.

Gromwell. Puccoon.

L. ARVENSE, L.

In cultivated fields and waste places; frequent. Naturalized from Europe.

L. OFFICINALE, L.

In waste places. Sussex: Plentiful at the zinc mines—Austin. Hudson: Hills back of Hoboken—Ruger. Adventive from Europe.

L. canescens (Michx.), Lehm. Hoary Puccoon.

Warren: Limestone bluff above Phillipsburg, 1884, very scarce—Porter.

ECHIUUM, L.

Blue-weed.

E. VULGARE, L.

In fields and waste places; frequent. Very common and troublesome as a weed in the northern counties. Naturalized from Europe.

CONVOLVULACEÆ.

IPOMŒEA, L.

Morning Glory.

- I. COCCINEA, L. (*Quamoclit coccinea*, Moench.) Scarlet Morning Glory.

In waste places. Camden: In river dredgings and on ballast—Parker. Burlington: Occasional along roadsides near Moorestown—J. Stokes. Hudson: In ballast at Communipaw—A. Brown. Mercer: Trenton—Apgar. Adventive from the South.

- I. PURPUREA (L.), Lam. Common Morning Glory.

In waste places. Escaped from cultivation. Frequent. Fugitive from Tropical America.

- I. NIL (L.), Pursh.

In waste places. Essex: Bank of Passaic River near Belleville—Britton. Monmouth: Near Union—R. W. Brown. Camden: In ballast—Parker. Gloucester: One mile south of Swedesboro—B. Heritage. Adventive from the South.

- I. LACUNOSA, L.

Monmouth: Abundant in a field at Cliffwood, 1888—Britton. Fugitive from the South.

- I. pandurata (L.), Meyer. Wild Potato-Vine. Man-of-the-Earth.

In sandy soil. Sussex: Swartswood—Rudkin. Warren: Blairstown—Rusby; Belvidere and Delaware Water Gap, and along the Pequest near Butzville—Britton. Bergen: Closter—Austin; Rutherford—Schuh. Morris: Summit and New Providence—Leggett. Hunterdon: Frequent towards the Delaware—Best; and frequent in the middle and southern counties. The great root sometimes weighs over thirty pounds.

CONVOLVULUS, L.

Bindweed.

- C. ARVENSIS, L. Bindweed.

In cultivated fields and waste places. Frequent or occasional. Adventive from Europe.

- C. sepium, L. (*Calystegia sepium*, R. Br.) Hedge Bindweed.

Low grounds along streams, and along fences and hedges. Common throughout the State.

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Var. repens (L.), Gray. (*Var. pubescens*, Gray Manual.)

In similar situations. Frequent in the middle and northern counties.

C. spithamæus, L.

In sandy soil. Monmouth: In sandy places, common—Willis. Cumberland: Frequent about Vineland—Mrs. Treat. Somerset: Quite plentiful at one station at Peapack—Miss Emeline Apgar; Rocky Hill—Apgar. Hunterdon: Rosemont—Best; Lambertville—Apgar. Sussex: High Point—Britton.

BREWBERIA, R. Br.

Breweria.

B. Pickeringii (Torr.), Gray. (*Stylisma Pickeringii*, Gray.)

In dry, sandy pine barrens. Atlantic: Mullica River—C. E. Smith; Pleasant Mills—Canby; along Little Egg Harbor River—Parker. Burlington: Atsion and Quaker Bridge—Martindale; Batsto—Parker.

CUSCUTA, L.

Dodder.

C. EPILINUM, Weihe.

Monmouth and Ocean: Flax fields, not common—Knieskern. Fugitive from Europe. Not recently collected.

C. Cephalanthi, Engelm. (*C. tenuiflora*, Engelm.)

Burlington: Quaker Bridge—Canby, Engelmann. Ocean: Toms River—E. H. Day. On tall shrubs.

C. arvensis, Beyrich.

Bergen: Closter—Austin. Monmouth: Shark River—Forman. Atlantic: Fields, Hammonton, of recent introduction—F. L. Bassett. Salem and Cumberland: In sandy fields—Commons. Cape May:—Parker. Mercer: Near Trenton—Volk. Hunterdon: Rosemont, frequent—Best.

C. Gronovii, Willd.

In low grounds on various plants. Common throughout the State.

C. compacta, Juss.

On shrubs in swamps. Bergen: Common—Austin. Middlesex: Metuchen—Miss L. N. Estabrook. Hudson: New Durham—Schuk; Snake Hill and Bergen Point—Leggett; and frequent in the southern counties.

SOLANACEÆ.

SOLANUM, L.

Nightshade.

S. DULCAMARA, L. Bittersweet.

In waste places; frequent. Adventive from Europe.

S. NIGRUM, L. Nightshade.

Waste places; common. Naturalized from Europe.

S. Carolinense, L.

In dry soil. Hudson: Weehawken—Britton; Bergen Point—Leggett. Union: Plainfield—Tweedy. Warren: Banks of the Delaware at Phillipsburg—Porter. Hunterdon: Rosemont, rare—Best; Rush Island, Delaware River—Theo. Green. Mercer: Trenton, frequent—Miss Isabel Mulford. Burlington: Pemberton—Lighthipe. Camden:—Parker. Salem: Banks of the Delaware—Commons.

S. ROSTRATUM, Dun.

In waste places. Passaic: Sparingly about Passaic—Woolson. Atlantic: Introduced in grain at Hamonton—F. L. Bassett. Cape May: Cape May Point—Canby. Fugitive from the West.

PHYSALIS, L.

Ground Cherry.

P. Philadelphica, Lam.

In dry soil. Camden: Clementon—Britton. Burlington: Moorestown—Miss A. M. Kaighn. Essex: Irvington—W. M. Wolfe.

P. angulata, L.

Essex: Springfield and Franklin—Rusby. Camden: In ballast—Parker. Perhaps introduced from farther south.

P. pubescens, L.

In low grounds. Bergen: Closter—Austin; Carlstadt—Otto Frank. Hudson: Weehawken—Leggett. Hunterdon: In woods near Locktown—Best. Camden: Camden, and Atlantic: Egg Harbor—Martindale. Ocean: Manchester—Chickering.

P. Virginiana, Mill. (*P. viscosa*, Gray Manual.)

In dry fields. Frequent throughout the State.

NICANDRA, Adans.

Apple of Peru.

N. PHYSALOIDES (L.), Gærtn.

In waste places. Camden:—Parker. Monmouth: Ocean Grove—A. Brown. Union: Plainfield—Tweedy. Hudson: In ballast, Communipaw—A. Brown. Adventive from South America.

LYCIUM, L.

Matrimony-vine.

L. VULGARE (Ait.), Dun.

Escaped from gardens to roadsides, etc.; frequent. Adventive from Europe.

DATURA, L.

Jamestown Weed. Thorn Apple.

D. STRAMONIUM, L.

In waste places; common. Naturalized from Asia.

D. TATULA, L.

In waste places; frequent. Naturalized from Tropical America.

HYOSCYAMUS, L.

Henbane.

H. NIGER, L.

In waste places. Warren:—Knighton. Hudson: In ballast at Communipaw—A. Brown. Camden: Ballast—Parker. Adventive from Europe.

NICOTIANA, L.

Tobacco.

N. RUSTICA, L. Wild Tobacco.

Union: In a field at Evona, 1883—Tweedy.

PETUNIA, L.

Petunia.

P. VIOLACEA, Hook.

In waste places, escaping from gardens. Gloucester: Mullica Hill—Britton. Camden:—Martindale. Middlesex: South Amboy—Britton. Fugitive from South America.

SCROPHULARINEÆ.

VERBASCUM, L.

Mullein.

V. THAPSUS, L. Common Mullein.

In old fields and along roadsides, etc.; common. Naturalized from Europe.

V. LYCHNITIS, L. White Mullein.

In fields and waste places. Atlantic: Indian Neck—Apgar. Gloucester: One mile north of Swedesboro, where it has been established for twenty-five years without spreading much—B. Heritage. Camden: Pavonia—Parker. Mercer: Trenton—Lockwood. Hunterdon: Stockton and Bull's Island—Best. Warren: At several points along the Delaware from Phillipsburg southward—Porter; near the Water Gap—S. W. Knipe; Belvidere—Miss Campbell. Naturalized from Europe.

A hybrid between this species and the preceding is found by Professor Porter at Phillipsburg.

V. BLATTARIA, L.

Waste places and cultivated fields; frequent. Naturalized from Europe.

LINARIA, Juss.

Toad-flax.

L. Canadensis (L.), Dumont.

In sandy soil. Very common in the southern and middle counties; frequent in Bergen and Passaic, but apparently uncommon in Warren and Sussex, and not reported from Hunterdon.

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L. VULGARIS, Mill. Butter-and-Eggs. Wild Snapdragon. Ranstead Weed. Rancid.

In old fields and along roadsides, etc.; very common. Naturalized from Europe.

L. CYMBALARIA, Mill.

Hunterdon: Escaping from gardens, Stockton and Bull's Island—Best. Camden: In ballast—Parker. Fugitive from Europe.

SCROPHULARIA, L.

Figwort.

S. nodosa, L., var. *Marylandica* (L.), Gray.

In open woods and clearings. Camden: Frequent about Camden—Martindale. Ocean and Monmouth: Along fences, rather rare—Knieskern; and frequent in the middle and northern counties.

PAWLOWNIA, Sieb. & Zucc.

Pawlonia.

P. TOMENTOSA (Thunb.), Britt. (*P. imperialis*, Sieb. & Zucc.)

Middlesex: Escaped into woods and well established at Rocky Hill, flowering in May, 1887—Lighthipe. A fugitive from Japan.

CHELONE, L.

Turtle-head. Snake-head.

C. glabra, L.

In wet places. Frequent throughout the State; most abundant northward.

PENTSTEMON, Mitch.

Beard-tongue.

P. hirsutus (L.), Willd. (*P. pubescens*, Soland.)

In fields. Camden: Kirkwood—Bassett. Gloucester: Mickleton, rare—B. Heritage. Mercer: Southeast of Trenton—Richard M. Abbott; Lawrence—Apgar; Princeton—Torrey. Burlington: Pemberton, scarce—Lighthipe. Monmouth: Freehold—Willis. Middlesex: West of Perth Amboy—Lighthipe. Union: Plainfield—Tweedy. Hudson: Bergen Point—Leggett; and frequent in the northern counties.

P. lævigatus, Soland., var. *Digitalis* (Nutt.), Gray. (*P. Digitalis*, Nutt.)

Warren: In meadows near the Delaware River below Van Campen's Creek, and above the Water Gap, abundant—Rusby and Britton. Hunterdon: Two miles northwest of Rosemont—Best. Sussex: In a field near Lake Grinnell, and Passaic: Grain field near West Milford—Britton. Essex: Franklin—Rusby; Montclair—Randall Spaulding. Mercer: Princeton—Peters. Middlesex: Near Cranbury—W. W. Swett.

MIMULUS, L.

Monkey-flower.

M. ringens, L.

Camden: Frequent at Camden—Martindale; Haddonfield—Parker; Atco—H. A. Green. Burlington: Near Pemberton—Lighthipe. Ocean and Monmouth: Rare—Knieskern. Atlantic: Frequent about Mays Landing—Peters. Gloucester: Mickleton, not common—B. Heritage; and common in swamps, middle and northern counties.

M. alatus, Ait.

Low grounds. Camden:—Parker. Burlington: Medford—E. H. Kilmer. Ocean and Monmouth: Rare—Knieskern. Mercer: Crosswicks Creek—Apgar; Trenton—Peters. Hunterdon: Locktown—Best; Baptisttown—H. Roberson. Sussex: Ogdensburg—Rusby. Hudson: Bergen Point—Leggett. Essex: Bloomfield—Rusby.

HERPESTIS, Gærtn. f.

Herpestis.

H. Caroliniana (Walt.), B. S. P. (*H. amplexicaulis*, Pursh.)

"New Jersey:"—Gray Manual. Not recently collected in the State.

GRATIOLA, L.

Gratiola.

G. Virginiana, L.

In wet places. Common throughout the State.

G. sphærocarpa, Ell.

Cape May:—Austin; Ocean View Station—Commons.

G. aurea, Muhl.

In wet, sandy places. Morris: Shore of Lake Hopatcong—Rusby; and of Green Pond—Britton: Warren: Shore of the Delaware River, Belvidere—Britton; Phillipsburg—Porter. Hunterdon: Along the Delaware—Best; and frequent in the middle and southern counties on soils of the Yellow Drift.

G. pilosa, Michx.

Camden: Low ground near Camden—Canby, C. E. Smith. Cape May:—Parker.

ILYSANTHES, Raf.

Ilysanthes.

I. gratioloides (L.), Benth.

Wet places. Frequent throughout the State.

MICRANTHEMUM, Michx.

Micranthemum.

M. Nuttallii, Gray.

Camden: Tidal mud, banks of the Delaware at Camden—Parker. Burlington: Barrack Creek near Burlington—Conrad.

LIMOSELLA, L.

Mudwort.

L. aquatica, L., *var. tenuifolia* (Nutt.), Hoffm.

In wet places. Passaic: In the Passaic River at Passaic and Woodside—Leggett. Bergen: Hackensack River—Austin. Monmouth: Long Branch—Torrey Catalogue; North Spring Lake and Bay Head—Lighthipe. Camden:—Martindale.

VERONICA, L.

Speedwell.

V. Virginica, L. Culver's-root.

In low grounds. Monmouth:—Willis. Middlesex: Near Chesquakes—R. W. Brown; South Amboy—Miss C. A. Boice. Mercer: Trenton—Apgar; and frequent in the middle and northern counties.

V. Anagallis, L., var. latifolia, Britt.*

In streams. Bergen:—Austin; Mahwah—Britton; along the Northern Railroad—Leggett. Hudson: West end of the Erie tunnel—Schrenk. Essex: Franklin—Rusby. Sussex: Near Stanhope and Waterloo—Britton. Warren: Along the Delaware at Mauunka Chunk and Marble Hill—Porter; below Flatbrookville—Britton. Hunterdon: Along the Delaware—Best.

V. Americana, Schwein. American Brooklime.

In streams. Ocean: New Egypt—Knieskern. Mercer: Trenton—Apgar; and frequent in the middle and northern counties.

V. scutellata, L.

In swamps. Mercer: Princeton Junction—Peters. Somerset: Black Swamp—Tweedy. Hunterdon: Rosemont, frequent—Best; and frequent or occasional in swamps, northern parts of the State.

V. officinalis, L.

In woods, and also in open places. Rather common in the northern and middle counties, and frequent or occasional in the southern parts of the State.

V. serpyllifolia, L.

Fields and roadsides. Common throughout the State. Appearing as if introduced.

V. peregrina, L.

Waste and cultivated grounds. Common throughout the State.

V. ARVENSIS, L.

Roadsides and cultivated grounds. Occasionally in woods; common. Naturalized from Europe.

V. AGRESTIS, L.

Monmouth: Long Branch—Peters. Hudson: In ballast at Communipaw—A. Brown. Camden: In ballast—Parker. Fugitive from Europe.

*The typical form is not definitely known from the State.

V. BYZANTINA (Sibth. & Sm.), B. S. P. (*V. Buxbaumii*, Ten.)

Middlesex: Growing as a weed in a garden at New Brunswick—Mrs. Geo. H. Cook. Hudson: In ballast at Communipaw—Britton. Camden: In ballast—Parker. Adventive from Europe.

V. HEDERÆFOLIA, L.

Hudson: "Among the shady rocks on the hills about Hoboken"—Torrey Catalogue, 1819; Weehawken—Ruger; in ballast at Communipaw—A. Brown. Camden: In ballast—Parker. Naturalized from Europe.*

BUCHNERA, L.

Buchnera.

B. Americana, L.

Burlington: Burlington—S. W. Conrad in Torrey Herb.

GERARDIA, L.

Gerardia.

G. purpurea, L.

Low grounds; frequent throughout the State; most abundant in the southern and middle counties.

Forma albiflora, Britt.

Atlantic: Atlantic City—Parker; Mays Landing—Peters; Hammonton—Bassett. Middlesex: Woodbridge—Lighthipe. Bergen: Carlstadt and Rutherford—Schuh. Monmouth: Deal—Miss R. C. Perry.

Var. paupercula, Gray.

In bogs. Hunterdon: Along shore of the Delaware—Porter; Rosemont, frequent—Best. Warren: White Pond—Porter. Sussex: Near Lake Grinnell—Britton.

G. maritima, Raf.

In salt meadows; frequent.

G. tenuifolia, Vahl.

Dry, open woods. Frequent or common throughout the State.

Forma albiflora, Britt.

Middlesex: South Amboy—Leggett; and Hunterdon: Rosemont—Schuh.

**Veronica spicata*, L., is admitted into the Willis Catalogue, with the statement "escaped from gardens, north." I have not seen it from the State.

Specimens which do not turn black in drying are occasional. A form with filiform leaves and pubescent corolla, too closely approaching *G. setacea*, Walt., of the South, occurs in the pine barrens—Torrey; Quaker Bridge—Leggett.

G. flava, L. False Foxglove.

In open woods. Frequent throughout the State.

G. Virginica (L.), B. S. P. (*G. quercifolia*, Pursh.)

Sussex: Base of High Point—Britton; Stockholm—Rusby; near Andover—Northrop. Hunterdon: Byram—Best. Morris: Morristown—Leggett. Bergen: Closter—Austin; Palisades—Britton; and frequent on the Yellow Drift soils in the middle and southern counties.

G. pedicularia, L.

In open, sandy or rocky woods. Frequent or occasional in the northern counties; common or frequent southward, on the Yellow Drift.

G. auriculata, Michx.

Middlesex: In a field at Woodbridge, 1885—Lighthipe. Fugitive from the West.

CASTILLEJA, L. f.

Painted-cup.

C. coccinea, (L.), Spreng.

In low meadows. Gloucester: Near Hurffville—A. Robinson. Camden: White Horse—Parker. Monmouth and Mercer: Sparingly—Willis; abundant at Ewing—Apgar. Union: Feltville—Tweedy. Somerset: Somerville—L. Schumacher; and frequent in the northern counties.

SCHWALBEA, L.

Chaff-seed.

S. Americana, L.

Atlantic: Abundant near Egg Harbor City—Parker; Hamonton—Bassett. Burlington:—Conrad.

PEDICULARIS, L.

Louse-wort.

P. Canadensis, L.

Copses and banks. Frequent throughout the State; most abundant northward.

P. lanceolata, Michx.

In swamps. Burlington: Medford—J. Stokes; Bordentown—E. Volk. Mercer: Common at Trenton—Apgar. Middlesex: Metuchen—Miss L. N. Estabrook; Sand Hills—Light-hipe. Monmouth: Freehold—Willis. Union: Plainfield—Tweedy; and frequent in the northern counties.

MELAMPYRUM, L.

Cow-wheat.

M. lineare, Lam. (*M. Americanum*, Michx.)

In open woods. Common throughout the State.

OROBANCHACEÆ.

APHYLLON, Mitch.

Naked Broom-rape.

A. uniflorum (L.), Gray.

Parasitic on the roots of golden-rods, and perhaps also of other herbs. Frequent throughout the State. Most abundant in the northern counties.

OROBANCHE, L.

Broom-rape.

O. MINOR, L.

Parasitic on the roots of clover. Camden: Near Camden—Parker; in ballast and at Haddonfield—Martindale. Gloucester: Woodbury—Mrs. W. McGeorge. Ocean: Toms River—A. B. Clute. Mercer: Princeton—Peters. Adventive from Europe.

Var. *FLAVESCENS*, Benth. (*O. Carota*, Desm.)

Parasitic on the wild carrot. Camden: Haddonfield—Martindale. Fugitive from Europe.

CONOPHOLIS, Wallr.

Squaw-root. Cancer-root.

C. Americana (L. f.), Wallr.

Parasitic on the roots of trees. Camden:—Parker. Essex: Franklin—Rusby. Bergen: Woodridge—Schuh. Hunterdon: Rosemont, frequent—Best. Evidently not generally common.

EPIPHEGUS, Nutt.

Beech-drops.

E. Virginiana (L.), Bart.

Parasitic on the roots of beech trees. Burlington: Pember-ton—Lighthipe. Gloucester: About Mickleton—B. Heritage; and common in the middle and northern counties.

LENTIBULARIÆ.

UTRICULARIA, L.

Bladderwort.

U. inflata, Walt.

In ponds, middle and southern counties. Monmouth: Long Branch—Willis; Spring Lake—Lighthipe. Union: Near Plainfield—Tweedy. Burlington: Taunton—Miss Anna M. Kaighn. Camden: Longacoming, rare—C. E. Smith. Atlantic: Egg Harbor City—Parker; Hammonton—Martindale. Gloucester: Woodbury—Parker. Cumberland: Vineland—Mrs. Treat.

U. vulgaris, L.

In ditches and slow streams. Camden: Ditches near Cooper's Creek—Burk; and frequent in the middle and northern counties.

U. clandestina, Nutt.

In bogs in the southern parts of the State. Monmouth:—Willis; Tracys—O. E. Pearce. Burlington: Waterford—Martindale; Taunton—J. Stokes; near Shamong—Parker; Atsion—Canby. Camden: Longacoming—C. E. Smith; Atco—H. A. Green. Cumberland: Vineland—Mrs. Treat. Atlantic: Mays Landing—B. Heritage.

U. intermedia, Hayne.

In bogs. Sussex: Near Ogdensburg—Britton. Morris: Budd's Lake—Porter. Bergen: Hackensack Swamps—Leggett. Hudson: New Durham—Schuh. Ocean: Toms River—Lighthipe. Camden: Near Camden—Parker.

U. resupinata, B. D. Greene.

Cape May: Near Sea Isle City, in mill-pond on the mainland, 1887—Burk.

U. fibrosa, Walt. (*U. striata*, Le Conte.)

In swamps on the Yellow Drift. Gloucester: Malaga and Franklinville—Parker. Atlantic: Hammonton—J. Stokes; Mays Landing—Peters; Egg Harbor City—Redfield. Camden:—Martindale. Salem: Elmer—Parker. Burlington: Quaker Bridge—Leggett; Brown's Mills—J. Stokes; Atsion meadows—H. A. Green. Ocean: Manchester—Chickering. Monmouth: Upper Squankum—Willis.

U. gibba, L.

In bogs. Bergen: Closter—Austin; along the Passaic near Woodside—Leggett. Monmouth: Freehold—O. E. Pearce; Bay Head—Lighthipe.

U. purpurea, Walt.

In ponds in the pine barrens; frequent.

U. cornuta, Michx.

Sandy borders of swamps in the southern counties. Burlington: New Lisbon—Lighthipe; and common in the pine barrens.

U. subulata, L.

In wet sand. Gloucester: Near Woodbury—C. E. Smith. Burlington: Between New Lisbon and Pemberton—Lighthipe; and frequent in the pine barrens.

U. cleistogama (Gray), Britt. (*U. subulata*, var. *cleistogama*, Gray.)

Burlington: Wet ground along Atsion River below Atsion, 1881—Prof. J. A. Allen. Ocean: Forked River, 1889—Britton. Reported also from the pine barrens in Gray's Manual, p. 320, collected by J. A. Paine, Jr.

BIGNONIACEÆ.

CATALPA, Juss.

Indian Bean. *Catalpa*.

C. bignonioides, Walt.

Mercer: Banks of Crosswicks Creek, "where it must be native, as it figures in a deed for land bearing date of 1684, as Indian Bean Tree, which is certainly before these trees were brought from the South for shade and ornamental purposes"—C. C. Abbott. Burlington: Along Rancocas Creek, Pemberton

and Birmingham, certainly spontaneous; also along roadsides, New Lisbon and Juliustown—Miss Willmarth. Hunterdon: Along the Delaware—Best. Warren: Along the Delaware—Porter. Elsewhere commonly escaped from cultivation.

TECOMA, Juss.

Trumpet Creeper.

T. radicans (L.), Juss.

Cape May: In swamps—Martindale. Cumberland: Abundant in swampy thickets at Haleyville—Britton. Salem: Common along roadsides on fence-posts and through the woods, probably indigenous—Mrs. M. A. Lawrence; and commonly escaped from cultivation in the middle counties.

PEDALINEÆ.

MARTYNIA, L.

Unicorn-plant.

M. PROBOSCIDEA, Glox.

Monmouth: Abundant near the light-house on Sandy Hook, 1856—Lockwood; noticed also in 1887—Britton. Camden: In ballast—Martindale. Adventive from the West.

ACANTHACEÆ.

RUELLIA, L.

Ruellia.

R. ciliosa, Pursh, var. hybrida (Pursh), Gray.

Cape May: Cape May Court House, abundant on the border of a pasture for fifty yards, 1886—Burk.

DIANTHERA, L.

D. Americana, L.

Mercer: In a pond near Trenton, 1880—L. Schumacher.

N

VERBENACEÆ.

PHRYMA, L.

Lopseed.

P. Leptostachya, L.

In woods and copses. Frequent throughout the State; most abundant northward.

LIPPIA, L.

L. LANCEOLATA, Michx.

Camden: In waste ground, Federal street wharf—Parker. Adventive from the South.

VERBENA, L.

Verbena. Vervain.

V. angustifolia, Michx.

In dry fields and roadsides. Bergen: Closter—Austin. Passaic: Wynokie and Midvale—Britton; Passaic Falls—Merriam. Essex: Montclair—W. M. Wolfe. Hunterdon: Near Sergeantsville—Theo. Green; Rosemont, frequent—Best. Union: Plainfield—Tweedy. Hudson: Hoboken—Torrey Catalogue. Somerset: Peapack—Miss Perry; and frequent in the middle and southern counties.

V. hastata, L.

Low grounds. Common throughout the State.

V. urticæfolia, L.

Fields and low grounds. Common throughout the State.*

V. STRICTA, Vent.

Warren: In an abandoned field above Phillipsburg, 1882—Porter. Fugitive from the West.

V. OFFICINALIS, L.

Roadsides and waste places. Camden: Roadsides and in ballast—Parker. Mercer: Roadsides, frequent—Willis. Hudson: In ballast at Communipaw—A. Brown. Adventive from Europe.

*A hybrid between this species and *V. hastata* was collected near Riegelsville, in a meadow near the Delaware River—Britton.

LABIATÆ.

COLLINSONIA, L.

Rich-weed. Horse-balm.

C. Canadensis, L.

In rich woods. Ocean: Along Crosswicks Creek near New Egypt—Britton. Gloucester: Along Raccoon Creek—B. Heritage. Burlington: Vincentown—Lighthipe; and frequent in the middle and northern counties.

MENTHA, L.

Mint.

M. ROTUNDIFOLIA, L. Round-leaved Mint.

Hudson: Near Hudson Station—Leggett. Essex: Near Bloomfield—W. M. Wolfe. Cape May: Commons. Camden: In ballast—Martindale. Adventive from Europe.

M. SYLVESTRIS, L.

Camden: White Horse—Burk. Salem: Meadow near Woodstown—Burk. Monmouth: Grove opposite Sea Bright—Leggett. Hunterdon: Bull's Island—Best. Warren: Kent's Furnace, Phillipsburg—Porter. Adventive from Europe.

Var. ALOPECUROIDES (Hull), Baker.

Hunterdon: Milford—Porter; near Lambertville—Apgar. Adventive from Europe.

M. VIRIDIS, L. Spearmint.

In low grounds and waste places. Common throughout the State. Naturalized from Europe.

M. PIPERITA, L. Peppermint.

Low grounds, especially along brooks. Common throughout the State. Naturalized from Europe.

M. AQUATICA, L. Water-mint.

Camden: In wet ballast—Parker. Hunterdon: Rosemont—Best. Adventive from Europe.

Var. CRISPA (L.), Benth.

Bergen: Pamrapo, and Monmouth: Holmdel—Leggett. Adventive from Europe.

M. SATIVA, L. Whorled Mint.

Warren: Banks of the Delaware River, Phillipsburg, and near Carpentersville—Porter. Hunterdon: Bull's Island, abundant—Porter. Mercer: Trenton, and near Bordentown—Apgar. Bergen: Closter—Austin. Essex: Near Belleville—Britton. Camden: In ballast—Parker.* Gloucester: Berkeley—B. Heritage. Adventive from Europe.

M. ARVENSIS, L. Corn Mint.

In waste and cultivated grounds; frequent. Adventive from Europe.

M. Canadensis, L. Wild Mint.

Salem: Shore of the Delaware, Salem Co., frequent, also at Woodstown—Commons. Camden:—Parker; and common in low grounds in the middle and northern counties.

Var. borealis (Michx.), Wood. (*Var. glabrata*, Benth.?)

Warren: Shores of the Delaware River—Porter. Hunterdon: Ridge's Island—Schuh.

LYCOPUS, L.

Water Horehound.

L. Virginicus, L.

In wet places. Frequent throughout the State.

L. sinuatus, Ell. (*L. Europæus*, L., *var. sinuatus*, Gray.)

In low grounds. Common throughout the State.

L. sessilifolius, Gray. (*L. Europæus*, L., *var. sessilifolius*, Gray.)

Salem: Borders of a pond near Pennsgrrove—Commons. Burlington: Batsto—Martindale; Atsion—Canby. Atlantic: Along Mullica River near Green Bank—Bassett. Ocean: Toms River—Parker; Forked River—Britton.

L. rubellus, Mœnch.

Cape May:—Commons. Camden: Near Winslow—Martindale.

L. EUROPEUS, L.

Salem: Well established about Salem—Commons. Camden: In ballast—Parker. Adventive from Europe.

* The *M. rubra* of the Preliminary Catalogue belongs here.

CUNILA, L.

Dittany.

C. Mariana, L.

In dry soil. Salem: Swede's Bridge—E. E. Hackett. Cumberland: Bridgeton—Britton. Gloucester: Occasional near Mickleton—B. Heritage. Monmouth: Near Keyport—R. W. Brown. Mercer: Frequent at Trenton; and frequent throughout the middle and northern counties.

PYCNANTHEMUM, Michx.

Mountain-mint.

P. aristatum, Michx.

Dry soil in the pine barrens. "From New Jersey southward"—Gray. Ocean: "Not rare"—Knieskern; Waretown—E. H. Day. Apparently very uncommon.

P. incanum (L.), Michx.

In dry soil. Atlantic: Quaker Bridge—Parker; Hammon-ton—Bassett. Gloucester: Two miles northwest of Mickle-ton—B. Heritage. Cumberland: Bridgeton—Britton. Camden: Near Merchantville—J. Stokes. Union: Plainfield—Tweedy. Mercer: Trenton—A. C. Stokes; and frequent in rocky places, middle and northern counties.

P. clinopodioides, T. & G.

In rocky woods. Sussex: Near Branchville, and near High Point—Britton. Hunterdon: Milltown—Best. Passaic: Pompton—Britton. Bergen: Palisades—Austin.

P. Torreyi, Benth.

Bergen: Closter—Austin. Monmouth: Freehold—Willis. Salem:—Commons. Atlantic: Frequent about Elwood—Peters.

P. muticum (Michx.), Pers.

In low grounds. Atlantic: Absecon—Bassett. Monmouth: Farmingdale—Britton. Burlington: Medford—E. H. Kilmer. Hudson: Weehawken—Torrey Catalogue; New Durham and Bergen Point—Leggett. Essex: Frequent—Rusby. Bergen: Closter—Austin; frequent at Rutherford—Schub. Warren: Marble Hill, above Phillipsburg—Porter. Hunterdon: Near Sergeantsville and Rosemont, frequent—Best.

P. Virginicum (L.), B. S. P. (*P. lanceolatum*, Pursh.)

In dry or moist soil. Frequent in the northern and middle counties. Occasional southward.

P. flexuosum (Walt.), B. S. P. (*P. linifolium*, Pursh.)

In rocky woods. Somerset: Rocky Hill—Lighthipe; Peapack—Miss R. C. Perry. Essex: Orange Mts.—Miss Isabel Mulford; and frequent in the northern counties.

ORIGANUM, L.

Wild Marjoram.

O. VULGARE, L.

Roadsides and waste places. Hudson: Hoboken—Austin; Weehawken—Leggett. Warren:—Knighton. Sussex: Vernon—Britton. Camden:—Martindale. Adventive from Europe.

THYMUS, L.

Thyme.

T. SERPYLLUM, L.

Morris: Roadsides—Austin; Mendham—Rankin; one mile north of Morristown—E. E. Butler. Sussex: Very abundant about the outlet of Morris Pond—Britton. Warren:—Knighton. Naturalized from Europe.

HYSSOPUS, L.

Hyssop.

H. OFFICINALIS, L.

Bergen: In a pasture lot, Carlstadt—Schuh. Fugitive from Europe.

HEDEOMA, Pers.

American Pennyroyal.

H. pulegioides (L.), Pers.

In dry fields and woods. Common throughout the State.

CALAMINTHA, Moench.

Basil.

C. Clinopodium, Benth.

In dry woods. Camden:—Martindale; Atco, occasional—Green. Burlington: Moorestown—J. Stokes. Ocean and Monmouth: Rather rare—Knieskern. Mercer: Princeton—Peters; and frequent in the northern counties.

MELISSA, L.

Balm.

M. OFFICINALIS, L.

Escaped from gardens to waste places. Bergen: Alpine—Schuh. Hudson: Weehawken—Ruger. Bergen Point—Leggett. Mercer: Hightstown—Willis. Camden: In ballast—Martindale. Hunterdon: Rosemont, frequent—Best. Adventive from Europe.

SALVIA, L.

Sage.

S. lyrata, L.

In sandy soil. Middlesex: South Amboy and Chesquakes Creek—Britton. Mercer: Abundant at Trenton—E. Volk, Apgar; and frequent southward on the Yellow Drift.

S. PRATENSIS, L.

Atlantic: Mays Landing, 1889—Peters. Fugitive from Europe.

MONARDA, L.

Horse-mint.

M. didyma, L. Oswego Tea.

Low grounds. Bergen:—Austin; West Rutherford—Schuh. Warren: Marble Hill—Porter; Van Campen's Creek—Britton. Hunterdon: Near Rosemont, rare—Best.*

M. fistulosa, L. Wild Bergamot.

In dry soil. Monmouth: Near Keyport—R. W. Brown. Mercer: Pennington—Apgar. Somerset: Peapack—Miss R. C. Perry. Essex: Franklin—Rusby. Hunterdon: Near Byram, scarce; Rosemont, frequent—Best. Morris:—Austin. Warren: Marble Hill—Porter. Bergen: Carlstadt—Schuh.

Var. rubra, Gray.

Hunterdon: Near Frenchtown—Schuh.

Var. mollis (L.), Benth.

Sussex: Pochuck Mt., west of McAfee—Britton.

M. punctata, L.

In sandy fields. Middlesex: South Amboy—Leggett. Mercer: Trenton—E. Volk; and common southward, on the Yellow Drift.

*Also recorded as from Monmouth and Ocean counties by Dr. Knieskern.

LOPHANTHUS, Benth.

Giant Hyssop.

L. nepetoides (L.), Benth.

Monmouth: Freehold—Willis. Mercer: Trenton, abundant—Apgar; Princeton—Peters. Hunterdon: Frequent—Best. Union: Plainfield—Tweedy. Hudson: Weehawken and Hoboken—Austin; Little Snake Hill—Leggett. Essex: Montclair—W. M. Wolfe. Bergen: Base of the Palisades—Leggett.

L. scrophulariæfolius (Willd.), Benth.

Camden: Banks of the Delaware—Parker. Monmouth: Freehold—Willis; and frequent in the middle and northern counties.

NEPETA, L.

Catnip.

N. CATARIA, L.

In waste places; common. Adventive from Europe.

N. HEDERACEA (L.), B. S. P. Ground Ivy. Gill.

In waste places, even in woods; common. Naturalized from Europe.

SCUTELLARIA, L.

Skullcap.

S. pilosa, L.

Monmouth and Mercer: Frequent—Willis; Keyport—R. W. Brown. Hunterdon: Common—Best; and common in the southern counties.

Var. ovalifolia (Pers.), Benth.

“New Jersey to Virginia”—Gray. Not seen by me from the State.

S. integrifolia, L.

In dry woods. Frequent throughout the State. Most abundant southward.

S. nervosa, Pursh.

Hunterdon: One mile west of Rocktown—Theo. Green; Goat Hill, near Lambertville—Schuh.

S. galericulata, L.

In wet places. Camden: Cooper's Creek—Conrad. Atlantic: Frequent—Peters. Gloucester: Mickleton, rather rare—B. Heritage; and frequent in the middle and northern counties.

S. lateriflora, L.

In wet, shaded places. Frequent throughout the State, except in the pine barrens.

BRUNELLA, L.

Heal-all.

B. vulgaris, L.

Woods and fields. Common throughout the State.

Forma albiflora (Bogenhard), Britt.

Middlesex: Woodbridge—Lighthipe.

PHYSOSTEGIA, Benth.

Obedient Plant.

P. VIRGINIANA (L.), Benth.

Escaped from gardens to waste places. Union: Plainfield—Tweedy. Middlesex: South Amboy—A. H. Van Cleve. Hunterdon: Grover—Best. Sussex: Andover—Britton. Adventive from the West.

MARRUBIUM, L.

Horehound.

M. VULGARE, L.

Occasional in waste places. Adventive from Europe.

STACHYS, L.

Hedge-nettle.

S. palustris, L.

Essex: Newark—Leggett. Camden: In ballast—Parker. Gloucester: In meadows near Mickleton—Heritage.

S. aspera, Michx. (*S. palustris, L., var. aspera, Gray.*)

Low grounds; frequent throughout the State.

S. cordata, Ridd. (*S. palustris, L., var. cordata, Gray.*)

Camden: Banks of the Delaware below Camden—Martindale. Hunterdon: Rosemont—Schuh.

S. hyssopifolia, Michx.

In low grounds. Bergen : Closter—Austin. Essex : Along the Passaic River—Rusby. Union : Plainfield—Tweedy. Middlesex : Monmouth Junction—E. Volk. Burlington : Pemberton—Miss H. M. Willmarth ; Medford—E. H. Kilmer. Camden :—Canby.

GALEOPSIS, L.

Hemp-nettle.

G. TETRAHIT, L.

Warren :—Knighton. Hunterdon : Frenchtown—Schuh. Hudson : In ballast at Communipaw—A. Brown. Camden : In ballast—Parker. Fugitive from Europe.

G. LADANUM, L.

Monmouth and Ocean : Near dwellings, rare—Knieskern. Hudson : In ballast at Communipaw—Martindale. Fugitive from Europe.

LEONURUS, L.

Motherwort.

L. CARDIACA, L.

In waste places ; common. Naturalized from Europe.

LAMIUM, L.

Dead-nettle.

L. AMPLEXICAULE, L. Henbit.

In waste and cultivated grounds ; frequent. Naturalized from Europe.

L. MACULATUM, L.

Sussex : Escaped from gardens to roadside at Vernon, and Warren : On Scott's Mt., near Montana—Britton. Fugitive from Europe.

L. ALBUM, L.

Camden : Kaighn's Point—Burk. Mercer : In a waste field near Trenton—W. S. Lee. Fugitive from Europe.

TRICHOSTEMA, L.

Blue Curls.

T. dichotomum, L. Bastard Pennyroyal.

In dry fields. Common throughout the State.

T. lineare, Nutt.

In sandy fields on the Yellow Drift. Mercer: Lawrence Station—Peters. Camden: Sparingly near Camden—Parker; Griffith's Swamp—C. E. Smith. Gloucester: Malaga, abundant—Parker. Burlington: Near Quaker Bridge—M. Carey Lea. Monmouth and Ocean: Not rare—Knieskern.

ISANTHUS, Michx.

False Pennyroyal.

I. brachiatus (L.), B. S. P. (*I. cœruleus*, Michx.)

Monmouth: Freehold, not rare—Willis. Mercer: White's Island, in Delaware River above Trenton—Apgar. Hunterdon: Along the Delaware at Tumble—Porter; Raven Rock—Best. Warren: Kent's Furnace, Phillipsburg—Porter. Bergen:—Austin.

TEUCRIUM, L.

Germander.

T. Canadense, L.

Low grounds. Frequent or occasional throughout the State.

PLANTAGINEÆ.**PLANTAGO**, L.

Plantain.

P. MAJOR, L.

Waste grounds; frequent. Naturalized from Europe.

Var. minima (DC.), Decne.

In salt meadows; frequent.

P. Rugelii, Decne.

In waste places. Common throughout the State.

P. decipiens, Barn. (*P. maritima*, L., *var. juncoides*, Gray.)

In salt marshes and sea-beaches; frequent. Also in a swamp on the Palisades between Guttenberg and Bull's Ferry—Rudkin.

P. LANCEOLATA, L. Rib-grass.

In fields and waste places; common. Naturalized from Europe.

P. Virginica, L.

In sandy fields. Hunterdon: Cliffs above Milford—Porter; Rosemont, frequent—Best. Union: Plainfield—Tweedy. Passaic: Paterson—Leggett. Essex: Franklin—Rusby; and common in the middle and southern counties.

P. elongata, Pursh. (*P. pusilla*, Nutt.)

In sandy places. Ocean and Monmouth: Not rare—Knieskern; Keyport—Lockwood. Camden: Near Haddonfield—Diffenbaugh. Cape May:—Parker.

P. HETEROPHYLLA, Nutt.

“South Jersey”—Austin in Willis Catalogue. Camden: In ballast—Parker. Probably introduced from the South.

P. PATAGONICA, Jacq., var. ARISTATA (Michx.), Gray.

Cumberland: Roadside near Millville—S. W. Knipe. Bergen: Rutherford—Schuh. Atlantic: Richland and Weymouth, and Monmouth: Asbury Park—Peters. Gloucester: Near Newfield—Ellis. Mercer: Trenton—Appar. Adventive from the West.

SERIES 3.—APETALÆ.

ILLECEBRACEÆ.

ANYCHIA, Rich.

Forked Chickweed.

A. Canadensis (L.), B. S. P. (*A. dichotoma*, Michx., var. *capillacea*, Torr.)

Frequent in shaded places, middle and northern counties. Also on dry sand in Atlantic county—Peters.

A. dichotoma, Michx.

Apparently common throughout the State, except in the pine barrens.

SCLERANTHUS, L.

Knawel.

S. ANNUUS, L.

In abandoned fields and waste places; common. Naturalized from Europe.

AMARANTACEÆ.

AMARANTUS, L.

Amaranth.

A. HYPOCHONDRIACUS, L.

In waste places. Hunterdon and Warren :—Knighton ; Rosemont—Best. Hudson : Communipaw—A. Brown. Fugitive from Tropical America.

A. PANICULATUS, L.

In waste and cultivated grounds. Camden :—Parker. Mercer : Princeton—Peters. Bergen : Roadside, Fort Lee—Miss Knight. Sussex : In a peach orchard near Andover, abundant—Britton. Hunterdon : Frequent at Rosemont—Schuh. Warren : Phillipsburg—Porter. Adventive from Tropical America.

A. RETROFLEXUS, L.

Camden : In ballast and in river dredgings—Parker. Monmouth : Sandy Hook—Britton. Adventive from Tropical America.

A. CHLOROSTACHYS, Willd.

Waste places ; common. Naturalized from Tropical America.

A. ALBUS, L.

In waste places ; common. Naturalized from Tropical America.

A. SPINOSUS, L.

In waste places. Camden : Waste ground and in ballast—Parker. Ocean and Monmouth : Rare—Knieskern. Hudson : In ballast at Communipaw—A. Brown. Warren : Abundant in the streets of Phillipsburg—Porter. Hunterdon : Bull's Island, frequent—Best. Gloucester : Waste ground at Mickleton—B. Heritage. Naturalized from Tropical America.

A. pumilus, Raf.

In sandy sea-beaches ; frequent.

ACNIDA, L.

Water Hemp.

A. cannabina, L.

In salt and brackish marshes along the coasts. Extends up the Delaware River to Trenton—Martindale.

CHENOPODIACEÆ.

CHENOPODIUM, L.

Figweed.

C. POLYSPERMUM, L.

Hunterdon: Lambertville—Schuh. Hudson: In ballast, Communipaw—A. Brown. Camden: In ballast—Parker. Adventive from Europe.

C. ALBUM, L. Lamb's Quarters.

Waste and cultivated grounds; common. Naturalized from Europe.

C. LEPTOPHYLLUM, Nutt.

Atlantic: Absecon Beach, 1860—D. C. Eaton; Atlantic City—E. Diffenbaugh. Monmouth: Sandy Hook—Britton. Adventive from the West.

C. BOSCIANUM, Moq.

Hunterdon: Above Milford—Porter, 1883. Adventive from further west.

C. URBICUM, L.

In waste grounds. Bergen: Closter—Austin. Essex: Newark—Leggett. Camden: In waste places and ballast—Parker. Salem: Banks of the Delaware—Commons. Adventive from Europe.

C. MURALE, L.

In waste grounds. Monmouth: Red Bank—Leggett. Burlington: Pemberton—Miss Willmarth. Camden: In ballast—Parker. Adventive from Europe.

C. HYBRIDUM, L.

In waste places; frequent. Naturalized from Europe.

C. BOTRYS, L. Jerusalem Oak.

Waste places. Frequent, especially along the canals and railroads. Naturalized from Europe.

C. AMBROSIOIDES, L. Mexican Tea.

Waste places; common. Naturalized from Tropical America.

Var. ANTHELMINTICUM (L.), Gray.

Waste places; frequent. Naturalized from Tropical America.

C. GLAUCUM, L.

In waste places. Hudson: Hoboken—Austin; Weehawken—Britton; in ballast at Communipaw—A. Brown; Hudson City—Ruger. Warren: Phillipsburg—Porter. Camden:—Parker. Atlantic: Atlantic City—B. Heritage. Adventive from Europe.

C. CAPITATUM (L.), S. Wats. (*Blitum capitatum*, L.)

Essex: In a garden at Orange—Leggett, Lighthipe, 1888; Milburn—Randall Spaulding. Fugitive from Europe.

C. rubrum, L. (*Blitum maritimum*, Nutt.)

In salt meadows. Ocean: Rare—Knieskern. Not seen by me from the State.

ROUBIEVA, Moq.

Roubieva.

R. MULTIFIDA (L.), Moq. (*Chenopodium multifidum*, L.)

Camden: In waste grounds about the city—Burk; in ballast—Parker. Fugitive from Europe.

ATRIPLEX, L.

Orache.

A. patula, L., var. hastata (L.), Gray.

Warren: Banks of the Delaware, Philipsburg—Porter; and common along the coasts and in the river valleys, middle and southern counties, extending up the Hudson beyond the State line.*

Var. littoralis (L.), Gray.

Middlesex: New Brunswick—Mrs. Geo. H. Cook. Camden:—Martindale. Hudson: Communipaw—Leggett. Hunterdon: Rare—Best.

A. arenaria, Nutt.

Sea-beaches; common.

SALICORNIA, L.**S. herbacea, L.**

Salt meadows; common.

*The type is recorded by Austin from Closter, but there is doubt of its occurrence in America.

S. mucronata, Bigel.

Salt meadows; frequent.

S. ambigua, Michx.

In wet sands of the sea-shore, and in salt meadows; frequent.

SUÆDA, Forsk.

Sea Blite.

S. linearis (Ell.), Torr., var. *salsa* (Michx.), B. S. P. (*S. maritima*, Gray.)

In salt meadows; common.

SALSOLA, L.

Saltwort.

S. Kali, L.

Sea-beaches; common. Extends up the Delaware to Camden—Martindale. Found growing in beach sand used at the High Bridge Foundry, Hunterdon Co.—P. H. Murray.

PHYTOLACCACEÆ.

PHYTOLACCA, L.

Pokeberry. Scke.

P. decandra, L.

In low grounds. Frequent throughout the State; apparently most abundant near the coast.

POLYGONACEÆ.

POLYGONUM, L.

Knotweed.

P. ORIENTALE, L. Prince's Feather.

In waste places; frequent. Very abundant on river dredgings at Camden—Martindale. Adventive from India.

P. Careyi, Olney.

In sandy swamps. Bergen: Margin of a swamp between Tenafly and Cresskill, 1858—Austin. Monmouth: Ocean Grove—Parker. Ocean: Manchester—Parker; Toms River—

Porter. Burlington: Pemberton—Miss Willmarth. Atlantic:
Egg Harbor City—Parker; Hammonton—Bassett. Camden:
Winslow—Parker. Gloucester: Near Mickleton—B. Heritage.

P. Pennsylvanicum, L.

Low grounds. Common throughout the State.

P. incarnatum, Ell.

In low grounds. Bergen: Rutherford—Schuh. Sussex:
Lake Grinnell—Britton. Camden: Banks of the Delaware—
Martindale.

P. PERISCARIA, L. Lady's Thumb.

Waste places; common. Naturalized from Europe.

P. HYDROPIPER, L. Water-pepper.

Waste places; common. Naturalized from Europe.

P. acre, H. B. K.

In swamps. Common throughout the State.

P. hydropiperoides, Michx.

In swamps. Frequent in the middle and southern counties;
apparently less abundant northward.

P. amphibium, L.

Sussex: Abundant in Morris Pond—Britton; in a railroad
ditch near Lake Grinnell—Porter. Hunterdon:—Best.

P. Hartwrightii, Gray.

Sussex: In a swamp along L. & H. R. R. R., between Lake
Grinnell and Woodruff's Gap—Porter & Britton, 1887.

P. emersum (Michx.), Britt. (*P. amphibium, L., var. terrestre, Willd.*)

Borders of swamps. Bergen: Closter—Austin. Sussex:
Morris Pond and near Woodruff's Gap—Britton. Warren:
Shore of the Delaware below Phillipsburg—Porter. Hunter-
don: Bull's Island—Best. Morris: Along the Black River at
Chester—Britton. Mercer: Meadows below Trenton—E. Volk.
Gloucester: In meadows near Mickleton, becoming a nuisance
—B. Heritage.

P. Virginianum, L.

In damp woods. Gloucester: Two miles south of Mullica
Hill—B. Heritage; and common in the middle and northern
counties.

P. aviculare, L. Door-weed.

In house-yards, paths and waste places. Very common throughout the State.

P. erectum, L. (*P. aviculare*, L., var. *erectum*, Gray.)

In similar situations. Common throughout the State.

P. maritimum, L.

Sandy sea-beaches; frequent. Certainly perennial at South Amboy—Britton.

P. ramosissimum, Michx.

In salt meadows. Cape May: Near the light-house, and Atlantic: Atlantic City—Commons. Monmouth: Sandy Hook—Britton. Middlesex: Woodbridge—Lighthipe.

P. tenue, Michx.

In dry soil. Atlantic: Landisville—C. A. Gross. Gloucester: Mullica Hill—Britton; Mickleton, occasional—B. Heritage. Camden:—Martindale. Monmouth: Keyport—R. W. Brown; and frequent on hills, middle and northern counties.

P. arifolium, L. Scratch Grass.

Low grounds. Common throughout the State.

P. sagittatum, L. Tear-thumb.

Low grounds. Common throughout the State.

P. CONVULVULUS, L. Black Bindweed.

Waste and cultivated grounds; frequent. Naturalized from Europe.

P. cilinode, Michx.

"Mountains, north"—Willis. Warren: Shore of the Delaware below Phillipsburg—Porter. Hunterdon: Bull's Island—Best.

P. dumetorum, L., var. *scandens* (L.), Gray.

In low grounds. Rather common throughout the State.

P. articulatum, L. Jointweed.

In sandy sea-beaches, and on the sands of the Yellow Drift. Middlesex: South Amboy—Britton. Camden: Berlin—Martindale. Gloucester: Woodbury—Mrs. W. McGeorge; and common in the pine barrens.

FAGOPYRUM, Gærtn.

Buckwheat.

F. ESCULENTUM, Mœuch.

In waste and cultivated fields; frequent. Fugitive from Europe.

RUMEX, L.

Dock.

R. Britanicus, L. (*R. orbiculatus*, Gray.)

In swamps. Bergen: Closter—Austin; Carlstadt—Leggett. Hudson: Secaucus Swamp—Leggett. Essex: Franklin—Rusby. Morris: Budd's Lake—Porter. Sussex: Franklin Furnace and Sparta—Britton; Swartswood Lake—Porter. Hunterdon: Near Rosemont—Best.

R. altissimus, Wood. (*R. Britanica*, Gray.)

In low grounds. Bergen: Closter—Austin. Hudson: Secaucus—Leggett.

R. verticillatus, L.

Hudson: Little Snake Hill—Leggett; New Durham—Ruger. Passaic: Paterson—Leggett. Warren: Great Meadows—Britton. Salem:—B. Heritage.

R. CRISPUS, L. Curled Dock.

In waste places and cultivated fields; common. Naturalized from Europe.

R. OBTUSIFOLIUS, L. Bitter Dock.

In waste places, even in woods; common. Naturalized from Europe.

R. SANGUINEUS, L.

Morris: Millington—L. Schumacher. Camden: In ballast—Parker. Fugitive from Europe.

R. maritimus, L. Golden Dock.

Moumouth and Ocean: Salt marshes, not rare—Knieskern. Hudson: In ballast at Hoboken—A. Brown. Camden: In ballast—Parker. I have seen no indigenous specimens.

R. ACETOSELLA, L. Sour Grass. Sheep Sorrel.

In fields and waste places; very common. Naturalized from Europe.

PODOSTEMACEÆ.

PODOSTEMON, Michx.

River-weed.

P. ceratophyllus, Michx.

On the bottoms of shallow streams. Passaic: In the Passaic River—Austin. Warren: Delaware River above Phillipsburg—Porter; abundant in the Delaware above the Water Gap—S. W. Knipe.

ARISTOLOCHIACEÆ.

ASARUM, L.

Wild Ginger.

A. *Canadense*, L.

In rich woods. Camden:—Parker. Burlington: Pember-ton—Lighthipe; Bordentown, scarce—A. C. Stokes. Monmouth: Freehold—Willis; and frequent in the middle and northern counties.

ARISTOLOCHIA, L.

Virginia Snakeroot.

A. *Serpentaria*, L.

In rich woods. Camden:—C. E. Smith. Gloucester: One mile east of Mullica Hill, very rare—B. Heritage. Monmouth: Keyport and Holmdel—R. W. Brown. Mercer: Hightstown—Willis. Hunterdon: Near Sergeantsville, scarce—Best. Morris: Chatham—Leggett; near Berkshire Valley—Britton. Essex: Milburn—Rusby. Hudson: Weehawken—Leggett. Bergen: Closter—Austin. Passaic: East of Greenwood Lake—Britton.

PIPERACEÆ.

SAURURUS, L.

Lizard's Tail.

S. *cernuus*, L.

In swamps and streams. Sussex: Swartswood Lake, and along Paulin's Kill—Porter. Passaic: In the Pequannock at Pompton—Britton. Hunterdon: Frequent—Best. Bergen: Closter—Leggett. Morris: Port Oram—Britton; and common in the middle and southern counties.

LAURINEÆ.

SASSAFRAS, Nees.

Sassafras.

S. officinale, Nees.

Woods and copses. Common throughout the State.

LINDERA, Thunb.

Spice Bush.

L. Benzoin (L.), Meisn.

Low woods. Common or frequent throughout the State, except in the pine barrens. Atlantic: Mays Landing—Peters.

THYMELÆACEÆ.

DIRCA, L.

Leatherwood. Moosewood.

D. palustris, L.

In low woods. Bergen: Closter and Palisades—Austin. Morris: Along Black River—Miss Emeline Apgar. Warren: Sparingly on limestone bluffs below Phillipsburg—Porter. Mercer: On the Assaupink three miles from Trenton, station now destroyed—C. C. Abbott. Salem: Near Salem—B. Heritage.

LORANTHACEÆ.

PHORADENDRON, Nutt.

American Mistletoe.

P. flavescens (Pursh), Nutt.

Parasitic on the black gum tree, or occasionally on the red maple. Monmouth: Four miles north from Keyport—Lockwood. Ocean: Between Manchester and Lakewood—Bower. Mercer: Hightstown—Willis. Burlington: Medford and New Lisbon—Britton. Atlantic: Hammonton—Bassett; Landisville—C. A. Gross; Mays Landing, forming fruit by September 2d—Peters. Camden: Atco and Kaighn's Swamp—Martindale. Gloucester: Woodbury and Mickleton—Mrs. W. McGeorge. Salem: Near Woodstown—E. E. Hackett. Cumberland: Near Vineland—Martindale; Bridgeton—Dr. J. B. Potter.

SANTALACEÆ.

COMANDRA, Nutt.

Bastard Toad-flax.

C. umbellata (L.), Nutt.

In dry soil, generally growing as a root parasite on blueberry or huckleberry bushes. Common throughout the State.

EUPHORBIACEÆ.

EUPHORBIA, L.

Spurge.

E. polygonifolia, L.

On sandy sea-beaches; common. Extends up the Delaware River to Camden—Martindale.

E. maculata, L.

Fields and roadsides. Very common throughout the State.

E. HUMISTRATA, Engelm.

Atlantic: Brigantine Beach—C. E. Smith. Fugitive from the Southwest.

E. hypericifolia, L.

Fields and roadsides. Common throughout the State.

E. MARGINATA, Pursh.

Escaping from door-yards to roadsides in the southern counties. Adventive from the West.

E. corollata, L.

Hunterdon: Common along the Delaware—Best. Somerset: Rocky Hill—Lighthipe. Mercer: Princeton—Peters; Trenton—Volk. Middlesex: Near South Amboy—Britton; and frequent southward, on soils of the Yellow Drift.

E. Ipecacuanhæ, L.

Middlesex: Near Metuchen—Miss Estabrook; near Woodbridge—Lighthipe. Mercer: Near Princeton—Peters; Lawrence Station—E. Volk; and common southward on soils of the Yellow Drift, with leaves varying from linear to orbicular, and in color from dark green to a vivid red.

E. CYPARISSIAS, L.

Roadsides and waste places. Escaped from gardens; frequent.
Naturalized from Europe.

E. PEPLUS, L.

Camden: In ballast—Parker. Mercer: In waste places at
Trenton—Stowell. Hudson: In ballast at Communipaw—A.
Brown. Warren:—Knighton. Adventive from Europe.

E. LATHYRIS, L. Caper Spurge.

Cape May:—Commons. Monmouth: Mohinkson Hill, near
Keyport—Lockwood. Morris: Near Nolan's Point, Lake
Hopatcong—Britton. Hunterdon: Rosemont, rare—Best. Ad-
ventive from Europe.

CROTON, L.

Croton.

C. capitatus, Michx.

"Pine barrens of New Jersey—Knieskern," Gray's Manual,
p. 438. Not recently collected.

CROTONOPSIS, Michx.

Crotonopsis.

C. linearis, Michx.

In dry sand. Ocean: Near Manchester and Southwark—
Knieskern. Atlantic: Pleasant Mills—Bassett. Gloucester:
Near Woodbury—Parker; on the road from Camden to Glass-
boro—C. E. Smith.

ACALYPHA, L.

Acalypha.

A. Virginica, L.

In fields and open woods. Common throughout the State.

Var. gracilens (Gray), Muell.

Essex: Franklin—Rusby. Hunterdon: Frequent—Best;
and frequent in the middle and southern counties.

A. Caroliniana, Walt.

Mercer: Princeton—Torrey; near Trenton—Lanning. Ber-
gen: Closter—Austin.

URTICACEÆ.

ULMUS, L.

Elm.

U. fulva, Michx. Slippery Elm.

In low woods. Camden: Clementon—H. A. Green. Monmouth and Mercer: Not common—Willis. Union: Plainfield—Tweedy. Hunterdon: Frequent—Best. Hudson: Hoboken—Leggett; and frequent in the northern counties.

U. Americana, L. Common Elm.

In low grounds, particularly along rivers. Salem: Near Salem—Dr. J. B. Potter. Gloucester: Quite common along streams near Mickleton—B. Heritage. Camden: Occasional near Atco—H. A. Green; along the Delaware—Parker. Monmouth and Ocean: Rather rare—Knieskern; and common in the middle and northern counties.

U. racemosa, Thomas. Corky Elm.

Sussex: Along L. & H. R. R. R. above Woodruff's Gap, a single tree observed—Porter & Britton, 1887.

CELTIS, L.

Hackberry. Bastard Elm. Juniper Tree.

C. occidentalis, L.

Bergen: Closter, scarce—Austin; Weehawken—Leggett; Palisades—Britton. Passaic: Midvale and Ringwood—Britton. Sussex: Newton—Hollick; Franklin Furnace—Britton. Hunterdon: Milford—Porter; and frequent in low grounds, middle and southern counties, though not very abundant in the pine barrens.

Var. pumila (Pursh), Gray.

Essex: Montclair, 1879—Rusby. Hunterdon: Rosemont, rare—Best. Gloucester: Bank of Mantua Creek, half a mile west of Berkley—B. Heritage.

HUMULUS, L.

Hop.

H. LUPULUS, L.

In thickets. Warren: Belvidere, apparently native—Miss M. E. Campbell; near Washington—Parker. Hunterdon: In

damp places, rare—Best. Bergen: Closter—Austin; along the Passaic River—Schuh. Hudson: Hoboken—Ruger. Morris: Chatham—Leggett. Sussex: Franklin Furnace—Britton. Very doubtfully native to the State. Adventive from the Northwest, or from Europe.

CANNABIS, L.

Hemp.

C. SATIVA, L.

In waste places; frequent. Escaped from cultivation. Adventive from Europe.

MORUS, L.

Mulberry.

M. rubra, L. Red Mulberry.

Camden: Winslow—H. A. Green. Burlington: Pemberton, rare—Miss Willmarth. Monmouth: Keyport—R. W. Brown; and frequent in woods, middle and northern counties.

M. ALBA, L. White Mulberry.

Escaped from cultivation. Camden:—Parker. Cumberland: Bridgeton—Britton. Salem: Occasional along roadsides—Willis. Monmouth:—R. W. Brown. Mercer: Near Trenton—Lockwood. Hudson: Hoboken—Leggett. Warren: Phillipsburg—Porter. Hunterdon: Frequent—Best. Adventive from Europe.

URTICA, L.

Nettle.

U. gracilis, Ait.

In open places. Burlington: Bordentown—Peters. Mercer: Trenton—A. C. Stokes. Essex:—Rusby; and frequent in the northern counties. Very abundant in Sussex and Warren.

U. dioica, L.

Camden: In waste grounds and on banks of the Delaware—Parker. Salem: Sparingly about Salem—Mrs. M. A. Lawrence. Mercer: Trenton—A. C. Stokes. Hunterdon: Bull's Island—Schuh; Baptisttown—H. Roberson; Frequent—Best. Warren:—Knighton. Hudson: Bergen Hill—Ruger. Essex:—Rusby. Gloucester: Mullica Hill—B. Heritage. Adventive from Europe.

U. URENS, L.

Hunterdon: Banks of the Delaware below Bull's Island—Schub. Hudson: In ballast at Communipaw—A. Brown. Camden: In ballast—Parker. Adventive from Europe.

LAPORTEA, Gaudich.

Wood Nettle.

L. Canadensis (L.), Gaudich.

In woods. Camden: Along the Delaware River above the city—Martindale. Gloucester: Mullica Hill—B. Heritage; and frequent in woods, middle and northern counties.

PILEA, Lindl.

Richweed. Clearweed.

P. pumila (L.), Gray.

Damp woods. Frequent or common in most sections of the State. Not very abundant in the pine barrens.

BOEHMERIA, Jacq.

False Nettle.

B. cylindrica (L.), Willd.

In wet woods and swamps. Gloucester: Frequent in a few localities near Mickleton—B. Heritage; and common or frequent in the middle and northern counties.

Var. scabra, Porter.

Morris: Budd's Lake—Porter.

PARIETARIA, L.

Pellitory.

P. Pennsylvanica, Muhl.

In shaded places. Mercer:—Torrey. Hunterdon: Sandstone cliffs above Milford—Porter. Monmouth: Sandy Hook, 1870—Ruger. Bergen: Closter—Austin. Warren: On rocks below Carpentersville—Porter.

PLATANACEÆ.

PLATANUS, L.

Buttonwood.

P. occidentalis, L.

Low grounds and along streams. Common throughout the State, though not abundant in the pine barrens.

JUGLANDEÆ.

HICORIA, Raf.

Hickory.

H. ovata (Mill.), Britt. (*Carya alba*, Nutt.) Shag-bark. Shell-bark.

In low woods and meadows. Common, except in the pine barrens.

H. alba (L.), Britt. (*Carya tomentosa*, Nutt.) Moker-nut.

In woods. Common throughout the State.

H. microcarpa (Nutt.), Britt. (*Carya microcarpa*, Nutt.)

In woods. Bergen: Closter—Austin; Fort Lee—Britton. Cumberland: In low woods near Sea Breeze—Commons.

H. glabra (Mill.), Britt. (*Carya porcina*, Nutt.) Pig-nut.

In low woods. Cumberland: Bridgeton—J. B. Potter. Camden: Frequent about Camden—Martindale; and common in the middle and northern counties.

H. minima (Marsh.), Britt. (*Carya amara*, Nutt.) Bitter-nut.

In low woods. Rather common throughout the State.

JUGLANS, L.

Walnut.

J. nigra, L. Black Walnut.

In low woods. Frequent, except in the pine barrens.

J. cinerea, L. Butternut.

Ocean and Monmouth: Banks of streams, rare—Knieskern. Mercer: On hills near Princeton—Willis; and frequent in woods in the northern counties.

A tree with leaves having from three to five leaflets only was found by Rev. E. E. Butler, near Morristown, 1886.

MYRICACEÆ.

MYRICA, L.

Wax-myrtle. Bayberry.

M. Gale, L. Sweet Gale.

Border of ponds. Sussex: Shore of Lake Marcia, near High Point—Britton. Warren: Sunfish Pond, Blockade Mt.—S. W. Knipe. Camden and Gloucester:—C. E. Smith.

M. cerifera, L. Bayberry.

In low grounds. Sussex: Swartswood Lake—Porter; in a stream two miles west of Sparta and in the Sparta meadows—Britton. Warren: Lake on Blockade Mt.—S. W. Knipe; White Pond—Porter; and common in the eastern and southern parts of the State.

M. asplenifolia (L.), Banks. (*Comptonia asplenifolia*, Ait.) Sweet-fern.

Dry soil. Common throughout the State. Especially abundant on the Kittatinny Mountains.

CUPULIFERÆ.

BETULA, L.

Birch.

B. lenta, L. Black Birch. Sweet Birch.

Gloucester: Plentiful in a ravine east of Mullica Hill—B. Heritage; and common in woods, middle and northern counties.

B. lutea, Michx. f. Yellow Birch.

In woods, northern counties. Bergen: Closter and Palisades—Austin. Passaic: West side of Bearfort Mt.—Britton. Morris: Lake Hopatcong—R. Palm; Brook Valley and near Hurdstown—Britton. Essex:—Rusby. Sussex: Near Morris Pond—Northrop.

B. populifolia, Marsh. White Birch.

In swampy soil. Common throughout most of the State, but locally rare in the southern counties and along the Delaware.

CORYLUS, L.

Hazel-nut.

C. Americana, Walt. Common Hazel.

In thickets and along fence-rows. Common or frequent throughout the State.

C. rostrata, Ait.

Copses. Mercer:—Torrey. Union: Plainfield—Tweedy. Hunterdon: Rosemont, frequent—Best; Bloomsbury—Garber. Morris: New Providence and Summit—Leggett; Green Pond Mountain—Britton. Warren: Phillipsburg—Porter. Sussex: Near Cherry Ridge—Britton. Passaic: West Side of Bearfort Mt.—Merrill.

QUERCUS, L.

Oak.

Q. alba, L. White Oak.

Woods. Common throughout the State. Not abundant in the pine barrens. A form with peculiarly lengthened leaves at Bridgeton—J. B. Potter.*

Q. minor (Marsh.), Sargent. (*Q. obtusiloba*, Michx.) Post Oak.

In sandy or rocky woods. Bergen:—Austin. Hudson: On Little Snake Hill—Britton. Warren: A clump on the Musconetcong near Bloomsbury—Porter; and common in the middle and southern counties.

Q. bicolor, Willd. Swamp White Oak.

In low grounds. Burlington: Marlton—H. A. Green; and common in the middle and northern counties.

Q. prinus, L. (Includes *var. monticola*, Michx.) Chestnut Oak.

In woods. Common throughout the State, except in the pine barrens. A form with leaves lobed more than half-way to the midrib, at Elwood—Martindale.

Q. Muhlenbergii, Engelm. (*Q. prinus*, L., *var. acuminata*, Michx.) Chestnut Oak.

Warren: On limestone bluffs below Phillipsburg—Porter. Sussex: On limestone at Sussex Mills and Sterling Hill, also

* *Quercus macrocarpa*, the Mossy-cup Oak, was admitted into the Preliminary Catalogue on the testimony of a leaf-specimen collected by I. C. Martindale at Quaker Bridge, and determined by Dr. Geo. Engelmann.

B. nigra, L. River Birch. Red Birch.

Along rivers and lakes. Common throughout the State. Especially abundant along the Delaware and all its tributary streams.

B. pumila, L.

Swamps in the northern counties. Sussex: Newton—Garber; common on Germany Flats and along the Walkkill between Ogdensburg and Sparta—Britton. Morris: Budd's Lake—Porter. Warren: Swamp on Jenny Jump Mt., near Green's Pond—Britton.

ALNUS, L.

Alder.

A. incana (L.), Willd.

Low grounds in the northern counties. Morris: Budd's Lake—Porter. Sussex: Near Andover and at Culver's Gap—Britton.

A. serrulata, Willd. Candle Alder.

In low grounds. Common throughout the State.

A. GLUTINOSA, Willd.

Essex: A single tree, some thirty feet high, along the canal at Belleville—Rusby. Fugitive from Asia.

CARPINUS, L.

Hornbeam. Iron-wood.

C. Caroliniana, Walt. (*C. Americana*, Michx.)

River banks and in copses. Common throughout the State, except in the pine barrens.

OSTRYA, Scop.

Hop-Hornbeam.

O. Virginiana (Mill.), Willd.

Along river banks, etc. Bergen: Closter—Austin; Palisades—Leggett. Sussex: Swartswood Lake—Britton. Warren: River hills from Phillipsburg southward—Porter. Hunterdon: Along the Delaware—Best. Somerset: Along the Raritan at Roxiticus—Britton.

at Lake Grinnell—Britton. Cumberland: On sandy soil near Bridgeton—Dr. J. B. Potter. Gloucester: Mullica Hill—Heritage.

Var. humilis (Marsh.), Britt. (*Q. prinoides*, Willd.) Chinquapin Oak.
Sweet Acorns.

Sussex: Waterloo, Sussex Mills, Andover, Walpack Centre and Swartswood—Britton. Morris: Near Budd's Lake—Porter. Essex: Orange—Leggett. Hunterdon: Rare—Best; and common in the middle and southern counties on the sandy soils of the Yellow Drift.

Q. Phellos, L. Willow Oak. Pin Oak.

Mercer:—Willis. Monmouth: Keyport—Lockwood; near Long Branch—Leggett. Middlesex: South River—Prof. Cook; New Brunswick—Miss Cook; and common southward.

Var. pumila, Pursh.

Salem:—Commons. Ocean:—Wm. Bower.*

Q. Rudkini, Britton. (*Q. Phellos*, L., × *Q. nigra*, L.)

Monmouth: Near Middletown—Torrey, 1833; in low woods, Cliffwood, and near Keyport—Rudkin, 1881. Salem: Low woods near the Delaware, a single tree—Commons, 1882. Burlington: Birmingham—Miss Willmarth.†

Q. nigra, L. Black Jack.

In sandy woods. Middlesex: South Amboy—Britton; between New Brunswick and Little Washington—Miss Vail. Mercer:—Torrey; and common southward on the Yellow Drift.

Q. heterophylla, Michx. f. Bartram's Oak.

Cumberland: In low woods near Fairton—Commons. Salem: Four miles from Pennsgrove, a form with deeply-lobed leaves—Commons. Gloucester: Near Woodbury—Parker; near Mickleton—Burk. Camden: Haddonfield—E. D. Cope. Burlington: Mount Holly—Martindale. Ocean: New Egypt—Britton.

* I am assured by Mr. Bower that this is a distinct form, never reaching the height of a man.

† *Q. imbricaria*, Michx., admitted into the Preliminary Catalogue, is not definitely known from the State. Specimens so called prove to be *Q. Rudkini*.

Q. ilicifolia, Wang. Scrub Oak.

Common throughout the State. Extremely abundant on the Kittatinny and Green Pond mountain ranges, and in the sandy soils of the middle and southern counties.

Q. cuneata, Wang. (*Q. falcata*, Michx.) Spanish Oak.

In woods. Monmouth: Keyport—Lockwood. Ocean: Point Pleasant, rather rare—Knieskern. Burlington: Moorestown—J. Stokes; Pemberton—Miss Willmarth; and frequent in the southern counties.

Q. coccinea, Wang. Scarlet Oak.

Woods. Common throughout the State.

Q. tinctoria, Bartr. Black Oak.

Woods. Frequent throughout the State.

Q. rubra, L. Red Oak.

Woods. Atlantic: Landisville, scarce—C. A. Gross. Camden: Occasional near Camden—Martindale; Atco, rare—H. A. Green. Gloucester: Occasional—Martindale; and common in the middle and northern counties.

Q. palustris, Du Roi.

In low woods. Occasional or frequent in the southern counties. Abundant northward.

CASTANEA, Gærtn.

Chestnut.

C. sativa, Mill., *var. Americana* (Michx.), Sargent. Chestnut.

In woods. Cumberland: Bridgeton, rare—J. B. Potter. Salem: Frequent—Potter. Atlantic: Mays Landing, not frequent—Peters; and common in the middle and northern counties; rare in the pine barrens.

C. pumila, Mill. Chinquapin.

Mercer: Near Trenton—Apgar; in woods between White Horse and Mercerville—W. S. Lee. Gloucester: Abundant at Clarksboro—Burk. Salem: Near Jericho—J. B. Potter.

FAGUS, L.

Beech.

F. ferruginea, Ait.

In rich woods. Burlington: Pemberton—Lighthipe. Monmouth: Banks of Squan and Shark Rivers, rare—Kuieskern. Camden: Abundant about Camden—Martindale. Gloucester: Quite frequent—B. Heritage; and common in the middle and northern counties.

SALICINEÆ.

SALIX, L.

Willow.

S. candida, Willd. Hoary Willow.

In bogs, northern counties. Morris: Budd's Lake—Porter. Sussex: Near Lake Grinnell—Britton. Hudson: New Durham—Leggett. Warren: Swamp on Jenny Jump Mt., near Green's Pond—Britton.

S. tristis, Ait. Dwarf Gray Willow.

Bergen:—Austin. Hunterdon: Common—Best. Middlesex: South Amboy—Leggett; Morgan's Station—Britton. Camden:—Parker. Gloucester:—C. E. Smith. Cumberland: Near Bridgeton—Britton. Salem: Low grounds east of Salem Creek—Common. Gloucester: Two miles northwest of Mickleton—B. Heritage.

S. humilis, Muhl. Low Willow.

In dry fields. Frequent throughout the State.

S. discolor, Muhl. Common Swamp Willow.

Low grounds. Common throughout the State.

S. sericea, Marsh. Silky Willow.

Low grounds. Apparently common throughout the State.

S. petiolaris, Smith.

Warren:—Knighton; Marble Hill—Porter. Morris: Boonton—Britton. Hudson: New Durham—Leggett. Camden: Kaighn's Point—Martindale.

P

S. VIMINALIS, L. Basket Osier.

Warren:—Knighton. Bergen: Near Carlstadt, completely escaped from cultivation and established—Schuh. Adventive from Europe.

S. PURPUREA, L. Purple Willow.

Middlesex: Low grounds near South Amboy, escaped from cultivation—Miss Knight. Fugitive from Europe.

S. cordata, Muhl.

Low grounds. Frequent throughout the State.

Var. angustata (Pursh), Anders.

Hunterdon: Near High Bridge—Britton. Essex: Bloomfield—Rusby.

S. rostrata, Richards. (*S. lucida*, Wahl., *var. occidentalis*, Gray.)

In dry soil. Warren:—Porter; near Carpentersville—Traill Green. Sussex: Waterloo—Britton. Morris: Near Budd's Lake—Porter. Bergen: Palisades—Austin. Essex: Verona—Rusby.

S. lucida, Muhl. Shining Willow.

Low grounds. Sussex: Andover—Garber; Swartswood Lake—Porter; frequent about Sparta—Britton.* Morris: Budd's Lake—Porter. Essex: Verona—Rusby.

S. nigra, Marsh. Black Willow.

Along streams and ponds. Passaic: Greenwood Lake—Britton; and common in the middle and southern counties.

S. FRAGILIS, L. Brittle Willow.

Sparingly escaped from cultivation. Salem:—Commons. Camden:—Parker. Hunterdon: Along the Delaware River below Bull's Island—Schuh. Warren: Delaware Water Gap—Garber. Passaic: Little Falls—Rusby. Bergen: Frequent about Rutherford—Schuh. Adventive from Europe.

S. ALBA, L. White Willow.

Common along streams throughout the State; escaped from cultivation. Naturalized from Europe.

* In Sussex county this willow holds its fertile catkins until late in September.—N. L. B.

S. longifolia, Muhl. Long-leaved Willow.

Gravelly shores of the Delaware River. Sussex:—Britton, Warren:—Porter, Garber. Hunterdon:—Best. Camden:—Parker. Gloucester:—Martindale.

S. myrtilloides, L.

Morris: Budd's Lake—Porter.

POPULUS, L.

Aspen. Poplar.

P. tremuloides, Michx. Aspen.

In woods. Common throughout the State; most abundant in the northern counties.

P. grandidentata, Michx. Large-toothed Aspen.

Camden: Atco, occasional—H. A. Green. Burlington: Near Moorestown—Martindale. Monmouth: Holmdel—Britton; and frequent in the middle and northern counties.

P. heterophylla, L. Swamp Poplar.

In wet woods. Bergen: Carlstadt—Leggett; one mile north-east of Woodridge—Schuh. Hudson: Weehawken—Leggett. Cumberland: Fortescue Beach—Commons.

P. monilifera, Ait. (Includes *P. angulata*, Ait.) Cottonwood.

Warren: Along the Delaware River at several points—Porter.

P. balsamifera, L., *var. candicans* (Ait.), Gray. Balm of Gilead.

Sussex: Along the Delaware River below Port Jervis—Britton. Hunterdon: Holland Station—Porter; and frequently escaped from cultivation.

P. NIGRA, L. (*P. Hudsonica*, Michx.?)

Hudson: "Hoboken, on the road to Weehawk"—Torrey Herb. Warren: Island in the Delaware above Phillipsburg—Porter. Salem: Banks of the Delaware—Commons. Adventive from Europe.

P. ALBA, L. White Poplar. Abele.

Frequently spontaneous by suckers, and troublesome in fields. Adventive from Europe.*

**Populus dilatata*, L., the Lombardy poplar, is frequently planted, and sometimes spontaneous in the manner of this species.

EMPETRACEÆ.

COREMA, Don.

Broom Crowberry.

C. Conradii, Torr.

Burlington: "Pemberton Mills, about twelve miles from Burlington"—Conrad in Torrey Herb. Ocean: "Cedar Bridge, nine miles due north of Quaker Bridge nearest the western tavern, about one hundred yards east of the tavern, in the sand"—Rafinesque in Torrey Herb. (both these localities now probably destroyed); on the "Plains," about two miles west of Cedar Bridge, in very great abundance, discovered by Merrill, 1886,* near Barnegat—Britton. Ocean and Monmouth: "Borders of pine woods"—Willis.

CERATOPHYLLÆ.

CERATOPHYLLUM, L.

Hornwort.

C. demersum, L.

Slow streams. Camden: In the Delaware River—Parker. Mercer: Trenton—Lockwood; Princeton, in deep water—Torrey. Bergen:—Austin; Cresskill—Rudkin. Gloucester: Mill-pond at Mullica Hill, and in ditches, Repaupo meadows—B. Heritage.

* See an interesting paper by Mr. J. H. Redfield in Bulletin Torrey Club, xvi., 193.

SUB-CLASS 2.—MONOCOTYLEDONÆ.

HYDROCHARIDEÆ.

ELODEA, Michx.

Water-weed.

E. Canadensis, Michx. (*Anacharis Canadensis*, Planch.)

Ponds and slow streams. Frequent throughout the State.

VALLISNERIA, L.

Eel-grass. Tape-grass.

V. spiralis, L.

In the larger streams and rivers. Common or frequent throughout the State. This is the "Wild Celery" of Chesapeake Bay. Its root is the favorite food of the canvas-back duck—C. E. Smith.

LIMNOBIUM, Rich.

Frog's-bit.

L. Spongia, Rich.

Monmouth: Swimming River, rare—Knieskern. Not recently collected, and not seen by me from the State.

ORCHIDEÆ.

MICROSTYLIS, Nutt.

Adder's Mouth.

M. unifolia (Michx.), B. S. P. (*M. ophioglossoides*, Nutt.)

In woods. Bergen: Closter—Austin; Rutherford—Schub. Hudson: New Durham Swamp—Torrey Catalogue; Bergen Point—Leggett. Middlesex: South Amboy—Miss Boice. Monmouth: Red Bank—Leggett; Keyport—R. W. Brown. Mercer:—Torrey. Atlantic: Hammonton—Bassett.

LIPARIS, Rich.

Tway-blade.

L. hiliifolia (L.), Rich.

In woods. Camden:—Parker. Salem: Near Auburn—B. Heritage. Ocean: Near Manchester, rare—Knieskern. Monmouth: Keyport—R. W. Brown. Mercer: Hightstown—Apgar. Burlington: Bordentown—Stokes. Union: Plainfield Tweedy; and frequent in the northern counties.

L. Loeselii (L.), Rich.

Burlington: Brown's Mills—E. J. Pond; Hanover—Apgar. Essex: First Mt.—Rusby. Hudson: Weehawken—I. H. Hall. Bergen: Closter, rare—Austin. Sussex: Vernon—Miss Isabel Mulford. Warren: Marble Hill—Porter; Hackettstown—Dr. Jos. Mixsell.

APLECTRUM, Nutt.

Putty-root. Adam-and-Eve.

A. spicatum (Walt.), B. S. P. (*A. hiemale*, Nutt.)

Bergen: Closter and Palisades—Austin; frequent in Lodi and Saddle River townships—Woolson. Passaic: Great Notch—W. M. Wolfe. Sussex: Newton—Garber; near Andover—J. D. Reynolds. Warren: Belvidere—Miss M. E. Campbell.

CORALLORHIZA, R. Br.

Coral-root.

C. innata, R. Br.

Woods in the northern counties; rare. Bergen: Closter—Austin. Warren: Blairstown—Rusby.

C. odontorhiza (Sw.), Nutt.

Camden:—Parker. Gloucester: Near Sewell and Mullica Hill—B. Heritage. Mercer: Princeton—Willis; Trenton—E. Volk; and frequent in the northern counties.

C. multiflora, Nutt.

Camden: Pine woods, common—C. E. Smith. Mercer: Near Princeton—Willis. Essex: Orange Mt.—Miss Mulford. Bergen: Closter—Austin. Passaic: Near Wanaque and New-

foundland—Britton. Sussex: Newton—Garber; near McAfee—Britton. Hunterdon: Rosemont, frequent—Best.

TIPULARIA, Nutt.

Crane-fly Orchis.

T. unifolia (Muhl.), B. S. P. (*T. discolor*, Nutt.)

In low woods. Bergen: Closter—Austin; Lodi and Saddle River townships—Woolson. Morris: Chatham—Leggett; Great Swamp, near Madison—F. J. Bumstead. Essex: Near Newark—Wm. Bower. Warren: Belvidere—Miss M. E. Campbell. Hudson: Bergea Point—Leggett. Monmouth: Near Freehold—Willis.

LISTERA, R. Br.

Tway-blade.

L. cordata (L.), R. Br.

Mercer:—Torrey. Hudson: "In the cedar swamp at New Durham"—Torrey Catalogue, 1819. Not recently collected.*

L. australis, Lindl.

Camden: Damp thickets near Camden—Herb. Acad. Phila. Middlesex: New Brunswick—Lockwood.

SPEIRANTHES, Rich.

Screw-stem. Ladies' Tresses.

S. latifolia, Torr.

Sussex:—Garber; Wawayanda Creek, about where it crosses the State line—Britton. Warren: Along the Delaware River above Flatbrookville—Rusby.

S. cernua (L.), Rich.

Wet meadows. Frequent throughout the State.

S. graminea, Lindl., var. *præcox* (Walt.), B. S. P. (Var. *Walteri*, Gray.)

Bergen: Closter—Austin. Morris:—Austin; Summit—Leggett. Essex: Franklin—Rusby. Cape May, and Burlington:

* *L. convallarioides*, Nutt., admitted into the Preliminary Catalogue as from New Durham, is this species. A specimen is preserved in the Torrey Herbarium.

Quaker Bridge—Parker; Brown's Mills—J. Stokes. Gloucester: About Mickleton, less common than the last—B. Heritage.

S. gracilis, Bigel.

Sandy woods and fields. Frequent throughout the State; most abundant near the coast.

S. simplex, Gray.

Bergen: Closter—Austin. Monmouth: Common about Keyport—R. W. Brown; near Shark River—Britton. Burlington: Near Wrightstown—Stowell. Camden: Longcoming—C. E. Smith; near Camden—Parker. Mercer: Near Trenton—Stowell. Atlantic: Hammonton—Bassett. Gloucester: Franklinville—J. B. Brinton.

GOODYERA, R. Br.

Rattlesnake-plantain.

G. pubescens (Willd.), R. Br.

In rich woods. Camden: Kirkwood—H. A. Green. Monmouth: Asbury Park—Peters; Allentown—E. H. Kilmer; and frequent in the middle and northern counties.

ARETHUSA, L.

Arethusa.

A. bulbosa, L.

Sussex: Andover—Garber. Morris: Budd's Lake—Porter; Brook Valley—Britton; along Black River—Miss E. Apgar. Bergen: Hackensack marshes—Woolson. Essex: Verona—Randall Spaulding. Hudson: New Durham—Leggett; and frequent or occasional in bogs in the middle and southern counties.

CALOPOGON, R. Br.

Calopogon.

C. tuberosus (L.), B. S. P. (*C. pulchellus*, R. Br.)

In bogs. Frequent throughout the State.

Forma albiflorus, Britt.

Atlantic: Mays Landing—Peters.

POGONIA, Juss.

Pogonia.

P. ophioglossoides (L.), Ker.

In bogs. Frequent throughout the State. Most abundant in the northern counties. With three-flowered stems, at Secaucus—Leggett.

P. trianthophora (Sw.), B. S. P. (*P. pendula*, Lindl.)

Bergen: Closter and on the Palisades—Austin; Fort Lee—Wm. Bower.

P. divaricata (L.), R. Br.

Atlantic: Batsto—D. C. Eaton. Burlington: Quaker Bridge—Leggett.

P. verticillata (Willd.), Nutt.

In low woods. Atlantic: Hammonton, rare—Bassett. Salem: Near Salem—Mrs. M. A. Lawrence. Gloucester: Near Clarksboro—B. Heritage; Red Bank—Difffenbaugh. Camden:—Parker; Haddonfield—J. L. Pennypacker. Burlington: Florence—Apgar. Ocean and Monmouth: Not common—Knieskern; Keyport—R. W. Brown; Freehold—Lockwood; and frequent in the middle and northern counties.

P. affinis, Austin.

Bergen: Near Closter and Norwood, stations destroyed—Austin. Mercer: Trenton—Apgar. Probably a form or variety of the last.

ORCHIS, L.

Orchis.

O. spectabilis, L.

In rich woods. Burlington: Below Bordentown—A. C. Stokes. Monmouth: Near Freehold—Willis; Keyport—R. W. Brown. Mercer: Princeton—Peters. Union: Near Plainfield—J. E. Cretin. Somerset: Rocky Hill—Lighthipe. Hunterdon: Lambertville—Apgar; Byram—Schuh; and frequent in the northern parts of the State.

HABENARIA, Willd.

Rein Orchis.

H. tridentata (Willd.), Hook.

In swamps or low woods. Frequent throughout the State. Most abundant in the southern counties.

H. integra (Nutt.), Spr.

Pine-barren regions; rare. Ocean and Monmouth: Wet places, not common—Kuieskern; Allaire—Lockwood. Burlington: Quaker Bridge—Parker.

H. flava (L.), Gray. (*H. virescens*, Spr.)

In swamps. Ocean: Toms River—Rudkin. Union: Plainfield—Tweedy. Hudson: Secaucus—Leggett. Essex: Milbura—Britton; and frequent in the northern counties.

H. bracteata (Willd.), R. Br.

In woods; northern counties. Bergen: Closter, rare—Austin; Ramapo Mts., rare—Stowell. Passaic: East of Greenwood Lake—Britton. Sussex: West side of Lake Hopatcong—Mrs. Schrenk; base of High Point—Britton. Warren: Bluffs below Phillipsburg—Porter.

H. hyperborea (L.), R. Br.

Bergen: Ramapo Mt., near the State line—H. C. Lee. Sussex: Swamp on east side of Wawayanda Mt.—Britton.

H. Hookeriana, Torr.

In rich woods. Sussex:—Austin; Newton—Hollick. Morris: One mile south of Newfoundland, abundant—Mrs. Britton. Passaic: East of Greenwood Lake and north of Ringwood—Merrill.

Var. oblongifolia, Paine.

Morris: With the type, south of Newfoundland—Mrs. Britton.

H. orbiculata (Pursh), Torr.

Bergen: Closter—Austin. Sussex: Newton—Garber; near Sparta—Austin. Rare.

H. cristata (Michx.), R. Br.

In low grounds. Hudson: New Durham—Torrey Catalogue; Secaucus—Wm. Bower. Monmouth: North Spring

Lake and Asbury Park—Lighthipe. Atlantic: Egg Harbor City—Parker; Hammonton—Bassett; Pancoast Mills—Peters. Burlington: Atsion—Canby. Camden: Griffith's Swamp—C. E. Smith. Cumberland:—Parker.

H. ciliaris (L.), R. Br.

In low grounds. Bergen: Tenafly and Closter—Austin; Lyndhurst—Schub. Essex: Franklin, rare—Rusby. Hudson: Hoboken meadows—Torrey Catalogue. Middlesex: South River—Miss C. A. Boice; and frequent southward, on the Yellow Drift. Specimens quite intermediate between this species and the next were collected by J. F. Poggenburg, at Little Ferry.

H. blephariglottis (Willd.), Torr.

Bergen: Closter—Austin. Hudson: Secaucus—Leggett. Mercer: Princeton—Peters; near Trenton—E. Volk. Occasional in the southwestern counties, and frequent in pine-barren swamps.

H. lacera (Michx.), R. Br.

In swamps. Frequent or occasional throughout the State.

H. psycodes (L.), Gray.

In swamps. Camden:—Parker. Monmouth: Freehold—Lockwood. Gloucester: Three miles east of Swedesboro, rare—B. Heritage; and frequent in the northern counties.

H. fimbriata (Ait.), R. Br.

In bogs in the middle and northern counties. Union: In meadows about Elizabethtown—Eddy in Torrey Catalogue. Mercer: Trenton—W. S. Lee. Morris: East base of Copperas Mt., at Green Pond mines—Rudkin; Budd's Lake—Porter; near Nolan's Point, Lake Hopatcong—Mrs. Britton; Millington—L. Schumacher; Morristown—Miss Hackett. Warren:—Knighton. Somerset: Peapack—Miss Perry.

H. peramoena, Gray.

Bogs; very rare. Camden: A single specimen from near Haddonfield—Martindale. Monmouth: Near Lawrenceville—Lanning; near Sharon—W. W. Swett. Mercer: Two specimens from a bog on Assanpink Creek near Edinburgh—W. S. Lee.

CYPRIPIEDUM, L.

Ladies' Slipper.

- C. parviflorum*, Salisb. Small Yellow Lady's Slipper.

In rich woods. Bergen: Palisades, rare—Austin; Tenafly—G. I. Cook. Passaic: High Mt., northwest of Paterson—Rusby. Essex: Newark Mountains—Rusby. Morris: Along Black River—Miss E. Apgar; Dover—L. Schumacher. Sussex: Newton—Garber. Warren:—Knighton. Monmouth: Keyport—R. W. Brown.

- C. pubescens*, Willd. Large Yellow Lady's Slipper.

In rich woods. Monmouth: Englishtown—Willis. Essex: Quite common on the mountains near Montclair—Rusby. Gloucester: A single plant near Mullica Hill—B. Heritage; and frequent in the northern parts of the State.

- C. spectabile*, Sw.

Hudson: In the cedar swamp at Weehawken—Torrey Catalogue, 1819. Sussex: Sparta—Austin; Allamuchy Swamp—Porter; west slope of High Point—Britton; abundant in a swamp one mile southwest of Springdale, near headwaters of north branch of the Pequest—J. D. Reynolds.

- C. candidum*, Muhl.

Warren: Near Green's Pond—Fred. Schwartz; Porter.

- C. acaule*, Ait. Pink Lady's Slipper. Moccasin Flower. Whip-poor-will Shoe.

Sandy woods. Frequent throughout the State.

HÆMODORACEÆ.

GYROTHECA, Salisb.

Red-root.

- G. tinctoria* (Walt.), Salisb. (*Lachnanthes tinctoria*, Ell.)

In low grounds in the pine barrens. Ocean: Sandy swamps near Manchester—Knieskern; and frequent in the southern counties.

LOPHIOLA, Ker.

Lophiola.

L. tomentosa (Muhl.), B. S. P. (*L. aurea*, Ker.)

In pine-barren swamps; frequent.

ALETRIS, L.

Star-grass. Colic-root.

A. farinosa, L.

In sandy fields and woods. Bergen: Closter—Austin; Little Ferry—Rudkin; Rutherford, frequent—Schuh. Morris: Chester and Dover—Apgar; Chatham—Leggett. Essex: Roseland—Rusby. Union: Plainfield—Tweedy; and frequent in the middle and southern counties.

A. aurea, Walt.

Very rare. Burlington: Pine barrens near Atsion, 1878—Rusby.

IRIDEÆ.

IRIS, L.

Blue-flag.

I. versicolor, L.

Swamps. Common in the eastern and southern counties; less frequent in the northwestern parts of the State.

I. prismatica, Pursh. (*I. Virginica*, Gray.)

Bergen: Closter, common—Austin; abundant on the Hackensack meadows—Leggett. Essex: Roseland and Kingsland—Rusby. Passaic: Valley of the Wanaque—Rudkin. Sussex: Waterloo—Britton. Hunterdon: Rosemont, rare—Best. Union: Plainfield—Tweedy. Mercer: Frequent—A. C. Stokes; and frequent southward.

I. PSEUDACORUS, L.

Escaped from cultivation. Bergen: Carlstadt—Otto Frank. Mercer: Along canal from Trenton northward, and near Princeton—Apgar. Hunterdon: Lambertville—Best. Camden: Banks of the Delaware above the city—Martindale. Adventive from Europe.

BELAMCANDA, Adans.

Blackberry Lily.

B. CHINENSIS (L.), Red. (*Pardanthus Chinensis*, Ker.)

Escaped from gardens. Monmouth: Along Crosswicks Creek near Walnford—Lockwood. Mercer: Princeton—Peters. Somerset: Along the canal at Rocky Hill—Lighthipe; Peapack—Apgar. Morris: Near Morristown—Miss R. C. Perry. Warren: Bridgeville—Miss M. E. Campbell. Sussex: Woodruff's Gap and Franklin Furnace—Britton. Passaic: Preakness—W. L. Fischer. Adventive from Asia.

SISYRINCHIUM, L.

Blue-eyed Grass.

S. angustifolium, Mill. (*S. Bermudiana*, Gray, not L.)

In fields. Common throughout the State; most abundant near the coast.

forma albiflorum (Raf.), Britt.

Ocean: Point Pleasant—E. H. Day. Monmouth: Freehold—Lockwood.

S. mucronatum, Michx.

Sussex: High Point—Britton. Hunterdon: Frequent—Best. Perhaps more common than is now apparent. I am not fully satisfied that we have more than one species.

AMARYLLIDÆ.*

HYPOXYS, L.

Star-grass. Yellow-eyed Grass.

In dry woods and fields. Common throughout the State.

DIOSCOREACEÆ.

DIOSCOREA, L.

Yam-root.

D. villosa, L.

Damp thickets. Frequent throughout the State.

**Narcissus pseudo-narcissus*, the Daffodil, has maintained itself for several years in the meadows below Trenton.—Abbott.

LILIACEÆ.

SMILAX, L.

Catbrier. Greenbrier.

S. Walteri, Pursh.

In pine-barren regions, southeastern parts of the State. Cape May:—Austin. Atlantic: Landisville—C. A. Gross; Mays Landing—Peters. Burlington: Quaker Bridge—Parker; Atsion—Martindale.

S. rotundifolia, L. (Includes *var. quadrangularis*, Gray.) Common Greenbrier.

Thickets. Common throughout the State, except in the mountainous portions of the northern counties, where it is seldom met with.

S. glauca, Walt.

Bergen: Carlstadt—Schuh. Essex:—Rusby. Warren: Along the Delaware River below the Water Gap—Britton. Hunterdon: Frequent—Best. Morris: Charlotteburg and Green Pond—Britton; and frequent in sandy soil, middle and southern counties.*

S. laurifolia, L.

In pine-barren regions, southeastern parts of the State. Monmouth: Southern part of the county—Willis. Ocean: Toms River, scarce—Britton. Burlington: Quaker Bridge—Parker. Atlantic: Hammonton—F. L. Bassett.

S. hispida, Muhl.

Sussex: Near Andover and Waterloo—Britton. Warren: On wet rocks along the Delaware River above the Water Gap—Rusby. Hunterdon:—Knighton in Willis Catalogue. Rare, and confined to the northwestern counties.

S. herbacea, L. Carrion Flower.

Low grounds. Common throughout the State.

**S. tannoides*, L., and *S. pseudo-China*, L., admitted into the Preliminary Catalogue on the authority of Gray's Manual, are not definitely known to me from the State. They are also given by Dr. Willis, the latter as "common in old fields."

S. tamnifolia, Michx.

Monmouth and Ocean: Open fields and shaded places, not rare—Knieskern; Spring Lake and Lake Como—Lighthipe; Freehold—Lockwood. Camden: Frequent—Parker; and frequent or common in the pine barrens.

ASPARAGUS, L.

Asparagus.

A. OFFICINALIS, L.

Escaped from gardens. Common along the borders of salt meadows and along the Delaware River, occasional in fields and waste places. Naturalized from Europe.

POLYGONATUM, Adans.

Solomon's Seal.

P. biflorum (Walt.), Ell.

In woods. Salem: Daretown—E. E. Hackett. Gloucester: Frequent about Mickleton—B. Heritage. Cumberland: Bridgeton, frequent—Britton. Camden: Atco—H. A. Green. Monmouth and Ocean: Not rare—Knieskern; and common in the middle and northern counties.

P. commutatum (Schult.), Dietr. (*P. giganteum*, Dietr.)

Bergen: Paramus—Austin. Warren: Along the Delaware River—Porter. Morris: Near Troy—Austin, Hunterdon: Raven Rock—Best; Holland—Porter; Lambertville—Stowell. Essex: Occasional—Rusby. Mercer: Trenton—W. S. Lee; Princeton—Peters. Monmouth and Ocean: Rich soil on river banks, common—Knieskern. Burlington: Bordentown—Apgar. Camden: Banks of the Delaware—Parker. Cumberland: Abundant about Shiloh—A. Robinson.

STREPTOPUS, Michx.**S. roseus**, Michx.

Sussex: Sparta Glen, 1887—Britton.

UNIFOLIUM, Adans.

False Solomon's Seal.

U. racemosum (L.), Britt.

In woods. Common throughout the State.

- U. stellatum** (L.), Greene. (*Smilacina stellata*, Desf.)
 Sussex: About the zinc mines—Austin; Newton—Garber.
 Bergen: Ramseys—Stowell. Hudson: Snake Hill—Le Roy.
 Monmouth: Freehold—Willis; near Sea Bright—Britton.
 Warren: Swamp on Jenny Jump Mt., near Green's Pond—
 Britton.
- U. trifolium** (L.), Greene. (*Smilacina trifolia*, Desf.)
 Sussex: Blue Mountains—Austin. Passaic: Swamp on west
 side of Bearfort Mountain—Britton.
- U. Canadense** (Desf.), Greene. (*Smilacina bifolia*, Ker., var. *Canadensis*,
 Gray.) Wild Lily of the Valley.
 In low woods. Common throughout the State.

HEMEROCALLIS, L.

Day-lily.

H. FULVA, L.

Escaped from gardens to meadows and roadsides; frequent.
 Adventive from Europe.

ALLIUM, L.

Onion.

- A. tricoccum**, Ait. Wild Leek.
 Rich, low woods. Bergen: Closter—Austin. Essex: Spring-
 field—Rusby. Passaic: Near Lodi—Woolson. Warren: Great
 Meadows—Britton. Hunterdon: Frequent—Best. Union:
 Plainfield—Tweedy. Mercer: Groveville—Burk. Salem:
 Occasional near Salem—Mrs. M. A. Lawrence.
- A. Canadense**, Kalm. Wild Garlic.
 Moist meadows. Camden:—Parker. Middlesex: Near
 Woodbridge—Britton. Mercer: Meadows below Trenton—
 E. Volk. Gloucester: Mickleton—B. Heritage; and frequent
 in the northern counties.
- A. VINEALE, L.** Wild Onion.
 In fields and meadows. Very common. Naturalized from
 Europe.*

**A. cernuum*, Roth, is recorded as common in Dr. Knieskern's Catalogue of Plants of Ocean and Monmouth Counties, doubtless intended for this species. Dr. Willis also admits it in his catalogue. It does not grow in the State, to my knowledge.

MUSCARI, Mill.

Grape Hyacinth.

M. BOTRYOIDES (L.), Mill.

Escaped from cultivation. Union: Plainfield—Tweedy.
Mercer: Trenton—Apgar. Adventive from Europe.

ORNITHOGALUM, L.

Star-of-Bethlehem.

O. UMBELLATUM, L.

Escaped from gardens into fields and meadows; frequent.
Naturalized from Europe.

LILIUM, L.

Lily.

L. Philadelphicum, L. Wild Red Lily.

In dry soil. Ocean and Monmouth: "Open copses, not rare"
—Knieskern; Keyport, very rare—R. W. Brown. Hudson:
Bergen Point—Leggett. Atlantic: Mays Landing, a single
specimen—Peters; and frequent in the northern counties.

L. Canadense, L. Wild Yellow Lily.

In low meadows. Burlington: Pemberton Junction—Light-
hipe. Ocean and Monmouth: Not common—Knieskern. Mer-
cer: Trenton—E. Volk; and frequent in the middle and north-
ern counties.

Forma rubrum, Britt.

Passaic: In a meadow east of West Milford—Britton, and
in Bergen Co.—G. C. Woolson.

L. superbum, L. Turk's Cap Lily.

In low meadows. Bergen: Common on the Hackensack
meadows, and in swamps, middle and southern counties.

ERYTHRONIUM, L.

Dog's Tooth Violet.

E. Americanum, Ker. Yellow Adder's Tongue.

In low grounds. Camden: Banks of Little Timber Creek—
Martindale; Haddonfield—Bassett. Gloucester: Frequent about

Mickleton—B. Heritage. Monmouth and Ocean: River banks, not rare—Knieskern; and common in the middle and northern counties.

E. albidum, Nutt. White Adder's Tongue.

Monmouth: Near Matawan, 1865, locality now destroyed—Lockwood. Warren: Oxford—Knighton in Willis Catalogue. Very rare. Not seen by me from the State.

NARTHECIUM, Moehr.

Bog-asphodel.

N. Americanum, Ker. (*N. ossifragum*, Huds., var. *Americanum*, Gray.)

In sandy swamps, especially in the pine barrens. Ocean: Toms River—A. H. Smith. Burlington: Quaker Bridge and Batsto, frequent—Canby; Mullica River—C. E. Smith. Atlantic: Pleasant Mills—Martindale. Gloucester: Woodbury—Mrs. W. McGeorge.

CHAMÆLIRIUM, Willd.

Blazing-star. Devil's-bit.

C. luteum (L.), Gray. (*C. Carolinianum*, Willd.)

Bergen: Closter—Austin. Essex: Franklin—Rusby. Morris: Morristown—Leggett. Warren: Banks of the Delaware above Flatbrookville—Britton; and frequent in the southern counties.

XEROPHYLLUM, Michx.

Turkey Beard.

X. asphodeloides (L.), Spreng.

In low, sandy meadows. Middlesex: Near Craner's Mills—Prof. Cook. Monmouth: Ocean Beach—A. Brown. Burlington: Pemberton—Lighthipe; and frequent in the pine barrens.

HELONIAS, L.

Swamp Pink.

H. bullata, L.

In swamps. Morris: Abundant in a bog at Succasunna, 1880—Porter; Budd's Lake—E. A. Rau. Middlesex: Near South Amboy—Miss C. A. Boice. Mercer: Abundant at Princeton Junction—Appar. Monmouth: Freehold—Lockwood. Ocean:

Very rare—Knieskern; Manchester—A. Brown; Collier's Mills—Britton; and frequent in the southern counties.

TOFIELDIA, Huds.

False Asphodel.

T. racemosa (Walt.), B. S. P. (*T. pubens*, Pers.)

Ocean: In a bog at Manchester—Knieskern. Very rare, and not recently collected.

UVULARIA, L.

Bellwort.

U. perfoliata, L.

In damp woods. Gloucester: Frequent about Mickleton—B. Heritage; and common in the middle and northern counties.*

OAKESIA, S. Wats.

Oakesia.

O. sessilifolia (L.), S. Wats. (*Uvularia sessilifolia*, L.)

In damp woods. Frequent throughout the State, except in the pine barrens.

Var. nitida, Britt.

Ocean: Borders of swamps near Toms River and Cedar Bridge—Britton.

CLINTONIA, Raf.

Clintonia.

C. borealis (Ait.), Raf.

Morris: In a bog near Succasunna—Porter. Sussex: Near the Ogden Mines and in a swamp at east base of Wawayanda Mt.—Britton. Warren: Hackettstown—Frank M. Cook. Passaic: Near Uttertown—Britton.

MEDEOLA, L.

Indian Cucumber Root.

M. Virginica, L.

In low woods. Common in the middle and northern counties. Frequent or occasional in the southern parts of the State.

**U. grandiflora*, Smith, was admitted into the Preliminary Catalogue on the authority of Gray's Manual, which states that *U. flava*, Smith (regarded by Dr. Watson as the same species), ranges from New Jersey to Virginia. No specimen to show its presence in the State is extant, so far as I can ascertain.

TRILLIUM, L.

Three-leaved Nightshade.

T. erectum, L.

Rich woods. Middle and northern counties. Union: Wetumpka Falls, near Plainfield—J. E. Cretin. Essex: Caldwell—Rusby. Burlington: Bordentown—Apgar. Morris: Near Charlotteburg—A. Brown. Bergen: Ramapo Mt.—Stowell; near Norwood—Austin. Passaic: Preakness—W. L. Fischer. Sussex: Vernon—Miss Isabel Mulford. Warren:—Knighton.

T. cernuum, L. Wake Robin.

In low grounds. Gloucester: Three miles east of Woodbury—Canby; west of Mullica Hill—B. Heritage. Camden: Rare—C. E. Smith. Mercer: Trenton—Apgar; and frequent in the middle and northern counties.

T. erythrocarpum, Michx.

Hudson: In the cedar swamp at New Durham—Torrey Catalogue, 1819. Passaic: In a swamp at the west base of Bearfort Mountain near Uttertown—Britton, 1885.

MELANTHIUM, L.

Bunchflower.

M. Virginicum, L.

In low meadows. Camden:—Parker. Gloucester: In a meadow northwest of Mickleton—B. Heritage. Burlington: Pemberton, rare—Lighthipe. Monmouth and Ocean: Rather rare—Knieskern; Keyport—R. W. Brown; and frequent in the middle and northern counties.

M. latifolium, Desvours.

In dry, rocky woods. Bergen: Palisades—Austin. Sussex: Near Swartswood—Wm. Bower; Sparta, Stanhope, Allamuchy Mountain, Hamburg Mountain, Vernon, Ogdensburg and Two Bridges—Britton. Morris: Near Drakesville—Britton.

VERATRUM, L.

White Hellebore.

V. viride, Ait.

Salem: Marlboro—Miss A. B. Rich. Cumberland: Stoe Creek township—A. Robinson. Gloucester: Frequent about

Mickleton—B. Heritage. Camden: Little Timber Creek—Martindale; Haddonfield—J. L. Pennypacker. Burlington: Moorestown—J. Stokes. Monmouth: Not common—Knieskern. Mercer: Trenton—Apgar. Union: Plainfield—Tweedy; and frequent in swamps in the northern counties.

ZYGADENUS, Michx.

Zygadenus.

Z. leimanthoides, Gray.

In low grounds. Ocean and Monmouth: Rather rare—Knieskern; Mt. Pleasant—R. W. Brown; Toms River—Parker. Mercer: Princeton Junction—Peters. Burlington: Near Atsion—Parker. Camden: Griffith's Swamp—C. E. Smith.

AMIANTHIUM, Gray.

Fly Poison.

A. muscætoxicum (Walt.), Gray.

In low meadows. Bergen: Abundant in Saddle River township near Arcola—Woolson; Rochelle Station—Leggett. Mercer:—Torrey. Burlington: In woods near Burlington, 1844—Cooley in Torrey Herb.; Pemberton—Miss Willmarth; Moorestown—J. Stokes; Beverly—Apgar. Camden: Meadows near Camden—Parker. Cumberland: Vineland—Mrs. Treat. Gloucester: One mile west of Mickleton—B. Heritage.

PONTEDERIACEÆ.

PONTEDERIA, L.

Pickereel-weed.

P. cordata, L.

Frequent in shallow water throughout the State.

Var. angustifolia, Pursh.

Morris: Southern end of Green Pond—Radkin. Burlington: Quaker Bridge—Martindale; Atsion—C. D. Fretz. Gloucester: Franklin—Parker.

HETERANTHERA, Ruiz & Pav.

Mud Plantain.

H. reniformis, Ruiz & Pav.

In river mud and ditches. Bergen: Common along the Hackensack and near Closter—Austin; along the Passaic—Leggett. Union: Near New Brooklyn—Tweedy. Morris: Chatham—Leggett. Hunterdon: Frequent—Best. Mercer: Trenton—Appar. Camden: In ditches—Parker. Gloucester: Near Bridgeport—Wm. Trimble. Salem: Common in ditches—Commons.

H. graminea (Michx.), Vahl. (*Schollera graminea*, Willd.) Water Star-grass.

In shallow water. Warren: Common along the Delaware—Porter. Hunterdon: Frequent—Best. Sussex: Swartswood Lake—Rusby. Morris: Whippany River near Morristown—Eddy in Torrey Catalogue. Bergen: Common along the Hackensack—Austin. Middlesex: Raritan River near New Brunswick—Lockwood. Mercer: Pond back of the State House, Trenton—W. S. Lee. Camden: In tidal mud, Delaware River—Parker.

XYRIDEÆ.

XYRIS, L.

Yellow-eyed Grass.

X. flexuosa, Muhl.

In swamps. Bergen: Closter—Austin; Rutherford and Lyndhurst—Schuh. Morris: Budd's Lake—Porter. Mercer: Near Trenton—Volk; Lawrence Station—Peters. Middlesex: Sayreville—Britton; and frequent in sandy swamps, in the southern counties.

Var. pusilla, Gray.

Burlington: Quaker Bridge—Torrey. Atlantic: Mays Landing—Peters.

X. Caroliniana, Walt.

Monmouth and Ocean: Sandy swamps, quite common—Knieskern; Forked River—Britton. Occasional southward, but very much less frequent than the last.

X. fimbriata, Ell.

Sandy swamps in the pine barrens. Ocean: Near Manchester, rare—Knieskern. Burlington: Quaker Bridge, along Atsion River, and in Atsion meadows near Jackson—Parker. Atlantic: Hammonton Lake, abundant, and elsewhere in Hammonton—Bassett.

X. torta, Smith.

Sandy pine barrens. Burlington: Batsto—D. C. Eaton; Taunton—J. Stokes.

COMMELINACEÆ.

COMMELINA, L.

Day-flower.

C. Virginica, L.

Burlington: Banks of a ditch near Plattsburg, July, 1850—Torrey Herb.; Medford—E. H. Kilmer, 1888. Gloucester: Near Mickleton—Heritage, 1887.*

C. nudiflora, L.

Mercer: Trenton—Apgar. Burlington: Moorestown—J. Stokes; Beverly—Apgar. Camden: Common about Camden—Parker; Merchantville—J. Stokes. Gloucester: Woodbury—Stowell. Salem: Along the Delaware near Pennsgrove, frequent—Commons. Atlantic: Atlantic City—Peters.

C. hirtella, Vahl.

Camden: Kaighn's Point—C. E. Smith.

TRADESCANTIA, L.

Spiderwort.

T. VIRGINICA, L.

Sparingly along the Delaware near Stockton and Lambertville—Best. Mercer: Trenton—Apgar. Burlington: Near Bordentown—A. C. Stokes. Camden: Along the Delaware below Gloucester—E. Diffenbaugh. Salem: Banks of the Delaware, scarce—Commons. Commonly cultivated, and occasionally escaped from gardens in other parts of the State. Its frequency

*This plant may be more abundant than here indicated, but nearly all specimens formerly regarded as this belong to the next species.

in the valley of the Delaware, as indicated by the above-cited localities, would suggest that it is there indigenous. Adventive from the West.

Forma albiflora, Britt.

Hunterdon: Holland Station—Porter.

JUNCACEÆ.

JUNCUS, L.

Bush.

J. effusus, L.

In swamps. Common throughout the State.

Var. conglomeratus (L.), Engelm.

Burlington: Atsion—Commons. Camden: Haddonfield—Martindale.

J. Roemerianus, Scheele.

"Brackish marshes, New Jersey"—Pursh.*

J. marginatus, Rostk.

Low grounds. Common throughout the State; most abundant near the coast.

Var. paucicapitatus, Engelm.

Hudson: Bergen Point—Leggett. Hunterdon: Frequent—Best; and frequent southward on the Yellow Drift.

Var. biflorus (Ell.), Engelm.

Monmouth: Sea Bright—Leggett. Atlantic: Atlantic City—Martindale; Landisville—C. A. Gross. Cape May:—Parker. Hunterdon: Rare—Best.

J. bufonius, L.

In moist places. Frequent throughout the State.

J. Gerardi, Lois. Black Grass.

In salt meadows. Very common.

* There is great uncertainty regarding the occurrence of this species in the State. Since the time of Pursh it has not been definitely reported. *J. maritimus*, Lam., an allied species, is stated by Dr. Knieskern to be common in brackish marshes in Ocean and Monmouth counties, but no one has seen it there lately. It grows on Coney Island, New York, and may well occur on our coasts.

J. tenuis, Willd.

In low grounds. Very common throughout the State.

Var. secundus (Poir.), Engelm.

Warren: Near Phillipsburg—Porter. Camden: Petty's Island—Burk. Gloucester:—Parker.

J. dichotomus, Ell.

Moist, sandy soil. Monmouth: Sandy Hook—Britton; and frequent southward on the Yellow Drift.

J. Greenii, Oakes & Tuck.

Middlesex: Burts' Creek and Sayreville, and Sussex: On the summit of High Point—Britton.

J. pelocarpus, E. Meyer.

Morris: On an island in Lake Hopatcong—Porter. Middlesex: Sayreville—Britton. Camden: Longacoming—C. E. Smith; and frequent in the pine barrens.

Var. fluitans (Michx.), B. S. P. (*Var. ? subtilis*, Engelm.)

Morris: Halsey's Island, Lake Hopatcong—Porter.

J. ARTICULATUS, L.

Camden: Petty's Island—E. Diffenbaugh. Fugitive from Europe.

J. militaris, Bigel.

In streams and ponds. Warren: Sunfish Pond, Kittatinny Mt., near the Delaware Water Gap—Britton. Ocean: In Toms River and branches—Parker, Martindale; Manchester—Knieskern. Burlington: Wading River—Gray in Torrey Herb.; Atsion River and in pond near Atsion—Parker. Atlantic: Near Cedar Lake—C. A. Gross; in Egg Harbor River at Mays Landing—B. Heritage. Cape May: In a pond near Seaville—Commons.

J. acuminatus, Michx. (*J. acuminatus*, Michx., *var. legitimus*, Engelm.)

In low grounds. Common throughout the State. Frequently prolific.

Var. debilis (Gray), Engelm.

Cumberland: Haleyville; Burlington: Atsion; Cape May: Dennisville—Parker. Essex: Verona—Rusby.

J. nodosus, L.

In bogs in the northern counties. Sussex: Near Andover—Garber; Lake Grinnell—Britton. Warren: White Pond—Porter.

Var. megacephalus, Torr.

Camden: Petty's Island—E. Diffenbaugh.

J. scirpoides, Lam. (*J. scirpoides*, Lam., *var. macrostemon*, Engelm.)

Middlesex: Near Sayreville—Britton; and common southward in the sands of the Yellow Drift.

J. Canadensis, J. Gay. (*J. Canadensis*, J. Gay, *var. longicaudatus*, Engelm.)

In swamps. Frequent throughout the State.

Var. subcaudatus, Engelm.

Monmouth: Red Bank—Leggett. Atlantic: Landisville—C. A. Gross. Camden: Near Camden—Parker.

Var. coarctatus, Engelm.

Morris: Budd's Lake—Porter. Sussex: Swamps near Lake Grinnell—Britton.

J. asper, Engelm.

In sandy swamps in the southern counties. Burlington: Near Quaker Bridge and along Atsion River—Parker. Atlantic: Pancoast's Mill—C. A. Gross. Camden: Griffith's Swamp—C. E. Smith.

LUZULA, DC.

Wood-rush.

L. pilosa (L.), Willd.

Bergen: Pascack—Austin. Not recently collected.

L. campestris (L.), DC.

In dry fields and woods. Frequent throughout the State.

TYPHACEÆ.

TYPHA, L.

Cat-tail.

T. latifolia, L.

In swamps. Rather common throughout the State.

T. angustifolia, L.

In swamps. Sussex: Waterloo—Britton. Hunterdon: Frequent—Best. Essex: Franklin—Rusby. Burlington: Pemberton—Miss Willmarth. Atlantic: Hammonton—Bassett; and very common along the margins of salt or brackish marshes on the Atlantic coasts, and along the lower Delaware River; remarkably luxuriant and abundant on the Hackensack and Newark meadows.

SPARGANIUM, L.

Bur-reed.

S. eurycarpum, Engelm.

In swamps. Camden: Along the Delaware—Martindale. Sussex: Swartswood Lake—Rudkin; Waterloo—Britton. Bergen: Closter, common—Austin; Fort Lee—Leggett.

S. androcladum (Engelm.), Morong. (*S. simplex*, Huds., var. *androcladum*, Engelm.)

In swamps. Frequent or common throughout the State.*

AROIDEÆ.**ARISÆMA, Mart.**

Indian Turnip.

A. triphyllum (L.), Torr. Jack-in-the-Pulpit.

In rich, damp woods. Salem: Frequent—E. E. Hackett. Cumberland: Not uncommon in the western townships—A. Robinson. Gloucester: Common—Mrs. W. McGeorge. Camden: Banks of Cooper's Creek—Parker. Atlantic: Near Hammonton—Parker. Burlington: Pemberton and elsewhere in the western part of the county—Lighthipe. Ocean and Monmouth: Rare—Knieskern; and common in the middle and northern counties.

Mr. F. L. Bassett states that the corms of the plants growing at Hammonton are not acrid. A specimen collected at Pleasant

*The *S. simplex*, Huds., recorded by Dr. Knieskern as common in shallow streams and pools in Monmouth and Ocean counties, a statement copied by Dr. Willis in his catalogue and made to apply to the whole State, is this species. Mr. A. P. Garber collected the leaves of an aquatic plant in a pond near Newton, Sussex county, which may be *S. minimum*, Bauhin, of Gray's Manual.

Valley, Bergen county, has one of the lateral leaflets divided, the leaf appearing as of four leaflets instead of three—Britton.

A. Dracontium (L.), Schott. Green Dragon.

Low woods. Camden: Along Cooper's Creek near Haddonfield—Parker. Burlington: Bordentown—Apgar. Hunterdon: On sandy river banks, Holland Station—Porter; on Ridge's Island and near Hopewell—Theo. Green; High Bridge—P. H. Murray. Sussex:—Austin. Bergen: Along the Ramapo River, Darlington—Stowell.

PELTANDRA, Raf.

Arrow Arum.

P. Virginica (L.), Kunth.

In shallow water. Rather common throughout the State. Rafinesque described another species, *P. undulata*, but I have been entirely unable to distinguish it by the characters given by him, or by Engler, who also separates the two.

CALLA, L.

Water Arum.

C. palustris, L.

In swamps. Hudson: New Durham—Torrey Catalogue. Bergen: Woodridge—Ruger; frequent in deep swamps on the Hackensack marshes—Woolson. Morris: Budd's Lake—Porter; Port Oram—L. Schumacher. Passaic: On Bearfort Mt., Greenwood Lake—Britton. Sussex:—Austin; Lake Marcia near High Point, and on the east side of Wawayanda Mt.—Britton. Warren: Near Sunfish Pond, Kittatinny Mt.—S. W. Knipe.

ORONTIUM, L.

Golden Club.

O. aquaticum, L.

In swamps. Bergen: Closter—Austin; near Arcola and Lodi—Woolson; Little Ferry—Rudkin; Ramseys—Stowell. Passaic River at Lyndhurst—Schub. Essex: Roseland and Springfield—Rusby. Hudson: New Durham—Austin. Morris: Budd's Lake—Porter; Port Oram—L. Schumacher. Hunterdon: Rare—Best. Sussex: Lake Marcia near High

Point—Britton; and very abundant at Howell's Pond, Pinkneyville—Merrill; and common in the southern counties.

SYMPLOCARPUS, Salisb.

Skunk Cabbage. Skunkweed.

S. foetidus (L.), Salisb.

Swamps and low grounds. Common or frequent throughout the State, except in the pine barrens, where it appears to be only occasional.

ACORUS, L.

Calamus. Sweet-flag.

A. Calamus, L.

Swamps and low grounds. Frequent throughout the State.

LEMNACEÆ.

LEMNA, L.

Duck-weed.

L. trisulca, L.

In ponds. Bergen: Closter—Austin. Passaic: Passaic—Leggett. Morris: Troy—Prof. J. T. Benedict. Essex:—Rusby.

L. Valdiviana, Philippi. (*L. Torreyi*, Austin.)

Bergen: In ponds, Closter—Austin. Union: Near Plainfield—Tweedy.

L. minor, L.

On stagnant water. Common throughout the State.

Var. obscura, Austin.

Hudson: Abundant near Weehawken, where it usually flowers—Austin; New Durham—Leggett.

Var. orbiculata, Austin.

Hudson: New Durham, in ditches and marshes—Austin.

L. perpusilla, Torr.

In ponds. Bergen: Woodside—Austin. Atlantic: Atlantic City—E. Diffenbaugh.

Var. trinervis, Austin.

Hudson: Pamrapo—Austin.

SPEIRODELA, Schleid.

Duck-weed.

S. polyrhiza (L.), Schleid. (*Lemna polyrhiza*, L.)

Ponds. Common throughout the State.

WOLFFIA, Horkel.

Wolffia.

W. Columbiana, Karsten.Bergen : Closter, rare—Austin. Camden : Kaighn's Point—
Martindale.**ALISMACEÆ.****ALISMA, L.**

Water Plantain.

A. Plantago, L. (Including *var. Americanum*, Gray.)

In shallow water. Common throughout the State.

SAGITTARIA, L.

Arrow Head.

S. sagittæfolia, L., *forma obtusa* (Willd.), Britt.

Camden : In the Delaware River—Martindale, C. E. Smith.

Forma latifolia (Willd.), Britt.

Camden : In the Delaware River—Martindale.

Forma hastata (Pursh), Britt.

In wet places. Common throughout the State.

Forma angustifolia (Engelm.), Britt.Burlington : Quaker Bridge—Leggett. Camden :—Martin-
dale.*Forma gracilis* (Pursh), Britt.In pine-barren swamps ; frequent. Burlington : Quaker
Bridge—Leggett ; Brown's Mills—E. Diffenbaugh. Atlantic :
Pleasant Mills—Leggett ; along Mullica River—C. E. Smith.
Monmouth : Sandy Hook—Martindale.**S. calycina**, Engelm.

Bergen : Hackensack marshes and Fairview—Austin.

Var. spongiosa, Engelm.

Camden: In tidal mud—Parker.

S. heterophylla, Pursh.

Camden: Frequent in wet places—Canby. Hunterdon: Bull's Island, Delaware River—Porter.

Var. elliptica, Engelm.

Camden: Delaware River—Martindale.

Var. angustifolia, Engelm.

Camden: Delaware River—Martindale. Passaic: Outlet of Greenwood Lake—Britton.

Perhaps both these varieties should more properly be considered as forms.

S. graminea, Michx.

Morris: Swamps, Lake Hopatcong—Rusby. Passaic: Cooper—Rudkin; Paterson—Leggett. Sussex: Pond near Branchville—Britton.

S. natans, Michx. (*S. pusilla*, Nutt.)

Camden: Shores of the Delaware River—Parker. Mercer: Trenton—Martindale. Bergen: Hackensack streams—Torrey Catalogue; Fairview—Austin. Passaic: Passaic—Leggett.

NAIADACEÆ.

(List revised by Rev. Thomas Morong.)

TRIGLOCHIN, L.

Arrow-grass.

T. maritimum, L.

Monmouth: Wet grounds. Not common—Willis. Not recently collected, nor seen by me from the State.

SCHEUCHZERIA, L.

Scheuchzeria.

S. palustris, L.

In bogs. Morris: Budd's Lake—Porter. Camden: Longcoming—C. E. Smith.

POTAMOGETON, L.

Pond-weed.

P. natans, L.

Ponds. Apparently quite common throughout the State.

P. Oakesianus, Robbins.

Bergen: In shallow water at Tenafly—Austin. Atlantic: Estelville—C. A. Gross. Burlington: Brown's Mills—E. J. Pond.

P. Pennsylvanicus, Cham. (*P. Claytonii*, Tuck.)

In ponds and slow streams. Frequent throughout the State.

P. Spirillus, Tuck.

Camden: In tidal mud, Delaware River—Parker. Warren: In the Delaware at Belvidere—Britton. Bergen: Closter—Austin. Passaic: Paterson—Leggett. Morris: Lake Hopatcong, and Sussex: Cranberry Reservoir and Stump Pond near Brauchville—Britton.

P. hybridus, Michx.

Ponds and streams. Frequent throughout the State. Often without any floating leaves.

P. fluitans, Roth. (*P. lonchites*, Tuck.)

Warren: In the Delaware River near Phillipsburg—Porter; Belvidere—Britton. Sussex: Swartswood Lake—Britton. Salem: In ditches—Commons.

P. pulcher, Tuck.

Atlantic: In a pond at Atlantic City, and Salem: Elmer—Parker. Ocean: Toms River—Porter.

P. amplifolius, Tuck.

In deep water. Sussex: Andover and Swartswood Lake—Porter; Waterloo—Garber; very luxuriant in Morris Pond near Sparta—Britton. Bergen: Hackensack River—Austin; Ramapo River near Mahwah—Britton. Passaic: In the Passaic River—Rusby. Camden: In the Delaware—Parker. Hunterdon: Frequent—Best.

P. gramineus, L.

Bergen: Waters of the Hackensack—Austin. Passaic: Greenwood Lake—Rudkin. Sussex: Swartswood Lake and Morris Pond—Britton. Morris: Lake Hopatcong—Austin.

R

Var. maximus, Morong.

Hunterdon: In the Delaware River at Tumble Station—Porter.

P. rufescens, Schrad.

Warren: In the Delaware River at Belvidere—Britton.

P. Zizii, Mart. & Koch. (*P. lucens*, L., *var. minor*, Nolte.)

Sussex: Swartswood Lake—Porter; Lake Hopatcong—Britton.*

P. praelongus, Wolf.

Morris: Budd's Lake—Porter, 1869.

P. perfoliatus, L.

In ponds and streams. Apparently frequent throughout the State.

P. crispus, L.

In streams. Union: Plainfield—Tweedy. Morris:—Austin; Lake Hopatcong—Porter. Passaic: Passaic—Leggett. Warren: Musconetcong River—Porter. Camden: In the Delaware River—Parker. Hunterdon: In the Delaware, rare—Best.

P. zosteræfolius, Schum. (*P. compressus*, Fries.)

Bergen: Hackensack River—Austin. Sussex: Waterloo—Porter.

P. pauciflorus, Pursh.

In ponds or slow streams. Frequent in the northern counties.

P. pusillus, L.

In ponds and streams. Common throughout the State.

P. Tuckermani, Robbins.

In pine-barren streams—Austin. Burlington: Near Atsion—Canby; Pleasant Mills—E. Diffenbaugh. Camden: Atco—Commons. Gloucester: Near Malaga—Parker.

P. pectinatus, L.

Bergen: Hackensack River—Austin; Passaic River—Schuh. Sussex: Hewitt's Pond, Andover and Lake Grinnell—

* *P. lucens*, L., is not certainly known from the State. New Jersey specimens referred to it prove to be this species.

Britton. Monmouth:—Torrey in Willis Catalogue. Hunterdon: In the Delaware River—Schuh.

P. Robbinsii, Oakes.

Sussex: Swartswood Lake—Porter; Morris Pond—Britton.
Bergen: Hackensack River—Austin. Morris: Budd's Lake—Porter.

RUPPIA, L.

Ditch-grass.

R. maritima, L.

In shallow brackish water along the coast; frequent.

ZANNICHELLIA, L.

Horned Pond-weed.

Z. palustris, L., *var. pedunculata*, Gray.

Bergen: In ditches—Austin.

ZOSTERA, L.

Eel-grass.

Z. marina, L.

Common in salt water along the coast.

NAIAS, L.

Naiad.

N. flexilis, Rostk.

In ponds. Frequent, especially in the northern counties.

N. Indica, Cham., *var. gracillima*, A. Br.

Salem: In the pond at Woodstown, 1881—Commons.

ERIOCAULEÆ.

ERIOCAULON, L.

Pipewort.

E. decangulare, L.

In pine-barren swamps; frequent or occasional.

E. gnaphalodes, Michx.

In pine-barren swamps; common.

E. septangulare, With.

In ponds. Sussex: Swartswood Lake—Porter; Lake Marcia, pond west of Branchville and Morris Pond—Britton. Morris: Green Pond—Rudkin; Budd's Lake—Porter; and frequent in the southern counties.

CYPERACEÆ.

CYPERUS, L.

Galingale.

C. flavescens, L.

Low grounds. Ocean: Near Good Luck Point—Knieskern; Manchester—Britton; Toms River—A. Brown. Cumberland: Near Jericho—Britton. Atlantic: Mays Landing, and Gloucester: Mickleton—B. Heritage. Morris: Long Hill and Chatham—Leggett. Camden: In ballast—Parker. Hunterdon: Rosemont—Best. Warren: Harmony—Britton.

C. diandrus, Torr.

In low grounds. Common throughout the State.

Var. castaneus (Bigel.), Torr.

In low grounds. Generally with the type, and equally abundant.

C. Nuttallii, Eddy.

In salt or brackish marshes. Common along the coasts.

C. aristatus, Rottb. (*C. inflexus*, Muhl.)

Warren: Shore of the Delaware River above Phillipsburg—Porter. Sussex: In low grounds along roadside three miles southwest of Sparta—Britton. Hunterdon: Bull's Island—Best.

C. dentatus, Torr.

Bergen: Closter—Austin. Essex: Franklin—Rusby. Hudson: New Durham swamp—Schuh. Warren: Common along the Delaware—Porter. Hunterdon: Common—Best; and frequent in sandy swamps, middle and southern counties.

C. esculentus, L. (*C. phymatodes*, Michx.)

In low grounds and in cultivated fields. Frequent throughout the State. Most abundant in the southern counties and near the coast. Occasionally a very troublesome weed.

C. strigosus, L.

In fields and low grounds. Common throughout the State.

Var. robustior, Kunth.

Morris: Chatham—Leggett. Probably not uncommon.

Var. capitatus, Boeckl.

Camden: Camden—Martindale. Sussex: Sparta—Britton.

Var. compositus, Britt.

Morris: Chester—Britton.

C. erythrorhizos, Muhl.

Camden: Shore of the Delaware—Martindale; Petty's Island—E. Diffenbaugh.

C. speciosus, Vahl. (*C. Michauxianus*, Torr.)

In low grounds. Bergen: Closter—Austin; Rutherford—Schuh. Hudson: Abundant about Snake Hill—Britton; Hackensack Junction—Leggett. Ocean: Manchester—Knieskern. Camden:—Parker. Atlantic: Mays Landing—B. Heritage.

C. ovularis (Vahl), Torr.

In fields. Frequent in the southern and middle counties; occasional northward.

C. Torreyi, Britt. (*C. cylindricus*, Britton, not of Chapman.)

Sandy soil. Middle and southern counties; frequent.

C. retrofractus, Torr.

Hudson: Near Hoboken—Torrey. Camden: Near Haddonfield and Griffith's Swamp, and Gloucester: In sandy fields at Malaga—Parker. Atlantic: Hammonton—Stowell.

C. filiculmis, Vahl.

In dry soil. Common throughout the State.

C. Grayii, Torr.

In sandy soil. Common on the sea-beaches from Sandy Hook southward, and in the pine barrens.

C. Lancastriensis, Porter.

Mercer: Bank of the Delaware River below Trenton—Britton. Camden: Centreville—Martindale.

DULICHIMUM, Pers.

Dulichium.

D. spathaceum (L.), Pers.

Borders of ponds and swamps. Common throughout the State.

ELEOCHARIS, R. Br.

Spike Rush.

E. Robbinsii, Oakes.

Streams and ponds in the pine barrens. Burlington: Quaker Bridge—Canby. Atlantic, and Cape May: Dennisville—Parker. Camden: Longcoming—C. E. Smith. Ocean: Forked River—Britton.

E. mutata (L.), R. & S. (*E. quadrangulata*, R. & S.)

Cape May:—J. B. Brinton; Johnson's Pond, Dennisville—Parker. Sussex: Swartswood Lake—Porter.

E. tuberculosa (Michx.), R. & S.

Monmouth and Ocean: Wet, sandy places not far from the sea-coast, common—Knieskern; and frequent southward, in the pine barrens.

E. ovata (Roth), R. & S. (*E. obtusa*, Schult.)

In muddy places. Common throughout the State.

Var. *Engelmanni* (Steud.), Britt.

Hunterdon: Kingwood—Best, 1886. Camden: Kaighn's Point—Burk. Morris: Long Hill—Leggett.

E. olivacea, Torr.

In wet places. Bergen: Closter—Austin; abundant on Hackensack meadows—Leggett; Rutherford—Schuh. Middlesex: South Amboy—Britton. Ocean and Monmouth: Common—Knieskern. Gloucester: Rare—C. E. Smith.

E. palustris (L.), R. & S.

In wet places. Frequent throughout the northern counties.

Var. *glaucescens* (Willd.), Gray.

In wet places. Common throughout the State.

E. rostellata, Torr.

Bergen: Abundant in the Hackensack marshes—Leggett. Atlantic: Atlantic City, and Cape May: Dennisville—Parker.

- E. intermedia* (Muhl.), Schult.
 "New Jersey"—Torrey Catalogue. Sussex: Swamp near
 Lake Grinnell—Porter.*
- E. tenuis* (Willd.), Schult.
 In wet places. Common throughout the State.
- E. microcarpa*, Torr. (Including *var. filiculmis*, Torr.)
 In pine-barren swamps. Apparently rare. Ocean:—Torrey,
 Austin. Burlington: Quaker Bridge—D. C. Eaton.
- E. melanocarpa*, Torr.
 Pine barrens—Parker. Monmouth: Sandy swamps—Willis.
 Rare.
- E. tricostata*, Torr.
 Ocean: "Near Quaker Bridge and Webb's old field, the
 northern limit of this plant, rare"—Knieskern.
- E. acicularis* (L.), R. & S.
 Muddy shores. Common throughout the State.

DICHROMENA, Michx.

Dichromena.

- D. cephalotes* (Walt.), Britt. (*D. leucocephala*, Michx.)
 New Jersey "damp pine barrens"—Gray's Manual. Mon-
 mouth and Ocean: "Wet places among the pine forests"—
 Willis. Not recently collected.

FIMBRISTYLIS, Vahl.

Fimbristylis.

- F. castanea*, Vahl. (*F. spadicea*, Vahl, *var. castanea*, Gray.)
 Frequent on salt or brackish meadows.
- F. autumnalis* (L.), Roem. & Schult.
 Low grounds. Frequent throughout the State.
- F. capillaris* (L.), Gray.
 In dry fields. Common throughout the State.†

* Also credited to Ocean and Monmouth counties by Dr. Willis. Probably mis-
 taken for some other species.

† *F. VAHLII* (Lam.), Link. (*F. congesta*, Torr.) In *Annals Lye. N. Y.* iii, 345
 (1836), Dr. Torrey records seeing a specimen of this plant in the Philadelphia Her-
 barium, marked as from New Jersey. It has not been noted recently.

SCIRPUS, L.

Bulrush.

- S. nanus**, Spreng. (*Eleocharis pygmaea*, Torr.)
On salt or brackish meadows; frequent.
- S. planifolius**, Muhl.
In dry woods. Bergen: Common on the Palisades—Austin. Essex: Montclair—Rusby. Morris: Near Budd's Lake—Porter. Union: Plainfield—Tweedy. Warren: Below Phillipsburg—Porter. Mercer: Princeton—Torrey. Hunterdon: Common—Best. Gloucester: In woods west of Mullica Hill—B. Heritage.
- S. subterminalis**, Torr.
Morris: Budd's Lake—Porter. Ocean: Slow-running streams, rare—Knieskern: Toms River—Dr. George Smith. Atlantic: Hammonton—Bassett. Burlington: Batsto—Torrey; Quaker Bridge—Parker. Camden: Longacoming—C. E. Smith. Gloucester: In streams—Parker.
- S. pungens**, Vahl. Three-square.
In wet places. Exceedingly abundant on salt and brackish marshes along the coast. Frequent in the interior of the State.
- S. Olneyi**, Gray.
Bergen: Hackensack meadows, frequent—Leggett. Ocean: Salt marshes, Toms River, and Monmouth: Near Squan Village, rare—Knieskern. Cape May: Dennisville—Martindale.
- S. lacustris**, L. (*S. validus*, Vahl.)
In ponds. Frequent throughout the State.
- S. debilis**, Pursh.
In wet places. Monmouth and Mercer:—Torrey. Morris: Morristown—Leggett. Bergen: Closter and Godwinville—Austin. Hunterdon: Pittstown—Best.
- S. Smithii**, Gray.
Camden: Little Timber Creek near Gloucester—A. H. Smith; tidal mud, Delaware River—Parker. Hardly distinct from the preceding.
- S. maritimus**, L., var. *macrostachyos*, Michx. Sea Club-rush.
On salt marshes; common.

S. fluviatilis (Torr.), Gray. River Club-rush.

Camden: Swampy borders of the Delaware—Parker. Salem:
In similar situations—Commons.

S. sylvaticus, L.

In swamps. Bergen: Closter—Austin. Sussex: Montague
township—Britton. Hunterdon: Along the Delaware near
Stockton—Best; Lambertville—Apgar.

S. atrovirens, Muhl.

In wet meadows. Monmouth: Freehold—Britton. Hudson:
Bergen Point, and common on the Newark marshes—Leggett.
Gloucester: Near Wolferth's Station—B. Heritage; and com-
mon in the northern counties.

S. polyphyllus, Vahl.

In wet places. Bergen: Closter—Austin. Hunterdon:
Rosemont—Best; Lambertville—Apgar. Morris: Cranetown,
along roadside—Britton. Evidently uncommon.

S. lineatus, Michx.

Bergen: Closter—Austin. Hudson: Bergen Point—Leg-
gett. Apparently very rare in the State.

ERIOPHORUM, L.

Cotton-grass.

E. cyperinum, L. (*Scirpus Eriophorum*, Michx.) Wool-grass.

In swamps. Common throughout the State.

Var. laxum (Gray), B. S. P.

Hudson: Bergen Point—Leggett. Hunterdon: Frequent
—Best.

E. Virginicum, L.

Swamps. Frequent in most sections of the State; very
abundant in the pine barrens.

E. polystachyon, L.

In bogs. Monmouth and Ocean: Not common—Knieskern.
Morris: Budd's Lake—Porter; Near Nolan's Point, Lake
Hopatcong—Britton. Bergen: Closter—Austin. Sussex:
Ogdensburg—Britton.

E. gracile, Koch.

Hudson: New Durham Swamp—Torrey Catalogue. Bergen: Demarest—Rudkin; Tenafly—A. Brown; Closter—Austin. Morris: Budd's Lake—Parker. Sussex: Newton—Garber.

FUIRENA, Rottb.

Umbrella-grass.

F. squarrosa, Michx. (*F. squarrosa*, var. *pumila*, Torr.)

Monmouth: Near Shark River, rare—Knieskern; Long Branch—Parker. (?) Atlantic: Mays Landing—Peters.

Var. hispida (Ehl.), Chapm. (*F. squarrosa* of Gray's Manual, not of Michaux.)

Cape May: In marshes—Parker. Ocean: Salt marshes, Toms River, rare—Knieskern; Forked River—Britton. Camden: On ballast, Petty's Island—Burk. Monmouth: Ocean Beach—A. Brown; Ocean Grove—Burk; North Spring Lake—Lighthipe. Atlantic: Mays Landing—Peters.

HEMICARPHA, Nees.

Hemicarpha.

H. micrantha (Vahl), Britt.

Camden: Petty's Island—Dr. Leidy. Hunterdon: Bull's Island—Moyer.

LIPOCARPHA, R. Br.

Lipocarpha.

L. MACULATA (Michx.), Torr.

Camden: Petty's Island—Leidy. Adventive from the South.

RYNCHOSPORA, Vahl.

Beak-rush.

R. cymosa (Willd.), Nutt.

In low grounds. Warren:—Knighton. Hunterdon: Byram—Schuh. Mercer: Princeton—Torrey; near Hightstown—Willis. Monmouth: Near Newberry Pond, Squan, rare—Knieskern. Camden: Near Griffith's Swamp—Parker. Gloucester:—Heritage.

R. Torreyana, Gray.

Wet places in the pine barrens. Monmouth and Ocean: Common—Knieskern. Burlington: Quaker Bridge—Torrey;

Atsion—E. Diffenbaugh. Atlantic: Pleasant Mills—Leggett;
Main Road Station—C. A. Gross.

R. capillacea, Torr.

Warren: Shore of White Pond, 1884—Porter.

R. fusca (L.), Link.

In low grounds. Ocean: Abundant in swamps near Manchester—Knieskern. Burlington: Quaker Bridge—Torrey. Atlantic: Near Cedar Lake—C. A. Gross. Camden: Near Spring Garden—Parker. Gloucester: Mickleton—B. Heritage.

R. gracilentia, Gray.

In pine-barren swamps. Monmouth and Ocean: Common—Knieskern. Burlington: Quaker Bridge—E. Diffenbaugh. Gloucester: Mickleton—B. Heritage.

R. pallida, M. A. Curtis.

Swamps in the southern counties. Ocean: Toms River—Parker. Burlington: Cranberry bogs east of Bordentown—Porter; Batsto and Shamong—Parker; Atsion—Canby; Quaker Bridge—Leggett. Camden: Merchantville—Parker. Gloucester: Near Woodbury—C. E. Smith.

R. alba (L.), Vahl.

In bogs. Common or frequent throughout the State.

R. Knieskernii, Carey.

In low grounds in the pine barrens. Reported as only on bog iron ore. Ocean: Paint Hollow, two miles from Manchester, on the road to Cassville—Knieskern; Hope Village, Shark River—A. H. Smith. Burlington: Quaker Bridge—Parker; Atsion—Martindale.

R. glomerata (L.), Vahl.

In low grounds. Frequent or common throughout the State; most abundant in the southern counties. The paniculate form occurs at Quaker Bridge—Parker.

R. axillaris (Lam.), Britt. (*R. cephalantha*, Gray.)

Sandy swamps in the pine barrens. Ocean: Bogs near Manchester, very rare—Knieskern. Burlington: Along Atsion River and at Quaker Bridge—Parker. Atlantic: Hammonton—Bassett.

R. laxa, Vahl, var. *macrostachya* (Torr.), Clarke. (*R. macrostachya*, Gray.)

In swamps. Ocean: Beaverdam, Manchester, rare—Knieskern. Camden: Longacoming—C. E. Smith. Cape May, and Gloucester: Franklin—Parker. Salem: Border of a pond near Pennsgrove—Commons.

CLADIUM, P. Br.

Twig-rush.

C. mariscoides (Muhl.), Torr.

In swamps. Frequent or common throughout the State.

SCLERIA, Berg.

Nut-rush.

S. triglomerata, Michx.

In low grounds. Bergen: Closter, rare—Austin; Rutherford—Schuh. Hudson: Newark meadows—Le Conte. Morris: Chatham—Leggett. Hunterdon: Frequent—Best; and frequent on Yellow Drift soils, middle and southern counties.

Var. *gracilis*, Britt.

Camden: Griffith's Swamp—A. H. Smith.

S. reticularis, Michx.

In sandy soil. Ocean: Manchester—Leggett. Atlantic: Main Road Station—C. A. Gross.

S. Torreyana, Walp. (*S. laxa*, Torr.)

In low grounds in the pine barrens; not common. Ocean: Paint Hollow, near Manchester, rare—Knieskern; Toms River—Parker. Burlington: Near Batsto—Parker.

S. pauciflora, Muhl.

Warren: In dry, rocky soil on Mt. Tammany, Delaware Water Gap—Britton. Monmouth: Near Shark River, on dry upland—Knieskern. Atlantic: Landisville and near Buena Vista—C. A. Gross.

S. verticillata, Muhl.

Bergen: Hackensack meadows, 1863—T. F. Allen.

CAREX, L.

Sedge.

C. subulata, Michx.

In swamps. Hudson: Weehawken—Torrey Catalogue; New Durham—R. H. Brownne. Bergen: Near Carlstadt—Schuh. Middlesex: South Amboy—Leggett. Ocean and Monmouth: Cedar swamps and borders of small streams, quite common—Knieskern. Mercer: Near Trenton—Stowell. Camden, and Gloucester: Near Malaga—Parker.

C. folliculata, L.

Swamps and wet meadows. Common throughout the State.

C. intumescens, Rudge.

Wet meadows and swamps. Common throughout the State.

C. Grayii, Carey.

Swamps. Bergen: Closter—Austin.

C. lupulina, Muhl.

In low grounds. Cape May:—Parker. Gloucester: Two miles west of Mickleton—B. Heritage; and common in the middle and northern counties.

Var. polystachya, Schw. & Torr. (*C. lupuliformis*, Sartw.)

Bergen: Hackensack Flats, in woods—Austin. Sussex: Swamp above Woodruff's Gap—Britton.

C. utriculata, Boott.

In swamps. Camden: Kaighn's Point—E. Diffenbaugh. Morris: Budd's Lake—Porter. Hudson: New Durham swamps—Leggett.

C. monile, Tuck.

In swamps. Bergen: Closter—Austin; Lyndhurst—Schuh. Morris: Boonton—Britton. Sussex: Franklin Farnace—Garber. Hunterdon: Kingwood, rare—Best.

C. Tuckermani, Boott.

Bergen: English Neighborhood—Austin in Parker Herb.

C. bullata, Schk.

Low grounds. Bergen: Closter—Austin. Middlesex: Ford's Corners—Lighthipe. Ocean and Monmouth: Not rare—Knies-

kern; Toms River—Britton. Atlantic and Camden:—Parker.
Gloucester: One mile northwest of Mickleton—B. Heritage.

C. Olneyi, Boott.

Middlesex: Near Woodbridge—Lighthipe. Determined by
Prof. Porter.

C. lurida, Wahl. (*C. tentaculata*, Muhl.)

Wet meadows. Common throughout the State.

Var. gracilis (Boott), Bailey.

Bergen: Closter—Austin.

C. Schweinitzii, Dewey.

“Canada to New Jersey”—Boott. “Wet swamps, New Jersey”—Gray Manual. Not seen by me from the State.

C. hystericina, Muhl.

In wet meadows. Frequent throughout the State.

C. Pseudo-Cyperus, L.

Bergen: Closter—Austin. Not seen by me.

Var. Americana, Hochst. (*C. comosa*, Boott.)

Swamps. Salem:—Commons; and frequent in the middle and northern counties.

C. squarrosa, L.

In low grounds. Occasional in the southern parts of the State; frequent in the middle and northern counties.

C. scabrata, Schw.

In wet grounds. Sussex: Andover—Garber; High Point and Pochuck Mt.—Britton. Warren: Washington—Garber. Hunterdon: Ravine above Milford—Porter. Rosemont, rare—Best. Morris: Boonton—Britton. Bergen: Closter and Palisades—Austin.

C. vestita, Willd.

In damp, sandy soil. Bergen: Closter—Austin. Essex: Franklin—Rusby. Morris: Budd's Lake—Porter. Warren: Washington—Garber. Hunterdon: Sergeantsville and Rosemont—Best. Union: Plainfield—Tweedy; and frequent in the southern counties.

C. striata, Michx., *var. brevis*, Bailey.

Wet places in the pine-barren regions. Ocean: Near Manchester—Knieskern; New Egypt and Toms River—Britton; and southward. Not rare.

C. filiformis, L.

In bogs. Bergen: Abundant along Buckman Road one-half mile northeast of Closter—Austin; Hackensack meadows—Leggett. Hunterdon: Rare—Best. Morris: Budd's Lake—Parker. Rare.

Var. lanuginosa (Michx.), B. S. P. (*C. lanuginosa*, Michx.)

In low grounds. Monmouth: Near Squan—Knieskern. Essex: Franklin—Rusby. Bergen: Closter—Austin. Sussex: Ogdensburg—Britton. Warren: Washington—Garber. Camden:—Parker. Hunterdon: Common—Best.

C. trichocarpa, Muhl.

In swamps. Bergen: Closter—Austin. Sussex: Along Flat Brook above Walpack Centre—Britton. Hunterdon: Stockton—Best.

C. riparia, W. Curtis.

In swamps. Gloucester: River swamps along the Delaware—Parker. Ocean: Manchester—Tweedy. Bergen: Along the Northern Railroad—Leggett; Carlstadt—Schuh; Closter—Austin. Morris: Budd's Lake—Porter. Sussex: Near Andover—Garber.

C. Buxbaumii, Wahl.

In bogs. Bergen: Englewood—Leggett; Hackensack marshes—Britton.

C. aquatilis, Wabl.

Camden: Shore of the Delaware north of Camden—Parker.

C. stricta, Lam.

Swamps and wet meadows. Very common throughout the State.

Var. decora, Bailey. (*C. aperta*, Olney.)

Morris: Budd's Lake—Porter. Camden:—C. E. Smith.

C. Barrattii, Schw. & Torr.

Swamps, southern counties; apparently rare. Ocean: Common about Manchester—Knieskern; Tweedy. Gloucester: Frequent about Mickleton—B. Heritage.

C. torta, Boott.

In swamps, northern counties. Essex: Verona—Rusby. Hunterdon: Rosemont—Porter. Sussex: High Point—Britton.

C. prasina, Wahl. (*C. miliacea*, Muhl.)

In low grounds. Hudson: New Durham—Leggett. Essex: Verona—Rusby. Morris: Along Rockaway River below Boonton—Britton. Sussex: High Point—Britton. Hunterdon: Frequent—Best. Gloucester: Mullica Hill—Heritage.*

C. crinita, Lam.

In wet places. Common throughout the State.

Var. gynandra (Schw.), Schw. & Torr. (*C. gynandra*, Schw.)

In cold bogs. Morris:—Porter. Warren: Near Oxford—W. H. Harrison. Sussex: Near High Point—Britton. Hunterdon:—Best.

C. limosa, L.

Morris: In the bog at Budd's Lake—Porter.†

C. virescens, Muhl.

In dry fields and woods. Common throughout the State.

C. triceps, Michx., *var. hirsuta* (Willd.), Bailey.

In dry fields and woods. Frequent throughout the State.

C. Smithii, Porter.

Gloucester and Camden: In meadows—Parker; near Mickleton—Heritage.

C. longirostris, Torr.

Hunterdon: Byram Station and Lambertville—Best. Warren: Along Van Campen's Creek—Britton & Rusby.

**C. salina*, Wahl (?). "On the banks of a branch of Tomas River, two miles north-east of Manchester, Ocean Co., where it is abundant. This species is included with some hesitation, but it compares very well with my specimens from Sweden."—Knieskern in Catalogue of Plants of Monmouth and Ocean Counties, p. 36.

†*C. irrigua*, Smith, of the Willis Catalogue, admitted into the Preliminary Catalogue, is this species.

- C. arctata*, Boott.
Bergen: Closter—Austin. Essex: Verona—Rusby.
- C. debilis*, Michx.
In low grounds. Frequent throughout the State.
- C. venusta*, Dewey, var. *glabra* (Boott), Bailey. (*C. glabra*, Boott.)
In sphagnous swamps. Cape May: East Creek—Parker.
Atlantic: Absecon—Canby. Camden:—C. E. Smith.
- C. gracillima*, Schw.
In low grounds. Bergen: Closter—Austin. Hudson: Weehawken—Rudkin. Passaic: Little Falls—Rusby. Sussex: High Point—Britton. Warren: Washington—Garber. Morris: Taylortown—Britton. Union: Plainfield—Tweedy.
- C. Davisii*, Schw. & Torr.
Warren: Marble Hill—Porter. Hunterdon: Rosemont—Best.
- C. grisea*, Wahl.
In low meadows. Frequent through the middle and northern counties.
- C. glaucodea*, Tuck. (*C. flacosperma*, Gray, not Dewey.)
Camden: Haddonfield—E. Diffenbaugh. Ocean: Horners-town, on upland—Knieskern. Essex: Verona—Rusby. Hunterdon: Frequent—Best.
- C. granularis*, Muhl.
In low meadows. Hunterdon: Rare—Best. Frequent through the middle and northern counties.
- C. flava*, L.
In low meadows. Sussex: Andover—Garber; Waterloo—Porter & Britton. Camden: Kaighn's Point, 1865—Parker. Warren: White Pond—Porter.
- C. Elderi*, Retz.
"New Jersey"—Torrey Herb. Warren: White Pond, near Blairstown, 1884—Porter. Camden: Atco—Martindale.
- C. pallescens*, L.
In low meadows. Ocean: New Egypt, very rare—Knieskern. Union: Plainfield—Tweedy. Essex: Montclair—Rusby. Bergen: Closter—Austin. Sussex: Ogdensburg—Britton.

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C. conoidea, Schk.

In low meadows. Bergen: Closter—Austin; Mahwah—Britton. Passaic: Paterson—Leggett; Ringwood—Britton. Essex: Verona—Rusby. Morris: Budd's Lake—Porter. Sussex: Ogdensburg—Britton. Warren:—Porter. Union: Plainfield—Tweedy. Hunterdon: Frequent—Best.

C. oligocarpa, Schk.

Bergen: Closter—Austin. Hunterdon: Frequent—Best.

C. laxiflora, Lam. (Including *var. intermedia*, Boott.)

In low woods. Common throughout the State.

Var. styloflexa (Buckley), Boott.

Bergen: Closter—Austin. Hunterdon: Rosemont—Schuh.

Var. plantaginea (Schk.), Boott.

In dry woodlands. Union: Plainfield—Tweedy. Essex: Verona—Rusby. Morris: Near Boonton—Britton. Hunterdon: Common—Best.

Var. blanda (Dewey), Boott.

In woods. Apparently common throughout the State.

Var. latifolia, Boott.

Bergen: Palisades—Austin. Hunterdon: Frequent—Best.

Var. varians, Bailey.

"New Hampshire to New Jersey"—Bailey, Mem. Torr. Club, i. 32.

C. laxiculmis, Schwein. (*C. retrocurva*, Dewey.)

Hunterdon: Rosemont—Best. Union: Plainfield—Tweedy. Bergen: Closter—Austin.

C. ptychocarpa, Steud.

Morris: In woods near Lake Hopatcong, 1884—Britton.

C. digitalis, Willd.

In woods. Union: Plainfield—Tweedy. Morris: Boonton—Britton. Hunterdon: Holland Station—Garber; common—Best. Warren: Marble Hill—Porter. Monmouth: Squan, very rare—Knieskern.

C. platyphylla, Carey.

In rocky woods. Sussex: Franklin Furnace—Britton. Warren: Delaware Water Gap—Garber; near Phillipsburg—Porter. Hunterdon: Lambertville—Apgar; frequent—Best. Bergen: Closter and Palisades—Austin. Hudson: Weehawken—Ruger. Essex: Frequent—Rusby. Somerset: Peapack—Apgar.

C. polymorpha, Muhl.

Ocean and Monmouth: "Borders of swamps, rare"—Knieskern. Union: Plainfield—Tweedy. Warren: Near Washington—Porter.

C. tetanica, Schk.

Sussex: Newton—Garber. Bergen: Little Ferry—Britton. Hunterdon: Baptisttown—Best.

C. livida, Willd.

Ocean: In abundance and perfection in swamps about Manchester—Knieskern. Burlington: Atsion—Parker.

C. eburnea, Boott.

Sussex: On limestone ledges—Austin.

C. pedunculata, Muhl.

Morris: Morristown—Leggett. Bergen: Closter—Austin.

C. Pennsylvanica, Lam.

In dry soil. Very common throughout the State.

C. communis, Bailey. (*C. varia*, Dewey.)

In dry soil. Union: Plainfield—Tweedy. Hunterdon: Byram—Schuh; common—Best. Essex: South Orange—Leggett. Bergen: Closter—Austin. Sussex: High Point—Britton.

C. varia, Muhl. (*C. Emmonsii*, Dewey.)

In dry soil, hillsides, etc. Common through the middle and northern counties, and apparently frequent southward.*

C. nigro-marginata, Schw.

In dry, sandy soil. Hunterdon: Near Milford—Garber; below Holland—Porter. Burlington: Hartford—Parker. Cam-

*This is the *C. Nova-Angliae* of Dr. Knieskern's Catalogue.

den: Near Camden and Winslow—Parker. Gloucester: Below Woodbury—Canby. Salem: Pennsgrove—Commons.

C. umbellata, Schk.

Monmouth and Ocean: Dry, sandy fields, common—Knieskern; Toms River—Britton. Warren: Delaware Water Gap—Garber. Hunterdon: Frequent—Best.

C. pubescens, Muhl.

Hunterdon: Near Rosemont, 1885—Best.

C. Willdenovii, Schk.

In woods. Bergen: Closter—Austin. Hunterdon: Below Holland Station and above Milford—Porter; Rosemont—Best. Gloucester: Near Woodbury—C. E. Smith.

C. polytrichoides, Muhl.

Gloucester: Mickleton, not common—B. Heritage. Frequent in the middle and northern counties.

C. stipata, Muhl.

In swamps and low meadows. Common throughout the State.

C. teretiuscula, Good.

In swamps. Bergen: Common at Closter—Austin. Morris: Budd's Lake—Porter. Sussex: Andover, and Warren:—Garber.

C. vulpinoidea, Michx.

In swamps and low meadows. Common throughout the State.*

C. tenella, Schk.

In bogs in the northern counties. Hudson: New Durham—Austin. Bergen: Tenafly—Leggett. Morris: Budd's Lake—Porter.

C. rosea, Schk.

In moist woods. Morris: Berkshire Valley, and Sussex: Sparta—Britton.

Var. radiata, Dewey.

In woods. Frequent or common throughout the State. Much more abundant than the type.

**C. disticha*, Huds., ascribed to Sussex Co. in the Willis Catalogue, on the authority of Garber, and admitted into the Preliminary Catalogue, must be omitted as uncertain.

Var. retroflexa (Muhl.), Torr.

Bergen: Closter and Palisades—Austin. Hunterdon: Rosemont—Best. Monmouth: Meadow woods near Squan—Knieskern.

C. sparganoides, Muhl.

Hunterdon: Rosemont—Best. Passaic: North of Ringwood, and Morris: Lake Hopatcong—Britton. Essex: Franklin—Rusby.

C. Muhlenbergii, Schk.

In dry fields. Bergen: Closter—Austin; Rutherford—Schuh. Warren: Hills above Carpentersville and Phillipsburg—Porter. Hunterdon: Frequent—Best. Sussex: High Point—Britton. Monmouth and Ocean: Rare—Knieskern. Camden: Near Griffith's Swamp—C. E. Smith. Atlantic: Atlantic City—Parker. Gloucester: Mickleton, quite common—B. Heritage.

Var. enervis, Boott.

Bergen: Closter—Austin. Sussex: Near Andover—Britton.

C. cephalophora, Muhl.

In dry fields and woods. Common or frequent throughout the State.

C. exilis, Dewey.

In pine-barren swamps. Monmouth: Shark River, and Ocean: Near Manchester and Burrsville—Knieskern; Toms River—Britton. Burlington: Hanover—Apgar; Pleasant Mills—Geo. Smith. Atlantic: Absecon—Canby.

C. echinata, Murray. (*C. stellulata*, Good.)

"New Jersey"—Olney. Morris: Budd's Lake—Porter. Hunterdon: Stockton—Best. Ocean: Toms River—Britton; "common"—Knieskern.

Var. radiata (Wahl.), B. S. P. (*C. stellulata*, Good., *vars. scirpoides* and *angustata*, Carey, and *C. sterilis*, Willd.)

In low grounds. Common throughout the State.

Var. conferta (Chapm.), Bailey.

Camden: Longacoming—C. E. Smith. Burlington: Atsion—Commons; Quaker Bridge—C. E. Smith. Ocean: Toms River—Britton.

C. canescens, L.

In wet meadows. Frequent throughout the State.

C. trisperma, Dewey.

In bogs. Ocean: Shady swamps near Manchester, very rare—Knieskern. Hudson: Secaucus—Leggett. Cape May: Dennisville; Gloucester: Malaga, and Camden: Spring Garden—Parker. Morris: Budd's Lake—Porter. Warren: Washington—Garber.

C. bromoides, Schk.

Swamps in the northern counties. Bergen: Closter—Austin; Tenafly—Leggett. Sussex: High Point—Britton. Warren: Washington—Garber. Hunterdon: Rosemont, rare—Best.

C. tribuloides, Wahl. (*C. lagopodioides*, Schk.)

In low grounds. Camden: Frequent about Camden—Martindale; and frequent in the middle and northern counties.

Var. cristata (Schw.), Bailey. (*C. cristata*, Schw.)

Bergen: Closter—Austin. Morris: Near Boonton, and Warren: Along the Delaware River above the Water Gap—Britton. Union: Plainfield—Tweedy. Hunterdon: Frequent—Best.

C. scoparia, Schk.

Swamps and low grounds. Common throughout the State.

C. adusta, Boott.

In dry soil. Sussex: Andover—Britton. Warren: Marble Hill—Porter. Hunterdon: Rosemont—Schuh.

C. straminea, Schk.

In low grounds. Common throughout the State.

Var. mirabilis (Dewey), Tuck.

Monmouth and Ocean: Damp meadows, rare—Knieskern. Union: Plainfield—Tweedy. Hunterdon: Frequent—Best.

Var. alata (Torr.), Bailey.

Atlantic: Atlantic City—Canby. Cape May:—Heritage.

Var. foenea (Willd.), Torr. (*C. foenea*, Willd.)

Along the edges of salt or brackish marshes; common. Occasionally farther inland.

C. moniliformis (Tuck.), Britt. (*C. silicea*, Olney; *C. foenea*, Willd., *var. sabulonum*, Gray.)

Sea-beaches; common.

GRAMINEÆ.

PASPALUM, L.

Paspalum.

P. Walterianum, Schult.

Cape May:—Nuttall. Atlantic: Landisville, very scarce—
C. A. Gross. Salem: Low grounds south of Pennsgrove—
Commons. Gloucester: In a field two miles west of Mickleton
—B. Heritage.

P. setaceum, Michx.

In dry fields. Common throughout the State.

P. læve, Michx.

In low grounds. Warren: Marble Hill—Porter. Bergen:
Lyndhurst—Schuh. Essex: Franklin—Rusby. Hunterdon:
Frequent—Best; and frequent in the middle and southern
counties.

AMPHICARPUM, Kunth.

Amphicarpum.

A. Purshii, Kunth.

Damp, sandy soil in the pine barrens. Ocean: Mauchester
—Knieskern; and frequent southward.

PANICUM, L.

Panic-grass.

P. filiforme, L.

In dry, sandy fields. Hunterdon: Frequent—Best. Mid-
dlesex: Near South Amboy—Britton; and frequent or common
southward.

P. GLABRUM (Schrad.), Gaud. Crab-grass.

In fields and waste places; frequent. Naturalized from
Europe.

P. SANGUINALE, L. Crab-grass.

In waste and cultivated grounds; very common. Naturalized
from Europe.

P. depauperatum, Muhl.

Dry woods and hills. Atlantic: Landisville—C. A. Gross.
Ocean: New Egypt—Britton. Gloucester: Mickleton, not

common—B. Heritage; and frequent on rocky hills in the middle and northern counties.

P. scoparium, Lam. (*P. pauciflorum*, Ell.?)

In low grounds. Warren: Above the Water Gap, along the river shore—Britton. Hunterdon: Below Carpentersville and at Holland Station—Porter; Rosemont—Best; and frequent in the middle and southern counties.

P. dichotomum, L.

In fields and woods. Common throughout the State.

P. nitidum, Lam.

In fields and woods. Common throughout the State.

Var. viride (Vasey), Britt.

In woods. Sussex: Hamburg Mt. and High Point; Bergen: Pleasant Valley—Britton.

Var. pauciflorum (Vasey), Britt.

Morris: Mountain east of Lake Hopatcong—Britton.

P. pubescens, Lam.

In dry woods. Frequent in the northern counties.

Var. barbulatorum (Michx.), Britt.

Hunterdon: Rosemont—Schuh. Morris: Long Hill—Leggett; Charlotteburg, and Warren: Delaware Water Gap—Britton. Bergen: Pleasant Valley—Rudkin.

P. latifolium, L.

In woods and moist thickets. Common throughout the State.

Var. molle, Vasey.

Hunterdon: Common—Best; Rosemont—Schuh. Sussex: Sparta and Pimple Hills—Britton.

P. commutatum, Schultes. (*P. nervosum*, Muhl.)

Hunterdon: Rosemont—Best, 1888.

P. clandestinum, L.

Moist thickets. Frequent throughout the State.

Var. pedunculatum, Torr.

Union: Plainfield—Tweedy.

P. viscidum, Ell.

In low grounds. Cape May: Dennisville, and Camden:—Parker. Gloucester: Occasional about Mickleton—B. Heritage.

P. sphærocarpon, Ell.

Hunterdon: Rosemont—Schuh. Union: Plainfield—Tweedy. Sussex: High Point and Ogdensburg—Britton.

P. microcarpon, Muhl.

"New Jersey"—Leggett; station not reported. Specimen in State Herbarium. Camden:—E. Diffenbaugh in Columbia College Herbarium.

P. capillare, L. Old-witch Grass.

Fields and roadsides. Very common throughout the State.

P. proliferum, Lam.

Borders of marshes. Bergen: Closter—Austin. Hunterdon: Rosemont—Schuh; and common along the borders of salt or brackish meadows, middle and southern counties.

P. MILIACEUM, L. The Millet of Scripture.

Atlantic: Landisville, introduced, 1883—C. A. Gross. Camden: In ballast—Parker. Hudson: Secaucus—R. G. Eccles; in ballast—Communipaw—A. Brown. Fugitive from Europe.

P. verrucosum, Muhl.

Monmouth and Ocean: Sandy swamps near the coast, rare—Knieskern; Sea Bright—A. Brown; Manchester and Forked River—Britton. Atlantic: Landisville—C. A. Gross. Gloucester: Woodbury—Martindale; Mickleton, frequent—B. Heritage.

P. anceps, Michx.

Hunterdon: Stockton, frequent—Best. Salem: Nikomis Run near Woodstown—Britton. Camden:—Parker. Gloucester: Near Mickleton—B. Heritage; and frequent in pine-barren swamps.

P. agrostoides, Muhl.

Wet meadows and shores. Frequent throughout the State.

P. virgatum, L.

In low grounds. Very common along the borders of salt and brackish marshes, and along the shores of the Delaware River; apparently uncommon in the interior of the State.

P. amarum, Ell., *var. minor*, Vasey & Scribn.

On sandy sea-beaches; frequent.

P. CRUS-GALLI, L. Barnyard Grass.

In waste places; frequent. Naturalized from Europe.

Var. hispidum (Muhl.), Torr.

In salt or brackish marshes; common.

SETARIA, Beauv.

Bristly Fox-tail Grass.

S. VERTICILLATA (L.), Beauv.

Ocean and Monmouth: Cultivated fields, not common—Knieskern. Essex: In waste places, Newark—Leggett. Hudson: Secaucus—Schub; Hoboken—Leggett. Bergen: Closter—Austin. Hunterdon: Rosemont, rare—Best. Gloucester: Near Mickleton, rare—B. Heritage. Adventive from Europe.

S. GLAUCA (L.), Beauv.

Waste and cultivated grounds. Very common. Naturalized from Europe.

S. VIRIDIS (L.), Beauv.

In waste places; frequent. Naturalized from Europe.

S. ITALICA (L.), Kunth. Millet. Bengal Grass.

Camden: In river dredgings, and near Cooper's Creek—Parker. Burlington: Along Birmingham Creek below Pemberton—Britton. Hunterdon: Frequent—Best. Frequently planted. Fugitive from Europe.

CENCHRUS, L.

Bur-grass.

C. tribuloides, L.

In sandy soil, especially on the sea-beaches and Yellow Drift, extending up the Delaware River to the Water Gap—Rusby; and on the eastern side of the State to Ramseys, Bergen county—Stowell.

SPARTINA, Schreb.

Marsh Grass.

S. cynosuroides (L.), Willd.

Bergen: Hackensack marshes—Leggett. Atlantic: Near
Hammonton—Bassett. Hunterdon: Rare—Best.

S. polystachya (Michx.), Willd. Salt Reed-grass.

On salt marshes; common. Probably not specifically distinct
from the last.

S. juncea (Michx.), Willd. Salt Meadow-grass.

On salt meadows. The common grass.

S. stricta (Ait.), Roth, var. *glabra* (Muhl.), Gray.

In salt-marsh ditches, etc.; common.

Var. *maritima* (Walt.), B. S. P. (Var. *alterniflora*, Gray.)

In similar situations. Ocean: Sea Side Park—Parker.
Atlantic: Atlantic City—Martindale. Cape May:—Canby.
Salem: Tidal banks of the Delaware—Commons.

TRIPSACUM, L.

Gamma Grass. Sesame Grass.

T. dactyloides, L.

Low grounds near the coast, rare. Middlesex: Woodbridge
—G. W. Wright. Monmouth: Monmouth Beach Centre—A.
Brown. Atlantic: Border of pond four miles north of Egg
Harbor City—Parker.

ZIZANIA, L.

Indian Rice.

Z. aquatica, L.

In swamps along rivers and streams. Frequent through-
out the State. Very abundant on the Newark and Hackensack
marshes.

HOMALOCENCHRUS, Mieg.

White Grass.

H. Virginica (Willd.), Britt. (*Leersia Virginica*, Willd.)

In damp, shaded places. Monmouth and Ocean: Not com-
mon—Knieskern; Sea Bright—Leggett. Gloucester: Frequent

about Mickleton—B. Heritage; and common in the middle and northern counties.

- H. oryzoides** (L.), Poll. (*Leersia oryzoides*, Sw.) Rice Cut-grass.
Swamps. Frequent throughout the State.

ERIANTHUS, Michx.

Wooly Beard-grass.

- E. alopecuroides** (L.), Ell.

In dry soil in the southern counties. Not common. Camden:—Parker. Burlington: Below Burlington—Martindale. Atlantic: Hammonton—Parker. Gloucester: Near Swedesboro—Burk; at one place near Mickleton—B. Heritage.

ANDROPOGON, L.

Beard-grass.

- A. provincialis**, Lam. (*A. furcatus*, Muhl.)

In dry soil. Camden: Rather rare—C. E. Smith. Monmouth and Ocean: Rare—Knieskern; Tracys—Britton; Manchester—Rudkin. Burlington: Bordentown—Burk; and common in the northern and middle counties.

- A. scoparius**, Michx.

In dry fields. Common throughout the State.

- A. Virginicus**, L.

In dry, sandy soil. Warren: Frequent along the Delaware—Porter. Passaic: Passaic—Rusby. Hunterdon: Frequent—Best; and frequent in the middle and southern counties.

- A. glomeratus** (Walt.), B. S. P. (*A. macrourus*, Michx.)

In sandy swamps. Middlesex: South Amboy—Britton; and frequent southward on the Yellow Drift.

CHRYSOPOGON, Trin.

Chrysopogon.

- C. nutans** (L.), Benth. (*Sorghum nutans*, Gray.)

In dry soil. Frequent throughout the State.

PHALARIS, L.

Canary-grass.

P. CANARIENSIS, L. Canary-seed.

In waste places. Bergen: Closter—Austin. Hudson: Hoboken—Leggett; in ballast, Communipaw—A. Brown. Middlesex: Perth Amboy—Britton. Burlington: Moorestown—Miss A. M. Kaighn. Camden: In waste places and ballast—Parker. Hunterdon: Frequent—Best. Atlantic: Atlantic City—B. Heritage. Fugitive from Europe.

P. arundinacea, L. Reed Canary-grass.

Camden: Banks of the Delaware below Camden—Martindale. Gloucester: Greenwich township, several large patches—B. Heritage; and frequent or occasional in wet places, middle and northern counties. Probably in part introduced from Europe.

ANTHOXANTHUM, L.

Vernal Grass.

A. ODORATUM, L.

In fields and meadows. Very common. Naturalized from Europe.

HIEROCHLOA, Gmel.

Holy-grass. Vanilla Grass.

H. odorata (L.), Wahl. (*H. borealis*, Roem. & Schult.)

Borders of salt or brackish meadows. Salem: Near Salem—Canby. Monmouth: Near Squan Village, rare—Knieskern; Sea Bright—Britton. Essex: Meadows near Newark—W. H. Wolfe. Bergen: Carlstadt—Schuh. Hudson: Weehawken—Leggett.

ALOPECURUS, L.

Fox-tail Grass.

A. GENICULATUS, L.

Camden: In ballast and waste places—Parker. Fugitive from Europe.

Var. aristulatus (Michx.), Munro.

Bergen: Closter—Austin; Palisades—Leggett. Hudson: Bergen Point and Guttenberg—Leggett; Communipaw—A. Brown. Sussex: Newton—Garber. Mercer:—Torrey. Camden and Gloucester: In river swamps—Parker.

ARISTIDA, L.

Triple-awned Grass.

A. dichotoma, L.

Dry fields. Common throughout the State.

A. gracilis, Ell.

Dry fields. Frequent throughout the State.

A. purpurascens, Poir.

In dry soil. Sussex: Limestone rocks—Austin. Warren: Marble Hill and below Carpentersville, frequent—Porter. Hunterdon: Common—Best. Bergen: Rutherford, frequent—Schuh. Ocean and Monmouth: Not rare—Knieskern. Atlantic: Landisville, scarce—C. A. Gross; Mays Landing—Peters. Gloucester: Common near Paulsboro—B. Heritage.

A. tuberculosa, Nutt.

In dry sand. Middlesex: South Amboy—Britton. Monmouth: Sandy Hook, abundant—Ruger; Keyport—Britton; Middletown, rare—Knieskern.

STIPA, L.

Feather-grass. Black Oat-grass.

S. avenacea, L.

In dry soil. Bergen: Palisades—Austin; Closter—Leggett. Passaic: Wanaque—Britton; and common in the southern counties.

ORYZOPSIS, Michx.

Mountain Rice.

O. melanocarpa, Muhl.

In rocky woods, northern counties. Essex: Along First Mt.—Rusby. Bergen: Palisades—Austin. Sussex: Franklin—Garber; near Two Bridges and on Pochuck Mt.—Britton. Warren: Blairstown—Rusby; Phillipsburg and Marble Hill—Porter; Mt. Mohopinoke—Britton; Water Gap—Parker. Morris: Piccatinny—Britton. Hunterdon: Rosemont, rare—Best.

O. asperifolia, Michx.

Union: In woods near Plainfield—Tweedy.

O. juncea (Michx.), B. S. P. (*O. Canadensis*, Torr.)

Essex: Rusby, W. M. Wolfe. Not seen by me from the State.

MUHLENBERGIA, Schreb.

Drop-seed Grass.

M. sobolifera (Muhl.), Trin.

In rocky places. Hudson: Snake Hill—Britton. Essex: Verona—Rusby. Hunterdon: Near Milford—Porter; common—Best; and frequent in the northern parts of the State.

M. racemosa (Michx.), B. S. P. (*M. glomerata*, Trin.)

Bogs in the northern counties. Bergen: Closter—Austin; Rutherford, rare—Schuh. Morris: Budd's Lake—Porter. Sussex: In swamps south of Lake Grinnell—Britton. Warren: White Pond—Porter.

M. Mexicana (L.), Trin.

Low grounds. Frequent throughout the State.

M. sylvatica (Torr.), T. & G.

Monmouth and Ocean: Shady places, along fences, rare—Knieskern; and frequent or occasional in moist places, middle and northern counties.

M. tenuiflora (Willd.), B. S. P. (*M. Willdenovii*, Trin.)

Ocean and Monmouth: "Shady places, not common"—Knieskern. Warren: Rocky bluffs on the Delaware River below Phillipsburg—Porter. Sussex: On Pochuck Mt., near Decker Pond—Britton. Bergen: Clóster—Austin. Hunterdon: Frequent—Best.

M. diffusa, Schreb. Nimble Will.

Dry hills and woods. Frequent throughout the State.

M. capillaris, Kunth. Hair Grass.

Hudson: Snake Hill and Little Snake Hill—Leggett. Atlantic: Hammonton—Bassett. Gloucester: Near Woodbury—C. E. Smith.

BRACHYELYTRUM, Beauv.

Brachyelytrum.

B. aristosum (Michx.), B. S. P. (*B. aristatum*, Beauv.)

Monmouth: Shady banks near Shark River, not common—Knieskern. Camden:—Parker. Gloucester: One mile northwest of Mickleton—B. Heritage; frequent in rocky places in the northern counties.

HELEOCHLOA, Host.

H. SCHGENOIDES (L.), Host. (*Crypsis schænoides*, Lam.)

Camden: Waste grounds, Kaighn's Point—Parker. Mercer:
Trenton—Apgar. Adventive from Europe.

PHLEUM, L.

Timothy.

P. PRATENSE, L.

In fields and meadows. Common. Naturalized from Europe.

SPOROBOLUS, R. Br.

Drop-seed Grass.

S. asper (Michx.), Kunth. (*Vilfa aspera*, Beauv.)

Low grounds. Ocean and Monmouth: Not common—Knies-
kern. Warren: Marble Hill and below Phillipsburg—Porter;
Carpentersville—Garber. Bergen: Closter—Austin. Hunter-
don: Frequent—Best. Gloucester: Mickleton—Heritage.

S. vaginæflorus (Torr.), Vasey.

In dry soil. Frequent throughout the State.

S. compressus (Torr.), Kunth.

In pine-barren swamps. Frequent.

S. serotinus (Torr.), Gray.

In pine-barren swamps. Common.

AGROSTIS, L.

Bent-grass.

A. altissima (Walt.), Tuck. (*A. elata*, Trin.)

In pine-barren swamps. Camden: Atco—Martindale. At-
lantic: Egg Harbor—Parker; Landisville—C. A. Gross; Ham-
monton—Scribner. Burlington: Atsion—Martindale.

A. perennans (Walt.), Tuck. Thin-grass.

Damp, shaded places. Apparently frequent throughout the
State.

A. hiemalis (Walt.), B. S. P. Hair-grass. (*A. scabra*, Willd.)

In damp, open places. Common throughout the State.

A. ALBA, L. White Bent-grass.

In meadows; common. Naturalized from Europe.

Var. VULGARIS (With.), Thurb. Red-top. (*A. vulgaris*, With.)

In fields and meadows. Commonly cultivated. Naturalized from Europe.*

CINNA, L.

Wood Reed-grass.

C. arundinacea, L.

Camden: Banks of the Delaware above Camden—Martindale.
Gloucester: Occasional about Mickleton—B. Heritage. Ocean
and Monmouth: Shady places, rare—Knieskern; and frequent
in the middle and northern counties.

DEYEUXIA, Clarion.

Deyeuxia.

D. Canadensis (Michx.), Beauv. (*Calamagrostis Canadensis*, Beauv.)

In low meadows. Monmouth: Near Squan and Shark
Rivers—Knieskern. Hunterdon: Frequent—Best. Gloucester:
At one locality near Mickleton—B. Heritage. Hudson: New
Durham—Leggett; and frequent in the northern parts of the
State.

D. Nuttalliana (Steud.), Vasey. (*Calamagrostis Nuttalliana*, Steud.)

In low grounds. Bergen: Closter and Palisades—Austin.
Hudson: Secaucus swamps—Leggett. Hunterdon: Common—
Best. Sussex: Newton—Garber. Morris: Budd's Lake—
Porter; Morristown—Leggett; and frequent in the middle and
southern counties.†

AMMOPHILA, Host.

Beach Grass.

A. arenaria (L.), Link. (*Calamagrostis arenaria*, Roth.) Sea Sand-reed.
Sandy sea-beaches; very common.

**A. canina*, L., admitted into the Preliminary Catalogue as from Andover, collected by Prof. Porter, must be omitted, as the specimens have been lost, and Prof. Porter is uncertain about the identification.

† This is the *Calamagrostis coarctata* of Dr. Knieskern's Catalogue of the Plants of Ocean and Monmouth Counties, and probably the *C. confinis* of Dr. Willis' Catalogue, attributed to swamps in Mercer county.

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A. brevipilis (Torr.), Benth. (*Calamagrostis brevipilis*, Gray.)

In pine-barren swamps; frequent. Probably generically distinct from the last.

AIRA, L.

Hair-grass.

A. PRÆCOX, L.

In sandy fields, southern counties. Camden: Near Camden—Redfield; near Gloucester—Parker. Gloucester: Abundant about Mullica Hill—Britton; Berkeley and Mickleton—B. Heritage. Atlantic: Somers Point, and Cape May:—Commons. Naturalized from Europe.

A. CARYOPHYLLEA, L.

Salem: Roadsides near Salem—Cauby. Fugitive from Europe.

DESCHAMPSIA, Beauv.

Hair-grass.

D. flexuosa (L.), Griseb. (*Aira flexuosa*, L.)

Sandy or rocky woods. Frequent throughout the State.

D. cæspitosa (L.), Beauv. (*Aira cæspitosa*, L.)

Monmouth and Ocean: "Damp places, rare"—Knieskern. Warren: Along the Delaware River above the Water Gap, 1884—Britton.

HOLOUS, L.

Velvet-grass.

H. LANATUS, L.

Fields and meadows; common. Naturalized from Europe.

TRISETUM, Pers.

Trisetum.

T. Pennsylvanicum (L.), B. S. P. (*T. palustre*, Torr.)

Wet meadows in the northern counties. Bergen: Closter—Austin. Morris: Near Brook Valley—Britton. Warren: Two miles north of Washington—Garber. Gloucester: Two miles southeast of Mickleton—Heritage.

AVENA, L.

Oat-grass.

A. striata, Michx.

Bergen: In rocky woods, Palisades—Austin. Not recently collected, and not seen by me from the State.

ARRHENATHERUM, Beauv.

Grass-of-the-Andes.

A. ELATIUS (L.), Mert. & Koch. (*A. avenaceum*, Beauv.)

Bergen: Closter—Austin. Moumouth: Near Shark River—Knieskern. Gloucester: One mile south of Mullica Hill—B. Heritage. Adventive from Europe.

DANTHONIA, DC.

Wild Oat-grass.

D. spicata (L.), Beauv.

In dry, sterile soil; common.

D. compressa, Austin.

Morris: On rocky hill near Lake Hopatcong, and Sussex: Summit of Kittatinny Mountain, Culver's Gap, and Warren: Kittatinny Mt., near Delaware Water Gap—Britton.

D. sericea, Nutt.

In sandy soil. Monmouth: Ocean Beach—A. Brown. Ocean: Manchester, rare—Knieskern.* Camden: Spring Garden; and occasional in the pine barrens.

CYNODON, Pers.

Bermuda Grass.

C. DACTYLON (L.), Pers.

Salem: Sandy shores of the Delaware River, well established in several places—Commons. Camden: Frequent in waste places and in ballast—Parker. Hudson: In ballast, Communipaw—A. Brown. Gloucester: Mantua and wharf at Swedesboro—B. Heritage. Naturalized or adventive from Europe.

* Reported in Catalogue of Monmouth and Ocean Co. Plants as *D. glumosa*.

GYMNOPOGON, Beauv.

Gymnopogon.

G. ambiguus (Michx.), B. S. P. (*G. racemosus*, Beauv.)

Camden: Griffith's Swamp—Parker. Atlantic: Hammon-
ton—Bassett. Gloucester: One mile east of Clarksboro—B.
Heritage.

BOUTELOUA, Lag.

Muskit-grass.

B. curtipendula (Michx.), Gray. (*B. racemosa*, Lag.)

Rocky places in the northwestern counties. Sussex: Lime-
stone ledges—Austin; Newton—Garber; Sterling Hill and
Franklin Furnace—Britton. Warren: On the first bluff below
Phillipsburg—Porter. Also Gloucester: Four miles south of
Mickleton—Heritage.

ELEUSINE, Gærtn.

Yard Grass. Wire Grass.

E. INDICA (L.), Gærtn.

In waste places; very common. Naturalized from India.

TRIODIA, R. Br.

Tall Red-top.

T. seslerioides (Michx.), Benth. (*Tricuspis seslerioides*, Torr.)

Dry soil. Common or frequent throughout the State.

DIPLACHNE, Beauv.

Diplachne.

D. fascicularis (Lam.), Beauv. (*Leptochloa fascicularis*, Gray.)

Borders of salt or brackish marshes; frequent.

TRIPLASIS, Beauv.

Sand-grass.

T. purpurea (Walt.), Chapm. (*Tricuspis purpurea*, Gray.)

Common on the sea-beaches and in the sands of the Yellow
Drift, middle and southern counties.

PHRAGMITES, Trin.

Reed.

P. vulgaris (Lam.), B. S. P. (*P. communis*, Trin.)

Swamps and borders of ponds. Frequent throughout the State.

CYNOSURUS, L.

C. CRISTATUS, L.

Hudson: Hoboken—Austin. Fugitive from Europe.

EATONIA, Raf.

Eatonia.

E. Pennsylvanica, (Spreng.), Gray.

Moist woods. Frequent throughout the State. Most abundant northward.

E. obtusata (Michx.), Gray.

Passaic: Passaic Falls, and Hudson: Weehawken—Leggett. Bergen: Carlstadt—Schuh. Cape May:—Common. Hunterdon: Frequent—Best.

E. Dudleyi, Vasey.

Hunterdon: On a dry hillside at Rosemont, 1886—Schuh.

ERAGROSTIS, Beauv.

Eragrostis.

E. hypnoides (Lam.), B. S. P. (*E. reptans*, Nees.)

Warren: Shore of the Delaware River above Phillipsburg and below Carpentersville—Porter. Camden: Petty's Island—Parker. Hunterdon: Common along the Delaware—Best.

E. MINOR, Host. (*E. poaoides*, Beauv.)

In waste places. Hunterdon: Byram—Best. Adventive from Europe.

E. MAJOR, Host. (*E. poaoides*, Beauv., *var. megastachya*, Gray.)

In waste places and cultivated fields; common. Naturalized from Europe.

E. PILOSA (L.), Beauv.

In waste places; frequent. Naturalized from Europe.

E. Purshii, Schrad.

Warren: Common along shore of the Delaware—Porter.
Hunterdon: Bull's Island—Best; and frequent in the middle and southern counties.

E. Frankii, Meyer.

Warren: Shore of the Delaware, Marble Hill and below Phillipsburg—Porter.

E. capillaris (L.), Nees.

In dry soil. Warren: Marble Hill—Porter. Hunterdon: Rosemont, frequent—Best. Bergen: Rutherford—Schuh. Hudson: Little Snake Hill—Britton; and frequent or occasional in sandy fields, middle and southern counties.

E. pectinacea (Michx.), Gray.

In dry fields. Frequent throughout the State.

Var. spectabilis (Pursh), Gray.

Monmouth: Sandy Hook—Britton. Hunterdon: Common—Best.

UNIOLA, L.

Spike-grass.

U. laxa (L.), B. S. P. (*U. gracilis*, Michx.)

In sandy soil. Middlesex: South Amboy—Britton; and frequent southward on the Yellow Drift.

DISTICHLIS, Raf.

Spike-grass.

D. spicata (L.), Greene. (*Brizopyrum spicatum*, Hook.)

Salt meadows; common.

DACTYLIS, L.

Orchard-grass.

D. GLOMERATA, L.

Fields and waste places; common. Naturalized from Europe.

POA, L.

Spear-grass. Meadow-grass.

P. ANNUA, L. Low Spear-grass.

In waste and cultivated grounds; very common. Naturalized from Europe.

P. compressa, L.

In dry fields and woods. Common throughout the State.

P. serotina, Ehrh.

In low meadows. Bergen: Closter—Austin. Essex: Rose-land—Rusby. Hudson: Bergen Point—Leggett. Camden:—Parker; in ballast—Burk.

P. PRATENSIS, L. Kentucky Blue-grass. Common Meadow-grass.

In fields and pastures. Extensively planted and escaped from cultivation. Naturalized from Europe.

P. TRIVIALIS, L.

In fields and meadows. Camden:—Parker. Monmouth:—Willis. Hudson: New Durham—Britton; Bergen Point—Leggett. Passaic: Near Rutherford—Schuh; near Great Notch—Britton. Hunterdon: Frequent—Best. Gloucester: Mickleton, rather rare—B. Heritage. Naturalized from Europe.

P. alsodes, Gray.

Monmouth and Ocean: "Borders of woods, not common"—Knieskern. Morris: Hanover—Rusby; Mt. Freedom—Schuh. Warren: Along Van Campen's Creek. Sussex: Newton and Two Bridges—Britton.

P. brevifolia, Muhl.

Warren: Shaded limestone bluffs below Phillipsburg, 1882—Porter. Hunterdon: Stockton—Best.

GLYCERIA, R. Br.

Manna-grass.

G. Canadensis (Michx.), Trin.

In swamps. Salem:—Commons. Gloucester: Frequent about Mickleton and Gibbstown—B. Heritage. Camden:—Parker; Elm and Kirkwood—Bassett. Burlington: Near Pemberton—Miss Willmarth. Ocean and Monmouth: Not common—Knieskern; and frequent in the middle and northern counties.

G. obtusa (Nutt.), Trin.

Swamps. Hudson: Homestead Station—Ruger. Middlesex: South Amboy and Sayreville—Britton; and frequent southward on the Yellow Drift.

G. elongata (Torr.), Trin.

Swamps. Monmouth: Holmdel—Rudkin. Bergen: Carlstadt—Leggett. Morris: Budd's Lake, and Warren: Near Washington—Porter. Sussex: Newton—Britton. Hunterdon: Stockton, rare—Best.

G. nervata (Willd.), Trin.

In wet meadows. Common throughout the State.

G. pallida (Eddy), Trin.

In shaded swamps and streams. Atlantic: Landisville—C. A. Gross. Gloucester: Two miles north of Mickleton—B. Heritage. Camden:—Martindale. Ocean and Monmouth: Not rare—Knieskern. Middlesex: Sayreville—Britton; and frequent in the middle and northern counties.

G. arundinacea, Kunth. (*G. aquatica*, Gray.)

Camden: Cooper's Bridge, 1863—E. Diffenbaugh.

G. fluitans (L.), R. Br.

In shallow water. Frequent throughout the State.

G. brevifolia (Muhl.), Schult. (*G. acutiflora*, Torr.)

In shallow water. Camden: Gloucester and Merchantville—Parker. Union: Near Plainfield—Tweedy. Gloucester: Two miles west of Mickleton—B. Heritage. Hudson: Hoboken—Leggett. Bergen:—Austin; Lyndhurst—Schuh. Passaic: Passaic—Schuh.

G. distans (L.), Wahl.

Salt meadows. Frequent along the coasts.

FESTUCA, L.

Fescue-grass.

F. MYURUS, L.

In dry fields. Monmouth: Squan, 1857—Leggett; and common in the southern parts of the State. Naturalized from Europe.

F. octoflora, Walt. (*F. tenella*, Willd.)

In dry soil. Sussex: Sparta—Britton. Essex:—Rusby. Hunterdon: Frequent—Best; and frequent in the middle and southern counties.

F. OVINA, L.

In waste places and ballast; frequent. Adventive from Europe.

F. DURIVUSCULA, L. (*F. ovina, L., var. durivuscula, Gray.*)

In fields, etc.; common. Naturalized from Europe.

F. ELATIOR, L.

In fields, etc.; common. Naturalized from Europe.

F. nutans, Spreng.

Gloucester: One mile west of Mickleton—B. Heritage.
Burlington: In woods along Coppuck's Run, Pemberton—Miss Willmarth. Monmouth and Ocean: "Meadows, not common"—Knieskern. Union: In rocky woods, Plainfield—Tweedy. Hudson: Bergen Point—Leggett; and frequent in rocky woods in the northern counties.

BROMUS, L.

Brome-grass.

B. SECALINUS, L. Cheat. Chess.

In wheat fields; common. Adventive from Europe.

B. RACEMOSUS, L. Chess.

Fields and meadows; common. Adventive from Europe.

B. MOLLIS, L.

In waste places. Cape May:—Commons. Atlantic; Sparingly at Hammonton—Bassett. Hudson: In ballast at Communipaw—Britton. Fugitive from Europe.

B. Kalmii, Gray.

Warren: In woods on limestone bluff one mile below Phillipsburg, and at White Pond, near Blairstown—Porter.

B. ciliatus, L.

In moist woods. Ocean and Monmouth: Not rare—Knieskern; frequent in the middle and northern counties.

B. purgans, L. (*B. ciliatus, L., var. purgans, Gray.*)

Warren and Hunterdon: Frequent along the Delaware, blooming much later than *B. ciliatus*—Porter. Sussex: Hamburgh Mt.—Britton.

B. TECTORUM, L.

In waste places; common. Naturalized from Europe.*

LOLIUM, L.

Darnel.

L. PERENNE, L.

In fields and waste places; common. Naturalized from Europe.

AGROPYRUM, J. Gærtn.

False Wheat.

A. REPENS (L.), Beauv. (*Triticum repens*, L.) Quitch Grass.

Fields and waste places; very common. Naturalized from Europe.

A. caninum (L.), Roem. & Schult. (*Triticum caninum*, Gray.)

In rocky woods. Sussex: Near Andover and Waterloo—Porter; Two Bridges and on Pochuck Mt. near Decker Pond—Britton.

HORDEUM, L.

Squirrel-tail Grass.

H. JUBATUM, L.

Camden: In ballast—Parker. Atlantic: Atlantic City and Hammonton—Bassett. Mercer: Trenton—Apgar. Fugitive from Europe.

ELYMUS, L.

Wild Eye.

E. Virginicus, L.

Banks of streams and rivers. Frequent throughout the State.

E. Canadensis, L.

Banks of streams and rivers. Monmouth: Shark River—Knieskern; Farmingdale—Britton. Bergen: Palisades—Austin; Hackensack meadows—Leggett. Hunterdon: Common—Best.

Var. *glaucofolius* (Muhl.), Gray.

Abundant in the valley of the Delaware River from Sussex to Salem counties—Porter, Britton, Martindale, Commons, Best.

*This must replace *B. sterilis*, L., of Dr. Willis' Catalogue, and my Preliminary Catalogue, a very closely allied plant, which to my knowledge has only been found in the ballast grounds

E. striatus, Willd.

Ocean and Monmouth: Banks of streams, rare—Knieskern.
 Hudson: Snake Hill—Schuh. Essex: Franklin—Rusby;
 Orange Mountains—Miss Isabel Mulford. Hunterdon: Rose-
 mont—Best; Ridge's Island—Schuh.

ASPRELLA, Willd.

Bottle-brush Grass.

A. *Hystrix* (L.), Willd. (*Gymnostichum Hystrix*, Schreb.)

In dry woods. Burlington: Arneytown—Britton; and fre-
 quent in rocky places, middle and northern counties.

CLASS 2.—GYMNOSPERMÆ.

CONIFERÆ.

THUJA, L.

White Cedar. Arbor Vita.

T. *occidentalis*, L.

“Rocky banks of the Hudson, New Jersey”—Torrey Cata-
 logue, 1819. Bergen: Near Closter—Austin. Warren:—
 Knighton. Commonly planted. Not seen by me growing wild
 within the State.

CHAMÆCYPARIS, Spach.

White Cedar.

C. *thyoides* (L.), B. S. P. (*Cupressus thyoides*, L.)

Passaic: Near the southern end of Greenwood Lake—Brit-
 ton. Essex: Swamp at Kingsland—Rusby. Hudson: New
 Durham and Secaucus Swamps, abundant—Austin, Leggett; a
 few trees on the meadows near Newark—W. M. Wolfe; Bergen
 Point—Leggett. Middlesex: About the buried forest on Mr.
 Ernst's property near South Amboy—Britton; and common
 southward in “cedar swamps.” Most abundant in the pine
 barrens.

JUNIPERUS, L.

Juniper.

J. communis, L. Juniper.

Monmouth and Mercer: Rare—Torrey. Hunterdon:—
Knighton; frequent—Best. Morris: Rockaway, Mine Hill,
Berkshire Valley and Montville—Britton; near Dover—Porter.
Bergen: Palisades, common—Austin.

J. Virginiana, L. Red Cedar. Savin.

Common in dry soil throughout the State, except in the pine
barrens, where it is only occasionally met with.

TAXUS, L.

Yew.

T. baccata, L., *var. Canadensis* (Willd.), Gray.

Damp woods in the northern counties. Bergen: Common on
the Palisades—Austin. Passaic: Greenwood Lake—Rudkin.
Sussex: Swartswood Lake—Wm. Bower; near Ogdensburg—
Britton.

PINUS, L.

Pine.

P. rigida, Mill. Pitch Pine.

In sandy or rocky soil. Common throughout the State. Very
abundant in the southeastern counties, forming the forests of the
pine barrens.

P. Virginiana, Mill. (*P. inops*, Ait.) Scrub Pine. Hemlock Pine.

Warren: Along the Delaware River above Riegelsville—
Merrill. Hunterdon: Abundant about Milford, and elsewhere
along the river—Porter; Best. Burlington: Sandy woods near
Pemberton—Miss Willmarth; and not uncommon in the western
part of the county—Lighthipe. Camden: Near the river, fre-
quent—Parker. Gloucester: Occasional—B. Heritage. Salem
and Cumberland: Frequent or common—Britton; J. B. Potter.
Monmouth and Ocean: Sandy soil, very rare—Knieskern.
Atlantic: Hammonton—Bassett; Mays Landing—Peters. Mid-
dlesex: Along the Raritan below New Brunswick—Smock;
Sand Hills, near Woodbridge—Lighthipe; near Monmouth
Junction—Britton.

P. pungens, Michx. f. Table Mountain Pine.

Hunterdon: Abundant one mile east of Sergeantsville—Best & Schuh, 1886.

P. echinata, Mill. (*P. mitis*, Michx.) Yellow Pine.

Middlesex: Sparingly near South Amboy—Britton. Monmouth and Ocean: Dry, sandy soil, common—Knieskern; New Egypt, abundant, but I have not seen much of it in the pine barrens—Britton. Burlington: Common in the western part of the county—Martindale. Camden: Frequent—Parker. Atlantic; Common at Hammonton—Bassett. Cumberland: Fairton—Commons; frequent about Bridgeton—J. B. Potter.

P. Strobus, L. White Pine.

Gloucester: Three miles south of Woodbury—Canby. Camden: Near Berlin, rare—H. A. Green. Ocean and Monmouth: Rare—Knieskern; Pine Brook Station, and northward along the Southern Railroad—Britton. Middlesex: A few trees near Woodbridge—Hollick; and frequent in the middle and northern counties, forming groves, but never forests.

PICEA, Link.

Spruce.

P. Mariana (Mill.), B. S. P. (*Abies nigra*, Poir.) Black Spruce.

Swamps in the northern counties. Hudson: New Durham Swamp—Torrey Catalogue; Secaucus—Leggett. Bergen: Palisades, rare—Austin. Morris: Budd's Lake—Porter; swamps near Succasunna—Britton. Passaic: Greenwood Lake—Rudkin; Cedar Pond, Bearfort Mt.—Merrill. Sussex: Swamp near High Point, and Warren: Kittatinny Mt. near the Water Gap—Britton. Hunterdon:—Knighton.

TSUGA, Carr.

Hemlock Spruce.

T. Canadensis (L.), Carr. (*Abies Canadensis*, Michx.)

Monmouth and Ocean: Shady borders of swamps, very rare—Knieskern; along Crosswicks Creek above New Egypt—Britton. Burlington: Along the Delaware above Burlington—Parker; Vincentown—Lighthipe; and frequent in moist woods and along

streams, middle and northern counties. Quite plentiful on the Kittatinny Mountains.

LARIX, Mill.

Tamarack. Larch.

L. laricina (Du Roi), B. S. P. (*L. Americana*, Michx.)

In swamps, northern counties. Hudson: New Durham—Leggett. Bergen: Along Passaic River and at Closter—Austin. Passaic: Greenwood Lake—Rudkin; Cedar Pond, Bearfort Mt.—Britton. Morris: Budd's Lake—Porter; abundant between Succasunna and Ironia—Britton. Sussex: Near Hamburg—Rudkin; between Andover and Waterloo, and near Sparta—Britton. Warren: Oxford Furnace—Henry Race; on Great Meadows, and a large grove south of Green's Pond—Britton.

SUB-KINGDOM II.—PTERIDOPHYTA.

ISOETEÆ.

ISOETES, L.

Quillwort.

I. echinospora, Durieu, var. *Braunii* (Durieu), Engelm.

In sandy bottoms of ponds and streams, in shallow water. Sussex: Pond west of Branchville, and in Morris Pond—Britton. Morris: Lake Hopatcong—Porter. Ocean: In Toms River—Parker.

I. riparia, Engelm.

Camden: Gravelly shores of the Delaware River—Parker.

I. Engelmanni, A. Br.

Bergen: Closter—Austin. Sussex: In deep water, west side of Lake Hopatcong—Britton. Camden: Along C. & A. R. R. four miles from Camden—C. E. Smith.

Var. *gracilis*, Engelm.

Bergen: In the Passaic River near low-water mark—F. Ennis.*

* See Engelmann, Trans. St. Louis Acad. Sci. iv. 384.

I. lacustris, L.

Sussex: Morris Pond, and in a cove on the west side of Lake Hopatcong—Britton.

SELAGINELLEÆ.

SELAGINELLA, Beauv.

Selaginella.

S. rupestris (L.), Spring.

On dry rocks. Essex: Common on First Mt.—Rusby. Hunterdon: Milford—Garber; and frequent in the northern parts of the State, preferring the trap and granitic out-crops.

S. apus (L.), Spring.

In low grounds. Ocean: Point Pleasant, rare—Knieskern. Gloucester: Mickleton—B. Heritage; and common or frequent in the middle and northern counties.

LYCOPODIACEÆ.

LYCOPODIUM, L.

Lycopod. Club-moss.

L. lucidulum, Michx.

In wet woods. Camden: Banks of Timber Creek and near Camden—Parker. Gloucester: Banks of Raccoon Creek—B. Heritage. Mercer: Princeton, rare—Peters. Somersét: Rocky Hill—Lighthipe; and frequent in the northern counties.

L. inundatum, L. (Including *var. Bigelovii*, Tuck.)

Bergen: Closter—Austin. Warren: Sunfish Pond, Kittatinny Mt. near Delaware Water Gap—Britton. Mercer: Princeton and Lawrence—Peters; and common in sandy swamps in the southern and middle counties.

L. alopecuroides, L.

Mercer: Lawrence Station—Peters. Cumberland: In a bog near Bridgeton—Britton; and frequent in sandy bogs in the pine barrens.

L. annotinum, L.

Bergen: Closter—Austin.

L. obscurum, L. (*L. dendroideum*, Michx.) Ground Pine.

In moist woods. Gloucester: Mickleton, rare—B. Heritage. Camden:—Parker; Atco—H. A. Green. Burlington: Moorestown—J. Stokes; New Lisbon—Lighthipe. Atlantic: Hamonton—Bassett. Ocean and Monmouth: Rare—Knieskern; and frequent in the middle and northern counties.

L. clavatum, L.

In dry woods. Gloucester: Mickleton, rare—B. Heritage; and frequent in the northern counties.

L. Carolinianum, L.

In sandy swamps in the pine barrens; frequent.

L. complanatum, L. Trailing Christmas Green.

In dry woods. Common throughout the State.

OPHIOGLOSSACEÆ.

OPHIOGLOSSUM, L.

Adder's Tongue.

O. vulgatum, L.

In wet meadows and woods. Burlington: Brown's Mills—E. J. Pond; Hanover—Apgar. Monmouth:—Torrey. Middlesex: Woodbridge—Lighthipe. Bergen: Abundant in Lodi township and on the Hackensack marshes—Woolson; Closter—Austin; West Rutherford—B. Vreeland. Essex: St. Cloud, Orange Mt.—Miss Isabel Mulford. Morris: Budd's Lake—Porter; hills west of Berkshire Valley—Mrs. Britton. Sussex: Andover—Garber; Waterloo—Porter.

BOTRYCHIUM, Sw.

Moonwort.

B. lanceolatum (Gmel.), Angstr.

Bergen: Closter—Austin; Lodi—Woolson. Morris: Chester—Austin. Berkshire Valley—Britton.

B. matricariæfolium, A. Br.

Morris: Big Swamp, Madison—F. J. Bumstead. Sussex: Kittatinny Mt. near Walpack Centre—Britton & Rusby. Bergen: Tenafly—Leggett.

B. Virginianum (L.), Sw.

In rich woods. Camden: Little Timber Creek—Martindale; Merchantville—J. Stokes; and common in the middle and northern counties.

B. ternatum (Thunb.), Sw., *var. obliquum* (Muhl.), Milde.

In low grounds. Frequent throughout the State.*

Var. intermedium, Eaton.

Bergen: Meadows near Mahwah—Miss Knight. Camden: Clementon—Britton.†

Var. dissectum (Spreng.), Milde.

In low grounds. Frequent or occasional throughout the State, often growing with one of the other varieties.

FILICES.

POLYPODIUM, L.

Polypody.

P. vulgare, L.

Camden: Banks of the Delaware below Gloucester—Parker. Burlington: Vincentown—Lighthipe. Mercer: Trenton—Appar; Princeton—Peters; and common in rocky woods, middle and northern counties.

CHEILANTHES, Sw.

Lip-fern.

C. vestita (Spreng.), Sw.

Rocky places in the northern and middle counties. Warren:—Parker. Hunterdon: Lambertville—Canby; cliffs above Milford, abundant—Porter. Union: Plainfield—Tweedy. Hud-

*This is the *B. lunarioides*, Sw., of the Knieskern and Willis Catalogues, and is the commonest form of the species in New Jersey.

†The *B. lunarioides* of Gray's Manual.

son: Snake Hill—Leggett. Essex: Montclair Heights—Rudkin. Passaic: Great Notch—Rusby; Little Falls—Miss Knight. Bergen: Palisades—Austin.

PELLÆA, Link.

Cliff-brake.

P. gracilis (Michx.), Hook.

Passaic: On rocks in a ravine, Godwinville—Austin.

P. atropurpurea (L.), Link.

On limestone rocks; not uncommon. Sussex: Near Newton—Wm. Bower; McAfee and near Sparta—Britton; near Andover—Rudkin. Warren: Near Blairstown—Rusby; below Phillipsburg—Porter; Pequest Valley and near the Kishpaugh Mine—Britton. Hunterdon: Rare—Best.

PTERIS, L.

Brake. Bracken.

P. aquilina, L.

In dry soil. Common throughout the State.

Var. lanuginosa, Bong.

Morris: Budd's Lake—Porter.

Var. caudata (L.), Hook.

Ocean: Near Toms River—Britton. Burlington: Brown's Mills, and Camden: Near Camden—Parker. Atlantic: Ham-
mington—E. A. Rau.

ADIANTUM, L.

Maidenhair Fern.

A. pedatum, L.

Burlington: Vincentown—Lighthipe. Monmouth: Key-
port—R. W. Brown. Mercer: About Trenton—E. Volk.
Salem: Sparingly at Auburn—B. Heritage; and common in
rich woods, middle and northern counties.

WOODWARDIA, Smith.

Chain-fern.

W. Virginica (L.), Smith.

In swamps. Bergen: Closter and Carlstadt—Austin; abund-
ant on the Hackensack marshes—Woolson. Hudson: Bergen
Neck—Leggett. Monmouth: Ocean Beach—Lighthipe; be-

tween Deal and Elberon—Mrs. W. McGeorge. Mercer: Near Trenton—Apgar. Gloucester: Occasional about Mickleton—B. Heritage; and frequent in the pine barrens.

W. areolata (L.), Moore. (*W. angustifolia*, Smith.)

In low grounds. Bergen: In swamps on the Hackensack marshes—Woolson; Woodridge—Schub. Essex: Franklin—Rusby. Hudson: Bergen Neck—Leggett. Union: Short Hills, near Plainfield—Tweedy. Mercer: Princeton Junction—Peters; and common in the middle and southern counties.

ASPLENIUM, L.

Shield-fern.

A. pinnatifidum (Muhl.), Nutt.

Warren: Blairstown, 1883—E. J. Pond.

A. ebenoides, R. R. Scott.

Sussex: Near Newton—Rusby. Specimen in Columbia College Herbarium.

A. Trichomanes, L.

On rocks. Somerset: Rocky Hill—Lighthipe. Mercer: Princeton—Peters. Hunterdon: Stockton, common—Best. Essex: Upper Montclair—Rusby; and frequent in the northern parts of the State.

A. platyneuron (L.), Oakes. (*A. ebenum*, Ait.)

On banks and in woods. Frequent throughout the State. Most abundant northward.

A. montanum, Willd.

Warren: On cliffs facing the Delaware near the summit of Mt. Tammany, 1879—S. W. Knipe.

A. Ruta-muraria, L.

On limestone rocks in the northwestern counties; frequent. Sussex: Between Newton and Swartswood Lake—Wm. Bower; Sparta—Rusby. Warren: Below Phillipsburg—Porter; Pequest Valley—Britton.

A. acrostichoides, Sw. (*A. thelypteroides*, Michx.)

In rich woods. Mercer: Princeton—Peters. Monmouth: Freehold—Willis; and frequent in the northern counties.

A. Filix-fœmina (L.), Bernh.

In moist woods. Gloucester, and Camden:—Parker; Kirkwood—H. A. Green. Burlington: Common about Pemberton—Miss Willmarth. Monmouth: Freehold—Willis; Navesink Highlands—D. S. Martin; and common in the middle and northern counties.

Var. laciniatum, Moore.

Monmouth: Near Red Bank—Miss Eliza Hosmer; A. B. Guilford.*

CAMPTOSORUS, Link.

Walking-fern. Walking-leaf.

C. rhizophyllus (L.), Link.

On trap-rocks, Bergen: Palisades—Austin; Darlington—Stowell. Passaic: Near Paterson—Wm. Bower; Little Falls—Randall Spaulding; Preakness—W. L. Fischer. Union: Near Plainfield—Tweedy. Hunterdon: Near Rosemont—Best; Lambertville—Apgar; above Milford—Porter; and frequent on limestone out-crops in the middle and northern counties.

PHEGOPTERIS, Fée.

Beech-fern.

P. Dryopteris (L.), Fée.

Passaic: Weazel Mt.—W. M. Wolfe. Warren: Low's Hollow—Porter.

P. connectilis (Michx.), B. S. P. (*P. polypodioides*, Fée.)

Sussex: Newton—Miss S. D. Thompson.

P. hexagonoptera (L.), Fée.

Common in the middle and northern counties.

ASPIDIUM, Sw.

Shield-fern.

A. Thelypteris (L.), Sw.

Marshes. Camden: Atco—H. A. Green. Gloucester: Common at Mickleton—Heritage. Monmouth: Sandy Hook—Britton; and common in the middle and northern counties.

*See Bulletin Torrey Bot. Club, vi. 168.

A. Noveboracense (L.), Sw.

In marshes and moist thickets. Ocean and Monmouth: Common—Knieskern. Gloucester: Common at Mickleton—B. Heritage; and common in the middle and northern counties.

A. spinulosum, Sw.

Mercer: Lawrence Station—Peters.*

Var. intermedium (Willd.), D. C. Eaton.

In woods. Camden: Atco—H. A. Green. Mercer: Along the Delaware below Trenton—Britton. Gloucester: Mickleton, frequent—B. Heritage; and common in the middle and northern counties.

Var. dilatatum (Sw.), Hook.

In woods; northern counties. Sussex: Newton—Miss S. D. Thompson. Warren:—Parker. Morris: Lake Hopatcong—Porter; Montville—Mrs. Britton.

A. cristatum (L.), Sw.

In woods. Camden:—Parker; Atco, rare—H. A. Green. Gloucester: Near Mullica Hill and Mickleton—B. Heritage. Burlington: Sparingly near Moorestown—J. Stokes. Mercer: Trenton—Apgar. Monmouth: Red Bank—A. B. Guilford. Hunterdon: Rosemont—Best; and frequent in the northern counties.

Var. Clintonianum, D. C. Eaton.

Camden: Little Timber Creek—Martindale. Mercer: Near Trenton—Stowell. Essex: Near Newark—Wm. Bower. Bergen: Swamps along Hackensack River—Eaton. Morris: Montville—Mrs. Britton. Bergen: Ramseys—Stowell.

A. Goldianum, Hook.

Hunterdon: Damp woods—Parker. Warren: Marble Hill—Porter. Essex: First Mt.—Rusby.

A. marginale (L.), Sw.

In woods. Camden:—Parker. Gloucester: A single specimen near Mickleton—B. Heritage. Monmouth:—Torrey. Hudson: Bergen Point—Leggett. Union: Plainfield—

*The typical form appears to be very rare in the State. Dr. Peters' specimens are the only ones I have seen which may be referred to it.

Tweedy. Mercer: Princeton—Peters; and common in rocky places in the northern counties. A form with deeply lobed pinules, approaching *var. elegans*, Robinson, was collected on Little Snake Hill, by Leggett.

A. acrostichoides (Michx.), Sw.

In woods. Common in the northern and middle counties. Frequent or occasional southward.

Var. Schweinitzii (Beck), B. S. P. (*Var. incisum*, Gray.)

Bergen:—Woolson; Fort Lee—Miss Knight. Essex: Montclair Heights—Britton. Morris: Millington and Morristown—L. Schumacher; near Newfoundland—Britton. Warren: Low's Hollow—Porter. Mercer: Princeton—Peters. Burlington: Below Bordentown—Stowell.

CYSTOPTERIS, Bernh.

Bladder-fern.

C. bulbifera (L.), Bernh.

On limestone rocks. Warren: Marble Hill—Porter. Sussex: Newton—Miss S. D. Thompson; Sussex Mills and near Ogdensburg, and along Wawayanda Creek near the State line—Britton; near Andover—J. D. Reynolds.

C. fragilis (L.), Bernh.

In moist places. Monmouth: Freehold—Willis. Mercer: Princeton—Peters; Somerset Junction—Stowell. Hudson: Weehawken—Ruger; and frequent in rocky places in the northern counties.

ONOCLEA, L.

Sensitive Fern.

O. sensibilis, L.

In low grounds. Common throughout the State.

O. Struthiopteris (L.), Hoffm. (*Struthiopteris Germanica*, Willd.)

Sussex: Along the Delaware River below Dingman's Ferry, and Warren: In a meadow along Van Campen's Creek—Rusby & Britton. Hunterdon: Rosemont and Bull's Island—Best; Frenchtown—Porter; Lambertville—Apgar. Burlington: Crosswicks Creek, rare—E. D. Sturtevant.

WOODSIA, R. Br.

Woodsia.

W. obtusa (Spreng.), Torr.

In woods. Hudson: Bergen Point—Leggett; Snake Hill—Britton. Essex: Common on First Mt.—Rusby. Mercer: Princeton—Peters; Somerset Junction—Stowell; and frequent in the northern counties.*

W. ilvensis (L.), R. Br.

On rocks. Bergen: Palisades—Austin. Passaic: Near Paterson—Rusby; near Ringwood—Britton. Sussex: Franklin Furnace—Garber; Two Bridges—Britton; near Andover—Porter. Morris: Near Berkshire Valley—Rudkin; Mendham—Rankin; Mt. Hope—Britton. Essex: On First Mt.—Rusby. Warren: Marble Hill—Porter. Hunterdon: Sparingly—Best.

DICKSONIA, L'Her.

Dicksonia.

D. punctilobula (Michx.), Gray. (*D. pilosiuscula*, Willd.)

In moist woods. Gloucester: Frequent about Mickleton—B. Heritage. Monmouth: Freehold—Britton. Mercer: Princeton—Peters; and common in the middle and northern counties.

LYGODIUM, Sw.

Hartford-fern. Climbing-fern.

L. palmatum (Bernh.), Sw.

Bergen: Saddle River township, sparingly—Woolson. Middlesex: Craner's Mills—Prof. Cook; near Lower Jamesburg—O. E. Pearce. Monmouth: Near Matawan—Lockwood; near Shark River—Knieskern. Mercer: Near Hightstown—Willis; near Trenton—Appar. Burlington: Brown's Mills and New Lisbon—Parker; Moorestown and Medford—Miss A. M. Kaighn; banks of Rancocas Creek and its branches—Lighthipe. Camden: Near White Horse—C. E. Smith.

* Large plants of this fern from Darlington, Bergen county, have been described by Mr. W. A. Stowell as *var. Darlingtonii*, in Journal of the Trenton Natural History Society, i. 25 (1887).

SCHIZÆA, Smith.

Curly-grass.

S. pusilla, Pursh.

Wet places in the pine barrens. Ocean: Toms River and near Kettle Creek—Knieskern; Ferago—Austin; Forked River—Britton. Burlington: Quaker Bridge—Torrey; along Atsion River—Parker. Atlantic: Pleasant Mills and Little Egg Harbor River—Leggett; cedar swamp near Egg Harbor—Parker; Hospitality Bridge, Eighth street—C. A. Gross.

OSMUNDA, L.

Flowering-fern.

O. regalis, L. Flowering-fern. Royal-fern.

In low grounds. Common or frequent throughout the State.

O. Claytoniana, L.

Monmouth: Freehold—Willis. Gloucester: A single plant noticed two miles south of Mullica Hill—B. Heritage. Mercer: Hightstown—Willis; Princeton—Peters; and common in the middle and northern counties.

O. cinnamomea, L. Cinnamon-fern.

In marshes and low woods. Common throughout the State.

Forma frondosa (Gray), Britt.

Camden:—Parker. Passaic: Taylortown—Mrs. Britton.

EQUISETACEÆ.

EQUISETUM, L.

Horsetail-rush.

E. arvense, L. Common Horsetail.

Moist, sandy soil. Very common throughout the State.

Var. serotinum, Meyer.

Bergen: Closter—Austin; Mahwah—Miss Knight.

E. sylvaticum, L.

Wet places in the northern counties. Sussex: Swartswood Lake—Britton. Morris: Budd's Lake—Porter; Charlotteburg—Britton. Bergen: Closter—Austin; Ramseys—Stowell.

E. pratense, L.

Bergen: Closter, and Sussex: Sparta, "on shaded grassy banks of rivulets"—Austin.

E. limosum, L.

In swamps. Camden:—Martindale. Sussex: Near Andover—Garber; Swartswood Lake—Porter; Ogdensburg, Franklin Furnace and on the Walkill marshes above Deckertown—Britton. Morris: Budd's Lake—Porter; Succasunna—Rusby. Bergen: Closter—Austin; Mahwah—Miss Knight; Rutherford—Schuh.

E. littorale, Kuhlw.

Warren: Shore of the Delaware above and below Phillipsburg—Porter; at Flatbrookville—Rusby, and Belvidere—Britton.

E. hyemale, L. Scouring Rush.

In sandy, wet grounds. Salem: Between Woodstown and Salem—B. Heritage. Camden:—Parker. Burlington: Medford—J. Stokes; banks of Rancocas Creek near Birmingham—Miss Willmarth; Vincentown—Britton. Ocean and Monmouth: Rare—Knieskern; Keyport—Britton; and common in the middle and northern counties.

SUB-KINGDOM III.—BRYOPHYTA.

CLASS 1.—SPHAGNA.

(Contributed by Mr. E. A. Rau.)

SPHAGNUM, L.

Bog Mosses.

S. Portoricense, Hampe.

Bogs in the southern and southeastern counties. Ocean: Manchester Pond—Austin. Atlantic: Pleasant Mills and Atsion; Burlington; Brown's Mills; Cumberland: Malaga, and Gloucester: Willow Grove—Rau.

S. imbricatum, Hornsch. (*S. Austini*, Sull.)

Ocean: Ferago and Manchester, in swamps—Austin; Toms River—Rau. Burlington: Atsion; Gloucester: Newfield; Morris: Budd's Lake—Rau.

S. papillosum, Lindb.

In bogs. Atlantic: Near Batsto—Austin. Ocean: Toms River; Burlington: Atsion and Quaker Bridge; Gloucester: Newfield—Rau.

Var. confertum, Lindb.

Gloucester: In fruit near Newfield—Rau.

S. cymbifolium, Ehrh.

In bogs. Very common throughout the State.

Var. pycnocladum, Hornsch.

Pine barrens—Rau.

Var. squarrulosum, Nees & Hornsch.

Bergen: Closter—Austin. Burlington: Atsion—Rau.

Var. congestum, Schimp. (*S. purpurascens*, Russow.)

Gloucester: In a swamp near Newfield—Rau.

S. rigidum (Nees), Schimp.

In wet, sandy places, pine barrens.

Var. humile, Schimp.

In wet, sandy places, pine barrens.

- Var. squarrosum*, Russow.
Salem : Near Pennsgrove—Commons. Determined by J. Cardot, 1888.
- S. molle*, Sull.
Frequent in the southern counties.
- S. tenellum*, Ehrh. (*S. molluscum*, Bruch.)
Peat bogs, in water one inch or less in depth, pine barrens.
- S. acutifolium*, Ehrh.
In bogs. Common throughout the State.
- Var. confertum*, Aust.
In open bogs.
- Var. purpureum*, Schimp.
In bogs; common.
- Var. fuscum*, Schimp.
In bogs, northern counties.
- Var. robustum*, Aust.
Ocean : In cedar swamps about Ferago—Austin.
- Var. intermedium* (Hoffm.), Aust.
In peat bogs, northern counties.
- Var. deflexum*, Schimp.
Gloucester : On margins of bogs, Newfield--Rau.
- Var. elegans*, Braithw.
Burlington : In open bogs, Atsion—Rau.
- S. fimbriatum*, Wils.
Bergen : Swamps on the Palisades near Closter—Austin.
- S. strictum*, Lindb. (*S. Girgensohnii*, Russow.)
Swamps and bogs in the northern counties.
- S. squarrosum*, Pers.
Bergen : In shaded swamps about Closter—Austin.
- Var. teres* (Angstr.), Schimp.
Bergen : Low grounds, Closter—Austin.
- S. Pylæsii*, Brid.
Ocean : Border of a pond near Manchester—Austin.
- S. cyclophyllum*, Sull. & Lesq.
In stagnant pools and marshes on the bog-iron ore beds in the southern counties. Found in fruit only by Austin.

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- S. laricinum*, Spruce.
Bergen: In an open grassy bog near Closter—Austin.
- Var. teretiusculum*, Lindb.
Bergen: Rocky swamps on the Palisades near Closter—Austin.
- S. affine*, Ren. & Card.
Morris: Newfoundland, Green Pond and Copperas Mt.—Mrs. Britton. Determined by J. Cardot, 1888.
- S. subsecundum*, Nees.
Low grounds; common.
- Var. Lescurii* (Sull.), Aust.
Inundated swamps and sluggish water, southern counties.
- Var. auriculatum* (Schimp.), Lindb.
Gloucester: In swamps at Newfield—Rau.
- Var. obesum* (Wils.), Schimp.
Burlington: Atsion—Rau.
- S. neglectum*, Angstr.
Gloucester: Swamps near Newfield—Rau.
- S. cuspidatum*, Ehrh.
Inundated bogs, etc.; very common.
- Var. laxifolium* (C. Muell.), Aust.
Bergen: In pools at Closter, also in pine barrens—Austin.
- Var. Torreyanum* (Sull.), Lesq. & James.
Ponds and pools in the southern counties.
- Var. plumosum*, Nees.
Ponds and pools in the southern counties.
- Var. parvum*, Aust.
In about an inch of water, with *S. tenellum*, cranberry bogs, pine barrens—Austin.
- Var. intermedium* (Hoffm.), Rau.
In bogs; not uncommon.
- S. macrophyllum*, Bernh.
Ocean: Manchester pond—Austin. Cumberland: Willow Grove, and Gloucester: Malaga—Rau.

CLASS 2.—MUSCI.

Original list in Preliminary Catalogue compiled by C. F. Parker from the collections of the late C. F. Austin; revised and augmented by E. A. Rau and Elizabeth G. Britton.

Unless otherwise stated, the specimens were collected and determined by Mr. Austin.

The following arrangement is based on Lindberg's "Musci Scandinavici," 1879, and Braithwaite's "British Moss Flora," as far as published:

SUB-CLASS 1.—ACROCARPI.

POLYTRICHACEÆ.

POLYTRICHUM, L.

P. commune, L.

On the ground in woods and in old sterile fields; very common.

P. Ohioense, Ren. & Card. (*P. formosum*, Sull., not Hedw.)

Bergen: About the roots of trees in damp woods and on flat, shaded rocks. Common in the northern counties.

P. juniperinum, Willd.

On the ground in dry, exposed places. Common throughout the State.

P. strictum, Banks.

On the ground in sandy pine barrens; frequent.

P. piliferum, Schreb.

Bergen: In old fields (fertile) and on rocks (sterile) near Closter—Austin. Middlesex: In sand near South Amboy, and Ocean: Toms River—Mrs. Britton. Passaic: On high rocks near Paterson—W. A. Stowell.

P. tenue, Menz. (*Pogonatum brevicaulis*, Beauv.)

On banks, roadsides, etc.; common.

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P. brachyphyllum, Michx. (*Pogonatum brachyphyllum*, Beauv.)

Ocean: On sandy loam, roadsides near Toms River—Austin.
Gloucester: Woodbury—James; Newfield—Rau. Camden:
Ancora—H. A. Green.

CATHARINEA, Ehrh.

C. angustata, Brid. (*Atrichum angustatum*, Br. & Sch.)

On the ground in woods and on open banks; common.

C. undulata (L.), Web. & Mohr. (*Atrichum undulatum*, Beauv.)

On shaded banks; common.

C. crispa, James. (*Atrichum crispum*, Sull.)

Camden: Banks of rivulets near Camden—James. Ocean:
Toms River, and Bergen: Closter—Austin.

BUXBAUMIACEÆ.

BUXBAUMIA, Haller.

B. aphylla, L.

On the ground in open woods; very rare. Bergen: Closter—
Austin; Alpine—Miss Rich. Ocean: Pine barrens—Austin.
Warren: Delaware Water Gap—S. W. Knipe.

GEORGIACEÆ.

GEORGIA, Ehrh.

G. pellucida (L.), Rabenh. (*Tetraphis pellucida*, Hedw.)

On decaying wood; common.

FISSIDENTACEÆ.

FISSIDENS, Hedw.

F. incurvus, Starke.

Bergen: Closter.

F. minutulus, Sull.

Bergen: On the ground, and on damp, shady or springy
places, Closter. Morris: Charlotteburg, and near Bartley—
Mrs. Britton.

- F. bryoides* (L.), Hedw.
Bergen: On the ground in woods, Closter.
- F. osmundoides* (Sw.), Hedw.
Bergen: Springy places in swamps, Closter—Austin. Camden: Atco—H. A. Green.
- F. subbasilaris*, Hedw.
Bergen: On roots of trees in woods, Closter, and Sussex; On limestone rock—Austin.
- F. Closteri*, Aust.
Bergen: On rocks along rivulets, Palisades near Closter; rare.
- F. taxifolius* (L.), Hedw.
Bergen: On the ground in woods, Closter.
- F. adiantoides* (L.), Hedw.
On wet banks and rocks; common.
- Var. immarginatus*, Lindb.
Morris: Along the Rockaway River below Boonton—Mrs. Britton.
- F. Julianus* (Savi), Schimp. (*Conomitrium Julianum*, Mont.)
In rocky streams, northern parts of the State—Austin. Passaic: Greenwood Lake—Mrs. Britton.
- F. Hallianus* (Sull. & Lesq.), Mitt. (*C. Hallianum*, Sull. & Lesq.)
Passaic: On shaded rocks moistened by spray, Little Falls, and Sussex: Near Ogdensburg.

MNIACEÆ.

ASTROPHYLLUM, Neck.

- A. sylvaticum*, Lindb. (*Mnium cuspidatum*, Hedw.)
On damp, shaded rocks, etc.; common.
- A. medium* (Br. & Sch.), Lindb.
Passaic: Wet rocks, Little Falls.
- A. rostratum* (Schrad.), Lindb.
Bergen: Wet rocks, Palisades, and elsewhere in northern parts of the State—Austin. Essex: Montclair Heights—Mrs. Britton. Monmouth: Squankum—Merrill.

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- A. cuspidatum* (L.), Lindb. (*M. affine*, Bland.)
Swamps and wet rocks; common.
- A. hornum* (L.), Lindb.
Hudson: Cedar swamps near New Durham; also on rocky or sandy banks of streams. Monmouth: Clay banks, Swimming River—Mrs. Britton. Burlington: Burlington—Porter.
- A. marginatum* (Dicks.), Lindb. (*M. serratum*, Laich.)
Bergen: Shaded banks and crevices of rocks, Palisades, and elsewhere in the northern part of the State.
- A. lycopodioides* (Hook.), Lindb.
On shaded rocks; northern part of the State.
- A. spinulosum*, Br. & Sch.
Bergen: On rocks in a ravine, Godwinville.
- A. stellare* (Reichard), Lindb.
On shaded cliffs and banks, and about the roots of trees in swamps; rather frequent.
- A. cinclidioides* (Blytt.), Lindb.
Bergen: Swamps and wet woods, Palisades; frequent; also elsewhere in the northern part of the State.
- A. punctatum* (L.), Lindb.
Swamps; common. Mr. Austin distinguished a variety growing on banks of rivulets.

TIMMIA, Hedw.

- T. megapolitana*, Hedw.
Banks of ravines, northern part of the State.

SPHÆROCEPHALUS, Neck.

- S. palustris* (L.), Lindb. (*Aulacomnion palustre*, Schwægr.)
Swamps and low grounds; common.
- Var. rupestris*, C. Muell.
Bergen: Moist rocks, Palisades near Closter—Austin. Morris: Swamp near Parsippany—Mrs. Britton.
- S. heterostichus* (Brid.), Britt. m. (*Aulacomnion heterostichum*, Br. & Sch.)
On banks and about the roots of trees in woods; common.

• MEESEACEÆ.

MEESEA, Hedw.

- M. triquetra* (L.), Angstr. (*M. tristicha*, Funck.)
Bergen: In wet meadows about Closter.

BARTRAMIACEÆ.

BARTRAMIA, Hedw.

- B. pomiformis* (L.), Hedw.
Banks of rivulets and in springy places; common.
Var. crispa (Sw.), Schimp.
Warren: Phillipsburg—Rau.
B. Cederiana (Gunn.), Sw.
Banks of ravines, northern part of the State.

PHILONOTIS, Brid.

- P. Muhlenbergii*, Brid. (*Bartramia Marchica*, Sulliv.)
Sussex: Wet banks—Rau. Morris: On wet rocks, Newfoundland—Mrs. Britton.
P. fontana (L.), Brid.
Banks of rivulets and in springy places; common.

BRYACEÆ.

BRYUM, L.

- B. Lescurianum*, Sulliv.
Bergen: On banks along roadsides, etc., Palisades.
B. nutans, Schreb.
On exposed rocks, mountain tops, northern part of the State.
B. crudum, Schreb.
Banks and ravines; sterile.
B. albicans (Wahl.), Brid.
Bergen: On wet rocks and banks, Pascack and Palisades—Austin. Monmouth: Swimming River, abundant along the banks—Mrs. Britton.

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- B. pendulum** (Hornsch.), Schimp. (*B. cernuum*, Br. & Sch.)
Bergen: About the roots of trees in open woods near Closter
—Austin. Passaic: Greenwood Lake; Sussex: Lake Grinnell;
Morris: Minnisink—Mrs. Britton.
- B. bimum**, Schreb.
Wet places; common. Mr. Austin distinguished a variety
growing on wet rocks, Little Falls, Passaic county.
- B. cæspiticium**, L.
On the ground, etc.; very common.
- B. argenteum**, L.
On the ground, old roofs, etc.; common.
- B. capillare**, L.
Shaded rocks, banks, etc.; common; sterile.
- B. cyclophyllum** (Schwægr.), Br. & Sch.
Bergen: About the roots of trees in a swamp near Closter;
sterile; rare.
- B. ventricosum**, Dicks. (*B. pseudo-triquetrum*, Schwægr.)
Moist rocks. Very common in northern parts of the State.
Mr. Austin distinguished a variety from wet rocks on the Palisades.
- B. proliferum** (L.), Sibth. (*B. roseum*, Schreb.)
On old logs, about the roots of trees, etc.; common.

LEPTOBRYUM, Wils.

- L. pyriforme** (L.), Wils. (*Bryum pyriforme*, Hedw.)
In pine barrens. Also Morris: Succasunna, and Bergen: On
roots of trees in swamp, Closter, and on wet rocks, Hohokus.

FUNARIACEÆ.

FUNARIA, Schreb.

- F. hygrometrica** (L.), Sibth.
On the ground. Very common throughout the State.

Var. patula, Br. & Sch.

On damp walls.

F. flavicans, Michx.

In pastures, on small patches of ground where the grass is killed by urine; not uncommon.

APHANORHEGMA, Sulliv.

A. serrata (Hook. & Wils.), Sull.

On damp ground; common.

PHYSCOMITRIUM, Brid.

P. immersum, Sulliv.

Camden: Low banks of the Delaware—James.

P. pyriforme (L.), Brid.

On damp ground; common.

SPLACHNACEÆ.

SPLACHNUM, L.

S. ampullaceum, L.

Burlington: Quaker Bridge—E. Tatnall.

TETRAPLODON, Br. & Sch.

T. australis, Sull. & Lesqx.

Ocean: Toms River and elsewhere in pine barrens.

WEBERACEÆ.

WEBERA, Ehrh.

W. sessilis (Schmid.), Lindb. (*Diphyscium foliosum*, Mohr.)

On banks in woods and rocky ravines. Middlesex: Morgans
—Mrs. Britton; and common in the northern counties.

TORTULACEÆ.

LEERSIA, Hedw.

- L. contorta* (Wolf.), Lindb. (*Encalypta streptocarpa*, Hedw.)
Sussex: On limestone rocks—Austin. Warren: Near Philipsburg—Rau.

BARBULA, Hedw.

- B. rubella* (Hoffm.), Mitt. (*Didymodon rubellus*, Br. & Sch.)
On rocks along streams, northern parts of the State.
- B. muralis* (L.), Timm.
Bergen: On old walls, Palisades; also in the central part of the State.
- B. unguiculata* (Huds.), Hedw.
Bergen: On the ground and old walls, common—Austin.
Warren:—Rau.
- B. fallax*, Hedw.
Bergen: Closter; rare.
- B. Closteri*, Aust.
Bergen: One-half mile south of Closter—Austin. A doubtful species.
- B. reflexa*, Brid. (*B. recurvifolia*, Schimp.)
Hudson: On rocks, Hoboken.
- B. humilis*, Hedw. (*B. cæspitosa*, Schwægr.)
About the roots of trees; common.
- B. tortuosa* (L.), Web. & Mohr.
Bergen: Flat rocks, Palisades; Sussex: On limestone, Ogdensburg.
- B. fragilis* (Drumm.), Br. & Sch.
Sussex: On dry limestone rocks at the New Jersey Zinc Mines.
Sterile.
- B. ruralis* (L.), Hedw.
Bergen: On rocks at the base of the Palisades, and Sussex:
About the zinc mines.

B. papillosa (Wils.), C. Muell.

Atlantic: On buttonwood trees, Batsto—James. Sussex:
About the zinc mines—Austin.

B. curvirostris (Ehrh.), Lindb. (*Gymnostomum curvirostrum*, Hedw.)

Bergen: On wet rocks, Godwinville.

PHASCUM, L.

P. cuspidatum, Schreb.

Old fields; common.

Var. piliferum (Schreb.), Br. & Sch.

Bergen: Old fields, Closter and Schrallenburg.

MOLLIA, Schrank.

M. viridula (L.), Lindb. (*Weisia viridula*, Hedw.)

Old fields, etc.; common.

Var. gymnostomoides (Brid.), Braithw. (*Hymenostomum microstomum*,
Aust.)

Bergen: Rocky ground, Palisades.

M. æruginosa (Sm.), Lindb. (*Gymnostomum rupestre*, Schwægr.)

Bergen: Damp, shaded rocks, Palisades.

M. tenuirostris (Hook. & Tayl.), Lindb. (*Didymodon cylindricus*, Br. &
Sch.)

Moist rocks and banks, northern parts of the State.

OREOWEISIA, Schimp.

O. serrulata (Fauck.), Schimp.

Bergen: On the perpendicular faces of moist rocks, Palisades,
and Warren: Delaware Water Gap.

ASTOMUM, Hampe.

A. nitidulum, Schimp.

Old fields.

A. Sullivantii (Schimp.), Hampe.

Bergen: Old fields.

SPHÆRANGIUM, Schimp.

- S. rufescens* (Jæger), Lesq. & James.
On the ground; common.
- S. muticum* (Schreb.), Schimp.
Bergen: On rocks, Palisades.
- S. triquetum*, Schimp.
Ocean: Sandy fields, Toms River.

POTTIA, Ehrh.

- P. riparia*, Aust.
Bergen: On moist rocks along streams, Palisades, and elsewhere in the northern parts of the State.
- P. truncatula* (L.), Lindb. (*P. truncata*, Fuern.)
Bergen: Palisades, and roadsides near Hackeusack.

DESMATODON, Brid.

- D. arenaceus*, Sull. & Lesq.
Bergen: On the ground, Closter; also in the southern part of the State.

EPHEMERUM, Hampe.

- E. serratum* (Schreb.), Hampe.
Bergen: In fields and gardens near Closter.
- E. crassinervium* (Schwægr.), Hampe.
Bergen: Damp ground, Closter.
- E. papillosum*, Aust.
Bergen: Rocks on the Palisades.
- E. spinulosum*, Br. & Sch.
Bergen: Palisades, and Camden.
- E. stenophyllum*, Schimp.
Bergen: Closter.*

* *Ephemerum Hystrix*, Lindb., "N. J. to Florida," Rau & Hervey List, p. 5, is not recorded from any definite station within the State.

MICROMITRIUM, Aust.

M. tenerum (Bruch), Lindb.

Camden: On the surface of clods of clay—T. P. James.

M. Austini (Sull.), Aust.

Bergen: Closter.

M. synoicum (James), Aust.

Camden: With *M. tenerum*—James.

DICRANACEÆ.

LEUCOBRYUM, Hampe.

L. glaucum (L.), Schimp.

On the ground in woods; common.

L. albidum (Brid.), Lindb. (*L. minus*, Hampe.)

Atlantic: Pomona—O. D. Allen. Camden: Atco—H. A. Green. Morris: Near Budd's Lake—Porter. Sussex: Pimple Hills and near Sparta—Mrs. Britton.

DICRANUM, Hedw.*

D. flagellare, Hedw.

On wet ground and decaying logs. Common throughout the State.

D. fulvum, Hook.

Passaic: On rocks and bases of trees—Rau. Bergen: Palisades—Austin; Mrs. Britton.

D. longifolium, Ehrh.

On shaded rocks and trunks of trees, northern parts of the State.

D. scoparium (L.), Hedw.

On the ground in woods. Common throughout the State.

Var. orthophyllum, Brid.

Bergen: Palisades.

* *D. montanum*, Hedw., admitted with hesitation into the Preliminary Catalogue, is still doubtful.

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Var. curvulum, Schimp.

Bergen: Palisades.

Var. orthocarpum, Aust.

Bergen: Woods near Closter.

Var. minor, Aust.

Bergen: Sandy banks near Closter.

Var. rupestre, Sull. & Lesq.

On granite and trap-rocks, northern counties.

Var. paludosum, Schimp.

Bergen: Springy places in swamps near Closter.

D. Schraderi, Web. & Mohr.

Swamps and wet woods; common.

D. spurium, Hedw.

On mountain rocks, northern New Jersey—Austin. Passaic:
Near Greenwood Lake—Mrs. Britton.

Var. condensatum (Hedw.), Lesqx. & James.

Middlesex: South Amboy—Mrs. Britton. Ocean: Near
Coleville, and common in white sand, pine barrens.

D. undulatum, Ehrh.

Bergen: On rocks and on the ground, Palisades and Closter
—Austin. Gloucester: Newfield—Rau.

D. elatum, Lindb.* (*D. Drummondii*, C. Muell.)

In shaded pine woods—T. P. James.

SELIGERIA. Br. & Sch.

S. setacea (Wolf.), Lindb. (*S. recurvata*, Br. & Sch.)

Bergen: On moist, shaded rocks at Hohokus and Godwin-
ville.

TREMATODON, Michx.

T. longicollis, Michx.

Bergen: Low grounds, Closter, rare—Austin. Ocean:
Roadside near Tom's River—Mrs. Britton.

T. ambiguus (Hedw.), Hornsch.

Bergen: Low grounds, Closter.

*Including *D. robustum* of the Preliminary Catalogue.

ANISOTHECIUM, Mitt.

A. crispum (Schreb.), Lindb. (*Dicranum Schreberi*, Hedw.)

Bergen: Wet rocks and banks, Hohokus.

A. rubrum (Huds.), Lindb. (*Dicranum varium*, Hedw.)

Bergen: Moist banks, Closter.

A. rufescens (Dicks.), Lindb.

On naked banks, etc., throughout the northern parts of the State.

DICRANELLA, Schimp.

D. heteromalla (L.), Schimp.

On the ground. Common throughout the State.

Var. orthocarpa (Aust.), C. Muell.

Moist ground and banks; not rare.

RHABDOWEISIA, Br. & Sch.

R. denticulata (Brid.), Br. & Sch.

Bergen: On rocks in ravines, Pascack.

R. fugax (Hedw.), Br. & Sch.

Warren: Delaware Water Gap.

BRUCHIA, Schwægr.

B. palustris (Schimp.), C. Muell. (*Sporledera palustris*, Schimp.)

Old fields—Austin. Burlington: Burlington—T. P. James.

B. flexuosa (Schwægr.), C. Muell.

Bergen: Old fields—Austin. Passaic: Near Oakland—Mrs. Britton. Gloucester: Newfield—Rau.

B. Beyrichiana (Schwægr.), C. Muell.

Burlington: Burlington—James. Manual Mosses, N. A., p. 47.

SWARTZIA, Ehrh.

S. inclinata, Ehrh. (*Trichostomum scitulum*, Aust.; *Distichium inclinatum*, Br. & Sch.)

Sussex: On limestone rocks, Ogdensburg. There may be some doubt as to the correct reference of these specimens.

DITRICHUM, Timm. (*Leptotrichum*, Hampe.)

- D. tortile** (Schrad.), Hampe. (*Trichostomum tortile*, Schrad.)
In dry soil; frequent.*
- D. pallidum** (Schreb.), Hampe. (*T. pallidum*, Hedw.)
On the ground. Very common throughout the State.

PLEURIDIUM, Brid.

- P. subulatum** (Schreb.), Lindb. (*P. alternifolium*, Brid.)
Bergen: Old fields, and Camden: About Camden—Austin.
Gloucester: Newfield—Rau. Passaic: Greenwood Lake, and
Ocean: Toms River, and Middlesex: Morgans—Mrs. Britton.
- P. Raveneli**, Aust.
New Jersey—Austin in Lesq. & James' Manual Mosses, N.
A., p. 43.

ARCHIDIUM, Brid.

- A. Ohioense**, Schimp.
Bergen: On flat rocks, Palisades.

DICHODONTIUM, Schimp.

- D. pellucidum** (L.), Schimp. (*Dicranum pellucidum*, Hedw.)
Sussex: On rocks subject to inundation, in deep glens near
West Vernon.

CERATODON, Brid.

- C. purpureus** (L.), Brid.
On the ground in dry places. Very common throughout the
State.
- Var. aristatus**, Aust.
In sandy pine barrens.

SÆLENIA, Lindb.

- S. cæsia** (Vill.), Lindb. (*Trichostomum glaucescens*, Hedw.)
Passaic: Crevices of rocks, Little Falls.

*The *Trichostomum lineare* of the Preliminary Catalogue, as well as *Trichodon-
nodulosus*, Aust., probably belong in this genus, but their relations are uncertain.

GRIMMIACEÆ.

WEISSIA, Ehrh.

- W. coarctata** (Palis.), Lindb. (*Ulota Ludwigii*, Brid.)
Sussex: Sparta—Mrs. Britton. Bergen: On trees and stone-fences, Palisades.
- W. Americana** (Palis.), Lindb. (*Ulota Hutchinsiae*, Schimp.)
Bergen: On dry rocks, Closter—Austin. Passaic:—Rau.
Common in the northern counties.
- W. ulophylla**, Ehrh. (*Ulota crispa*, Brid.)
Bergen: On trees, Closter—Austin. Camden:—H. A. Green.
Morris: Boonton and Newfoundland; Ocean: Toms River—Mrs. Britton.
- Var. crispula* (Bruch), Hammar. (*Ulota crispula*, Brid.)
Bergen: On trees, particularly yellow birch, Palisades.
Morris: Montville, and Sussex: Near Sparta—Mrs. Britton.

ORTHOTRICHUM, Hedw.

- O. anomalum**, Hedw.
Bergen: Rocks, Palisades.
- Var. Peckii*, Sull. (*O. Peckii*, Aust.)
Sussex: On dry limestone rocks.
- Var. minus*, Sull. (*O. Lescurii*, Aust.)
On dry, shaded rocks, northern part of the State.
- O. pumilum**, Sw., *var. Americanum*, Venturi. (*O. pumilum*, Schwæg., of Preliminary Catalogue.)
On shade trees in the towns of Central New Jersey.
- O. cupulatum**, Hoffm. (*O. strangulatum*, Beauv.)
Bergen: On apple trees, Closter.
- O. sordidum**, Sull. & Lesqx.
On trees; common.
- O. Ohioense**, Sull. & Lesqx., *var. citrinum* (Aust.), Lesqx. & James.
(*O. citrinum*, Aust.)
On trees; not rare.

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- O. striatum* (L.), Hedw. (*O. leiocarpum*, Br. & Sch.)
Bergen: On red cedar, Palisades; very rare.
- O. psilocarpum*, James.
On shade trees, Central New Jersey.

ANCECTANGIUM, Hedw.

- A. *Peckii*, Sull.
Warren: Delaware Water Gap.
- A. *Lapponicum*, Hedw. (*Amphoridium Lapponicum*, Schimp.)
In crevices of rocks, northern part of the State.

DRUMMONDIA, Hook.

- D. *clavellata*, Hook.
On the trunks and branches of trees (particularly red cedar), etc. Very common in the northern parts of the State.

PTYCHOMITRIUM, Br. & Sch.

- P. *incurvum* (Schwagr.), Sull.
On old stone fences, rarely on rocks, northern parts of the State—Austin. Morris: Parsippany, and Passaic: Oakland—Mrs. Britton.

GLYPHOMITRIUM, Brid.

- G. *saxicola* (Web. & Mohr.), Mitt. (*Campylostelium saxicola*, Br. & Sch.)
Bergen: On sandstone boulders near Closter; rare.

GRIMMIA, Ehrh.

- G. *conferta*, Funck.
Passaic: On rocks and on the ground, Passaic Falls*—Austin; between Bloomingdale and Wanaque—Mrs. Britton.
- G. *apocarpa* (L.), Hedw.
Common on rocks in moist ravines, middle and northern counties.

* Mr. Austin notes two varieties of this species in his distributed sets, but does not give them names. One of them is probably *var. obtusifolia*, Schimp., which Braithwaite regards as a mere form.

Var. gracilis (Schleich.), Web. & Mohr.

Bergen: On shaded, wet rocks, Palisades, and Passaic: Greenwood Mts.

G. Pennsylvanica, Schwægr.

Bergen: On rocks, Closter—Austin; Ramapo Mt.—Mrs. Britton. Essex: Montclair Heights; Morris: South Branch of Raritan River near Bartley, and Sussex: Near Sparta—Mrs. Britton.

G. Olneyi, Sull.

Bergen: On exposed rocks, Palisades, and elsewhere in the northern parts of the State.

G. campestris, Burchell. (*G. leucophæa*, Grev.)

Bergen: Exposed rocks, Palisades; sterile.

G. acicularis (L.), C. Muell. (*Rhacomitrium aciculare*, Brid.)

Bergen: Rocky beds of streams, Palisades.

G. microcarpa (Gmel.), Lindb. (*Rhacomitrium sudeticum*, Br. & Sch.)

On irrigated rocks, northern part of the State.

G. ramulosa, Lindb. (*Rhacomitrium microcarpon*, Brid.)

Exposed rocks in the mountains, northern counties.

ANDRÆACEÆ.

ANDRÆA, Ehrh.

A. petrophila, Ehrh.

Bergen: On steep, dry rocks near Closter. Sussex: On boulders near Sparta.

A. rupestris, Turner.

Warren: On rocks, Delaware Water Gap.

SUB-CLASS 2.—PLEUROCARPI.

HYPNACEÆ.

THUIDIUM, Br. & Sch.

- T. minutulum* (Hedw.), Br. & Sch.
On decayed wood in swamps; common.
- T. pygmæum* (Br. & Sch.), Sulliv. & Lesq.
On stones along rivulets, northern part of the State.
- T. scitum* (Beauv.), Aust.
Bergen: On the base of a tree near Closter.
- Var. æstivale*, Aust.
On the roots of trees, New Jersey—Austin. Morris: Mount Olive—Mrs. Britton.
- T. gracile*, Br. & Sch., *var. Lancastriense*, Sull. & Lesq.
On dry, sterile ground in open woods; common.
- T. recognitum* (Hedw.), Lindb. (*T. delicatulum*, Br. & Sch.)
On shaded rocks and banks; common.
- T. delicatulum* (L.), Mitt. (*Hypnum tamariscinum*, Sulliv. & Lesq.)
On the roots of trees, old logs, etc.; very common.
- T. abietinum* (L.), Br. & Sch.
Sussex: On dry limestone ridges; very abundant.
- T. paludosum* (Sulliv.), Rau & Hervey. (*Elodium paludosum*, Aust.)
Swamps and low grounds; common.

LESKEA, Hedw.

- L. denticulata*, Sulliv.
On dry rocks and roots of trees; sterile.
- L. polycarpa*, Ehrh.
Bergen: Closter—Austin. Monmouth: New Egypt—Britton.

L. obscura, Hedw.

On the roots of trees and on stones within the reach of floods, in low grounds; common.

L. Austini, Sulliv.

Sussex: On stone walls, Monroe Corners.

L. tristis, Cesati.

On trees and rocks; common; sterile.

ANOMODON, Hook. & Tayl.

A. rostratus (Hedw.), Schimp.

Bergen: About the roots of trees in woods, forming dense cushions, Closter—Austin. Sussex: Newton and Sparta, and Essex: Montclair Heights—Mrs. Britton.

A. attenuatus (Schreb.), Huebn.

About the roots of trees and on rocks; common.

A. obtusifolius, Br. & Sch.

On trunks of trees and on rocks; common.

Var. fragilis, Aust.

Bergen: On trees about Closter.

A. viticulosus (L.), Hook. & Tayl.

Sussex: On limestone rocks.

AMBLYSTEGIUM, Br. & Sch.

A. minutissimum, Sulliv. & Lesq.

In old wells, northern part of the State; rare.

A. adnatum, Hedw.

On stones and roots of trees; very common.

A. Lescurii, Sulliv.

On rocks in mountain rivulets; rare.

A. serpens (L.), Br. & Sch.

On the ground in wet places; very common.

Var. orthocladon (Beauv.), Aust.

In swamps; common.

- A. varium** (Hedw.), Lindb. (*A. radicale*, Br. & Sch.)*
 Roots of trees and on wet ground; common.
- A. irriguum** (Hook. & Wils.), Br. & Sch.
 Passaic: On wet rocks, Little Falls.
- A. fluviatile** (Sw.), Br. & Sch.
 Bergen: On rocks in a rivulet near Closter.
- A. riparium** (L.), Br. & Sch.
 In rivulets and springs; common and variable.
- A. hygrophilum** (Jur.), Schimp. (*Hypnum Bergenense*, Aust.)
 Bergen: On decaying leaves, etc., in partially inundated places about Closter, common—Austin. Gloucester: Newfield—Rau. Morris: Parsippany—Mrs. Britton.
- A. chrysophyllum** (Brid.), De Not. (*Hypnum chrysophyllum*, Brid.)
 On the ground in fields and woods; very common.
- Var. rupestre*, Aust.
 On shaded or dripping rocks; common.
- Var. uncinifolium*, Aust.
 Bergen: Moist, rocky banks, Hohokus.
- A. stellatum** (Schreb.), Lindb.
 Bergen: Wet meadows near Closter—Austin. Morris: Brook Valley—Mrs. Britton.
- Var. protensum*, Br. & Sch.
 Bergen: Bogs and swamps near Closter.
- A. polygamum**, Br. & Sch.
 Bergen: Swamps about Closter; rare.
- A. aduncum** (L.), Lindb. (*H. uncinatum*, Hedw.)
 Passaic: On wet rocks, Little Falls. Sussex: In marshy places; Bergen: On a stone fence, Closter.
- A. Kneiffii**, Br. & Sch.
 Bergen: In sunken places about Closter.

* Including, probably, both *var. radicale subulaceum* and *var. radicale parvulum*, Austin, of the Preliminary Catalogue.

- A. Wilsoni** (Schimp.), Lindb. (*A. aduncum*, var. *giganteum* of Preliminary Catalogue.)
 Morris: Budd's Lake—Austin; Porter.
- A. vernicosum**, Lindb.
 Morris: In open bogs and marshes about Budd's Lake.
- A. filicinum** (L.), Lindb.
 Warren: Jenny Jump Mt., and Monmouth: Banks of the Manasquan River—Britton. Determined by E. A. Rau.
- A. cordifolium** (Hedw.), De Not.
 Swamps; common.
- A. palustre** (Huds.), Lindb.
 On rocks in mountain rivulets, northern part of the State; rare.
- A. dilatatum** (Wils.), Lindb. (*Hypnum molle*, Amer. Auth.; *H. Closteri*, Austin.)
 On rocks along streams, northern part of the State; rare.
 Bergen: On rocks along rivulets, Closter.
- A. ochraceum** (Turner), Lindb.
 On rocks along streams, northern part of the State.
- A. Smithii** (Sw.), Lindb. (*Hypnum arcticum*, Sommerf.)
 Bergen: On rocks along rivulets near Closter—Austin.
 (Fide Lesq. & James' Manual Mosses N. A., p. 400.)

HYPNUM, L.

- H. lætum**, Brid. (*Brachythecium lætum*, Br. & Sch.)
 On the ground, old logs, roots of trees and old rocks; common.
- H. acuminatum**, Beauv.
 Bergen: On the roots of trees and on old logs in woods, Closter—Austin. Morris: Mt. Olive—Mrs. Britton.
- H. plumosum**, Huds. (*H. salebrosum*, Hoffm.)
 On the ground, old wood, etc.; common.
- H. Mildeanum**, Schimp. (*H. acutum*, Mist.)
 Bergen: On the ground in swamps near Closter.

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H. campestre, Bruch.

On the ground in woods, Closter and northern New Jersey.*

H. rutabulum, L.

On wet, shaded ground, dripping rocks and old wells; common.

H. rivulare, Bruch.

Bergen: On rocks in rivulets, Palisades; common.

H. Starkii, Brid.

Warren: On old logs at the Water Gap, and Passaic: Greenwood Mountains.

H. pseudoplumosum, Brid. (*H. plumosum*, Sw., not Huds.)

On rocks in rivulets and damp ravines; very common.

H. Novæ-Angliæ, Sull. & Lesq., var. *rupestre*, Aust.

On irrigated rocks in the mountains.

H. strigosum, Hoffm.

On banks in woods; common.

H. diversifolium, Schimp.

On shaded banks.

H. Boscii, Schwægr.

On shaded banks; common.

H. Sullivantii, Spruce.

On banks of deep, shaded ravines; common.

H. hians, Hedw.

Bergen: In low swamps near Closter.

H. piliferum, Schreb.

On the ground about the roots of trees and old logs in swampy places; rare.

H. demissum, Wils. (*Rhynchoszegium demissum*, Br. & Sch.)

Bergen: On damp, shaded rocks, Palisades; very rare.

H. Novæ-Cæsareæ, Aust.

Sussex: On rocks in a small rivulet which crosses the State line, Shawangunk Mts.

* Mr. Austin also distinguished a variety from under shrubbery in yards and gardens about Closter. In Lesquereux & James' Manual the species is not recorded any nearer to us than the White Mountains.

H. recurvans, Schwægr.

Bergen: On decayed wood, etc., Closter; also a variety in cedar swamps, northern part of the State—Austin. Middlesex: South Amboy—Mrs. Britton.

H. cylindrocarpum, C. Muell.

On trees and rocks, northern parts of the State.

H. microcarpum, C. Muell., var. *anisocarpum*, Sull.

Bergen: On stones in damp woods about Closter; frequent.

H. geophilum, Aust.

On clayey, shaded ground; frequent.

H. deplanatum, Schimp.

Bergen: On the ground, under rocks in moist ravines, Palisades.

H. serrulatum, Hedw.

On the ground, roots of trees, etc., in woods and swamps; common.

H. rusciforme, Weiss.

On rocks in rapid streams; common.

Var. inundatum (Br. & Sch.), Lesqx. & James.

Passaic: In pot-holes, Clinton Falls—Mrs. Britton.

H. micans, Sw., var. *fulvum* (Hook. & Wils.), Aust.

Ocean: On inundated logs, etc., in cedar swamps, Toms River.

Var. albulum (C. Muell.), Aust.

Bergen: On decaying leaves, etc., margins of stagnant pools near Closter.

H. Alleghaniense, C. Muell.

Bergen: In deep crevices of wet rocks, Palisades.

HOMALOTHECIUM, Br. & Sch.**H. subcapillatum** (Hedw.), Br. & Sch.

On trees and rocks; common.

CAMPTOTHECIUM, Schimp.

C. nitens (Schreb.), Schimp.

Sussex: In peat-bogs near Sparta.

PTERIGYNANDRUM, Hedw.

P. filiforme, Hedw.

Bergen: On rocks and roots of trees, Palisades.

STEREODONTACEÆ.

MYURELLA, Br. & Sch.

M. Careyana, Sull.

Bergen: Banks of ravines about Hohokus; also in the mountains. Rare in fruit.

M. julacea (Vill.), Br. & Sch.

Warren: Delaware Water Gap.

FABRONIA, Raddi.

F. octoblepharis, Schwægr.

Warren: On rocks and trees, Delaware Water Gap.

ANACAMPTODON, Brid.

A. splachnoides, Brid.

Bergen: About decayed knots on trees, Closter; rare.

CLASMATODON, Hook. & Wils.

C. parvulus (Hampe), Sull., *var. rupestris*, Sull. & Lesqx.

Warren: Delaware Water Gap.

THELIA, Sull.

T. hirtella (Hedw.), Sull.

Common on the trunks of trees near the ground; rarely on rocks.

T. asprella (Schimp.), Sull.

On the roots of trees, old stumps, and on stones in open woods ;
common.

T. Lescurii, Sull.

Bergen : On flat rocks, Palisades. On white sand about the
bases of stunted oaks in the southern part of the State.

HYLOCOMIUM, Br. & Sch.

H. proliferum (L.), Lindb. (*H. splendens*, Br. & Sch.)

On the ground in woods, northern part of the State ; sterile.

H. parietinum (L.), Lindb. (*Hypnum Schreberi*, Willd.)

On the ground in woods ; very common.

H. brevirostre (Ehrh.), Br. & Sch.

In deep, shaded ravines and swamps ; common ; sterile.

H. triquetrum (L.), Br. & Sch.

On the ground in woods. Common in the northern counties.
Sterile.

H. rugosum (L.), De Not. (*Hypnum rugosum*, L.)

Bergen : On flat rocks, Palisades ; sterile.

CAMPYLIUM, Mitt.

C. hispidulum (Brid.), Mitt. (*Hypnum hispidulum*, Brid.)

On the ground, roots of trees, dead wood, rocks, etc. ; common.

CTENIDIUM, Mitt.

C. molluscum (Hedw.), Mitt. (*Hypnum molluscum*, Hedw.)

On the ground in damp woods ; common ; usually sterile.

PTILIUM, De Not.

P. crista-castrense (L.), De Not. (*Hypnum crista-castrensis*, L.)

Bergen : On the ground and on decaying logs in deep woods
and swamps, Closter ; rare.

STEREODON, Mitt.

- S. imponens** (Hedw.), Brid. (*Hypnum imponens*, Hedw.)
On decayed logs in woods and among *Sphagna*; very common.
- S. cupressiforme** (L.), Brid. (*H. cupressiforme*, L.)
On rocks, roots of trees, etc.
- S. confervoides**, Brid. (*Amblystegium confervoides*, Brid.)
On limestone rocks, Sussex.
- S. pallescens** (Hedw.), Lindb. (*Hypnum reptile*, Michx., including *var. viride*, Aust.)
On the roots of trees, decayed logs and on stones; very common.
- Var. protuberans* (Brid.); Lindb. (*H. pallescens*, Aust. Musci Appal., No. 414.)
On *Kalmia latifolia* in mountain swamps.
- S. curvifolius** (Hedw.), Brid. (*Hypnum curvifolium*, Hedw.)
On decayed wood, wet ground and rocks; very common.
- S. Haldanianum** (Grev.), Lindb. (*H. Haldanianum*, Grev.)
On the ground and old logs, etc., in woods; common.
- S. pratense** (Koch), Britt. m. (*H. pratense*, Koch.)
Bergen: On the ground in swampy places; common. Hudson: On tussocks and old logs in cedar swamps near New Durham; a variety.

PYLAISIA, Br. & Sch.

- P. intricata** (Hedw.), Br. & Sch.
On trees; very common. A variety on old roofs and stone fences, in the limestone regions of the northern parts of the State.
- P. velutina**, Br. & Sch.
On trees (chiefly young elms) in swamps; also on old logs in the mountainous regions. A variety on red cedars.
- P. subdenticulata**, Schimp.
Bergen: On the bases of white oaks about Closter.

ISOPTERIGIUM, Mitt.

I. elegans (Hook.), Lindb. (*Plagiothecium elegans*, Hook.)

In crevices of shaded rocks, northern part of the State.

Var. terrestre, Lindb.

On the ground in a ravine near Pascaek; sterile.

I. turfaceum, Lindb.

Bergen: On the ground in woods, Palisades.

PLAGIOTHECIUM, Br. & Sch.

P. latebricola (Wils.), Br. & Sch.

Bergen: About the roots of old stumps, etc., in swamps near Closter.

P. Passaicense, Aust.

Rocky banks. Passaic; Morris; Bergen.

P. denticulatum (L.), Br. & Sch.

On the ground in wet woods and swamps; common.

Var. pusillum, Aust.

On flat rocks in the shade of hemlocks; also on the roots of trees in dry woods.

Var. lætum (Br. & Sch.), Lindb.

Morris: Along the Rockaway River below Boonton—Mrs. Britton.

P. Mullerianum, Schimp.

In rocky ravines, northern part of the State.

P. Sullivantiæ, Schimp.

Passaic: About Greenwood Lake—Mrs. Britton. Determined by E. A. Rau.

P. sylvaticum (Huds.), Br. & Sch.

In deep, wooded ravines in mountainous regions.*

P. striatellum (Brid.), Lindb.

Bergen: Crevices of rocks and rocky banks, Closter.

*The two varieties of the species admitted into the Preliminary Catalogue are not certainly known from the State.

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Var. chrysophylloides, Schimp.

On the ground in woods and swamps. Bergen. Camden:—
Parker.

P. subfalcatum, Aust.

In crevices of rocks in the mountains; sterile.

CYLINDROTHECIUM, Br. & Sch.

C. seductrix (Hedw.), Sull.

On roots of trees, old logs, etc., and on wet ground; very
common.

C. cladorhizans (Hedw.), Schimp.

On old logs, roots of trees, etc., northern part of the State.

C. brevisetum (Wils.), Br. & Sch.

On leaning trunks of trees, old logs and stone fences; also on
rocks, northern part of the State.*

ACROCLADIUM, Mitt.

A. cuspidatum (L.), Lindb. (*Hypnum cuspidatum*, L.)

In bogs; common.

ENTODON, C. Muell.

E. palatinus (Neck.), Lindb. (*Platygyrium repens*, Br. & Sch.)

On the roots of the chestnut and beech, and more commonly
on dead wood; frequent.

NECKERACEÆ.

HOMALIA, Brid.

H. gracilis, James.

Bergen: Under overhanging rocks, Palisades.

NECKERA, Hedw.

N. pennata (L.), Hedw.

On the trunks of trees. Common in the mountainous districts.

* In Lesquereux & James' Manual of the Mosses of N. A., this species is attributed
only to the northwest coast.

CLIMACIUM, Web. & Mohr.

C. dendroides (L.), Web. & Mohr.

Bergen: In swamps about Closter. Ocean: Toms River.

C. Americanum, Brid.

On the ground about the roots of trees in swamps and on moist rocks; very common.

Var. fruitans, Aust.

Bergen: In stagnant pools in woods near Closter and Palisades.

DICHELYMA, Myrin.

D. Swartzii, Lindb.

"Pools of stagnant water, New Jersey—Austin," Lesq. & James' Manual Mosses N. A. 275.

D. capillacea (Dicks.), Br. & Sch.

In stagnant pools in woods, adhering to the roots of trees and sticks; common.

FONTINALIS, L.

F. antipyretica, L., *var. gigantea*, Sulliv.

In rivulets; common; generally sterile. In fruit in a stream on Allamuchy Mt., tributary to Cranberry reservoir—Britton.

F. Dalecarlica, Br. & Sch.

In rocky rivulets; common.

F. Novæ-Angliæ, Sull.

In springs and in rivulets in swampy places; common; sterile.

F. Lescurii, Sull.

Ponds and sluggish streams, southern part of the State—Austin. Morris: Green Pond, in fruit—Mrs. Britton.

Var. gracilescens, Sulliv.

Bergen: In stagnant pools in woods about Closter.

Var. (?) cymbifolia, Aust.

In ponds in the northern part of the State; sterile.*

* *F. disticha* and *F. Sullivantii*, admitted into the Preliminary Catalogue, are not certainly New Jersey plants.

CRYPHÆA, Mohr.

O. glomerata, Br. & Sch.

Bergen: On red cedars, Palisades; rare.

LEPTODON, Mohr.

L. trichomitrium (Hedw.), Mohr.

On trees and rocks. Common in the northern part of the State.

LEUCODON, Schwægr.

L. julaceus (Hedw.), Sull.

On trees. Common in the northern part of the State.

HEDWIGIA, Ehrh.

H. ciliata, Ehrh.

Exposed rocks and boulders. Very common in the northern and middle counties. Mr. Austin distinguished a very small, dark-colored variety from inundated rocks in the Passaic River near Paterson and Little Falls.

CLASS 3.—HEPATICÆ.

Original list in Preliminary Catalogue compiled by C. F. Parker from the collections of C. F. Austin; revised and augmented by E. A. Rau.

Unless otherwise stated, the specimens were collected and determined by Mr. Austin.

The following arrangement is based on Lindberg's "Musci Scandinavici" with references to Underwood's "Descriptive Catalog of North American Hepaticæ" and other writings, but differs somewhat from that of either.

JUNGERMANIACEÆ.

FRULLANIA, Raddi.

F. Eboracensis, Gottsche.

Bergen: On red cedars, Palisades—Austin; common on trees and rocks—Rau.

F. saxicola, Aust.

Bergen: On inclined surfaces of dry trap-rocks, slightly shaded, near Closter, and Passaic: Little Falls.

F. squarrosa, Nees.

On rocks, bark of trees, etc.

F. plana, Sull.

On shaded rocks.

F. æolotis, Nees.

Sussex: On trees and rocks near Ogdensburg.

F. Hutchinsiae (Hook.), Nees.

Bergen: On wet rocks, Closter—Austin. Gloucester: Newfield—Rau.

F. Asa-Grayana, Mont.

Bergen: On rocks and trees, Closter—Austin. Camden: Atco—H. A. Green. Gloucester: Newfield—Rau.

LEJEUNEA, Libert.

L. echinata (Hook.), Tayl.

Gloucester: On bases of trees, Newfield—Rau.

L. clypeata (Schw.), Sull.

On rocks; common.

RADULA, Nees.

R. complanata (L.), Dumort.

On rocks and roots of trees; common.

Var. minor, Aust.

Roots of trees.

R. obconica, Sull.

Bergen: On rocks in ravines; rare.

PORELLA, L.

P. platyphylla (L.), Lindb. (*Madotheca platyphylla*, Dumort.)

Bergen: On rocks and trees, Closter.

P. pinnata, L. (*Madotheca Porella*, Nees.)

On rocks and roots of trees subject to inundation; common.

METZGERIA, Raddi.

M. conjugata, Lindb. (*M. furcata*, Dumort., in part.)*

"On rocks and roots of trees; very common."

LEPIDOZIA, Dumort.

L. reptans (L.), Nees.

On the ground in deep, shaded ravines.

L. setacea (Web.), Mitt.

On the ground and on rotten wood; common.

BAZZANIA, S. F. Gray.

B. trilobata (L.), S. F. Gray. (*Mastigobryum trilobatum*, Nees.)

In deep ravines, wet woods and swamps; common.

Var. tridenticulata (Michx.)

In swamps; common. Mr. Austin distinguished still another variety of this species growing on rocks in deep ravines.

ODONTOSCHISMA, Dumort.

O. Sphagni (Dicks.), Dumort.

Among mosses, etc. Bergen: Closter—Austin. Burlington: On old logs—T. P. James. Camden:—H. A. Green. Gloucester: Newfield—Rau.

O. denudatum (Nees.), Dumort. (*Jungermania Schraderi*, Mart.)

On the ground, rotten wood, etc.; very common.

*After Underwood, who does not refer the species to any New Jersey stations.

CEPHALOZIA, Dumort.

- C. bicuspidata* (L.), Dumort., *var. conferta*, Austin.
 Bergen: On banks in woods near Closter—Austin. Gloucester: Newfield—Rau.
- C. multiflora* (Huds.), Lindb. (*C. connivens*, Austin.)
 On decaying moss, rotten wood and on the ground. Common and variable.
- C. divaricata* (Franc.), Dumort.
 On dry sand in the pine barrens.
Var. confervoides, Austin.
 Bergen: Among *Sphagna* in a peat-bog near Closter.
- C. multiflora*, Spruce. (*C. catenulata*, Aust.)
 On rotten wood in swamps, etc.
- C. curvifolia* (Dicks.), Dumort.
 On rotten logs in damp woods and swamps; common.
- C. fluitans* (Nees), Spruce.
 Bergen: Peat-bog near Closter.
- C. Sullivantii*, Austin.
 On rotten wood; rare.

LOPHOCOLEA, Dumort.

- L. minor*, Nees. (*L. crocata*, Austin, Hep. Exs., No. 65.)
 On the ground, old logs, etc., in woods and swamps; very common.
- L. heterophylla* (Schrad.), Dumort.
 Bergen: On the ground, old logs, etc., in wet woods, Closter.
- L. Austini*, Lindb. (*L. minor*, Austin, Hep. Exs., No. 65*b*.)
 On naked banks and roots of trees in woods.

CHEILOSCYPHUS, Corda.

- C. ascendens*, Hook. & Wils.
 Gloucester: On rotten logs near Newfield—Rau.

C. polyanthos (L.), Corda.

On the ground in springy places in woods, and on rotten logs in swamps; common.

KANTIA, S. F. Gray.

K. Trichomanis (L.), Lindb. (*Calypogeia Trichomanis*, Corda.)

On the ground and decaying logs.

Var. rivularis (Aust.)

In sluggish streams, or growing in loose tufts on their banks, cedar swamps, southern parts of the State.

Var. tenuis (Aust.)

Bergen: In a peat-bog near Closter.

K. Sullivanti (Aust.), Underw. (*Calypogeia Sullivanti*, Aust.)

Warren: On slides, Delaware Water Gap.

ANEURA, Dumort.

A. multifida (L.), Dumort.

Bergen: Closter, and common on decaying moss, wood, etc., in cedar swamps, southern part of the State.

A. palmata (Hedw.), Nees.

On rotten wood; common.

A. sessilis, Spreng.

Bergen: On old logs in partly inundated swamps, Closter.

A. Pinguis (L.), Dumort.

On wet banks; rare. A variety in water among *Sphagna*, southern part of the State.

A. pinnatifida, Nees.

Bergen: On dripping rocks, Hohokus.

TRICHOCOLEA, Dumort.

T. tomentella (Ehrh.), Dumort.

Among mosses in swamps and along the margins of woodland rivulets; common.

BLEPHAROZIA, Dumort.

B. ciliaris (L.), Dumort.

Bergen: On the roots of trees, old logs, stumps, etc., Closter.

HERBERTA, S. F. Gray.

H. adunca (Dicks.), S. F. Gray. (*Scutnera juniperina*, Amer. Auth.)

Passaic: On rocks, Greenwood Mts.

BLEPHAROSTOMA, Dumort.

B. trichophyllum (L.), Dumort.

On the ground and on rotten wood; common.

SCAPANIA, Dumort.

S. irrigua (Nees.), Dumort. (*Scapania compacta*, var. *irrigua*, Underw.)

Ocean: Near Toms River.

S. nemorosa (L.), Nees.

Margins of rivulets, swamps, etc.; common.

DIPLOPHYLLUM, Dumort.

D. taxifolium (Wahlenb.), Dumort. (*Scapania albicans*, Mitt., var. *taxifolia*, Underw.)

On banks in woods, also on rocks and on the ground in damp, shaded ravines; common.

PLAGIOCHILA, Dumort.

asplenioides (L.), Dumort.

In rocky, shaded rivulets; common.

orelloides, Lindenb.

Among mosses in swamps and shaded ravines; common.

MYLIA, S. F. Gray.

M. Taylori (Hook.), S. F. Gray. (*Coleochila Taylori*, Dumort; *Leptosecyphus Taylori*, Mitt.)

Bergen: Among mosses in a peat-bog near Closter.

JUNGERMANIA, L.

J. fossombronioides, Austin.

Bergen: On rocks in a rivulet near Closter.

J. crenuliformis, Austin.

Bergen: On rocks in rivulets near Closter.

J. biformis, Austin.

Warren: On steep, wet rocks, Delaware Water Gap.

J. sphaerocarpa, Hook.(?)

Bergen: On the banks of a small creek subject to inundation, in shaded low grounds near Closter.

J. pumila, With.

Bergen: On shaded rocks along rivulets, Closter; common.

J. laxa, Lindb. (*J. polita*, Aust. Hep. Bor. Am., No. 46.)

Bergen: In a peat-bog near Closter.

J. inflata, Huds.

On sterile ground and on rocks. Burlington: Batsto—T. P. James. Atlantic: Atsion—Rau.

J. excisa, Dicks.

On sterile ground in open woods.

Var. crispa, Hook.

Shaded banks, on the ground, and in crevices of rocks along the Passaic and Delaware Rivers.

NARDIA, S. F. Gray.

N. crenulata (Sm.), Lindb. (*Jungermania crenulata*, Sm.)

On the ground in old fields, along roadsides, common—Austin Southern part of the State—Rau.

N. hyalina (Lyell), Carr. (*Jungermania hyalina*, Lyell.)

Bergen: On banks in woods, Closter.

MARSUPELLA, Dumort.

M. sphacelata (Gieske), Dumort. (*Sarcoscyphus sphacelatus*, Gieske.)

On wet rocks in the mountainous regions of the State.

FOSSOMBRONIA, Raddi.

F. pusilla (L.), Nees.

Bergen: Damp ground, Closter. Matures in September and October.

F. angulosa, Raddi.

Brackish meadows; common. Matures in early spring.

F. cristula, Austin.

Atlantic: On moist sand in unfrequented paths near Batsto. Matures in autumn.

PELLIA, Raddi.

P. epiphylla (L.), Nees.

Bergen: On the ground along small streams, Closter—Austin.
Camden: Atco—H. A. Green. Burlington: Quaker Bridge—
Rau. Atlantic: Mays Landing—Peters.

PALAVICINIA, S. F. Gray.

P. Lyellii (Hook.), S. F. Gray. (*Stetzia Lyellii*, Lehm.)

Among mosses in swamps, often aquatic; common. Ocean:
Ferago Pond. Camden:—Austin; Atco—H. A. Green.
Gloucester: Newfield—Rau.

MARCHANTIACEÆ.

MARCHANTIA, L.

M. polymorpha, L.

In ditches and wet, springy places, and in patches after forest fires; common.

PREISSIA, Nees.

- P. hemispherica* (L.), Cogn. (*P. commutata*, Nees.)
Rocky river banks, northern part of the State.

CONOCEPHALUS, Neck.

- C. conicus* (L.), Dumort. (*Fegatella conica*, Corda.)
Shady banks of rivulets; common.

FIMBRIARIA, Nees.

- F. tenella*, Nees.
On damp ground in old fields, etc.; very common.

GRIMALDIA, Nees.

- G. fragrans* (Balb.), Corda. (*G. barbifrons*, Bisch.)
Bergen: Rocky places near Closter.

REBOULIA, Raddi.

- R. hemispherica* (L.), Raddi.
Rocky banks, chiefly along streams; common.

RICCIACEÆ.

RICCIA, L.

- R. sorocarpa*, Bisch.
Bergen: Rocky places in unfrequented paths, etc., near Closter.
- R. lamellosa*, Raddi.
Bergen: Rocky places, Palisades.
- R. arvensis*, Aust.
Bergen: Wet, broken ground in cultivated fields, etc., about Closter.

Var. hirta, Aust.

Bergen: Rocky places near Closter.

R. Lescuriana, Aust.

Bergen: Rocky ground in paths, etc., Palisades.

R. lutescens, Schw.

On broken ground in wet places, etc.; common.

R. tenuis, Aust.

Bergen: Wet, broken ground, margin of woods near Closter.
Mercer: Near Lawrence—James.

R. fluitans, L.

In both stagnant and running water; common; always sterile.

Var. terrestris, Aust.

Bergen: On the ground in cultivated fields, Closter.

Var. Sullivanti, Aust.

Bergen: On damp or wet, broken ground in cultivated fields, Closter.

R. natans, L.

Mercer: Trenton—Dr. A. C. Stokes, 1888.

ANTHOCERATACEÆ.

ANTHOCEROS, L.

A. lævis, L.

Bergen: In mud in cow tracks, also in cultivated fields, Closter.

NOTOTHYLAS, Sull.

N. orbicularis, Sull. (*N. valvata*, Sulliv.)

On wet ground, banks of ditches, etc.; common.

N. melanospora, Sull.

On damp ground, chiefly in cultivated fields; rather common.

CLASS 4.—CHARACEÆ.

(Contributed by T. F. Allen, M.D.)

NITELLA, Ag.

- N. flexilis*, Ag.
Ponds and streams; common.
- N. glomulifera*, A. Br.
Morris: Green Pond, in deep water.
- N. mucronata*, A. Br., *forma tenuior*, Allen.
Morris: Green Pond; rare.
- N. tenuissima* (Desv.), Kütz.
Morris and Sussex: In ponds; common.
- N. intermedia*, Nordst.
Sussex: Sparta Pond. Quite common in shallow water.
- N. microcarpa*, A. Br.
Morris: Morristown, a few specimens gathered in 1880. Not since found.
- N. macrocarpa*, Allen.
Sussex: Morris Pond.
- N. gracilis*, Sm.
Sussex: Morris Pond.
- N. minuta*, Allen.
Sussex: Pond near Sparta.

CHARA, L.

- C. coronata*, A. Br.
Quite common in ponds.
- C. Hydrophytes*, Reichenb., *var. septentrionalis*, Nordst.
Sussex: Common in Panther Pond and Morris Pond.
- C. Brittonii*, Allen.
Sussex: In springy ground one mile west of Sparta—Britton.
- C. contraria*, A. Br.
In several ponds, northern counties.

- C. intermedia*, A. Br.
Sussex: In Panther Pond; a slender variety.
- C. fragilis*, Desv.
Ponds; common.
- C. sejuncta*, A. Br.
Sussex: Near Panther Pond.
- Forma condensata*, Allen.
Sussex: Morris Pond.

SUB-KINGDOM IV.—THALLOPHYTA.

CLASS 1.—LICHENES.

List in the Preliminary Catalogue printed from a manuscript of the late C. F. Austin, based on specimens named by the late Professor E. Tuckerman. Revised for this work by Dr. J. W. Eckfeldt.

Sub-Class 1.—GYMNOCARPÆ.

Tribe 1.—PARMELIACEÆ.

USNEÆ.

RAMALINA, Ach.

- R. rigida* (Pers.), Tuck.
Pine barrens—Austin. Camden: Common about Atco, on pines and oaks—Eckfeldt.
- R. calicaris* (L.), Fr.
On oaks; common.
- Var. fastigiata*, Fr.
On old fences; frequent.
- Var. fraxinea*, Fr.
On old fences and trunks; frequent.
- Var. canaliculata*, Fr.
Bergen: Closter—Austin.
- Var. farinacea*, Fr.
On rocks. Bergen:—Austin. Warren: Frequent—Eckfeldt.

CETRARIA, Ach.

C. Islandica (L.), Ach.

Sussex, and Warren: Delaware Water Gap—Austin.

C. aleurites (Ach.), Th. Fr.

Eastern counties, on living trees and dead wood—Eckfeldt.

Var. placorodia, Tuck.

Ocean:—Austin. Monmouth: On old rails, frequent—Eckfeldt.

C. Fendleri, Tuck.

Ocean:—Austin. New Jersey—E. Michener. Camden and Atlantic: On old rails, frequent—Eckfeldt.

C. Fahlunensis (L.), Schær.

Rocks. Warren: Delaware Water Gap—Austin.

C. ciliaris (Ach.), Tuck.

On trees and old rails throughout the State; fertile.

C. lacunosa, Ach.

On trees and old rails; common; fertile.

C. glauca (L.), Ach.

Northern New Jersey; mostly on trees—Eckfeldt.

C. aurescens, Tuck.

Bergen: On old rails—Austin. Passaic: Sterile—Eckfeldt.

C. juniperina (L.), Ach.

Pine barrens; very abundant.

Var. Pinastri, Ach.

Bergen: On trees—Austin.

EVERNIA, Ach.

E. furfuracea (L.), Mann.

Bergen: On old trees—Austin.

USNEA, Ach.

U. barbata (L.), Fr.

Common on old trees.

- Var. florida*, Fr.
Pine forests; common.
- Var. hirta*, Fr.
Pine woods; common. (Includes *var. strigosa*.)
- Var. rubiginea*, Mx.
Oaks and fences; frequent.
- Var. plicata*, Fr.
Pines, Camden county—Eckfeldt.
- Var. dasypoga*, Fr.
Bergen :—Austin. Pines, Camden :—Eckfeldt.
- Var. ceratina*, Schær.
On oaks, Atco—Eckfeldt; Mays Landing—Peters.
- U. angulata*, Ach.
Camden: Around Atco, on oaks, frequent—Eckfeldt.
- U. trichodes*, Ach.
Bergen :—Austin. Camden: Atco, often growing with
U. barbata, *var. plicata*—Eckfeldt.

ALECTORIA, Ach.

- A. jubata* (L.), Tuck.
On fences; common.
- Var. chalybeiformis*, Ach.
Bergen :—Austin. Camden and Atlantic :—Eckfeldt.
- Var. implexa*, Fr.
Bergen :—Austin. Camden and Atlantic :—Eckfeldt.
- Var. bicolor*, Fr.
Sussex: On shrubs—Eckfeldt.
- A. ochroleuca* (Ehrh.), Nyl, *var. sarmentosa*, Nyl.
Sussex: On trees—Eckfeldt.

PARMELIÆ.

THELOSCHISTES, Norm.

- T. parietinus* (L.), Norm.
Bergen: On the locust—Austin.

- T. lychneus*, Nyl.
 Bergen: On the locust—Austin. Camden:—Eckfeldt.
- T. polycarpus* (Ehrh.), Tuck.
 Camden: On *Morus alba*—Eckfeldt.
- T. chrysophthalmus* (L.), Norm.
 Camden: On *Juglans nigra*—Eckfeldt.
- T. concolor* (Dicks.), Tuck.
 Camden: On *Morus alba*—Eckfeldt.

PARMELIA, Ach.

- P. crinita*, Ach.
 Rocks. Bergen:—Austin. Warren: Frequent—Eckfeldt.
- P. perforata* (Jacq.), Ach.
 Trunks. Abundant in all parts of the State.
- P. cetrata*, Ach.
 Trunks, Atco—Eckfeldt.
- P. perlata* (L.), Ach.
 Bergen: Trunks. Sussex: Not common—Eckfeldt.
- P. tiliacea* (Hoffm.), Floerk.
 Trunks, in all the forests.
- P. Borreri*, Ach.
 Bergen:—Austin.
- Var. rudecta*, Tuck.
 Very common on trunks throughout the State.
- P. saxatilis* (L.), Fr.
 On old trunks. Common in Northern New Jersey.
- P. lævigata*, Ach. (?)
 Ocean; Monmouth: On trunks—Eckfeldt.
- P. pertusa*, Schrær.
 Bergen: On trees—Austin.
- P. physodes* (L.), Ach.
 Atco, on trunks—Eckfeldt. Bergen:—Austin.

- P. colpodes* (Ach.), Nyl.
On trees, Atco—Eckfeldt. Bergen :—Austin.
- P. caperata* (L.), Ach.
Trunks, rails and limbs, all over the State.
- P. conspersa* (Ehrh.), Ach.
Bergen :—Austin.
- P. ambigua* (Wulf.), Ach., var. *Halei*, Tuckerm.
On pines, New Jersey—Austin. Camden : Atco—Eckfeldt.
- P. olivacea* (L.), Ach.
On oaks; frequent.

PHYSICIA, DC.

- P. aquila* (Ach.), Nyl., var. *detonsa*, Tuck.
On trees; abundant.
- P. speciosa* (Wulf.), Nyl.
On oak trunks; common.
- P. hypoleuca* (Ach.), Tuck.
Bergen :—Austin. Camden : On trunks around Atco—Eckfeldt.
- P. comosa* (Eschw.), Nyl. (*P. speciosa*, var. *galactophylla*, Tuck.)
Ocean :—Austin. Camden :—Eckfeldt.
- P. pulverulenta* (Schreb.), Nyl.
Bergen :—Austin. Camden : On oaks in woods at Atco—Eckfeldt.
- P. stellatis* (L.), Tuck.
On branches throughout the State.
- P. astroidea* (Fr.), Nyl. (*P. stellaris*, var. *astroidea*, Tuck.)
Atlantic : On trunks of *Populus*—Eckfeldt.
- P. tribacia* (Ach.), Tuck.
Old rail fences; rather a common form.
- P. hispida* (Schreb.), Tuck.
Bergen : Trunks and dead wood—Eckfeldt.
- P. obscura* (Ehrh.), Nyl.
Bergen : On oaks—Austin. Camden : Frequent—Eckfeldt.

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Var. endochrysea, Nyl.

Camden : At the foot of oak trees—Eckfeldt.

P. adglutinata (Flörk.), Nyl. (*P. obscura*, var. *adglutinata*, Schær.)

Bergen : On the smooth bark of chestnut trees—Austin.

PYXINE, Fr.

P. Coccoes (Sw.), Nyl.

On various trees.

P. soreliata, Fr. (*P. Coccoes*, var. *soreliata*, Tuck.)

Bergen :—Austin. Camden : On various trunks—Eckfeldt.

MYRIANGIUM, Mont. & Berk.

M. Durisæi, Mont. & Berk.

Camden : Upon the branches of *Nyssa*. Atlantic : In pine barrens near Egg Harbor—Eckfeldt.

UMBILICARIEÆ.

UMBILICARIA, Hoffm.

U. Pennsylvanica, Hoffm.

Sussex :—Austin. Warren : On rocks—Eckfeldt.

U. Muhlenbergii (Ach.), Tuck.

Bergen : On rocks—Austin. Sussex :—Eckfeldt.

U. Dillenii, Tuck.

Sussex :—Austin. New Jersey :—J. Bartram. Warren :—Eckfeldt.

U. pustulata (L.), Hoffm.

On rocks. Common in the northern and middle counties.

PELTIGERIEÆ.

STICTA, Schreb.

S. crocata (L.), Ach.

Bergen : On trees—Austin. Gloucester : Newfield, frequent—Eckfeldt. Atlantic : Mays Landing—Peters.

- S. quercizans* (Michx.), Ach.
 Bergen: On rocks and trunks—Austin. Sussex:—Eckfeldt.
- S. aurata* (Sm.), Ach.
 Gloucester: On trees, Newfield—Eckfeldt.
- S. pulmonaria* (L.), Ach.
 On trunks in various parts of the State.
- S. amplissima* (Scop.), Mass.
 Bergen: On trunks—Austin. Gloucester: Frequent about
 Newfield—Eckfeldt.

NEPHROMA, Ach.

- N. lævigatum*, Ach.
 Bergen: On trunks—Austin. Camden: Atco, frequent—
 Eckfeldt.
- N. Helveticum*, Ach.
 Bergen: On trunks.
- N. tomentosum* (Hoffm.), Koebr.
 Bergen: On trunks.

PELTIGERA, Willd.

- P. venosa* (L.), Hoffm.
 Bergen: On the earth—Austin. Warren: Not common—
 Eckfeldt.
- P. aphthosa* (L.), Hoffm.
 Bergen: On the earth and rocks—Austin.
- P. horizontalis* (L.), Hoffm.
 Bergen and Morris: On the earth.
- P. polydactyla* (Neck.), Hoffm.
 Bergen: On the earth—Austin. Sussex:—Eckfeldt.
- P. rufescens* (Neck.), Hoffm.
 Bergen:—Austin. Gloucester: On the earth among moss,
 Newfield—Eckfeldt.
- P. canina* (L.), Hoffm.
 Bergen:—Austin. Warren: On the earth in forests—
 Eckfeldt.

Var. spuria, Ach.

Bergen: Old fields—Austin. Gloucester: Small specimens found in the vicinity of Newfield—Eckfeldt.

PANNARIEÆ.

HEPPIA, Næg.

H. Despreauxii (Mont.), Tuck.

On the earth. Camden:—Eckfeldt.

PHYSMA, Mass.

P. luridum (Mont.), Tuck.

New Jersey—Austin. On trees. Camden: Atco, and Gloucester: Newfield, frequent—Eckfeldt.

PANNARIA, Delis.

P. lanuginosa (Ach.), Kœrb.

Bergen: On the earth—Austin.

P. rubiginosa (Thunb.), Delis.

On old trees. Gloucester: Newfield—Eckfeldt.

P. leucosticta, Tuck.

On old trunks; common.

P. microphylla (Sw.), Delis.

Bergen: Closter—Austin. Gloucester: Newfield—Eckfeldt.
Hudson: Weehawken—Gerard.

P. tryptophylla (Ach.), Mass.

Gloucester: Newfield—Eckfeldt.

P. molybdæa (Pers.), Tuck.

Bergen:—Austin. Salem:—Eckfeldt.

Var. cronia, Nyl.

Sussex:—Austin.

P. nigra (Huds.), Nyl.

On rocks. Bergen:—Austin.

P. byssina (Hoffm.), Tuck.

Bergen:—Austin. On the earth. Camden:—Eckfeldt.

COLLEMEÆ.

*EPHEBE, Fr.

E. pubescens, Fr.

Bergen:—Austin. Sussex: On the rocks in small patches,
Blue Mts.—Eckfeldt.

PYRENOPSIS, Nyl.

P. Schæreri (Mass.), Nyl.

Sussex: On rocks in the Blue Mts.—Eckfeldt.

P. phæococca, Tuck.

Sussex: On rocks in the Blue Mts.—Eckfeldt.

COLLEMA, Hoffm.

C. myriococcum, Ach.

Sussex:—Austin. Warren: Among moss on calcareous rocks
—Eckfeldt.

C. pycnocarpum, Nyl.

Bergen:—Austin. Gloucester: On trunks about Newfield,
common—Eckfeldt.

C. cyrtaspis, Tuck.

Bergen:—Austin. Gloucester: On old trunks in woods near
Newfield—Eckfeldt.

C. microphyllum, Ach.

Bergen: On old trunks—Austin.

C. verruciforme, Nyl.

Bergen: On red cedar—Austin. Camden: Cedar trunks
and limbs—Eckfeldt.

C. leptaleum, Tuck.

On trunks; frequent.

C. flaccidum, Ach.

Bergen:—Austin. Camden: On trunks and old stumps—
Eckfeldt.

**E. minor*, Willey, of the Preliminary Catalogue, is merely a provisional name for a sterile and undetermined plant.—Eckfeldt.

C. nigrescens (Huds.), Ach.

Bergen :—Austin. Trunks and logs, eastern counties—Eckfeldt.

C. rysssoleum, Tuck.

On rocks. Bergen :—Austin. Sussex :—Eckfeldt.

C. pulposum (Bernh.), Nyl.

Bergen :—Austin. On the earth, northern part of the State—Eckfeldt.

C. tenax (Sw.), Ach.

On the earth. Sussex :—Eckfeldt.

C. furvum (Ach.), Nyl.

On rocks. Bergen :—Austin. Sussex : Blue Mts.—Eckfeldt.

LEPTOGIUM, Fr.

L. bolacinum, Stizenb.

On rocks among mosses—Austin.

L. tenuissimum (Dicks.), Korb. (*L. subtile*, Nyl.)

On old logs, forests of New Jersey ; common.

L. lacerum (Sw.), Fr.

On logs and trunks ; common.

L. pulchellum (Ach.), Nyl.

Bergen :—Austin. On old trunks in the forests of Central New Jersey—Eckfeldt.

L. tremelloides (L. f.), Fr.

Bergen :—Austin. Gloucester : On old trunks, Newfield—Eckfeldt.

L. dactylinum, Tuck.

Warren : On limestone—Austin.

L. chloromelum (Sw.), Nyl.

Bergen : On trunks—Austin. Warren :—Eckfeldt.

L. myochroum (Ehrh.), Tuck.

Bergen :—Austin. Sussex : On trunks and rocks, Blue Mts.—Eckfeldt.

Var. saturninum (Sm.), Schar.

Bergen :—Austin. Camden : On trunks—Eckfeldt.

HYDROTHYRIA, Russell.

H. venosa, Russell.

Bergen:—Austin. Warren: Adhering to stones under water, in streams; frequent—Eckfeldt.

LECANOREÆ.

PLACODIUM, DC.

P. cerinum (Hedw.), Næg. & Hepp.

Bergen:—Austin. Warren: Calcareous rocks. Camden: Trees and shrubs—Eckfeldt.

P. cinnabarinum (Ach.), Anz.

Bergen:—Austin. Calcareous rocks. Warren:—Eckfeldt.

P. aurantiacum (Lightf.), Næg. & Hepp.

On rocks and cedars; common.

P. camptidium, Tuck.

On maple trunks. Camden:—Eckfeldt.

P. ferrugineum (Huds.), Hepp.

Bergen:—Austin. Camden: On branches and trunks—Eckfeldt.

Var. Pollinii, Tuck.

On cedar. Camden:—Eckfeldt.

P. microphyllum, Tuck.

On old cedar rails. Camden:—Eckfeldt.

P. vittellinum (Ehrh.), Næg. & Hepp.

Bergen:—Austin. Camden: Old cedar rails—Eckfeldt.

P. citrinum (Hoffm.), Leight.

On old buildings and ancient mortar, and peculiar to calcareous rocks—Eckfeldt.

P. rupestre (Scop.), Br. & Rostr.

Rocks. Warren:—Eckfeldt.

LECANORA, Ach.

L. rubina (Vill.), Ach.

Sussex :—Austin. Warren : On rocks—Eckfeldt.

L. muralis (Schreb.), Schær.

Sussex :—Austin. On rocks. Warren, and Morris—Eckfeldt.

L. pallida (Schreb.), Schær.

Bergen :—Austin. Camden : On cedar and chestnut trunks—Eckfeldt.

Var. cancriformis, Tuck.

Camden : Chestnut saplings, Atco—Eckfeldt.

L. miculata, Ach.

Salem : On *Cercis Canadensis*—Eckfeldt.

L. subfusca (L.), Ach.

Trunks and rocks ; frequent.

Var. allaphana, Ach.

Camden : Maple trunks, Atco—Eckfeldt.

Var. distans, Ach.

Camden : Chestnut trunks, Atco—Eckfeldt.

L. Hageni, Ach.

Bergen :—Austin. Camden : On hickory wood and old rails—Eckfeldt.

L. Willeyi, Tuck.

On fences, New Jersey—Austin. Gloucester : On cedar and chestnut rail fences, Newfield—Eckfeldt.

L. atra (Huds.), Ach.

On hornblendic rocks, Northern New Jersey—Eckfeldt.

L. varia (Ehrh.), Nyl.

Bergen :—Austin. On cedars and old rails. Camden : Atco, and Gloucester : Newfield—Eckfeldt.

Var. sæpincola, Fr.

Camden : Old rail fences, Atco—Eckfeldt.

- L. Cupressi*, Tuck.
On white cedar, New Jersey—Austin. Camden: On white cedar, Atco—Eckfeldt.
- L. orosthea* (Sm.), Tuck.
Bergen:—Austin. Camden: On cedars and maples—Eckfeldt.
- L. athroocarpa* (Duby), Nyl.
Bergen:—Austin. Camden: On trunks and limbs—Eckfeldt.
- L. elatina*, Ach.
Camden: On trunks—Eckfeldt.
- L. pallescens* (L.), Schær.
Bergen:—Austin. On cedar and maple trunks—Eckfeldt.
- L. tartarea* (L.), Ach.
Bergen:—Austin. Warren: On granitic rocks—Eckfeldt.
- L. punicea*, Ach.
Salem: On maple trunks—Eckfeldt.
- L. cinerea* (L.), Sommerf.
On schist, northern part of the State.
- L. lacustris* (With.), Nyl.
Salem: On rocks; scarce—Eckfeldt.
- L. Bockii* (Fr.), Th. Fr.
Bergen:—Austin. On granitic rocks in the mountains—Eckfeldt.
- L. xanthophana*, Nyl.
Bergen:—Austin. Warren: On micaceous rocks—Eckfeldt.
- L. cervina* (Pers.), Nyl.
Bergen:—Austin.
- L. fuscata* (Schrad.), Th. Fr., *var. rufescens*, Th. Fr.
On rocks, Northern New Jersey—Eckfeldt.
- L. simplex* (Dav.), Nyl.
On rocks, Northern New Jersey—Eckfeldt.
- Var. pruinosa*, Tuck.
Sussex: On rocks, Blue Mts.—Eckfeldt.

RINODINA, Mass.

R. Ascociscana, Tuck.

Sussex: On trunks—Austin.

R. sophodes (Ach.), Ny.

Bergen:—Austin. Sussex: On rocks and trunks—Eckfeldt.

Var. confragosa, Nyl.

Bergen:—Austin. Warren: On rocks—Eckfeldt.

R. constans (Nyl.), Tuck.

Bergen:—Austin. Camden: On trunks—Eckfeldt.

R. milliaria, Tuck.

Camden: Cherry trees—Eckfeldt.

PERTUSSARIA, DC.

P. velata (Turn.), Nyl.

Bergen:—Austin. Camden: On maple trunks, Atco—Eckfeldt.

P. multipuncta (Turn.), Nyl.

Bergen:—Austin. Camden: On oaks, Atco—Eckfeldt.

P. communis, DC.

On various trunks and on rocks; frequent.

P. leioplaca (Ach.), Schær.

Bergen:—Austin. Camden: On beech trunks—Eckfeldt.

P. pustulata (Ach.), Nyl.

Bergen:—Austin. On chestnut trunks. Camden:—Eckfeldt.

P. globularis, Ach.

Bergen:—Austin. Warren: On moss growing upon rocks—Eckfeldt.

CONOTREMA, Tuck.

C. urceolatum (Ach.), Tuck.

Bergen:—Austin. Camden: On beech bark—Eckfeldt.

GYALECTA, Ach.

G. Pineti (Schrad.), Fr.

Bergen:—Austin. Gloucester: On an old *Boletus*, Newfield—Eckfeldt.

G. lutea (Dicks.), Tuck.

Gloucester: On chestnut bark, Newfield—Eckfeldt.

URCEOLARIA, Ach.

U. scrupeosa (L.), Nyl.

Bergen:—Austin. Warren: On rocks, and Camden: On old rail fences, Atco—Eckfeldt.

THELOTREMA, Ach.

T. subtile, Tuck.

Gloucester: On trunks—Eckfeldt.

Sub-Class 2.—LECIDACEÆ.

CLADONIEÆ.

STEREOCAULON, Schreb.

S. paschale (L.), Fr.

Sussex:—Austin. Warren: On the earth—Eckfeldt.

S. tomentosum (Fr.), Th. Fr.

Bergen:—Austin. Sussex: On the earth—Eckfeldt.

S. denudatum, Flörck.

Bergen:—Austin. Sussex: On the earth—Eckfeldt.

CLADONIA, Hoffm.

C. symphicarpa, Fr. (*C. pyxidata*, var. *symphicarpa*, Nyl.)

In all localities, on the ground.

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Var. epiphylla (Ach.), Nyl.*

On disintegrated rocky banks.

C. Mitrula, Tuck.

Bergen :—Austin. Sussex :—Eckfeldt. Camden : On the ground in pine barrens—Eckfeldt.

C. cariosa (Ach.), Spreng.

Bergen :—Austin. Camden : On the ground in pine thickets.—Eckfeldt.

C. pyxidata (L.), Fr.

On the ground and rotten logs ; common.

C. fimbriata (L.), Fr.

Bergen :—Austin. Camden : On fallen and decayed trunks.—Eckfeldt.

Var. tubæformis, Fr. (*Var. adspersa*, Tuckerm.)

Bergen :—Austin.

C. degenerans, Flörk.

On the earth. Bergen :—Austin. Sussex and Warren :—Eckfeldt.

C. gracilis (L.), Nyl.

Bergen :—Austin. Camden : On the earth, Atco—Eckfeldt.

Var. verticillata, Fr.

Closter—Austin ; Weehawken—Gerard. Gloucester : On the earth, Newfield—Eckfeldt.

Var. hybrida, Schaer.

Bergen :—Austin. Salem : On the earth—Eckfeldt.

Var. elongata, Fr.

Bergen :—Austin. Sussex : On the earth in small forms—Eckfeldt.

C. cornuta (L.), Fr.

On the earth. Bergen :—Austin. Warren : Frequent—Eckfeldt.

C. turgida (Ehrh.), Hoffm.

Bergen :—Austin. Warren : Growing among the crevices of rocks among ferns, Blue Mts.—Eckfeldt.

- C. papillaria* (Ehrh.), Hoffm.
Bergen: On argillaceous banks, and Camden: In the sand region of Atco—Eckfeldt.
- C. squamosa*, Hoffm.
On the ground and dead wood, everywhere.
- C. delicata* (Ehrh.), Fløerk. (*C. squamosa*, var. *delicata*, Fr.)
Bergen:—Austin. On dead wood, pine barrens—Eckfeldt.
- C. cæspiticia* (Pers.), Fløerk. (*C. squamosa*, var. *cæspiticia*, Auctt.)
Bergen:—Austin. On the ground, pine barrens—Eckfeldt.
- C. furcata* (Huds.), Fr.
On the earth. Bergen:—Austin. Camden:—Eckfeldt; as also
- Var. crispata*, Fløerk.
- Var. racemosa*, Fløerk.
- Var. subulata*, Fløerk.
- C. rangiferina* (L.), Hoffm.
On the earth, all over the State.
- Var. sylvatica* (L.), Fr.
Camden: On the earth, Atco—Eckfeldt.
- Var. alpestris* (L.), Fr.
On the earth, pine barrens—Eckfeldt.
- C. lepidota*, Fr.
On the earth. Bergen:—Austin. Salem:—Eckfeldt.
- C. uncialis* (L.), Fr.
Ocean:—Austin.
- Var. adunca*, Ach.
Camden: On the earth in pine thickets—Eckfeldt.
- C. cornucopioides* (L.), Fr.
Bergen:—Austin. Sussex: On the earth, Blue Mts.—Eckfeldt.
- C. macilenta* (Ehrh.), Hoffm.
Bergen:—Austin. Camden: On rotten logs, Atco—Eckfeldt.

C. cristatella, Tuck.

Bergen:—Austin. Camden: On old fences, stumps and the ground, Atco—Eckfeldt. Atlantic: Mays Landing—Peters.

C. leporina, Fr.

Camden: On the ground at Atco—Eckfeldt.

LECIDEÆ.

BÆOMYCES, Pers.

B. roseus, Pers.

Bergen: On the earth—Austin. Sussex:—Eckfeldt.

B. æruginosus (Scop.), DC.

Bergen: On old dead wood—Austin. Sussex:—Eckfeldt.

B. byssoides (L.), Schær.

Warren: On the earth—Eckfeldt.

*BIATORA, Fries.

B. icterica, Mont.

Bergen: On trunks, Palisades—Austin. Salem:—Eckfeldt.

B. Russellii, Tuck.

Sussex: On the earth—Austin.

B. anthracophila, Nyl.

New Jersey: Base of pine trees—Austin.

B. granulosa (Ehrh.), Poetsch. (*B. decolorans*, Fr.)

Bergen: On trunks—Austin. Camden: Frequent—Eckfeldt.

B. viridescens (Schrad.), Fr.

Bergen: On rocks and bark—Austin. Warren—Eckfeldt.

B. vernalis (L.), Fr.

Bergen: On old trunks—Austin. Sussex:—Eckfeldt.

B. parvifolia (Pers.), Tuck.

Bergen: On dead wood—Austin. Salem:—Eckfeldt.

**Biatora nigra*, Tuck., and *B. sanguinea*, Fr., names printed from Mr. Austin's manuscript list, in the Preliminary Catalogue, are unknown.

- B. sanguineo-atra** (Fr.), Tuck.
New Jersey—Austin.
- B. russula** (Ach.), Mont.
Bergen:—Austin. Camden: On maple limbs and trunks—
Eckfeldt.
- B. varians** (Ach.), Tuck. (*B. exigua*, Fr.)
Bergen:—Austin. Camden: On the trunks of young oak
trees—Eckfeldt.
- B. uliginosa** (Schrad.), Fr.
Bergen:—Austin. Camden: On the earth at the base of
trees, Atco, and Gloucester: On dead wood, Newfield—Eck-
feldt.
- B. synathea**, Ach. (*B. denigrata*, Fr.)
Bergen: Occasional on old trunks—Austin. Camden:—
Eckfeldt.
- B. mixta**, Fr. (*B. tricolor*, With.)
Bergen: On various trunks, frequent—Austin. Camden:—
Eckfeldt.
- B. inundata**, Fr.
New Jersey—Austin.
- B. hypnophila** (Turn.), Tuck.
Bergen:—Austin. Camden: On the ground and rotten wood,
on moss, Atco—Eckfeldt.
- B. suffusa**, Fr.
New Jersey—Austin.
- B. cupreo-rosella** (Nyl.), Tuck.
Sussex:—Austin.
- B. coarctata** (Nyl.), Tuck.
Sussex: On schist—Eckfeldt.
- B. rufo-nigra**, Tuck.
Warren: On rocks, frequent—Eckfeldt.
- B. rubella** (Ehrh.), Rab.
Bergen:—Austin. Camden: On trunks, Atco—Eckfeldt.

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B. umbrina (Ach.), Tuck.

Bergen:—Austin. Gloucester: On trees, Newfield—Eckfeldt.

B. chlorosticta, Tuck.

Ocean:—Austin. Camden: On trunks, Atco—Eckfeldt.

B. chlorantha, Tuck.

Bergen: On trunks, Eastern New Jersey—Austin.

B. campestris, Fr.

Bergen:—Austin. Gloucester: On dead and decaying wood, Newfield—Eckfeldt.

B. fossarum (Duf.), Mont.

Bergen:—Austin. Camden: On dead wood—Eckfeldt.

B. geophana, Nyl.

Bergen: On the earth—Austin. Warren:—Eckfeldt.

B. Resinæ (Fr.), Tuck.

Bergen:—Austin. Gloucester: On dead and decaying wood, Newfield—Eckfeldt.

HETEROTHECIUM, Flot.

H. sanguinarium (L.), Flot.

On trunks, Southern New Jersey, frequent—Eckfeldt.

H. tuberculosum (Fée), Flot.

Atlantic: On trees—Eckfeldt.

H. pezizoideum (Ach.), Flot.

Bergen:—Austin.

H. vulpinum, Tuck.

Atlantic: On dead wood, seen but once—Eckfeldt; H. A. Green.

LECIDEA, Ach.

L. contigua, Fr.

Bergen:—Austin. Warren: On rocks and stones—Eckfeldt.

L. enteroleuca, Fr. (*L. elæochroma*, Fr.)

Bergen:—Austin. Camden: On trunks and brick pavements—Eckfeldt.

- L. cyrtidia*, Tuck. (*L. sylvicola*, Flot.)
Gloucester: On pebbles, Newfield—Eckfeldt.
- L. granosa*, Tuck.
On limestone, New Jersey—Austin.
- L. tessellina*, Tuck.
Bergen: On rocks—Austin.
- L. tessellata*, Flörk. (*L. spilota*, Fr.)
Bergen:—Austin.

BUELLIA, De Not.

- B. stellulata* (Tayl.), Br. & Rostr.
Bergen: On trunks—Austin. Salem:—Eckfeldt.
- B. spuria* (Schaer.), Arn. (*B. lactea*, Tuck.)
On stones, northern and eastern counties—Eckfeldt. New Jersey—Austin.
- B. parasema* (Ach.), Th. Fr.
On various trunks throughout the State.
- B. dialyta* (Nyl.), Tuck.
Bergen: On trunks—Austin. Salem and Cumberland:—Eckfeldt.
- B. myriocarpa* (DC.), Mudd.
Bergen:—Austin. Camden: On dead wood and old rail fences—Eckfeldt.
- B. Schræereri*, De Not.
Bergen:—Austin. Warren:—Eckfeldt.
- B. vernicoma*, Tuck.
Bergen:—Austin. Warren: On trunks and stones—Eckfeldt.
- B. colludens*, Nyl. (*Lecidia Myrini*, Fr.)
Salem: On trunks—Eckfeldt.
- B. petræa* (Flot.), Tuck.
Stones, northern and eastern counties.
- Var. Montagnei* (Flot.), Tuck.
Warren and Bergen: On rocks—Austin.

Sub-Class 3.—GRAPHIDACEÆ.

LECANACTIDEÆ.

MELASPILEA, Nyl.

M. angulosa, Nyl.

Camden: On cherry trees—Eckfeldt.

OPEGRAPHEÆ.

OPEGRAPHA, Humb.

O. varia (Pers.), Fr.

Bergen:—Austin. Camden: On oak bark and dead wood—Eckfeldt.

Var. rimalis, Fr.

Same localities and habitats.

O. vulgata (Ach.), Nyl.

Camden: Oak and gum trees—Eckfeldt.

O. atra, Pers.

Camden and Atlantic: On *Ilex*—Eckfeldt.

O. viridis (Pers.), Nyl.

Bergen:—Austin. Gloucester: On *Ilex*, Newfield to Salem—Eckfeldt.

XYLOGRAPHA, Fr.

X. opegraphella, Nyl.

Gloucester: On old chestnut and cedar rails, Newfield—Eckfeldt.

GRAPHIS, Ach.

G. scripta, Ach.

Bergen:—Austin. Camden: On *Liriodendron* and *Castanea*-bark—Eckfeldt.

Var. assimilis, Nyl.

Bergen:—Austin.

Var. recta, Schær.

Bergen:—Austin. Camden: On *Prunus*—Eckfeldt.

Var. serpentina, Schær.

Camden: Same habitat—Eckfeldt.

Var. limitata, Schær.

Camden: Same habitat.

G. elegans (Sm.), Ach.

Bergen:—Austin.

G. dendritica, Ach.

Bergen:—Austin. Camden: On *Ilex* trunks, Atco—Eckfeldt.

G. sculpturata, Ach.

Bergen:—Austin. Salem: On *Ilex* trunks—Eckfeldt.

GLYPHIDEÆ.

GLYPHIS, Ach.

G. Acharina, Tuck.

Gloucester: Newfield, on *Ilex* trunks, not common—Eckfeldt.

ARTHONIEÆ.

*ARTHONIA, Ach.

A. glaucescens, Nyl.

Bergen: On pines—Austin. Salem:—Eckfeldt.

A. lecideella, Nyl.

Bergen:—Austin. Camden: On *Ilex* trunks, Atco—Eckfeldt.

A. astroidea, Ach.

Bergen:—Austin. Camden: On *Ilex* trunks, Atco—Eckfeldt.

**A. globosa*, Tuckerm., printed from Mr. Austin's manuscript list, in the Preliminary Catalogue, is a mistake. It has not yet been found east of the Rocky Mountains.

Var. Swartziana, Nyl.

Warren: On *Carpinus* trunks—Eckfeldt.

A. spectabilis, Fl.

Bergen:—Austin.

A. stellaris, Tuck.

Camden: On *Ailanthus* trunks, Atco—Eckfeldt.

A. lædiosa, Nyl.

Gloucester: Newfield, on hickory and maple—Eckfeldt.

A. pyrrhula, Nyl.

Gloucester: On chestnut, Newfield—Eckfeldt.

A. dispersa, Nyl.

Camden: On *Acer platanoides*—Eckfeldt.

A. polymorpha, Ach.

Gloucester: On hickory, Newfield—Eckfeldt.

MYCOPORUM, Flot.

M. pycnocarpum, Nyl.

Bergen:—Austin.

Sub-Class 4.—CALICIACEÆ.

CALICIEÆ.

ACOLIUM, Fée.

A. tigillare (Ach.), De Not.

Bergen:—Austin. Camden: On old cedar rail fences, Atco—Eckfeldt.

CALICIUM, Pers.

C. phæocephalum (Turn.), Turn. & Borr.

Bergen: On old cedar and chestnut rail fences—Austin.

C. curtum, Turn. & Borr.

Bergen:—Austin. Camden: On dead wood and bark, Atco—Eckfeldt.

C. subtile, Fr.

Bergen :—Austin. Camden : On cedar and chestnut rail fences—Eckfeldt.

C. turbinatum, Pers.

Camden : On trunks of *Liriodendron*—Eckfeldt.

C. fuscipes, Tuck.

Bergen :—Austin. Camden : On dead wood—Eckfeldt.

C. roscidum (Flot.), Nyl.

Bergen :—Austin. Gloucester : On old decaying stumps, Newfield—Eckfeldt.

Var. roscidulum, Nyl.

Ocean :—Austin.

C. byssaceum, Fr.

Bergen :—Austin. Salem : On dead wood—Eckfeldt.

C. tubæforme, Tuck.

Bergen : On bark and twigs—Austin. Camden and Atlantic—Eckfeldt.

CONIOCYBE, Ach.**C. pollida** (Pers.), Fr.

Gloucester : On dead wood, Newfield—Eckfeldt.

Sub-Class 5.—VERRUCARIACEÆ.**ENDOCARPEÆ.****ENDOCARPON**, Hedw.**E. miniatum** (L.), Schær.

Bergen :—Austin. Warren : On limestone rocks in the Blue Mts.—Eckfeldt.

Var. aquaticum, Schær.

Hunterdon : On rocks in creeks, sometimes inundated—Eckfeldt.

Var. complicatum, Schær.

Warren: On rocks, Blue Mts.—Eckfeldt.

E. arboreum, Schwein.

Bergen:—Austin. Camden: On oak trunks, Atco, common—Eckfeldt.

E. rufescens, Ach.

Bergen:—Austin. Sussex: On the earth in the mountains—Eckfeldt.

E. hepaticum, Ach.

Bergen:—Austin. Sussex: On the earth, Blue Mts.—Eckfeldt.

VERRUCARIEÆ.

THELOCARPON, Nyl.

T. Laureri (Flot.), Tuck.

Gloucester: On old pine boards, Newfield—Eckfeldt.

STAUROTHELE, Norm.

S. diffractella (Nyl.), Tuck.

Sussex: On rocks—Eckfeldt.

TRYPETHELIUM, Spreng.

T. virens, Tuck.

Bergen:—Austin. Gloucester: On *Ilex* trunks, Newfield—Eckfeldt.

T. cruentum, Mont.

Salem: On *Ilex* trunks, rare—Eckfeldt.

SAGEDIA, Mass.

S. lactea, Koeb.

Bergen:—Austin. Camden: On the branches of *Hicoria*—Eckfeldt.

S. chlorotica (Ach.), Mass.

Sussex: On rocks—Eckfeldt.

S. oxyspora (Nyl.), Tuck.

Bergen:—Austin. Gloucester: On poplar and white birch trunks, Newfield—Eckfeldt.

S. Cestrensis, Tuck.

Bergen:—Austin. Camden: On *Acer* bark—Eckfeldt.

VERRUCARIA, Pers.

V. epigæa (Pers.), Ach.

Bergen:—Austin. Sussex: On clay soil and rocks—Eckfeldt.

V. muralis, Ach.

Camden: On rocks and bricks—Eckfeldt.

V. rupestris, Schrad.

Warren: On rocks—Eckfeldt.

V. virens, Nyl.

Same locality.

V. fuscella, Fr.

Sussex: On rocks—Eckfeldt.

V. nigrescens, Pers., *var. eleochroa*, Tuck.

Sussex: On shale—Eckfeldt.

PYRENULA, Ach.

P. hyalospora (Nyl.), Tuck.

Bergen:—Austin. Salem: On smooth trunks—Eckfeldt.

P. glabrata (Ach.), Mass.

Bergen:—Austin. Gloucester: On *Alnus*, Newfield—Eckfeldt.

P. nitida, Ach.

Bergen:—Austin.

P. lactea (Mass.), Tuck.

Bergen:—Austin. Camden: On *Gleditschia*, near Atco, and Gloucester: Newfield—Eckfeldt.

P. punctiformis (Ach.), Næg.

Bergen :—Austin. Camden : On cherry trunks, Atco, and Gloucester : Newfield—Eckfeldt.

P. thelæna (Ach.), Tuck.

Bergen :—Austin. Gloucester : On cherry trunks, Newfield—Eckfeldt.

P. pachycheila, Tuck.

Gloucester : On various trunks, Newfield—Eckfeldt.

CLASS 2.—ALGÆ.

The list of marine forms contributed by Isaac C. Martindale,* and of fresh-water forms by Rev. Francis Wolle, combined by me into a single series.

Sub-Class 1.—FLORIDEÆ.

LEMANEÆ.

LEMANEA, Bory.

L. torulosa (Roth.), Ag.

Bergen : Attached to stones in swift waters—Austin.

L. fluviatilis, Ag.

Northern parts of the State—Wolle.

PORPHYREÆ.

PORPHYRA, Ag.

Laver.

P. laciniata (Lightf.), Ag.

Along the coast. Hudson and Monmouth : Common in New York Bay and Harbor—Pike. Burlington : On eel-grass in Little Bay, Egg Harbor—Ashmead. Atlantic : Atlantic City—Morse ; Longport—Martindale.

* See Memoirs Torrey Botanical Club, Vol. I., No. 2, where the names of collectors are given in greater detail.

SQUAMARIÆ.

HILDENBRANDTIA, Nardo.

H. rosea, Kütz.

New York Bay and Harbor. Very common on stones from Hoboken to Sandy Hook—Pike.

SPERMOTHAMNIÆ.

SPERMOTHAMNION, Aresch.

S. Turneri (Mert.), Aresch.

Hudson: Communipaw, marine—Pike.

CERAMIÆ.

CALLITHAMNION, Lyngb.

C. cruciatum, Ag.

Hudson: Communipaw—Pike. Atlantic: Atlantic City—Morse; Longport—Martindale.

C. Americanum, Harvey.

Hudson: On the flats—Pike. Atlantic: Atlantic City—Morse.

C. plumula (Ellis), Lyngb.

Monmouth: Long Branch—Miss E. C. Morris. Hudson: Communipaw—Pike. Atlantic: Atlantic City—Morse.

C. Borreri (Sm.), Ag.

Hudson: Very common at Communipaw—Pike. Atlantic: Atlantic City, common—Morse; Longport—Martindale; Somers Point—Mrs. Porter. Cape May:—Halliday Jackson.

C. roseum (Roth), Harvey.

Hudson: New York Harbor—A. R. Young. Monmouth: Pleasure Bay—Pike. Atlantic: Atlantic City—Morse.

C. polyspermum, Ag.

On old shells in Great Egg Harbor Bay, rare—Ashmead. Hudson: Communipaw—Pike.

P. leucosticta, Thur.

Atlantic: Atlantic City—Morse; Longport—Mrs. Lawton.

BANGIA, Lyngb.

B. fusco-purpurea (Dillw.), Lyngb.

On wharves. Atlantic: Atlantic City—Morse. Monmouth :
Pleasure Bay—Pike.

ERYTHROTRICHIA, Aresch.

E. ceramicola (Lyngb.), Aresch.

On other algae. Atlantic: Atlantic City—Morse; Longport
—Martindale.

E. ciliaris (Carm.), Thuret.

Atlantic: On *Chaetomorpha Melagonium*—Morse. Deter-
mined by F. S. Collins.

GONIOTRICHUM, Kütz.

G. elegans (Chauv.), Zanard.

Atlantic: Atlantic City—Morse. Mixed with *Bangia*. De-
tected by F. S. Collins.

BATRACHOSPERMEÆ.

BATRACHOSPERMUM, Roth.

B. moniliforme, Roth.

Spring waters; frequent.

B. vagum, Ag., *var. keratophytum*, Bory.

In ponds, Burlington, and southward—Wolle.

CHANTRANSIA, Fr.

C. macrospora, Wood.

Burlington: Abundant in the pond at Atsion—Wolle.

C. violacea, Kütz.

Frequent in shallow streams.

Z

C. Baileyi, Harvey.

Common from New Jersey to Cape Cod—Farlow. Hudson:
Abundant in New York Bay—Pike.

C. byssoidesum, Arn.

Frequent on eel-grass and attached to old shells in Great Egg
Harbor Bay—Ashmead. Hudson: New York Harbor—Har-
vey; Jersey City and Hoboken—Halliday Jackson. Atlantic:
Atlantic City—Martindale; Longport—Mrs. Lawton; Somers
Point—Mrs. L. H. Porter. Cape May—Martindale.

C. corymbosum (Smith), Lyngb.

Hudson: Communipaw—Pike.

C. Dietziæ, Hooper.

Hudson: Communipaw—Pike.

C. tenue (Ag.), Harv.

Cape May: Beesley's Point—Ashmead. Atlantic: Long-
port—Mrs. Lawton; Atlantic City, not uncommon—Morse;
Somers Point—Mrs. Lucy H. Porter. Monmouth: Pleasure
Bay, and Hudson: Communipaw—Pike.

GRIFFITHSIA, Ag.**G. Bornetiana**, Farlow.

Hudson: Communipaw, and Monmouth: Pleasure Bay—
Pike.

HALURUS, Kütz.**H. equisetifolius**, Kütz.

On the New Jersey coast near New York—Pike. The exact
station not recorded.

PTILOTA, Ag.**P. elegans**, Bonnem.

Monmouth: Sandy Hook—Pike; Sea Bright—H. Averill;
Squan Beach—Miss Morris; Ocean Grove—Miss C. A. Boice;
Asbury Park—L. E. Knight. Atlantic: Atlantic City—
Morse; Longport—Mrs. Lawton.

P. pectinata (Gunnar), Kjellm. (*P. serrata*, Kütz.)

Monmouth: Asbury Park, 1886—L. E. Knight.

CERAMIUM, Lyngb.

C. rubrum (Huds.), Ag.

Hudson: New York Harbor—Pike. Monmouth: Ocean Grove—Miss C. A. Boice. Atlantic: Atlantic City—Morse; Somers Point—Mrs. Porter; Longport—Martindale. Cape May: Beesley's Point, abundant on *Zostera*, and quite variable—Ashmead.

Var. proliferum, Ag.

Monmouth: Asbury Park—Gardner. Atlantic: Atlantic City—Martindale.

Var. secundatum, Ag.

Atlantic: Atlantic City—Martindale.

Var. squarrosum, Harvey.

With the last. Same locality.

C. diaphanum (Lightf.), Roth.

Cape May: Sparingly at Beesley's Point—Ashmead. Atlantic: Atlantic City—Morse; Longport—Mrs. Lawton.

C. strictum (Kütz.), Harvey.

Hudson: Communipaw, and Monmouth: Pleasure Bay—N. Pike; Asbury Park—Kain; Ocean Grove—Miss Boice. Atlantic: Atlantic City—Morse; Longport—Martindale; Somers Point—Dr. Porter. Cape May:—Halliday Jackson.

C. fastigiatum, Harvey.

Hudson: New York Bay—B. B. Chamberlin. Monmouth: Asbury Park—N. T. Gardner; Long Branch—Miss Morris. Atlantic: Atlantic City—Morse; Somers Point, on *Rhabdonia*—Martindale. Cape May: In dense tufts on *Zostera* at Beesley's Point—Ashmead. Burlington: Tuckerton—Martindale.

C. tenuissimum (Lyngb.), Ag.

Monmouth: Ocean Grove—Kain; Asbury Park—N. T. Gardner. Atlantic: Atlantic City—Morse; Longport—Mrs. Lawton; Somers Point—Martindale.

Var. arachnoideum, J. Ag.

Atlantic: Atlantic City—Martindale.

Var. patentissimum, Harvey.

Same locality.

SPYRIDIEÆ.

SPYRIDIA, Harvey.

S. filamentosa (Wulf.), Harvey.

Hudson: Communipaw—N. Pike. Atlantic: Abundant in bays at Egg Harbor—Ashmead; Atlantic City—Morse; Longport—Martindale; Somers Point—Mrs. Porter.

GIGARTINEÆ.

PHYLLOPHORA, Grev.

P. Brodiaei (Turn.), J. Ag.

Hudson: Communipaw—Pike. Monmouth: Asbury Park—N. T. Gardner. Atlantic: Atlantic City—Morse.

P. membranifolia. (Good. & Woodw.), J. Ag.

Monmouth: Long Branch—Miss Morris; Pleasure Bay—Pike; Asbury Park and Ocean Beach—N. T. Gardner; Ocean Grove—Miss C. A. Boice. Atlantic: Atlantic City—Morse.

AHNFELDTIA, Fr.

A. plicata (Huds.), Fr.

Monmouth: Sandy Hook, washed ashore—Pike.

CYSTOCLONIUM, Kütz.

C. purpurascens (Huds.), Kütz.

Hudson: New York Bay—J. Hooper. Monmouth: Squan—Miss Morris. Atlantic: Atlantic City, not uncommon—Morse. Cape May:—Mrs. Porter.

Var. cirrhosa, Harv.

Monmouth: Ocean Grove—Miss Boice.

CHONDRUS, Stack.

C. crispus (L.), Stack.

Atlantic: Atlantic City, rare—Morse.

RHODOMENIÆ.

RHODOMENIA, J. Ag.

R. palmata (L.), Grev.

Monmouth: On *Laminaria* at Long Branch—Pike. Atlantic: Atlantic City, not uncommon—Morse.

EUTHORA, Ag.

E. cristata (Ag.), J. Ag.

Monmouth: Long Branch—J. Walters.

LOMENTARIA, Gaill.

L. uncinata, Menegh.

Cape May: Frequent on *Zostera* and *Ulva* at Beesley's Point—Ashmead. Atlantic: Somers Point—Martindale; Atlantic City—Morse; Longport—Mrs. Lawton.

Var. fliformis, Harv.

Atlantic: Same localities as the type.

Var. valida (Harv.), Martindale.

Atlantic: Longport—Martindale.

Var. robusta (Harv.), Martindale.

Same locality—Mrs. McCullough.

CHAMPIA, Ag.

C. parvula (Ag.), Harv.

Monmouth: Asbury Park—N. T. Gardner; Ocean Beach—Kain. Atlantic: Atlantic City, common—Morse; Longport and Somers Point—Martindale; plentiful in Little Bay—Ashmead. Cape May:—Mrs. Porter. Middlesex: South Amboy—Martindale.

HYPNEÆ.

HYPNEA, Lamour.

H. musciformis (Wulf.), Lamour.

Monmouth: Sandy Hook—Pike. Atlantic: Atlantic City—Miss Murphy; Longport—Mrs. Lawton.

GELIDIEÆ.

GELIDIUM, Lamour.

G. crinale (Turn.), J. Ag.

Hudson: Communipaw—J. Walters. Atlantic: On piling below high water—Morse; Somers Point—Martindale. Burlington: On old shells in Little Bay—Ashmead.

SOLIERIEÆ.

RHABDONIA, Harv.

R. tenera, Ag.

Cape May:—Martindale. Atlantic: Very common on the shores of Egg Harbor Bay—Ashmead; Somers Point—Mrs. Porter; Atlantic City—Morse; Longport—Mrs. Lawton. Monmouth: Ocean Grove—Miss Boice; Long Branch—Miss Morris; and common in New York Bay and Harbor—Pike. Middlesex: South Amboy, and Burlington: Tuckerton—Martindale.

SPHÆROCOCOIDEÆ.

GRINNELLIA, Harv.

G. Americana (Ag.), Harv.

Atlantic: A single specimen in Great Egg Harbor—Ashmead; Atlantic City, abundant and luxuriant—Morse; Longport—Miss Murphy. Monmouth: Ocean Grove—Miss Boice; Asbury Park—N. T. Gardner. Cape May:—Martindale.

DELESSERIA, Lamour.

D. sinuosa (Good. & Woodw.), Lamour.

Monmouth: Sea Bright—H. Averill; Long Branch—Pike; Ocean Grove—Miss Boice. Atlantic: Atlantic City, not uncommon—Morse. Cape May:—Martindale.

D. Leprieurii, Mont.

Bergen: Fort Lee—H. Averill. Atlantic: Atlantic City, on piling—Morse; Longport—Martindale.

GRACILARIA, Grev.

G. multipartita, J. Ag.

Frequent along the entire coast.

Var. angustissima, Harv.

With the type.

RHODOMELEÆ.

CHONDRIOPSIS, J. Ag.

C. dasyphylla (Woodw.), J. Ag.

Atlantic: Plentiful in Little Bay and on Bond's Bar, growing in large tufts on sandy mud—Ashmead; Atlantic City—Martindale; Longport—Mrs. McCullough. Burlington: Tuckerton—Martindale.

C. tenuissima (Good. & Woodw.), J. Ag.

Atlantic: Common with the last species—Ashmead; Atlantic City—Morse; Longport—Mrs. Lawton; Somers Point—Martindale. Monmouth: Asbury Park—N. T. Gardner. Burlington: Tuckerton—Martindale. Cape May:—Miss H. C. Bond.

Var. Baileyana (Mont.), Farlow.

Atlantic: Same localities as the type; also in New York Harbor—Prof. Bailey.

C. atropurpurea (Harv.), J. Ag., *var. fasciculata*, Farlow.

Monmouth: Pleasure Bay—N. Pike.

RHODOMELA, J. Ag.

R. subfusca (Woodw.), Ag.

Middlesex: South Amboy—Martindale. New York Bay—Hooper.

POLYSIPHONIA, Grev.

P. urceolata (Dillw.), Grev.

Monmouth: Long Branch—Miss Morris. Atlantic: Atlantic City, not very common—Morse.

Var. formosa, Ag.

Cape May:—H. Jackson. Atlantic: On rocks at the inlet, Atlantic City—Morse.

P. subtilissima, Mont.

Hudson: Hoboken—J. Hooper; Communipaw—Pike.

P. Olneyi, Harv.

Cape May: On eel-grass in Egg Harbor Bay—Ashmead;
Cape May—H. Jackson. Atlantic: Atlantic City—Martindale.
Monmouth: Ocean Beach—Kain; very abundant in Pleasure
Bay in August and September—Pike. Burlington: Tuckerton,
and Middlesex: South Amboy—Martindale.

P. Harveyi, Bail.

Atlantic: Abundant in bays and on Bond's Bar, Egg Harbor
—Ashmead; Atlantic City—Morse; Longport—Mrs. Lawton;
Somers Point—McCormick. Monmouth: Ocean Grove—
Kain; Asbury Park—N. T. Gardner. Burlington: Tuckerton,
and Middlesex: South Amboy—Martindale.

P. fibrillosa (Dillw.), Grev.

Atlantic: Longport—Martindale.

P. variegata (Ag.), Zan.

Common along the whole coast.

P. atrorubescens (Dillw.), Grev.

Hudson: Communipaw—Pike. Monmouth: Long Branch
—Miss Morris; Asbury Park—N. T. Gardner. Atlantic:
Atlantic City, not very common—Morse.

P. nigrescens (Dillw.), Grev.

Common along the whole coast.

Var. fucoides, Ag.

Atlantic: Atlantic City—Martindale; Longport—Mrs. Mc-
Cullough.

Var. affinis, Ag.

Same localities.

Var. Durkeei, Harv.

Atlantic: Atlantic City—Miss Murphy.

Var. plumosa, Harv.

Atlantic: Longport—Mrs. McCullough.

P. fastigiata (Roth), Grev.

Hudson: Communipaw, and Monmouth: Pleasure Bay—
Pike.

BOSTRYCHIA, Mont.

B. rivularis, Harv.

Bergen: Fort Lee—H. Averill. Atlantic: On piling at the draw-bridge, Atlantic City—Morse; floating in the thoroughfare—Mrs. Porter; Longport—Mrs. Lawton. Cape May:—Martindale.

DASYA, Ag.

Chenille.

D. elegans (Mart.), Ag.

Frequent along the whole coast.

CORALLINEÆ.*

MELOBESIA, Aresch.

M. Le Jolisii, Rosanoff.

Atlantic: Atlantic City—Miss Murphy.

M. farinosa, Lamour.

Atlantic: Atlantic City, on *Phyllophora*, rare—Morse; abundant on *Zostera*, washed ashore—Miss H. C. Bond; on the New Jersey coast—Pike.

M. pustulata, Lamour.

Atlantic: Atlantic City—Morse; Somers Point—Mrs. Porter; Longport—Martindale.

M. Lenormandi, Aresch.

Monmouth: Long Branch; Atlantic: Longport and Atlantic City—Martindale.

JANIA, Lamour.

A species of this genus was collected at Longport in the summer of 1888, attached to *Sargassum*, washed up on the beach, possibly *J. rubens*, Lamour, or *J. Cubensis*, Mont., but not sufficiently developed for satisfactory determination—Martindale.

**Corallina officinalis*, L., admitted into the Preliminary Catalogue, is reported as found at Long Branch, but not authenticated.

TRENTEPOHLIA, Ag.

T. vigatula (Harv.), Farlow.

Atlantic: On other algæ and on *Zostera*, Atlantic City—Morse; Longport—Mrs. Lawton. A plant of uncertain affinity.

T. Daviesii (Dillw.), Harv.

Atlantic: On *Chaetomorpha Melagonium*, Atlantic City—Morse.

Sub-Class 2.—OOSPOREÆ.

FUCACEÆ.

ASCOPHYLLUM (Stack), Le Jolis.

Rockweed.

A. nodosum (L.), Le Jolis. (*Fucus nodosus*, L.)

Atlantic: Atlantic City, common—Morse; Longport, washed up in abundance in 1887—Martindale. Monmouth: Sandy Hook, rare—Britton. Cape May:—Martindale.

FUCUS, L.

Rockweed.

F. vesiculosus, L.

Common along the whole coast.

Var. laterifructus, Grev.

With the type.

Var. spiralis.

With the type.

F. edentatus, De la Pyl.

Atlantic: Atlantic City—Morse.

F. furcatus, Ag.

Atlantic: Atlantic City, a single plant, washed ashore—Morse. Determined by F. S. Collins.

SARGASSUM, Ag.

Gulfweed.

S. vulgare, Ag.

Frequently washed ashore along the entire outside coast.

Var. Montagnei (Bailey), Farlow.

With the type.

S. bacciferum (Turn.), Ag. Gulfweed.

Atlantic: Frequently washed ashore at Atlantic City—Martindale; Longport—Prof. Rachel L. Bodley.

VAUCHERIEÆ.

VAUCHERIA, DC.

V. Thuretii, Woronin.

On soil submerged by tides—Wolle. Atlantic: Muddy ditches, Atlantic City—Morse.

V. litorea (Hoffm.), Bang.

Marine. On gravel. Atlantic: Atlantic City—Martindale.

V. Dillwynii, Ag.

Fresh water. Banks of ponds and rivers—Wolle.

V. sessilis (Vauch.), DC.

Frequent on moist earth.

V. geminata (Vauch.), DC.

In ponds and pools.

V. terrestris, Lyngb.

On shaded, moist ground.

BOTRYDIEÆ.

BOTRYDIUM, Wallr.

B. granulatum, L.

Bergen: On moist earth—Wolle.

COLEOCHÆTEÆ.

COLEOCHÆTE, Breb.

C. soluta, Frings.

Frequent in ponds.

- C. scutata*, Breb.
Very common in ponds.
- C. orbicularis*, Prings.
Same habitat.
- C. irregularis*, Prings.
On aquatic plants; not rare in ponds.

CÆDOGONIEÆ.

CÆDOGONIUM, Link.

- Cæ. cryptoporum*, Wittr.
Middlesex: In a pond, Perth Amboy.
- Cæ. plusiosporum*, Wittr.
Not rare in small ponds.
- Cæ. polymorphum*, Wittr. & Lund.
Ponds. Burlington: Brown's Mills, and Somerset: Bound Brook.
- Cæ. paludosum* (Hass.), Wittr.
Middlesex: Pond at Perth Amboy.
- Cæ. platygynum*, Wittr.
Burlington: In pond at Atsion.
- Cæ. decipiens*, Wittr.
Morris: Lake Hopatecong; rare.
- Cæ. Areschoughii*, Wittr.
Morris: In ponds.
- Cæ. Braunii* (Kütz.), Prings.
In ponds; not rare.
- Cæ. crassiusculum*, Wittr.
Sussex: Pond at Branchville.
- Cæ. Borisianum* (Le Cl.), Wittr.
In ponds, etc.; frequent.
- Cæ. concatenatum* (Hass.), Wittr.
Union: Plainfield.

- Œ. sexangulare*, Cleve.
 Lake Hopatcong.
- Œ. Wolleanum*, Wittr.
 In ponds and lakes.
- Œ. acrosporum*, De By., *var. boreale*, Wollé.
 Not rare.
- Œ. ciliatum* (Hass.), Prings.
 Burlington: In a marsh pool—Atsion.
- Œ. echinosporum*, A. Br.
 Frequent.
- Œ. capillare* (L.), Kütz.
 In ponds; common.
- Œ. stagnale*, Kütz.
 Somérsset: Bound Brook.
- Œ. capilliforme*, Kütz.
 Morris: Lake Hopatcong.
- Œ. pachyandrium*, Wittr.
 Stagnant waters; frequent.
- Œ. Franklinianum*, Wittr.
 Sussex: In the pond at Franklin.
- Œ. Boscii* (Le Cl.), Wittr.
 Occasional.
- Œ. delicatulum*, Kütz.
 Frequent in ponds.
- Œ. fonticulum*, A. Br.
 Frequent in stagnant or sluggish waters.
- Œ. Londiense*, Wittr.
 Morris: Lake Hopatcong.
- Œ. pyriforme*, Wittr.
 Sussex: Branchville.*

**Œ. subsetaceum*, *Œ. pachydermate*, *Œ. leve* and *Œ. affine*, admitted into the Preliminary Catalogue, are not now recognized as New Jersey plants.

BULBOCHÆTE, Ag.

- B. intermedia*, De By.
Common in ponds and sluggish waters.
- B. crenulata*, Prings.
Frequent in similar localities.
- B. setigera* (Roth), Ag.
In pine-barren regions.
- B. Brebissonii*, Kütz.
Atlantic: In a pond at Hammonton.
- B. mirabilis*, Wittr.
In ponds.
- B. nana*, Wittr.
Frequent in ponds.
- B. insignis*, Prings.
Morris: Lake Hopatcong.
- B. minor*, A. Br.
In ponds.
- B. repanda*, Wittr.
Morris: Lake Hopatcong.
- B. rectangularis*, Wittr.
Not rare in ponds.

SPHÆROPLEÆ.

CYLINDROCAPSA, Reinsch.

- C. geminella*, Wolle.
In ponds; not frequent.

VOLVOCINEÆ.

VOLVOX, L.

- V. globator*, L.
In ponds. Essex: Newark; probably frequent. Camden:
—Martindale.
- V. stellatus*, Ehrh.
Union: In ponds about Plainfield.

Sub-Class 3.—ZOOSPOREÆ.

CHLOROSPOREÆ.

MONOSTROMA, Thur.

M. Blyttii (Aresch.), Wittr.

Atlantic: On woodwork exposed to the waves, Atlantic City—Morse.

M. crepidinum, Farlow.

Atlantic: On wharf pilings, Atlantic City—Morse.

ULVA, L.

Sea Lettuce.

U. Lactuca (L.), Le Jolis.

Common in bays along the entire coast.

Var. rigida (Ag.), Le Jolis.

Atlantic: Atlantic City—Martindale.

Var. Lactuca, Le Jolis.

Atlantic: Atlantic City—Morse; Longport—Mrs. Lawton.

Var. latissima, Le Jolis.

Common in bays along the coast.

U. enteromorpha, Le Jolis.

Common in bays along the entire coast.

Var. lanceolata (Kütz.), Le Jolis.

Atlantic: Atlantic City—Morse; Longport—Mrs. Lawton.
Cape May:—Martindale.

Var. intestinalis (L.), Le Jolis.

Common along the entire coast.

Var. compressa (L.), Le Jolis.

Abundant with the last.

U. marginata (J. Ag.), Le Jolis.

Atlantic: On wharf between tide-marks, Atlantic City—Morse.

U. aureola, Ag.

Atlantic: Atlantic City, not uncommon on woodwork—Morse.

U. percursa, Ag.

Same locality; rather common in tide pools.

U. clathrata, Ag.

Cape May: Beesley's Point—Ashmead. Atlantic: Atlantic City, common—Morse; Longport—Mrs. Lawton. Monmouth: Ocean Grove—Miss Boice; New York Bay—Pike.

Var. uncinata, Le Jolis.

Atlantic: Atlantic City—Morse.

Var. erecta, Le Jolis.

Same locality.

Var. prostrata, Le Jolis.

Same locality.

Var. crinita, Hauck.

Same locality.

U. Hopkirkii (McCalla), Harv.

Atlantic: On old shells, Atlantic City—Morse.

ULOTHRIX, Kütz.

U. flacca (Dillw.), Thur.

Atlantic: On wharves, Atlantic City—Morse.

U. isogona (Smith), Thur.

With the last, not uncommon. Also in New York Bay—Harvey.

U. zonata (Web. & Mohr.), Aresch.

In streams, firmly attached to stones.

U. tenuis, Kütz.

In rapid waters.

U. subtilis, Kütz.

Varieties in flowing waters.

U. flaccida, Kütz.

In damp or wet places.

U. varia, Kütz.

On moist earth.

U. parietina (Vauch.), Kütz.

At the base of trees.

CONFERVA, Link.

C. floccosa, Ag.

Frequent in streamlets.

C. fugacissima, Roth.

In ponds.

C. vulgaris, Rabh.

In trenches of running water.

C. bombycina, Ag. (*Tolypothrix bombycina*, Prelim. Cat.)

In ponds and flowing waters.

C. punctalis, Dillw.

In meadow pools.

C. rhypphila, Kütz.

In small pools.

CHÆTOMORPHA, Kütz.

C. ærea (Dillw.), Kütz.

Cape May: Common at Beesley's Point—Ashmead. Also in New York Harbor—Hooper.

C. Melagonium (Web. & Mohr.), Kütz.

Atlantic: Atlantic City, a slender, short-jointed form—Morse. Determined by F. S. Collins.

C. Piquotiana (Mont.), Kütz.

Hudson: Communipaw, and Monmouth: Long Branch—Pike. Atlantic: Washed ashore at Atlantic City—Martindale.

C. Linum (Flor. Dan.), Kütz.

Cape May: Beesley's Point—Ashmead. Atlantic: Atlantic City—Morse; Longport—Mrs. Lawton. "In the summer of 1887, I collected at Somers Point, a form with unusually large fronds, which must be of this species, although the cells were very much larger than common"—Martindale.

RHIZOCLONIUM, Kütz.

- R. salinum* (Schleich.), Kütz. (*R. riparium*, Roth.)
Atlantic: On exposed *Spartina* roots, Atlantic City—Martindale.
- R. Kochianum*, Kütz.
Atlantic: On *Zostera*, Atlantic City—Martindale; Somers Point—Mrs. Porter.
- R. hieroglyphicum*, Kütz.
On moist or wet ground near springs.
- R. fluitans*, Kütz.
Somerset: In streams, Bound Brook. Also elsewhere in the State.
- R. Fontinali*, Kütz.
In springs and flowing waters.
- R. major*, Wolle.
Middlesex: On the docks at Perth Amboy—Wolle.

PITHOPHORA, Wittr.

- P. CEdogonia* (Mont.), Wittr., var. *vaucherioides* (Wolle), Wittr.
Union: In three localities in ponds about Plainfield.

*CLADOPHORA, Kütz.

- C. arcta* (Dillw.), Farlow.
New York Bay—Walters.
- C. rupestris* (L.), Kütz.
Hudson: Communipaw—Pike.
- C. albida* (Huds.), Kütz.
Cape May: Beesley's Point—Harvey. Atlantic: Atlantic City—Morse. Hudson: Communipaw—Pike; New York Bay—Harvey.

* *C. Morrisia*, Harv., reported from Elsinborough, Delaware, by Harvey in *Nereis Boreali Americana*, may have really come from the New Jersey shore, as there is an Elsinborough in Salem county.—Martindale.

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C. refracta (Roth), Aresch.

Hudson: Newark Bay—Pike. Atlantic: Atlantic City—Morse; floating in the bay at Longport—Mrs. Lawton.

C. glaucescens (Griff.), Harv.

Cape May: Beesley's Point—Ashmead. Atlantic: Atlantic City, not uncommon—Morse. Also in New York Bay—Harvey.

C. lætivirens (Dillw.), Harv.

Cape May: Beesley's Point—Ashmead. Hudson: Communipaw—Pike; New York Bay—Harvey.

C. Hutchinsiae (Dillw.), Kütz.

Atlantic: In tide pools, Atlantic City—Morse; Longport—Miss J. Wood.

C. flexuosa (Griff.), Harv.

Atlantic: In tide pools, same localities—Martindale; Mrs. Lawton.

C. Rudolphiana (Ag.), Harv.

Hudson: Communipaw, and Monmouth: Pleasure Bay—Pike.

C. gracilis (Griff.), Kütz.

Cape May: Beesley's Point—Ashmead. Atlantic: Atlantic City—Morse; Longport—Mrs. Lawton. Monmouth: Asbury Park—N. T. Gardner. Also in New York Bay—Hooper.

Var. expansa, Farlow.

Atlantic: Atlantic City—Morse.

C. expansa, Kütz.

Atlantic: Common in brackish pools, Atlantic City—Morse; Longport—Miss McCullough.

C. fracta (Fl. Dan.), Kütz.

Cape May: Beesley's Point—Ashmead. Atlantic: Atlantic City—Morse. Monmouth: Floating, at Key East—Gardner. Also in New York Bay—Harvey. Varieties of this species are frequent in ponds and streams—Wolle.

C. falcata, Harv.

Cape May: Plentiful in Little Bay—Ashmead. Hudson: Communipaw, common—Pike.

C. glomerata, Kütz.

Varieties are frequent in running waters—Wolle.

C. crispata, Kütz.

Frequent in standing waters—Wolle.

ACROBLASTE, Reinsch.

A quantity of a species of this genus has been collected at Atlantic City—Martindale.

CHROOLEPUS, Ag.

C. aureus (L.), Kütz.

On moist rocks.

C. umbrinus, Kütz.

On the bark of trees.

APHANOCHÆTE, A. Br.

A. repens, A. Br.

Parasitic on other fresh-water algæ; not rare.

A. globosa (Nordst.), Wolle.

Atlantic: Pond at Hammonton—Wolle.

CHÆTOPHORA, Schrank.

C. pisiformis (Roth), Ag.

Not rare in ponds.

C. endiviæfolia, Ag.

Same habitat.

STIGEOCLONIUM, Kütz.

S. tenue, Kütz.

Varieties of this species are frequent in flowing waters.

S. radians, Kütz.

On aquatic plants; frequent.

DRAPARNALDIA, Ag.

D. glomerata, Ag.

In spring waters; frequent.

D. plumosa, Ag.

Same habitat.

BRYOPSIDEÆ.

BRYOPSIS, Lamour.

B. plumosa (Huds.), Ag.

Cape May: Attached to old shells, etc., on the shores of Great Egg Harbor Bay—Ashmead. Atlantic: In muddy ditches, Atlantic City—Morse; Longport—Martindale. Also common in New York Bay—Harvey.

B. hypnoides, Lamour.

Hudson: On the ferry-bridge, Jersey City, just below the water line, 1850—Pike.

PHÆOSPOREÆ.

PHYLLITIS, Kütz.

P. fascia, Kütz.

Monmouth: Long Branch—Pike. Atlantic: Atlantic City, common—Morse; Longport—Mrs. Lawton.

Var. cæspitosa (Ag.), Farlow.

Atlantic: Atlantic City—Martindale.

SCYTOSIPHON, Ag.

S. lomentarius (Lyngb.), J. Ag.

Atlantic: On stones between tide marks, common—Morse.

PUNCTARIA, Grev.

P. latifolia, Grev.

Atlantic: Atlantic City—Morse. Middlesex: Perth Amboy—Britton. Also in New York Bay—Harvey.

Var. Zosteræ, Le Jolis.

Atlantic: Atlantic City—Morse; Longport—Mrs. Lawton.
Hudson: Communipaw—Pike.

P. plantaginea (Roth), Grev.

Atlantic: On piling between tide marks, Atlantic City—Morse.

DESMARESTIA, Lamour.

D. aculeata (L.), Lamour.

Hudson: Communipaw, and Cape May, Beesley's Point—Pike.

D. viridis, Lamour.

Monmouth: Sandy Hook—Pike. Also in New York Bay—Hooper.

DICTYOSIPHON, Grev.

D. fœniculaceus (Huds.), Grev.

Atlantic: On stones and other algæ near low-water mark, Atlantic City—Morse; Longport—Mrs. Lawton. Also in New York Bay—Hooper. Forms approaching *var. flaccidus*, Aresch., were collected at Atlantic City—Morse.

MYRIOTRICHIA, Harv.

M. clavæformis, Harv.

Hudson: Communipaw, and Monmouth: Pleasure Bay—Pike. Atlantic: On *Zostera*, Atlantic City and Longport—Martindale.

Var. filiformis (Harv.), Farlow.

With the type.

ECTOCARPUS, Lyngb.

E. tomentosus (Huds.), Lyngb.

Atlantic: Atlantic City, rather common—Morse.

E. granulatus (Smith), Ag.

Atlantic: Atlantic City, on an old mast—Morse.

E. confervoides (Roth), Le Jolis.

Common along the entire coast.

Var. siliculosus, Kjellman.

Cape May: Common at Beesley's Point, in the bays, on *Zostera*, disappearing in July—Ashmead. Atlantic: Atlantic City, common—Morse; Longport—Mrs. Lawton. Monmouth: Ocean Grove—Miss C. A. Boice. Burlington: Tuckerton, and Middlesex: South Amboy—Martindale.

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E. fasciculatus, Harv.

Hudson: Communipaw, and Middlesex: Perth Amboy—Pike.

E. littoralis, Lyngb.

Cape May: Abundant in the bays of Egg Harbor—Ashmead.
Atlantic: Atlantic City—Martindale; Longport—Mrs. Lawton.
Also in New York Bay—Pike. Burlington: Tuckerton, and
Middlesex: South Amboy—Martindale.

Var. ramellosus, Hauck.

Atlantic: Atlantic City—Morse.

E. lutosus, Harv.

Monmouth: Pleasure Bay—Pike.

E. terminalis, Kütz.

Atlantic: Atlantic City—Martindale.

MYRIONEMA, Grev.

M. vulgare, Thur.

Common on various algæ, and occasional on stones along the entire coast.

ELACHISTEA, Duby:

E. fucicola (Velley), Fr.

Common on rockweed along the entire coast.

LEATHESIA, S. F. Gray.

L. difformis (L.), Aresch.

Atlantic: On woodwork and eel-grass at low-water mark,
Atlantic City—Morse; Longport—Mrs. Lawton. Burlington:
Tuckerton—Martindale.

CHORDARIA, Ag.

C. flagelliformis (Fl. Dan.), Ag.

Atlantic: Atlantic City, not common—Morse.

MESOGLOIA, Ag.

M. divaricata (Ag.), Kütz.

Monmouth: Pleasure Bay—Pike. Also in New York Bay—Hooper.

RALFSIA, Berk.

R. verrucosa (Aresch.), J. Ag.

Atlantic: On old shells, Atlantic City—Martindale; on wood-work—Morse. Cape May:—Martindale.

R. clavata (Carm.), Crouan.

Atlantic: With the preceding species, also at Somers Point—Dr. L. H. Porter; Longport—Martindale.

STILOPHORA, Ag.

S. rhizodes, Ag.

Cape May: Egg Harbor, rather rare on old shells near low-water mark—Ashmead.

S. papillosa, J. Ag.

Cape May: Great Egg Harbor Bay, and Monmouth: Pleasure Bay—Pike.

CHORDA, Stack.

C. flum (L.), Stack.

Middlesex: Perth Amboy—Britton; Monmouth: Ocean Beach—Kain. Evidently uncommon.

LAMINARIA, Lamour.

Devil's Apron.

L. saccharina (L.), Lamour.

Monmouth: Long Branch—Harvey; Sandy Hook—Britton; Asbury Park—N. T. Gardner. Atlantic: Atlantic City, not very common—Morse; Longport, occasional—Martindale. Also in New York Bay.

PANDORINEÆ.

PANDORINA, Bory.

P. morum, Bory.

In pools of stagnant water; not rare.

EUGLÆNA, Ehrb.

E. viridis, Ehrb.

Common in stagnant waters.

GONIUM, Muell.

G. pectorale, Muell.(?)

Stagnant waters; rare.

CHELAMYDOCOCCUS, A. Br.

C. pluvialis, A. Br.

Pools; infrequent.

HYDRODICTYÆ.

HYDRODICTYON, Roth.

H. utriculatum, Roth.

Sluggish waters; frequent.

PEDIASTRUM, Meyen.

P. muticum, Kütz.

Ponds; occasional.

P. angulosum (Ehrb.), Menegh.

Frequent in ponds.

P. forcipatum (Corda), A. Br.

In similar situations.

P. Boryanum (Turp.), Menegh.

Frequent in similar localities.

P. pertusum, Kütz.

Everywhere in pools.

CRATEROSPERMUM, A. Br.

- C. lætivirens*, A. Br.
Morris: Green Pond.

ZYGNEMEÆ.

SPIROGYRA, Link.

- S. inflata* (Vauch.), Rab.
S. Weberi, Kütz.
S. Grevilleana (Hass.), Kütz.
S. calospora, Cleve.
S. insignis (Hass.), Kütz.
S. varians (Hass.), Kütz.
S. quinina (Ag.), Kütz.
S. communis (Hass.), Kütz.
S. longata (Vauch.), Kütz.
S. condensata (Vauch.), Kütz.
S. punctata, Cleve.
Burlington: Pleasant Mills.
S. fluviatilis, Hilse.
S. nitida (Dillw.), Link.
S. bellis (Hass.), Cleve.
S. crassa, Kütz.
S. setiformis (Roth), Kütz.
S. rivularis, Rab.
S. majuscula, Kütz.*

All these species appear to be quite generally distributed throughout the State, in streams and ponds.

ZYGNEMA, Kütz.

- Z. insigne*, Kütz.
Z. stellinum, Ag.

**S. intermedia* and *S. stagnalis*, admitted into the Preliminary Catalogue, are not now regarded as New Jersey plants.

P. Ehrenbergii (Corda), A. Br.
Frequent in pools.

P. tetras, Ehrb.
Same habitat.

CCELASTRUM, Næg.

C. Cambricum, Arch.*
In ponds.

C. microporum, Næg.
Same habitat.

Sub-Class 4.—CONJUGATÆ.

MESOCARPEÆ.

MESOCARPUS, Hass.

M. scalaris (Hass.), De By.
In marsh and meadow pools; frequent.

M. nummuloides, Hass.
In similar localities.

PLEUROCARPUS, A. Br.

P. mirabilis, A. Br.
In pools; very common; sterile.

STAUROSPERMUM, Kütz.

S. Capucinum, Kütz.
Burlington: Atsion, Pleasant Mills, and generally frequent in ponds.

S. quadratum, Kütz.
Morris: Budd's Lake, and other ponds.

* Replaces *P. sphaericum* of the Preliminary Catalogue. *C. Nægeli* of that catalogue is not now regarded as a New Jersey plant.

Z. tenue, Rab.

Z. Vaucheria, Ag.

Z. purpureum, Wolle.

Z. cruciatum, Ag.

All these species are widely distributed throughout the State,
in ponds and streams.

ZYGOGONIUM, Kütz.

Z. pectinatum, Kütz.

Stagnant waters; frequent.

MOUGEOTIA, De By.

M. sphærocarpa, Wolle. (*M. laevis* of the Prelim. Cat.)

Sussex: Franklin Pond.

DESMIDIEÆ.

GONATOZYGON, De By.

G. asperum (Ralfs), Rab.

In ponds; frequent.

G. pilosum, Wolle.

Same habitat.

HYALOTHECA, Ehrb.

H. dissiliens (Smith), Breb.

In sluggish, shallow waters; frequent.

H. mucosa (Mert.), Ralfs.

In similar situations.

H. undulata, Nordst.

In ponds; frequent.

H. dubia, Kütz.

Same habitat; occasional.

BAMBUSINA, Kütz.

B. Brebissonii, Kütz.

In quiet waters; frequent.

B. delicatissima, Wolle.

Burlington: Pleasant Mills.

DESMIDIUM, Ag.

D. cylindricum, Grev.

In ponds; frequent.

D. quadratum, Nordst.

Burlington: Brown's Mills.

D. longatum, Wolle.

Same locality.

D. Swartzii, Ag.

In shallow pools; frequent.

D. aptogonium, Breb.

Similar places; frequent.

D. Baileyi (Ralfs), Wolle. (*Aptogonium Baileyi*, Ralfs.)

Ocean, and Burlington: Pleasant Mills, in sluggish waters.

PHYMATODOCIS, Nordst.

P. Nordstedtianum, Wolle.

Burlington: Pond at Brown's Mills.

SPHÆROZOSMA, Corda.

S. pulchrum, Bail.

Frequent in ponds.

Var. planum, Wolle.

Middlesex: Near Metuchen.

Var. inflatum, Wolle.

Sparingly in ponds.

S. filiforme, Rab.

Frequent in ponds.

S. pulchellum (Arch.), Rab.

Same habitat.

- S. excavatum**, Ralfs.
Same habitat.
- S. vertebratum** (Breb.), Ralfs.
Same habitat.
- S. serratum**, Bail.
Same habitat.
- S. Wallachii**(?) Jacobsen.
Burlington: Brown's Mills.
- S. rectangulare**, Wolle.
Same locality as the last.*
- S. moniliforme**, Lund.
Occasional in ponds.

MESOTÆNIUM, Næg.

- M. micrococccum**, Kütz.
On moist earth.
- M. Endlicherianum**, Næg.
In ponds.

SPIROTÆNIA, Breb.

- S. condensata**, Breb.
In meadow pools, etc.
- S. obscura**, Ralfs.
In ponds; rather rare.

PENIUM, Breb.

- P. Digitus** (Ehrb.), Breb.
- P. margaritaceum**, Breb.
- P. interruptum**, Breb.
- P. closterioides**, Ralfs.
- P. truncatum**, Ralfs.
- P. polymorphum**, Perty.
- P. Brebissonii** (Menegh.), Ralfs.
- P. Navicula**, Breb.

All these species frequent in ponds.

S. sedens of the Preliminary Catalogue is to be omitted.

CLOSTERIUM, Nitsch.

- C. *juncidum*, Ralfs.
- C. *macilentum*, Breb.
- C. *gracile*, Breb.
- C. *didymotocum*, Corda.
- C. *decussatum*, Kütz.
- C. *Lunula*, Ehrb.
- C. *Cucumis*, Ehrb.
- C. *acerosum* (Schrank), Ehrb.
- C. *turgidum*, Ehrb.
- C. *strigosum*, Ehrb.
- C. *striolatum*, Ehrb.
- C. *costatum*, Corda.
- C. *lineatum*, Ehrb.
- C. *decorum*, Breb.
- C. *acutum*, Breb.
- C. *Dianæ*, Ehrb.
- C. *Jenneri*, Ralfs.
- C. *Venus*, Kütz.
- C. *Ehrenbergii*, Menegh.
- Var. immane*, Wolle.
- C. *moniliferum*, Ehrb.
- C. *Leibleinii*, Kütz.
- C. *Ralfsii*, Breb.
- Middlesex: Pond near Perth Amboy.
- C. *rostratum*, Ehrb.
- C. *Kützingii*, Breb.
- C. *cetaceum*, Ehrb.

All these species are distributed throughout the State in ponds,
in greater or less abundance.

DOCIDIUM, Breb.

Including *Pleurotanium*, Næg.

- D. *crenulatum* (Ehrb.), Rab.
- D. *clavatum* (Kütz.), De By.

- D. Trabecula* (Ehrb.), Næg.
D. truncatum, Breb.
D. Baculum (Breb.), De By.
D. coronatum, Rab.
D. coronulatum, Grun.
D. constrictum, Bail.
D. nodosum, Bail.
D. repandum, Wolle.
D. dilatatum (Cleve), Lund.
 All frequent in ponds throughout the State.
D. sinuosum, Wolle.
 Burlington: Brown's Mills.
Var. breve, Wolle.
 Same locality.
D. undulatum, Bail.
 Cape May: Dennisville, and Atlantic: Hammonton.
D. spinosum, Wolle.
 Cape May: Dennisville.
D. verrucosum (Bail.), Ralfs.
 In quiet waters, northern parts of the State.
D. tridentulum, Wolle.
 Burlington: Brown's Mills, Pleasant Mills.
D. minutum, Ralfs.
 In ponds.
D. costatum, Wolle.
D. verticillatum, Bail.
D. gracile, Bail.
 All frequent in ponds throughout the State.

CALOCYLINDRUS, De By.

- C. Ralfsii* (Kütz.), Kirch. (*Cosmarium cylindricum*, Ralfs.)
 In ponds; frequent.
C. Cucurbita (Breb.), Kirch.
 Same habitat.

C. curtus (Breb.), Kirch.

Same habitat.

C. connatus (Breb.), Kirch.

Same habitat.

C. Clevei (Lund.), Wolle.

Burlington: Brown's Mills.

C. Thwaitesii, Ralfs.

Monmouth: Frequent in a pond at Spring Lake.

COSMARIUM, Corda.

C. ovale, Ralfs.

In ponds.

C. Cucumis, Corda.

Same habitat; frequent.

C. constrictum, Delp.

Same habitat.

C. granatum, Breb.

C. moniliforme, Ralfs.

C. globosum, Bulnh.

C. bioculatum, Breb.

All these are frequent in ponds.

C. Quimbyi, Wood.

Camden: In a spring near Camden—Wood.

C. tinctum, Ralfs.

In ponds.

C. tumidum, Lund.

Morris: Split Rock Pond.

C. sejunctum, Wolle.

Gloucester: Pond near Malaga.

C. nitidulum, De Not.

In ponds; frequent.

C. variolatum, Lund.

In ponds, southern parts of the State.

C. contractum, Kirch.

Morris: Denmark and other ponds.

- C. sexangulare*, Lund.
Morris: Split Rock Pond.
- C. depressum* (Næg.), Lund.
Monmouth: Pond at Spring Lake.
- C. obsoletum*, Reinsch.
Monmouth: In a sluggish stream, Ocean Grove.
- C. Meneghinii*, Breb.
In ponds; frequent.
- C. polygonum*, Næg.
In ponds; occasional.
- C. lunatum*, Wolle.
Burlington: Brown's Mills.
- C. Smolandicum*, Lund.
In ponds; frequent.
- C. undulatum*, Corda, *var. crenulatum*, Wolle.
Same habitat.
- C. crenatum*, Ralfs.
In ponds; occasional.
- C. venustum*, Rab.
Same habitat.
- C. Reinschii*, Archer.
Morris: Lake Hopatcong.
- C. pyramidatum*, Breb.
In ponds; common.
- Var. stenonotum*, Nordst.
Union: Pond near Plainfield—A. D. Balen.
- C. Ralfsii*, Breb.
In ponds; occasional.
- C. pachydermum*, Lund.
Morris: Budd's Lake.
- C. galeritum*, Nordst.
In springs and ponds.
- C. polymazum*, Nordst.
Morris: Denmark Pond.

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C. taxichondrum, Lund.

Ponds in the northern counties; frequent.

C. pseudotaxichondrum, Nordst.

Burlington: Brown's Mills.

C. anisochondrum, Nordst.

Morris: Denmark and other ponds.

C. Kitchellii, Wolle.

Atlantic: In a pond near Hammonton—Rev. H. D. Kitchell.

C. trachypleurum, Lund.

Frequent in ponds.

C. triplicatum, Wolle.

Same habitat.

C. margaritiferum, Menegh.

Same habitat.

C. Botrytis, Menegh.

Very common in ponds.

C. Brebissonii, Menegh.

Atlantic: Frequent.

C. conspersum, Ralfs.

In ponds; frequent.

C. tetraophthalmum (Kütz.), Breb.

Same habitat.

C. dentatum, Wolle.

Cape May: Dennisville.

C. portianum, Archer.*

In ponds; frequent.

C. orbiculatum, Ralfs.

Same habitat.

C. excavatum, Nordst.

Same habitat.

C. amensum, Breb.

Atlantic: Hammonton.

* Erroneously spelled *Porterianum* in the Preliminary Catalogue.

- C. orthostichum*, Lund.
In ponds, northern parts of the State.
- C. Hammeri*, Reinsch.
Frequent in ponds.
- C. sublobatum*, Archer.
Same habitat.
- C. retusum*, Perty.
In ponds.
- C. margaritum*, Wolle.
Morris: Split Rock and other ponds. Cape May: Dennisville.
- C. Phaseolus*, Breb.
Common in ponds.
- C. bierme*, Nordst.
Morris: Denmark Pond, Budd's Lake.
- C. Schliephackianum*, Grun.
In ponds; frequent.
- C. ornatum*, Ralfs.
Frequent in ponds.
- C. Sportella*, Breb.
Morris: Lake Hopatcong.
- C. protractum* (Næg.), Archer.
Sussex: In a pond near Branchville.
- C. commisurale*, Breb.
In ponds; not rare.
- C. subcrenatum*, Hantzsch.
Same habitat.
- C. Quasillus*, Lund. (*C. irregulare*, Wolle.)
In ponds.
- C. Eloisianum*, Wolle.
Morris: Split Rock Pond.
- C. Broomei*, Thwaites.
Common in ponds.
- C. Pseudobroomei*, Wolle.
Sussex: Wood Lake.

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C. biretum, Breb.

Bergen: In a sluggish stream near Closter—Austin.

C. cælatum, Ralfs.

Frequent in ponds.

C. Kjellmanii, Wille.

Sussex: Wood Lake.

C. Blyttii, Wille.

Sussex: Wood Lake and Longwood Pond.

C. supraspeciosum, Wolle.

Frequent in ponds, northern parts of the State.

C. pectenoides, Wolle.

Frequent in small ponds.

C. Turpinii, Breb.

In ponds; not rare.

TETMEMORUS, Ralfs.

T. Brebissonii, Menegh.

Var. turgidus, Ralfs.

T. granulatus, Ralfs.

T. lævis (Kütz.), Ralfs.

All these are frequent in ponds.

T. minutus, De By.

In ponds; occasional.

T. giganteus, Wood.

Atlantic: Pond, Atsion.

XANTHIDIUM, Ehrb.

X. armatum (Breb.), Ralfs.

Atlantic: In ponds, Hammonton and Pleasant Mills.

X. aculeatum (Ehrb.), Breb.

Morris: Lake Hopatcong.

X. cristatum (Breb.), Ralfs.

Atlantic: Hammonton.

- X. *asteptum*, Nordst.
In quiet waters.
- X. *fasciculatum* (Ehrb.), Ralfs.
In ponds; frequent.
- X. *antilopæum* (Breb.), Kütz.
Same habitat.
- X. *tetracentrotum*, Wolle.
Sussex: In a pond.

ARTHRODESMUS, Ehrb.

- A. *convergens* (Ehrb.), Ralfs.
In ponds; common.
- A. *fragile*, Wolle.
Atlantic: Hammonton Pond and elsewhere.
- A. *Rauii*, Wolle.
Gloucester: In a pond near Newfield—E. A. Rau.
- A. *subulatus*, Kütz.
In ponds; rather rare.
- A. *Incus* (Ehrb.), Hass.
Atlantic: Hammonton.
- A. *octocornis*, Ehrb.
Same locality.

EUASTRUM, Ehrb.

- E. *crassum* (Breb.), Kütz.
- E. *oblongum* (Grev.), Ralfs.
- E. *pinnatum*, Ralfs.
- E. *humerosum*, Ralfs.
- E. *ansatum* (Ehrb.), Ralfs.
- E. *Didelta* (Turp.), Ralfs.
- E. *ampullaceum*, Ralfs.
- E. *affine*, Ralfs.
All frequent in ponds.

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- E. urnaforme*, Wolle.
Passaic: Wood Lake.
- E. verrucosum* (Ehrb.), Ralfs.
Ponds; frequent.
- E. circulare* (Hass.), Ralfs.
Same habitat.
- E. gemmatum*, Breb.
Morris: Split Rock Pond.
- E. insigne*, Hass.
Frequent in ponds.
- E. mamillosum*, Wolle.
Sussex: In ponds.
- E. Wollei*, Lagh. (*E. intermedium*, Prelim. Cat.)
Gloucester: Pond near Newfield.
- E. attenuatum*, Wolle.
Monmouth: Near Ocean Beach; Morris: Budd's Lake.
- E. formosum*, Wolle.
Ocean: Toms River.
- E. divaricatum*, Lund.
Occasional in ponds.
- E. inerme*, Lund.
Rather common in ponds.
- E. crassicolle*, Lund.
In ponds; not common.
- E. cuspidatum*, Wolle.
Atlantic: Pond, Absecon.
- E. pingue*, Em.
In ponds, Atlantic and Passaic.
- E. Nordstedtianum*, Wolle.
In ponds; not common.
- E. elegans*, Kütz.
Same habitat; common.
- E. rostratum*, Ralfs.
- E. spinosum*, Ralfs.

E. simplex, Wolle.

E. binale (Turp.), Ralfs.

E. abruptum, Nordst.

Passaic: Wood Lake.*

E. magnificum, Wolle.

Ocean and Gloucester: Ponds near Manchester and Malaga.

MICRASTERIAS, Ag.

M. Torreyi, Bail.

Morris: Split Rock and other ponds.

M. radiosa (Ag.), Ralfs.

M. papillifera, Breb.

M. rotata (Grev.), Ralfs.

M. denticulata (Breb.), Ralfs.

M. fimbriata, Ralfs.

M. furcata (Ag.), Ralfs.

All these are frequent in ponds.

M. pseudofurcata, Wolle.

Morris: Split Rock and other ponds

M. Crux-Militensis, Ehrb.

Cape May: Dennisville.

M. dichotoma, Wolle.

Gloucester: Malaga and Bamber.

M. Americana (Ehrb.), Kütz.

Ponds; frequent.

Var. recta, Wolle.

Cape May: Dennisville.

M. Mahabuleshwariensis, Hobson.

In ponds.

M. Nordstedtianum, Wolle.

Passaic: Longwood Pond.

M. crenata (Breb.), Ralfs.

In ponds; frequent.

**E. Ralfsii* and *E. pectinatum* of the Preliminary Catalogue are omitted; also *Micrasterias ringens*.

M. truncata (Corda), Ralfs.

Same habitat; common.

M. triangularis, Wolle.

Monmouth: Ocean Beach.

M. Jenneri, Ralfs.

M. laticeps, Nordst. (*M. disputata*, Wood.)

M. oscitans, Ralfs.

M. pinnatifida (Kütz.), Ralfs.

All frequent or occasional in ponds.

M. Kitchellii, Wolle.

Cape May: Dennisville.

M. arcuata, Bail.

Atlantic: Pleasant Mills; and elsewhere in the southern counties.

M. expansa, Bail.

With the preceding species.

M. Baileyi, Ralfs.

Mercer: In pond, Princeton.

M. foliacea, Bail.

Morris: Denmark Pond.

M. muricata, Bail.

In ponds; occasional.

M. apiculata, Menegh. (*M. mucronata*, Prelim. Cat.)

Same habitat.

STAURASTRUM, Meyen.

S. muticum, Breb.

Frequent in ponds.

S. orbiculare (Ehrb.), Ralfs.

Same habitat.

S. majusculum, Wolle.

Passaic: Longwood Pond.

S. dejectum, Breb.

Ponds; common.

S. megacanthum, Lund.

- S. brevispinum, Breb.
- S. Dickiei, Ralfs.
- S. aristiferum, Ralfs.
- S. cuspidatum, Breb.
- S. trifidum, Nordst.
- S. Avicula, Breb.

All these species frequent or occasional in ponds.

- S. brachiatum, Ralfs.
Burlington: Brown's Mills, and Ocean: Bamber.
- S. Bieneanum, Rab., var. ellipticum, Wolle.
Frequent in ponds.
- S. inconspicuum, Nordst.
Same habitat.
- S. pseudopachyrhynchum, Wolle.
Monmouth: Pond at Spring Lake.
- S. margaritaceum, Ehrb.
- S. striolatum, Næg.
- S. tricorne, Breb.
- S. polymorphum, Breb.
- S. crenulatum (Næg.), Delp.
- S. muricatum, Breb.
- S. asperum, Breb.
- S. rugulosum, Breb.
- S. punctulatum, Breb.
- S. pygmæum, Breb.
- S. alternans, Breb.
- S. dilatatum, Ehrb.
- S. cyrtocerum, Breb.
- S. paradoxum, Meyen.
- S. arachne, Ralfs.
- S. comptum, Wolle.
All frequent in ponds.
- S. elongatum, Barker, var. tetragonum, Wolle.
Burlington: Pond at Brown's Mills.

S. scabrum, Breb.

S. fasciculoides, Wolle.

S. pusillum, Wolle.

S. Franconicum, Reinsch.

S. Haabœliense, Wille.

All frequent in ponds.

S. incisum, Wolle.

Morris: Split Rock Pond.

S. meriani, Reinsch.

Frequent in ponds.

S. Heleneanum, Wolle.

Morris: Split Rock Pond.

S. cerastes, Lund.

Frequent in ponds.

S. gracile, Balfs.

Same habitat.

S. Ophiura, Lund.

Same habitat.

Var. tetracerum, Wolle.

Morris: Denmark Pond.

Var. pentacerum, Wolle.

Same locality.

S. macrocerum, Wolle.

Frequent in ponds.

S. odontatum, Wolle.

Morris: Split Rock Pond.

S. Rotula, Nordst.

Morris: Split Rock and Denmark Ponds.

S. coronulatum, Wolle.

Morris: Denmark Pond; Gloucester: Pond near Malaga.

S. pentacladum, Wolle.

Frequent in ponds.

- S. leptocladum*, Nordst.
Same habitat.
- S. grallatorium*, Nordst.
Morris: Denmark Pond.
- S. fusiforme*, Wolle.
Same locality.
- S. otanum*, Wolle.
Monmouth: Ocean Beach, and Gloucester: Malaga.
- S. ankyroides*, Wolle.
Gloucester: Pond near Malaga.
- Var. hexacerum*, Wolle.
Ponds in the northern counties
- S. vestitum*, Ralfs.
- S. Sebaldi*, Reinsch.
- S. Pseudosebaldi*, Wille.
- S. arcuatum*, Nordst.
- S. subarcuatum*, Wolle.
- S. aculeatum*, Ehrb.
- S. teliferum*, Ralfs.
All frequent in ponds.
- S. Saxonicum*, Bulnh.
Morris: Budd's Lake.
- S. echinatum*, Breb.
Frequent in ponds.
- S. Pecten*, Perty.
Morris: Denmark Pond.
- S. hirsutum* (Ehrb.), Breb.
Frequent in ponds.
- S. aspinosum*, Wolle.
Burlington: Brown's Mills.
- S. quaternium*, Wolle.
Gloucester: Pond near Malaga.

- S. forficulatum*, Lund
Bamber Pond.
- S. monticulosum*, Breb., var. *bifarium*, Nordst.
Monmouth: Spring Lake.
- S. tricornutum*, Wolle.
Atlantic: Hammonton and other ponds.
- S. Novæ-Cæsareæ*, Wolle.
Atlantic: Pond near Hammonton.
- S. quadrangulare*, Breb.
Frequent in ponds.
- S. Brasiliense*, Nordst.
Passaic: Pond.
- S. furcigerum*, Breb.
- S. eustephanum* (Ehrb.), Ralfs.
- S. spongiosum*, Breb.
- S. artiscon*, Ehrb. (*S. munitum*, Wood.)
All frequent in ponds.
- S. Eloiseanum*, Wolle.
Morris: Split Rock Pond.
- S. distentum*, Wolle.
Morris: Denmark and Split Rock Ponds.
- S. furcatum* (Ehrb.), Breb.
Frequent in ponds.
- S. enorme*, Ralfs.
Same habitat.
- S. leptacanthum*, Nordst., var. *tetroctocorum*, Wolle.
Gloucester: Pond near Malaga.*

* *S. bifidum*, *S. brachyserum*, *S. polytrichum*, *S. pulchrum*, *S. senarium* and *S. setigerum* of the Preliminary Catalogue are omitted as uncertain.

Sub-Class 5.—DIATOMACEÆ.*(Contributed by Professor C. Henry Kain.)***Tribe 1.—RAPHIDIEÆ.****CYMBELLEÆ.****AMPHORA, Ehrb.****A. affinis, Kütz.**

Brackish water. Cape May: Common in Dennis Creek.

A. aponina, Greg.

Salt or brackish water. Monmouth: Shark River and Manasquan River, often forming a bright brown deposit on the sand-flats. Cape May: Cape May, Dennis Creek.

A. costata, W. Sm.

Marine. Atlantic: Common in tidal pools near the inlet at Atlantic City.

A. elegans, Greg.

Marine. Monmouth: Shark River and Manasquan River, on the sands between tide-marks.

A. Eulensteinii, Grun.

Salt or brackish water. Monmouth: Occasional in Shark River and abundant in brackish pools near the mouth of Manasquan River.

A. excisa, Greg.

Marine. Monmouth: Common between tide-marks in Shark River and Manasquan River.

A. intermedia, Lewis.

Marine. Atlantic: Occasional in tidal pools near the inlet at Atlantic City.

A. lævis, Greg.

Marine. Monmouth: Common in Manasquan River and Shark River between tide-marks.

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A. lævissima, Greg.

Marine. Monmouth: Common in Manasquan River and Shark River, on the sand-flats.

A. lanceolata, Cleve.

Marine. Monmouth: Occasional in Shark River and Manasquan River. Atlantic: Pools on the marshes near Atlantic City.

A. lineata, Greg.

Marine. Atlantic: Occasional in pools on the marshes near Atlantic City.

A. naviculacea, Donkin.

Marine. Monmouth: Common on the sands at the mouth of Shark River.

A. obtusa, Greg.

Marine. Monmouth: Common between tide-marks in Shark River and Manasquan River.

A. ovalis, Kütz.

Fresh water. Common in ponds. Camden: Kirkwood, Laurel Mills. Sussex: Hamburg, Andover.

A. Pediculus (Kütz.), Grun.

Fresh water. Camden: Common in pond at Kirkwood.

A. plicata, Greg.

Salt or brackish water. Monmouth: On the wet sands just above tide-marks in Shark River and Manasquan River. Atlantic: Tidal pools near Atlantic City.

A. Proteus, Greg.

Marine. Monmouth: Common between tide-marks in Shark River and Manasquan River.

A. rectangularis, Greg.

Marine. Atlantic: Marsh pools at Atlantic City.

A. robusta, Greg.

Marine. Monmouth: Common on sands between tide-marks in Shark River and Manasquan River.

A. salina, W. Sm.

Marine. Atlantic: Common in pools near the inlet at Atlantic City.

CYMBELLA, Ag.

C. affinis, Kütz.

Fresh water. Frequent in ponds and ditches. Burlington: Marlton, Pemberton. Sussex: Hamburg, Andover. Morris: Budd's Lake, Lake Hopatcong.

C. Anglica, Lagerst.

Fresh water. Occasional in ponds and ditches. Camden: Kirkwood. Salem: Woodstown, Sharptown. Morris: Budd's Lake, Lake Hopatcong.

C. Cistula, Hempr. (*Cocconema*.)

Fresh water. Common in ponds and ditches. Burlington: Marlton. Camden: Kirkwood. Salem: Woodstown, Sharptown. Sussex: Andover. Morris: Fossil at Drakesville.

C. cuspidata, Kütz.

Fresh water. Common in ponds and ditches. Burlington: Marlton, Pemberton. Gloucester: Mullica Hill. Sussex: Andover. Morris: Lake Hopatcong, Budd's Lake, Drakesville deposit.

C. cymbiformis, Ehr. (*Cocconema*.)

Fresh water. Common in ponds and ditches. Burlington: Marlton. Gloucester: Mullica Hill. Camden: Kirkwood, Camden. Morris: Lake Hopatcong.

C. Ehrenbergii, Kütz.

Fresh water. Frequent in ponds and ditches. Burlington: Marlton, Pemberton. Camden: Kirkwood, Camden. Morris: Fossil at Drakesville.

C. gracilis, Kütz., *var. lævis*, V. H.

Fresh water. Burlington: Occasional in meadow ditches near Marlton.

C. lanceolata, Ehrb. (*Cocconema*.)

Fresh water. Very common in ponds and ditches. Camden: Kirkwood, Camden. Burlington: Marlton. Gloucester: Mullica Hill. Salem: Woodstown, Sharptown, Salem. Sussex: Andover, White Hall, Culver's Gap. Morris: Fossil at Drakesville.

C. turgida, Greg. (*Encyonema turgidum*, Grun.)

Fresh water. Morris: Fossil at Drakesville.

ENCOYONEMA, Kütz.

E. cæspitosum, Kütz.

Fresh water. Gloucester: Common in pond at Mullica Hill.

E. gracile (Ehrb.), Rab.

Fresh water. Atlantic: Frequent in ponds at Hammonton, and Camden: Kirkwood.

E. prostratum (Berk.), Ralfs.

Fresh water: Sussex: Common in ponds near Andover.

E. ventricosum, Kütz.

Fresh water. Common in ponds and ditches. Burlington: Marlton, Pemberton. Gloucester: Mullica Hill. Salem: Sharptown, Woodstown. Sussex: Andover, White Hall, Culver's Gap. Morris: Lake Hopatcong.

NAVICULEÆ.

MASTOGLIOIA, Thwaites.

M. angulata, Lewis.

Marine. Cape May: Common at Shellinger's Inlet, and Atlantic: Marshes at Atlantic City—Lewis.

M. elegans, Lewis.

Marine. Same localities as the preceding—Lewis.

M. exigua, Lewis.

Marine. Same localities—Lewis.

M. Kinsmanii, Lewis.

Marine. Frequent in the same localities—Lewis.

M. lanceolata, Thwaites.

Marine. Ocean: Common in Barnegat Bay.

M. Smithii, Thwaites.

Marine. Common along the coast—Lewis.

STAURONEIS, Ehrb.

S. acuta, W. Sm.

Fresh water. Morris: Fossil at Drakesville. Salem: Common in meadow ditches at Woodstown.

S. anceps, Ehrb.

Fresh water. Common in meadow ditches. Salem: Woodstown, Sharptown, Salem. Burlington: Marlton. Camden: Camden, Kirkwood. Sussex: Culver's Gap, Andover. Morris: Lake Hopatcong, Budd's Lake. Cape May: Ditches near Cape May Point.

Var. amphicephala, Kütz.

Fresh water. Monmouth: Common in Lake Como.

S. aspera (Ehrb.), Kütz.

Marine. Monmouth: Common in Manasquan River, Shark River and Barnegat Bay; fossil in clay at Ocean Beach.

S. gracilis, Ehrb.

Fresh water. Common in ponds and meadow ditches. Camden: Camden, Blackwood. Burlington: Marlton, Pemberton. Salem: Woodstown, Sharptown. Gloucester: Mullica Hill. Sussex: Andover, White Hall, Hamburg. Morris: Fossil at Drakesville.

S. Phœnicenteron, Ehrb.

Fresh water. Common in ponds and meadow ditches throughout the State. Fossil at Drakesville.

S. salina, W. Sm.

Marine. Monmouth: Common in Shark River, Manasquan River, and in marsh pools near Absecon.

NAVICULA, Bory.

N. acrocephæria, Breb.

Fresh water. Burlington: Frequent in old marl-pits near Marlton.

N. affinis, Ehrb.

Fresh water. Monmouth: Common in meadow ditches near Long Branch, and Salem: Woodstown.

N. Americana, Ehrb.

Fresh water. Morris: Fossil at Drakesville.

N. amphigomphus, Ehrb. (*N. iridis*, var.)

Fresh water. Common in ponds and ditches. Burlington: Marlton, Ewansville, Pemberton. Atlantic: Absecon. Monmouth: Ocean Beach clay.

N. amphirhynchus, Ehrb.

Fresh water. Salem: Common in meadow ditches near Woodstown, and Burlington: Marlton.

N. amphiscena, Bory.

Salt or brackish water. Monmouth: Abundant between tide marks near the mouth of Manasquan River, and Atlantic: In pools on the marshes near Atlantic City.

N. apiculata, Breb.

Marine. Monmouth: Rare in Shark River.

N. arenaria, Donkin.

Marine. Atlantic: Occasional in marsh pools at Atlantic City.

N. bicapitata, Lagerst.

Fresh water. Common in meadow ditches. Sussex: Andover. Gloucester: Woodbury, Mullica Hill.

N. borealis (Ehrb.), Kütz.

Fresh water. Widely distributed but never found in abundance. Salem: Woodstown, Salem, Sharptown. Burlington: Marlton. Gloucester: Mullica Hill, Barnsboro, Woodbury. Atlantic: Hammonton, Absecon. Sussex: Hamburg, Andover. Morris: Fossil at Drakesville.

N. Brebissonii, Kütz.

Fresh water. Burlington: Occasional in ponds at Marlton, and Camden: Kirkwood.

N. brevis, Greg.

Marine. Monmouth: Common on sand flats near the mouth of Manasquan River.

N. brevistriata, Grun. (*N. gibba*, var.)

Fresh water. Camden: Common in cranberry bogs near Ancora.

N. crabro, Ehrb.

Marine. Cape May: Occasional at Cape May.

N. cruciformis, Donkin.

Marine. Monmouth: Occasional in Shark River.

N. cryptocephala, Kütz.

Fresh water. Frequent in ponds and ditches. Gloucester: Mullica Hill, Woodbury. Burlington: Marlton. Sussex: Hamburg, Andover, White Hall.

N. cuspidata, Kütz.

Fresh water. Common in meadow ditches. Camden: Laurel Mills, Kirkwood, Gloucester. Salem: Woodstown, Sharptown. Burlington: Marlton.

N. cyprinus (Ehrb.), W. Sm.

Marine. Monmouth: Occasional in Manasquan River. Atlantic: Common at Atlantic City, and Cape May:—Lewis.

N. didyma, Ehrb.

Marine, Monmouth: Common in Manasquan and Shark Rivers; Ocean Beach clay. Cape May: Ditches near Cape May—Lewis.

N. dilatata, Ehrb.

Fresh water. Common in ponds throughout the State. Fossil at Drakesville.

N. divergens, W. Sm.

Fresh water. Burlington: Frequent in old marl-pits near Marlton.

N. elegans, W. Sm.

Brackish water. Common in pools on the salt marshes. Monmouth: Shark River. Atlantic: Absecon.

N. elliptica, Kütz.

Salt, brackish or fresh water; common. Monmouth: Manasquan River, Shark River; Ocean Beach clay. Camden: Camden water-supply. Gloucester: Mullica Hill. Salem: Woodstown, Sharptown. Burlington: Pemberton, Marlton. Cape May: Ditches near Cape May Point, Dennis Creek.

N. firma, Kütz.

Fresh water. Common in ponds throughout the State.

Var. subampliata, Grun.

Fresh water. Atlantic: Frequent in the pond at Hammon-ton, and Monmouth: In Lake Como.

N. follis, Ehrb.

Fresh water. Atlantic: Frequent in ponds at Hammonton and Absecon.

N. forcipata, Grev.

Marine. Frequent on the sands between tide marks and in salt-water ditches. Monmouth: Shark River, Manasquan River, Ocean Beach clay. Atlantic: Atlantic City.

N. fortis, Greg.

Marine. Atlantic: Common in meadow pools near the inlet at Atlantic City.

N. gibba (Kütz.), Ehrb.

Fresh water. Common in ponds and streams. Monmouth: Ocean Beach, Lake Como. Sussex: Culver's Gap, Branchville. Atlantic: Absecon.

N. gracilis (Ehrb.), Kütz.

Fresh water. Sussex: Occasional in a pond near Hamburg.

N. granulata, Breb.

Marine. Monmouth: Occasional on sand flats at the mouth of Shark River and of Manasquan River; Ocean Beach clay. Atlantic: Atlantic City.

N. Henedyi, W. Sm.

Marine. Monmouth: Occasional in Shark River and Manasquan River; fossil in Ocean Beach clay. Camden: Fossil in the blue clay of the Delaware River at Camden—Lewis.

N. Hitchcockii, Ehrb.

Fresh water. Camden: Rare, in Kirkwood Pond.

N. humerosa, Breb.

Marine. Monmouth: Common between tide marks in Shark River and Manasquan River; fossil in Ocean Beach clay; also at Long Beach, on algæ—Lewis.

N. Indica, Grev.

Marine. Monmouth: Occasional in ditches near the mouth of Manasquan River; fossil in Ocean Beach clay.

N. inflexa, Greg.

Marine. Monmouth: Abundant in sand ripples at the mouth of Shark River.

N. lata, Breb.

Fresh water. Burlington: Occasional in old marl-pits near Marlton.

N. Legumen (Ehrb.), Grun.

Fresh water. Gloucester: Occasional in ditches at Mullica Hill, and Salem: Woodstown.

N. Liber, W. Sm.

Fresh water. Monmouth: Frequent in ponds near Ocean Beach.

N. Lyra, Ehrb.

Marine. Monmouth: Abundant on the sands between tide marks in Manasquan River and Shark River; Ocean Beach clay. Atlantic: Marsh pools near Atlantic City.

N. macilenta, Ehrb.

Fresh water. Salem: Common in meadow ditches at Woodstown. Burlington: Marlton, and Atlantic: Hammonton.

N. major, Kütz.

Fresh water. Very common in ponds and ditches throughout the State. Fossil at Drakesville.

N. marginata, Lewis.

Fresh water. Camden: Fossil in the blue clay of the Delaware River at Camden—Lewis.

N. marina, Ralfs.

Marine. Monmouth: Common in Shark River and Manasquan River. Atlantic: Marsh pools near Atlantic City.

N. mesolepta, Ehrb.

Fresh water. Generally distributed throughout the State.

Var. stauroneiformis, V. H.

Fresh water. Generally distributed throughout the State.

N. minutula, W. Sm.

Salt or brackish water. Cape May: Marshes near Cape May. Monmouth: On sands at the mouth of Shark River. Atlantic: Marshes near Absecon.

N. mutica, Kütz.

Fresh water. Burlington: Occasional in old marl-pits near Marlton.

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N. nobilis (Ehrb.), Kütz.

Fresh water. Generally distributed throughout the State.
Fossil at Drakesville.

N. oblonga, Kütz.

Fresh water. Common in ponds and ditches. Salem: Woodstown, Sharptown. Atlantic: Hammontou. Gloucester: Mullica Hill. Sussex: Hamburg, Andover. Morris: Lake Hopatcong, Budd's Lake; fossil at Drakesville.

N. oculata, Breb.

Marine. Monmouth: Abundant between tide marks at the mouth of Shark River and of Manasquan River.

N. palpebralis, Breb.

Marine. Monmouth: Common between tide marks in Manasquan River and Shark River. Cape May: Dennis Creek.

N. parva (Ehrb.), V. H.

Fresh water. Frequent in ponds and ditches. Camden: Ancora. Gloucester: Mullica Hill. Burlington: Marlton. Cape May.

N. peregrina (Ehrb.), Kütz.

Fresh or salt water; common. Monmouth: Fresh-water ditches near Ocean Beach; salt marshes near the mouth of Manasquan River; fossil in Ocean Beach clay. Atlantic: Water from artesian well at Atlantic City.

N. permagna, Bailey.

Brackish or salt water; common. Monmouth: Ditches near the mouth of Shark River; marshes near the mouth of Manasquan River; fossil in Ocean Beach clay. Cape May: Salt marshes near Cape May.

N. polyonca, Breb.

Fresh water. Camden: Occasional in Kirkwood Pond—Kain; mud from Cooper's Creek at Camden—Lewis.

N. Powellii, Lewis.

Fresh water. Gloucester: Rare in old marl-pits at Mullica Hill.

N. prætexta, Ehrb.

Marine. Monmouth: Common in the mud of ditches near the mouth of Manasquan River; fossil in Ocean Beach clay.

N. producta, W. Sm.

Fresh water. Atlantic: Common in Absecon Pond.

N. pusilla, W. Sm.

Fresh or brackish water. Atlantic: Brackish ditches near Absecon and Pleasantville. Cape May: Ditches near Cape May.

N. radiosa, Kütz.

Fresh water. Sussex: Frequent in ponds and ditches at White Hall, Andover, and in the Musconetcong River at Waterloo.

Var. acuta, V. H.

Fresh water. Gloucester: Common in ponds and ditches at Mullica Hill. Sussex: White Hall and Andover. Morris: Lake Hopatcong and Drakesville fossil deposit.

N. retusa, Breb.

Marine. Monmouth: Occasional between tide marks at the mouth of Shark River.

N. rhomboides, Ehrb.

Fresh water. Generally distributed throughout the State. Atlantic: Occurs in enormous quantities upon *Utricularia* and other water plants in ponds at Hammonton, Absecon and Mays Landing. Ocean: Toms River, and Cape May: Dennisville. Particularly plentiful in cedar-swamp bogs and streams.

Var. crassinervis, Breb. (*Frustulia Saxonica*, Rab.)

Fresh water. Abundant in the same localities as the last-named species.

N. rhyncocephala, Kütz.

Fresh water. Camden: Occasional in the pond at Kirkwood, and Atlantic: In the water from the artesian well at Atlantic City.

N. Schweinfurthii, A. S.

Fresh water. Burlington: Occasional in old marl-pits at Marlton.

N. semen, Ehrb.

Fresh water. Burlington: Common in old marl-pits at Marlton, and Gloucester: Mullica Hill.

N. semicrucata, Weissflog.

Fresh water. Occasional in the same localities as the preceding species.

N. seminulum, Grun.

Fresh water. Morris: Occasional in Budd's Lake, and Gloucester: Mullica Hill Pond.

N. servans (Breb.), Kütz.

Fresh water. Atlantic: Common in ponds at Absecon and Hammonton. Morris: Fossil at Drakesville.

N. Smithii, Breb.

Salt or brackish water. Monmouth: Common in sand ripples near the mouth of Shark River and of Manasquan River. Atlantic: Brackish ditches at Absecon.

N. sphærophora, Kütz.

Fresh water. Gloucester: Occasional in meadow ditches at Mullica Hill, and Burlington: Marlton.

N. stauroptera, Grun. (*N. leptogongyla*, Ehrb., var. *stauroneiformis*, V. H.)

Fresh water. Camden: Common in cranberry bogs and ponds at Ancora and Kirkwood, and Gloucester: Mullica Hill.

N. Tabellaria, Ehrb.

Fresh water. Common in meadow ditches and grassy pools throughout the State.

N. trinodis, Lewis.

Fresh water. Occasional in ponds and ditches. Camden: Blackwood, Kirkwood and Camden. Gloucester: Mullica Hill and Woodbury. Sussex: Hamburg. Associated with this is often found the *N. trinodis* of Wm. Smith, which has the valve divided into three equal lobes. *N. trinodis* of Lewis has the central lobe much larger than the others. It is doubtful whether the two are really distinct species.

N. Trochus, Ehrb.

Fresh water. Camden: Rare in the blue clay of the Delaware River at Philadelphia—Lewis.

N. tumida, Rab. (*Scoliopleura*, Breb.)

Salt or brackish water. Atlantic: Abundant in pools on the marshes near Absecon and Atlantic City. Cape May: Occasional in Dennis Creek.

N. veneta, Kütz.

Marine. Atlantic: Abundant in pools near the inlet at Atlantic City, and Monmouth: On the marshes near the mouth of Manasquan River.

N. ventricosa (Ehrb.), Donkin.

Fresh water. Frequent in ponds. Salem: Woodstown and Sharptown. Burlington: Marlton and Pemberton. Monmouth: Lake Como.

N. viridis, Kütz.

Fresh water. Very common in ditches, ponds and pools throughout the State.

AMPHIPLEURA, Kütz.

A. pellucida (Ehrb.), Kütz.

Fresh water. Morris: Rare in Budd's Lake.

PLEUROSIGMA, W. Smith.

P. Æstuarii, W. Sm.

Salt or brackish water; common. Monmouth: Shark River and Manasquan River. Cape May: Dennis Creek and Cape May.

P. angulatum, W. Sm.

Salt or brackish water. Monmouth: Occasional in marsh pools, Shark River, Manasquan River; fossil in Ocean Beach clay. Atlantic: Absecon, Pleasantville, Atlantic City.

P. Balticum, W. Sm.

Salt or brackish water. Very common all along the coast. Fossil in Ocean Beach clay.

P. decorum, W. Sm.

Salt or brackish water. Monmouth: Common in sand ripples near the mouth of Shark River.

P. delicatulum, W. Sm.

Brackish water. Camden: Rare in the Delaware River—Lewis.

P. elongatum, W. Sm.

Salt or brackish water. Monmouth: Occasional in Shark River and Manasquan River. Cape May: Marshes near Cape May—Lewis.

P. fasciola, W. Sm.

Salt or brackish water; common. Monmouth: Shark River, Manasquan River; fossil in Ocean Beach clay. Atlantic: Marshes near Atlantic City.

P. formosum, W. Sm.

Marine. Monmouth: Frequent in Shark River, and Atlantic: In tidal pools near Atlantic City.

P. hippocampus, W. Sm.

Brackish water. Common in brackish ditches and marsh pools. Monmouth: Shark River and Manasquan River. Cape May: Dennis Creek and Cape May.

P. macrum, W. Sm.

Brackish water. Marshes near Delaware Bay, Monmouth: Marshes near Manasquan River.

P. rigidum, W. Sm.

Brackish water. Monmouth: Common in ditches near Manasquan River.

P. spencerii, W. Sm.

Fresh water. Salem: Frequent in meadow ditches, Woodstown and Sharptown. Sussex: Hamburg and Andover.

P. strigilis, W. Sm.

Brackish water. Cape May: Common in Dennis Creek.

P. strigosum, W. Sm.

Brackish water. Cape May: Common on marshes near Cape May.

AMPHIPROA, Ehrb.

A. alata (Ehrb.), Kütz.

Salt or brackish water. Atlantic: Common in marshes near Atlantic City. Cape May: Marshes near Dennisville.

A. lepidoptera, Greg.

Marine. Monmouth: Frequent in sand ripples near mouth of Shark River.

A. ornata, Bailey.

Fresh water; rare. Burlington: Marl-pits near Marlton.
Sussex: Old Furnace Pond near Hamburg.

A. paludosa, W. Sm.

Brackish water. Atlantic: Marshes near Atlantic City—
Lewis.

A. pulchra, Bailey.

Salt or brackish water; common. Atlantic: Marshes near
Atlantic City. Cape May, and Monmouth: Manasquan River.

PLAGIOTROPIS, Pfitzer.

P. gibberula, Grun.

Brackish water. Cape May: Ditches near Cape May.

SCHIZONEMA, Ag.

S. Americanum, var. *tenuis*, Grun.

Marine. Monmouth: Abundant on eel-grass in Shark
River, from the middle of July to the middle of August. Cape
May: Beach at Cape May, attached to grass roots of submerged
meadow. Also in New York Harbor—Edwards.

S. cruciger, W. Sm.

Marine. New York Harbor—Edwards.

S. Dillwynii, Ag.

Marine. Monmouth: Abundant in Shark River, near the
mouth, from the middle to the close of July. Occurs in long,
dark, chestnut-colored filaments attached to shells, stones, and
large algæ.

S. Grevillei, Ag.

Marine; common. New York Harbor. Atlantic: Atlantic
City. Monmouth: Shark River. Cape May.

S. Smithii, Ag.

Marine. Common along the coast—Lewis.

COLLETONEMA, Breb.

C. eximium, Thwaites.

Fresh or brackish water. Salem: Ditches near Salem.

C. vulgare, Thwaites.

Fresh water. Monmouth: Lake Como.

BERKLEYA, Grev.

B. fragilis, Grev.

Marine. Monmouth: Abundant on eel-grass in Shark River, and Atlantic: In the bays near Atlantic City.

GOMPHONEMÆ.

GOMPHONEMA, Ag.

G. acuminatum, Ehrb.

Fresh water. Common on water plants in ponds and ditches. Gloucester: Mullica Hill. Salem: Sharptown. Burlington: Marlton and Pemberton. Morris: Lake Hopatecong. Sussex: Andover, Hamburg, Culver's Gap and Musconetcong River.

Var. laticeps, V. H.

Fresh water. Camden: Common in Kirkwood Pond.

G. affine, Kütz.

Fresh water. Burlington: Common in pond near Marlton.

G. angustatum (Kütz.), Grun.

Fresh water. Salem: Common in ponds at Sharptown and Woodstown.

G. Augur, Ehrb.

Fresh water. Common in ponds. Salem: Sharptown. Camden: Kirkwood. Sussex: Hamburg and Andover.

G. capitatum, Ehr.

Fresh water. Camden: Common in Kirkwood Pond.

G. constrictum, Ehrb.

Fresh water. Common in ponds and ditches. Gloucester: Mullica Hill. Salem: Woodstown, Sharptown. Morris: Lake

Hopatcong, Budd's Lake, Drakesville fossil deposit. Sussex :
Andover, White Hall, Hamburg.

Var. subcapitatum, V. H.

Fresh water. Morris : Lake Hopatcong. Sussex : Culver's
Gap, Andover, White Hall.

G. insigne, Greg., *forma major*, V. H.

Fresh water. Occasional in ponds and ditches. Gloucester :
Mullica Hill. Burlington : Marlton. Morris : Lake Hopat-
cong.

G. insigne, Greg., *forma minor*, V. H.

Fresh water. Morris : Fossil in Drakesville deposit.

G. lanceolatum, Kütz.

Fresh water. Gloucester : Mullica Hill Pond. Burlington :
Marl-pits near Marlton.

G. olivaceum, Ehrb.

Fresh water. Gloucester : Mullica Hill Pond.

G. sphærophorum, Ehrb.

Fresh water. Camden : Occasional in ponds at Kirkwood,
and Gloucester : Mullica Hill.

G. subclavatum, Grun.

Fresh water. Gloucester : Occasional in Mullica Hill Pond.

G. subtile, Ehrb.

Fresh water. Sussex : Meadow ditches at White Hall.

G. turgidum, Ehrb.

Fresh water. Burlington : Occasional in marl-pits near
Marlton. Camden : Ditches near Blackwood.

G. ventricosum, Greg.

Fresh water. Common in ponds. Camden : Laurel Mills.
Salem : Sharptown and Woodstown. Sussex : Hamburg and
Andover.

RHOIKOSPHENIA, Grun.

R. curvata (Kütz.), Grun.

Brackish water. Atlantic : Marsh pools near Absecon and
Pleasantville.

ACHNANTHEÆ.

ACHNANTHES, Bory.

A. brevipes, Ag.

Marine. Monmouth: Abundant on algæ in Shark River, Manasquan River, Barnegat Bay, Shrewsbury River, and Atlantic: Bay at Atlantic City. Most abundant in August.

A. linearis, W. Sm., *forma curta*, Grun. (*Achnanthidium linearis*, W. Sm.)

Fresh water. Camden: Abundant in an aquarium at Elm.

A. longipes, Ag.

Marine. It is doubtful whether this species is distinct from *A. brevipes*. It occurs in the same localities and associated with it.

A. parvula, Kütz.

Marine. Monmouth: Occasional in tidal pools near Manasquan River and Cape May.

A. subsessilis, Ehrb.

Marine. Frequent in the same localities as the last-named species.

COCCONIDEÆ.

COCconeIS, Ehrb.

C. dirupta, Greg., *var. flexella*, Grun:

Marine. Monmouth: Rare in Manasquan River.

C. excentrica, Donkin.

Marine. Monmouth: Abundant in sand ripples between tide marks at the mouths of Shark River and Manasquan River.

C. lineata (Ehrb.), Grun.

Brackish water. Cape May: Occasional in Dennis Creek.

C. molesta, Kütz.

Fresh water. Sussex: Culver's Gap.

C. pediculus, Ehrb.

Fresh water. Abundant. Parasitic upon water plants in brooks and ponds throughout the State. Fossil at Drakesville,

Morris county. Although this is usually considered to be strictly a fresh-water species, yet it is very plentiful in a decidedly brackish pool near Manasquan River.

C. placentula, Ehrb.

Fresh water. Generally distributed throughout the State.

C. scutellum, Ehrb.

Salt and brackish water. Abundant all along the coast. Parasitic upon algæ and zoöphytes.

Tribe 2.—PSEUDO-RAPHIDIEÆ.

FRAGILARIEÆ.

EPITHEMIA, Breb.

E. gibba (Ehrb.), Kütz.

Fresh water. Common in ponds and ditches. Gloucester: Mullica Hill. Salem: Woodstown. Burlington: Marlton. Sussex: White Hall and Andover. Morris: Lake Hopatcong and Drakesville fossil deposit.

E. Musculus, Kütz.

Brackish water. Common in brackish ditches and pools all along the coast.

E. succincta, Breb.

Fresh water. Burlington: Occasional in meadow ditches near Marlton.

E. turgida (Ehrb.), Kütz.

Fresh water. Very common in meadow ditches and pools. Fossil at Drakesville, Morris county.

E. ventricosa, Kütz. (Variety of *E. gibba*.)

Fresh water. Frequent in meadow ditches and pools. Salem: Woodstown. Burlington: Marlton. Sussex: Andover and Hamburg. Morris: Lake Hopatcong.

EUNOTIA, Ehrb.

E. Arcus, Ehrb.

Fresh water. Common in brooks and ponds. Camden: Kirkwood. Gloucester: Mullica Hill. Atlantic: Hammon-
ton and Absecon.

E. bicapitata, Grun.

Fresh water. Camden: Common in cranberry bogs near
Ancora.

E. denticula (Breb.), Rab.

Fresh water. Atlantic: Occasional in Hammonton Pond.

E. diodon, Ehrb.

Fresh water. Common in ponds and brooks.

E. Doliolus, Wallich. (*Pseudo-eunotia Doliolus*, Grun.)

Fresh water. Burlington: Occasional in marl-pits near
Marlton.

E. exigua (Breb.), Grun.

Fresh water. Frequent in brooks and ponds. Atlantic:
Absecon and Hammonton. Ocean: Toms River. Camden:
Kirkwood. Gloucester: Mullica Hill.

E. Falx, Grev. (*Pseudo-eunotia hemicyclus*, Grun.; *Eunotia hemicyclus*,
Ehrb.)

Fresh water. Atlantic: Rare in Absecon Pond.

E. flexuosa, Kütz.

Fresh water. Atlantic: Occasional in Hammonton Pond.

E. gracilis (Ehrb.), Rab.

Fresh water. Common in springs and ponds. Camden:
Kirkwood and Camden. Burlington: Marlton. Atlantic:
Hammonton. Gloucester: Mullica Hill. Morris: Fossil at
Drakesville.

E. lunaris (Ehrb.), Grun., *forma major*, V. H.

Fresh water. Common in ponds and meadow ditches.
Sussex: White Hall. Burlington: Marlton. Morris: Lake
Hopatcong.

Var. excisa, Grun.

Fresh water. Camden: Occasional in Kirkwood Pond.

Var. Smithii, Ralfs.

Fresh water. Salem: Occasional in pond at Sharptown.
Monmouth: Lake Como.

Var. subarcuata (Næg.), Grun.

Fresh water. Same localities as the last.

E. major (W. Sm.), Rab.

Fresh water. Camden: Common in meadow ditches near
Camden. Sussex: Lake Hopatcong and spring in Culver's Gap.

E. monodon, Ehrb.

Fresh water. Common in ponds and meadow ditches through-
out the State. Fossil at Drakesville.

E. pectinalis (Kütz.), Rab.

Fresh water. Sussex: Spring in Culver's Gap.

E. pectinalis, forma curta, V. H.

Fresh water. Atlantic: Occasional in Hammonton Pond.

E. pectinalis, forma elongata, V. H.

Fresh water. Atlantic: Occasional in ponds at Hammonton,
and Salem: Sharptown.

Var. undulata, Ralfs. (*Himantidium undulatum*, W. Sm.)

Fresh water. Very common in ponds and brooks; especially
abundant in cedar-swamp streams. Camden: Ancora. Atlan-
tic: Mays Landing, Hammonton and Absecon. Salem: Sharp-
town. Morris: Budd's Lake and Lake Hopatcong.

E. prærupta, Ehrb.

Fresh water. Frequent in ponds and brooks. Gloucester:
Mullica Hill. Camden: Kirkwood. Atlantic: Hammonton
and Absecon.

E. robusta, Ralfs.

Fresh water. Common in cranberry bogs and ponds. Cam-
den: Ancora and Kirkwood. Ocean: Toms River.

Var. tetraodon (Ehrb.), Ralfs.

Fresh water. Sussex: Occasional in a spring in Culver's Gap.

E. triodon, Ehrb.

Fresh water. Frequent in brooks and ponds. Ocean: Toms
River. Atlantic: Hammonton. Sussex: Andover and Cul-
ver's Gap. Cape May: Cape May Point.

DIMEREGRAMMA, Ralfs.

D. marinum (Greg.), Ralfs.

Marine. Monmouth: Rare in mud at the mouth of Shark River.

RHAPHONEIS, Ehrb.

R. Amphiceros, Ehrb.

Marine. Common all along the coast in the mud at the mouths of rivers and inlets and in tidal pools.

Var. rhombica, Grun.

Cape May: Occasional in brackish water of Dennis Creek.

SYNEDRA, Ehrb.

S. affinis, Kütz.

Marine and brackish water. Ocean: Very common in Barnegat Bay. Cape May: Marshes near Cape May—Lewis.

Var. tabulata (Kütz.), V. H. (*S. tabulata*, Kütz.)

Marine and brackish water. Cape May: Common near Cape May.

S. capitata, Ehrb.

Fresh water. Sussex: Hewitt's Pond near Andover. Morris: Fossil in the Drakesville deposit.

S. fulgens (Kütz.), W. Sm.

Marine. Abundant on marine algæ. Monmouth: Shark River, Manasquan River, Shrewsbury River. Ocean: Barnegat Bay.

S. gracilis, W. Sm.

Marine. Common all along the coast—Lewis.

S.(?) nitzschiioides, Grun. (*Thalassiothrix*, Grun.)

Marine and brackish water. Monmouth: Occasional in brackish water of Lake Como.

S. pulchella, Kütz.

Fresh water. Abundant on water plants. Monmouth: Lake Como. Sussex: Andover. Burlington: Marlton.

Var. Smithii, Ralfs.

Fresh water. Common on water plants. Same localities.

S. radians, H. L. S.

Fresh water. Common in ponds and brooks, attached to water plants. Gloucester: Mullica Hill. Burlington: Marlton. Morris: Lake Hopatcong. Sussex: Hamburg.

S. splendens, Kütz.

Fresh water. Common in ponds and brooks, attached to water plants. Generally distributed throughout the State.

S. Ulna (Nitzsch.), Ehrb.

Fresh water. Common in ponds and brooks, attached to water plants. Generally distributed throughout the State.

FRAGILARIA, Lyngb.**F. binodis**, Ehrb.

Fresh water. Atlantic: Rare in Absecon Pond.

F. capucina, Desmaz.

Fresh water. Common in springs and brooks. Camden: Camden and Kirkwood. Salem: Woodstown and Sharptown. Burlington: Marlton. Sussex: Hamburg, Andover and Culver's Gap.

F. construens, Ehrb.

Fresh water. Common in springs and brooks. Sussex: Hamburg, Andover and Waterloo. Morris: Fossil at Drakesville.

F. parasitica (W. Sm.), Grun.

Fresh water. Sussex: Occasional in a spring in Culver's Gap.

F. virescens, Ralfs.

Fresh water. Common in springs and brooks throughout the State.

Var. oblongella, Grun.

Fresh water. Sussex: Occasional in a spring in Culver's Gap.

LICMOPHORA, Ag.**L. Baileyii**, Edwards.

Marine. Atlantic: Common on marine algae at Long Beach—Lewis.

L. Ehrenbergii (Kütz.), Grun.

Marine. Common all along the coast—Lewis.

L. flabellata (Carm.), Ag.

Marine. Common on zoöphytes and algæ. Atlantic: Atlantic City. Cape May. Monmouth: Mouth of Manasquan River and mouth of Shark River.

L. Lyngbyei (Kütz.), Grun.

Marine. Generally distributed along the coast—Lewis.

L. tincta (Ag.), Grun.

Marine. Common on zoöphytes and algæ. Monmouth: Shark River, Manasquan River. Ocean: Barnegat Bay. Cape May.

RHIPIDOPHORA, Kütz.

R. paradoxa, Kütz.

Marine. Generally distributed along the coast—Lewis.

R. elongata, Kütz.

Marine. Generally distributed along the coast—Lewis.

DIATOMA, DC.

D. anceps (Ehrb.), Grun.

Fresh water. Morris: Common in Budd's Lake.

D. hiemale (Lyngb.), Heiberg.

Fresh water. Common in ponds, springs and brooks. Gloucester: Mullica Hill. Camden: Blackwood and Kirkwood. Burlington: Marlton.

D. vulgare, Bory.

Fresh water. Common in ponds and brooks. Gloucester: Mullica Hill. Burlington: Marlton. Morris: Fossil in Drakesville deposit.

ASTERIONELLA, Hass.

A. formosa, Hass.

Fresh water. Common in ponds and swamps. Atlantic: Absecon, Hammonton and Mays Landing. Gloucester: Mullica Hill. Ocean: Toms River. Cape May: Dennisville. Camden: Berlin, Delaware River blue clay, and Cooper's Creek near Camden—Lewis.

A. Ralfsii, W. Sm.

Fresh water. Camden: Springs near Berlin. Atlantic: Absecon Pond.

MERIDION, Ag.**M. circulare, Ag.**

Fresh water. Common in ponds and springs. Burlington: Marlton. Salem: Woodstown and Sharptown. Camden: Blackwood and Kirkwood. Monmouth: Lake Como. Sussex: Andover.

M. constrictum, Ralfs.

Fresh water. Found in the same localities as the preceding species and associated with it. It is doubtful whether or not the two species are really distinct. Specimens are not infrequent that show gradations from one into the other.

TABELLARIÆ.**TABELLARIA, Ehrb.****T. fenestrata, Kütz.**

Fresh water. Very common. Especially abundant in the ponds and streams of cedar-swamp regions.

T. flocculosa (Roth.), Kütz.

Fresh water. Abundant in springs and brooks throughout the State.

GRAMMATOPHORA, Ehrb.**G. Islandica, Ehrb.**

Marine. Monmouth: Common on *Ectocarpus* in Shark River.

G. marina, Kütz.

Marine. Abundant on algæ and on zoöphytes. Monmouth: Shark River, Manasquan River, Shrewsbury River. Atlantic: Atlantic City, Barnegat Bay. Cape May.

G. serpentina, Ehrb.

Marine. Monmouth: Occasional on algæ in Manasquan River; occasional in Ocean Beach clay.

G. subtilissima, Bailey. (*G. marina*, var.?)

Marine. Common on algæ. Monmouth: Shark River, Manasquan River, Long Branch. Atlantic: Atlantic City. Ocean: Barnegat Bay.

ATTHEYA, West.

A. decora, West.

Marine. Monmouth: Abundant at the mouth of Shark River between tide marks; occasional in Manasquan River.

STRIATELLA, Ag.

S. unipunctata, Ag.

Marine. Common on algæ. Monmouth: Shark River, Manasquan River. Ocean: Barnegat Bay. Atlantic: Atlantic City.

RHABDONEMA, Ehrb.

R. Adriaticum, Kütz.

Marine. Common on algæ. Monmouth: Shark River, Manasquan River, Shrewsbury River, Ocean Beach clays. Atlantic: Atlantic City.

R. arcuatum (Ag.), Kütz.

Marine. Common on algæ. Monmouth: Shark River, Manasquan River, Shrewsbury River. Atlantic: Atlantic City.

SURIRELLÆ.

CYMATOPLEURA, W. Sm.

C. apiculata, W. Sm.

Fresh water. Rare in meadow ditches. Sussex: White Hall and Andover.

C. elliptica (Breb.), W. Sm.

Fresh water. Sussex: Occasional in Old Furnace Pond near Hamburg, and Hewitt's Pond near Andover. Morris: Fossil at Drakesville.

C. Solea (Breb.), W. Sm.

Fresh water. Occasional in ponds and meadows. Gloucester: Mullica Hill. Sussex: Hamburg and Andover. Burlington: Marlton.

TRYBLIONELLA, W. Sm.

T. acuminata, W. Sm.

Salt or brackish water. Cape May:—Lewis.

T. angustata, W. Sm.

Brackish water. Monmouth: Ditches near Manasquan River; Ocean Beach clay.

T. constricta, Greg.

Brackish water. Cape May: Dennis Creek.

T. Hautzschiana, Grun.

Brackish water. Monmouth: Common in ditches and marsh pools near Manasquan River; fossil in Ocean Beach clay. Cape May: Dennis Creek. Ocean: Barnegat Bay.

T. levidensis, W. Sm.

Brackish water. Atlantic: Marshes near Absecon, and Cape May: Dennis Creek.

T. marginata, W. Sm.

Brackish water. Cape May: Cape May and Dennis Creek. Atlantic: Absecon.

T. punctata, W. Sm.

Brackish water. Monmouth: Common in the mud of ditches and in marsh pools, Manasquan River; fossil in Ocean Beach clays. Cape May: Dennis Creek. Ocean: Barnegat Bay.

T. Scutellum, W. Sm. (*Surirella circumscuta*, Bailey.)

Brackish water. Common in the mud of ditches and marsh pools. Monmouth: Manasquan River, Shark River and Shrewsbury River; fossil in Ocean Beach clay. Ocean: Barnegat Bay,

SURIRELLA, Turp.

S. Amphioxys, W. Sm.

Fresh water. Monmouth: Rare in Ocean Beach clays.

S. angusta, Kütz.

Fresh or brackish water. Common in ponds. Gloucester: Mullica Hill. Salem: Sharptown and Woodstown. Atlantic: Brackish pools near Absecon.

S. bifrons, Ehrb.

Fresh water. Frequent in ponds and meadow ditches. Camden: Camden, Blackwood and Kirkwood. Salem: Woodstown and Sharptown. Gloucester: Mullica Hill. Atlantic: Hamonton and Absecon. Morris: Fossil at Drakesville, and Monmouth: In clay at Ocean Beach.

S. biseriata, Breb.

Fresh water. Camden: Common in ponds at Kirkwood, and Gloucester: Mullica Hill.

S. cardinalis, Kitton.

Fresh water. Gloucester: Common in ponds at Mullica Hill. Atlantic: Absecon. Camden: Occasional in the water-supply of Camden.

S. elegans, Ehrb.

Fresh water. Occasional in ponds and meadow ditches. Camden: Camden and Blackwood. Atlantic: Absecon. Gloucester: Mullica Hill. Salem: Woodstown and Sharptown. Morris: Fossil at Drakesville. Monmouth: In clay at Ocean Beach.

S. fastuosa, Ehrb.

Marine. Common all along the coast—Lewis.

S. Febigerii, Lewis.

Brackish water. Monmouth: Common in the mud of brackish ditches near the mouth of Manasquan River, and of Shark River. Cape May: Marshes near Cape May—Lewis.

S. Gemma, Ehrb.

Salt or brackish water. Monmouth: Marshes near the mouth of Manasquan River. Atlantic: Marshes near Absecon.

S. limosa, Bailey.

Camden: Delaware River mud—Lewis.

S. linearis, W. Sm.

Fresh water. Camden: Common in cranberry bogs near Atco.

S. minuta, Breb.

Fresh water. Common in ponds. Salem: Sharptown and Woodstown. Gloucester: Mullica Hill. Sussex: Andover and White Hall.

S. Molleriana, Grun.

Fresh or brackish water. Monmouth: Fresh-water ditches near Shark River and Lake Como. Atlantic: Brackish pools near Absecon.

S. ovalis, Breb.

Fresh or brackish water. Monmouth: Common in ditches running into Lake Como and Shark River. Atlantic: Brackish ditches near Absecon. Cape May: Cape May and Dennisville.

S. ovata, Kütz.

Fresh water. Common in ponds and ditches. Burlington: Marlton. Camden: Kirkwood. Occasional in Camden water-supply. Salem: Woodstown. Gloucester: Mullica Hill.

S. pinnata, W. Sm.

Fresh water. Sussex: Common in springs and ditches at Andover and Culver's Gap.

S. salina, W. Sm.

Marine. Generally distributed—Lewis.

S. splendida, Ehrb.

Fresh water. Common in meadow pools and ditches.

S. striatula, Turp.

Salt or brackish water. Monmouth: Common in the mud of brackish ditches near the mouth of Manasquan River; mud of ditches near the mouth of Shark River. Atlantic: Meadow pools near Atlantic City. Cape May: Cape May, and mud of Dennis Creek.

S. senega, Greg.

Fresh water. Gloucester: Occasional in pond at Mullica Hill. Camden. In Camden water-supply.

CAMPYLODISCUS, Ehrb.

C. costatus, W. Sm.

Camden: Rare in Delaware River mud—Lewis.

C. cribrosus, W. Sm.

Salt or brackish water. Monmouth: Ocean Beach clay; mud of brackish ditches near the mouth of Manasquan River. Blue clay of the Delaware River at Philadelphia—Lewis.

C. spiralis, W. Sm.

Fresh water. Rare in the blue clay of the Delaware River at Philadelphia—Lewis.

NITZSCHIA, Hass.

N. Amphioxys, W. Sm.

Fresh water. Common in ditches and meadows.

N. angularis, W. Sm.

Fresh water. Camden: Delaware River mud—Lewis.

N. birostrata, W. Sm.

Marine. Generally distributed along the coast—Lewis.

N. Closterium (Ehrb.), W. Sm.

Marine. Monmouth: Very abundant on flats at the mouth of Shark River and at the mouth of Manasquan River.

N. curvula, W. Sm.

Fresh water. Atlantic: Occasional in ponds at Hammonton and Absecon, and Ocean: Toms River.

N. dubia, W. Sm.

Brackish water. Atlantic: Marshes near Absecon. Monmouth: Marshes near Shark River.

N. elongata, Hantzsch.

Fresh water. Gloucester: Occasional in Mullica Pond.

N. epithemioides, Grun. (*Amphiprora latestriata*, Breb.)

Marine. Atlantic: Very abundant in a tidal pool near the inlet at Atlantic City.

N. fasciculata, Grun. (*Homocladia sigmoidea*, W. Sm.)

Brackish water. Salem: Abundant in brackish ditches near Salem. Atlantic: Marshes near Absecon. Monmouth: Marshes near Shark River.

N. Heufferiana, Grun.

Fresh water. Morris: Rare in the Drakesville deposit.

N. hybrida, Grun. (*N. bilobata*, W. Sm., var.?)

Marine. Monmouth: Occasional at the mouth of Shark River.

- N. inearis** (Ag.), W. Sm.
Fresh water. Camden: Camden water-supply. Sussex:
Brook near iron mine at Andover.
- N. littorea**, Grun. (*N. thermalis* (Kütz.), Grun., var. ?)
Marine. Monmouth: Occasional between tide marks at the
mouth of Shark River.
- N. longissima** (Breb.), Ralfs.
Marine. Monmouth: Abundant on sand flats in Shark River
and Manasquan River.
- N. marina**, Grun.
Marine. Same localities as the last.
- N. obtusa**, W. Sm.
Marine. Generally distributed along the coast—Lewis.
- Var. flexella*, H. L. S.
Fresh or brackish water. Atlantic: Ditches near Absecon.
Monmouth: Abundant in a brook flowing into the south side of
Shark River; Ocean Beach clay. Sussex: Old Furnace Pond,
Hamburg.
- Var. scalpelliformis*, Grun.
Brackish water. Cape May: Dennis Creek.
- N. Palea** (Kütz.), W. Sm.
Fresh water. Cape May: Ditches near Cape May Point.
Atlantic: Abundant in overflow from artesian well, Atlantic
City.
- N. panduriformis**, Greg.
Brackish water. Monmouth: Ditches near Shark River.
- Var. continua*, Grun.
Brackish water. Monmouth: Pools near the mouth of Mana-
squan River.
- N. paradoxa** (Gmelin), Grun. (*Bacillaria paradoxa*, Gmelin.)
Brackish water. Monmouth: Ditches near the mouth of
Manasquan River. Hudson: Meadows near Hoboken—Ed-
wards. Atlantic: Marshes near Atlantic City. Cape May:
Brackish marshes.
- N. plana**, W. Sm.
Marine. Generally distributed along the coast—Lewis.

N. reversa, W. Sm.

Rare in marshes on the lower Delaware—Lewis.

N. scalaris (Ehrb.), W. Sm.

Fresh or brackish water. Cape May: Fresh-water ditches near Cape May Point. Monmouth: Fresh-water brook running into Shark River, and brackish ditches near Shark River. Atlantic: Egg Harbor River at Mays Landing; brackish ditches near Absecon.

N. Sigma, W. Sm.

Marine. Common. Monmouth: Shark River, Manasquan River. Atlantic: Atlantic City.

Var. rigidula, Grun.

Brackish water. Atlantic: Absecon. Monmouth: Shark River.

N. sigmoidea (Ehrb.), W. Sm.

Fresh water. Common in ponds and ditches.

N. spathulata, W. Sm. (*N. hyalina*, Greg.)

Salt or brackish water. Atlantic: Marshes near Atlantic City, and Cape May—Lewis.

N. virgata, Roper.

Marine. Monmouth: Frequent in sand ripples near the mouth of Shark River.

N. vivax, Hantzsch.

Marine. Monmouth: Common in sand ripples near the mouth of Shark River. Atlantic: Tidal pools near inlet at Atlantic City. Cape May: Abundant on the beach at Cape May.

Tribe 3.—CRYPTO-RAPHIDIÆ.

MELOSIREÆ.

MELOSIRA, Ag.

M. Borrerii, Grev.

Marine or brackish water. Monmouth: Abundant on piling at the mouth of Manasquan River, and in Shrewsbury River.

M. distans, Kütz.

Fresh water. Common. Camden: Blackwood. Sussex: Hamburg and Culver's Gap.

M. granulata (Ehrb.), Ralfs.

Fresh water. Common in ponds and ditches. Gloucester: Mullica Hill. Atlantic: Mays Landing. Monmouth: Ocean Beach. Burlington: Marlton. Camden: Kirkwood and Blackwood.

M. nummuloides (Bory), Ag.

Salt or brackish water. Abundant on algæ or attached to piling. Atlantic: Atlantic City. Monmouth: Shrewsbury River, Manasquan River, Shark River. Ocean: Barnegat Bay.

M. punctata, W. Sm. (*Orthosira*.)

Fresh water. Monmouth: Occasional in a brook emptying into the south side of Shark River.

M. sulcata (Ehrb.), Kütz.

Marine. Common in marine mud. Monmouth: Manasquan River, Shark River; fossil in Ocean Beach clay. Atlantic: Atlantic City. Cape May: Cape May and Dennis Creek.

M. varians, Ag.

Fresh water. Very common in brooks and ponds.

PODOSIRA.

P. compressa, West. (*Druridgia geminata*, Donkin.)

Marine. Monmouth: Occasional in mud at the mouth of Shark River.

P. hormoides, Mont.

Marine. Generally distributed along the coast—Lewis.

P. maculata, W. Sm.

Marine. Rare in Delaware River mud—Lewis.

The names which the last three species should bear under *Melosira* are uncertain.

BIDDULPHIÆ.

BIDDULPHIA, Gray.

B. aurita (Lyngb.), Breb.

Marine. Occasional in marine mud. Monmouth: Shark River, Manasquan River, and Shrewsbury River; fossil in Ocean Beach clay. Atlantic: Atlantic City.

B. Baileyi, W. Sm.

Marine. Monmouth: Occasional on algæ and in marine mud. Shark River, Manasquan River, and Shrewsbury River; fossil in Ocean Beach clay. Atlantic: Atlantic City.

B. lævis, Ehrb.

Marine. Atlantic: Occasional on algæ and piling at Atlantic City. Monmouth: Fossil in Ocean Beach clay; abundant on piling in Shrewsbury River.

B. pulchella, Gray.

Marine. Common on algæ and in salt-water mud. Monmouth: Manasquan River, Shark River, Shrewsbury River; fossil in Ocean Beach clay. Cape May. Atlantic: Atlantic City.

B. Rhombus (Ehrb.), W. Sm.

Marine. Common in marine mud. Monmouth: Manasquan River and Shark River; fossil in Ocean Beach clay.

B. turgida, W. Sm. (*Cerataulus turgidus*, Ehrb.)

Marine. Rare in marine mud. Monmouth: Shark River and Manasquan River; fossil in Ocean Beach clay.

TRICERATIUM, Brightwell.**T. alternans**, Bailey.

Marine. Occasional in marine mud. Cape May. Monmouth: Manasquan River and Shark River; fossil in Ocean Beach clay.

T. favus, Ehrb.

Salt or brackish water. Camden: Occasional in Delaware River mud as far north as Camden; not uncommon in Camden water-supply. Monmouth: Fossil in Ocean Beach clay; common in marine or brackish mud from Shark River and Manasquan River. Atlantic: Atlantic City. Cape May: Dennis Creek and Cape May.

T. punctatum, Brightw.

Marine. Generally distributed along the coast—Lewis.

T. undulatum, W. Sm.

Marine. Camden: Rare in Delaware River mud—Lewis.

TERPSINOË, Ehrb.

T. *Americana*, Ralfs. (*Tetragramma*, Bailey.)

Marine. Camden: Rare in Delaware River mud—Lewis.

T. *musica*, Ehrb.

Marine. Camden: Very rare in the blue clay of the Delaware River at Camden—Lewis.

EUPODISCÆ.

AULISCUS, Ehrb.

A. *cælatus*, Bailey.

Marine. Camden: Rare in Delaware River mud—Lewis.

A. *radiatus*, Bailey.

Marine. Camden: Rare in Delaware River mud—Lewis.

A. *sculptus* (W. Sm.), Ralfs.

Marine. Atlantic: Occasional in marine mud from Atlantic City. Monmouth: Shark River and Manasquan River; fossil in Ocean Beach clay.

EUPODISCUS, Ehrb.

E. *Argus*, Ehrb.

Marine. Monmouth: Occasional in Ocean Beach clay and mud from the mouth of Manasquan River. Also in the blue clay of the Delaware River at Philadelphia—Lewis.

HYALODISCUS, Ehrb.

H. *subtilis*, Bailey.

Salt or brackish water. Occasional on algæ. Monmouth: Manasquan River, Barnegat Bay, Shark River. Cape May: Dennis Creek.

CYCLOTELLA, Kütz.

C. *comta* (Ehrb.), Kütz.

Fresh water. Common in ponds and meadow ditches. Atlantic: Absecon. Burlington: Marlton. Gloucester: Mullica Hill. Morris: Fossil at Drakesville.

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Var. radiosa, Grun.

Fresh water. Camden: Ditches and meadow pools near Blackwood.

C. Kutzingiana (Thwaites?), Chauvin.

Generally distributed along the coast—Lewis.

C. operculata, Kütz.

Fresh water. Common in ponds and ditches. Gloucester: Mullica Hill. Burlington: Marlton. Salem: Woodstown. Atlantic: Absecon. Camden: Kirkwood. Morris: Fossil at Drakesville.

C. rotula, Kütz.

Generally distributed along the coast—Lewis.

C. striata (Kütz.), Grun.

Salt or brackish water. Monmouth: Ditches near Shark River. Salem: Ditches near Salem Creek. Camden: Frequent in the water-supply of Camden.

ACTINOCYCLUS, Ehrb.

A. Ralfsii, W. Sm.

Marine. Monmouth: Occasional in marine mud of Shark River and Manasquan River.

COSCINODISCUS, Ehrb.

C. eccentricus, Ehrb.

Salt or brackish water. Occasional between tide marks and in marine mud. Monmouth: Manasquan River, Shark River; fossil in Ocean Beach clay. Atlantic: Atlantic City, and Cape May. Camden: Rare in Camden water-supply.

C. lineatus, Ehrb.

Salt or brackish water. Occasional in the same localities as the preceding species.

C. nitidus, Greg.

Marine. Monmouth: Occasional on the sand flats near the mouth of Manasquan River.

C. Oculus-Iridis, Ehrb.

Marine. Monmouth: Occasional at the mouth of Manasquan River. Atlantic: Common on the beach at Atlantic City.

C. omphalanthus, Ehrb. (*C. Oculus-Iridis*, var.?)

Marine. Monmouth: Frequent in sand ripples at the mouth of Shark River, and at the mouth of Manasquan River; fossil in Ocean Beach clay. Atlantic: Common on the beach at Atlantic City.

C. radiatus, Ehrb.

Marine. Monmouth: Occasional at the mouth of Shark River, and at the mouth of Manasquan River.

C. subtilis, Bailey.

Marine and brackish water. Common in marine and brackish mud. Monmouth: Manasquan River, Shark River. Atlantic: Atlantic City, Absecon. Cape May: Dennis Creek. Camden: Sometimes quite abundant in the Camden water-supply.

ACTINOPTYCHUS, Ehrb.**A. splendens** (Shadbolt), Ralfs. (*Actinosphænia*, Shadbolt; *Halioryx*, Grunow.)

Camden: Rare in Delaware River mud—Lewis. Monmouth: Mud of ditches near the mouth of Shark River.

A. undulatus, Ehrb.

Marine. Common in marine mud. Monmouth: Manasquan River, Shark River. Atlantic: Absecon. Cape May: Cape May and Dennis Creek.

CLASS 3.—FUNGI.

(Contributed by J. B. Ellis, with additions by W. R. Gerard.)

Where no locality is given, Newfield, Gloucester county, is understood, and, unless some other person is specified, Mr. Ellis is the collector.

Sub-Class 1.—BASIDIOMYCETES.

COHORT I.—HYMENOMYCETES.

AGARICINÆ.

Series 1.—LEUCOSPORÆ.

AGARICUS, L.

Sub-Genus.—AMANITA.

- A. *cæsareus*, Scop.
Hudson: Weehawken—Gerard.
- A. *vernus*, Bull.
Hudson: Weehawken—Gerard.
- A. *muscarius*, L.
Open woods; common.
- A. *rubescens*, Fr.
Damp woods. Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.
- A. *vaginatus*, Bull.
Woods and open ground.
- A. *strangulatus*, Fr.
Open woods.
- A. *chlorinosmus*, Pk.
Hudson: Weehawken—Gerard.
- A. *farinosus*, Schw.
Sand, by roadsides, etc.

Sub-Genus.—LEPIOTA.

- A. naucinoides*, Pk.
Cultivated ground.
- A. procerus*, Scop.
Fields and open woods.
- A. Americanus*, Pk.
Open woods.
- A. rachodes*, Vitt.
Open places among bushes.
- A. cristatus*, A. & S.
Hudson: Weehawken—Gerard.
- A. clypeolarius*, Bull.
Dry woods.
- A. floralis*, Rav.
Sandy ground in orchards.
- A. granuloseus*, Batsch.
Among moss, in swamps.
- A. noctiphilus*, Ell.
On a bank of earth recently thrown up.

Sub-Genus.—ARMILLARIA.

- A. melleus*, Vahl.
Base of old stumps; common.
- A. nardosmius*, Ell.
Dry oak woods; common.

Sub-Genus.—TRICHOLOMA.

- A. equestris*, L.
Sandy pine woods. Gloucester: Newfield—Ellis. Hudson:
Weehawken—Gerard.
- A. portentosus*, Fr.
Sandy pine woods.
- A. rutilans*, Schæff.
Open woods.

- A. saponaceus*, Fr.
Open woods.
- A. luridus*, Schæff.
Open woods.
- A. transmutans*, Pk.
Dry oak woods.
- A. fumidellus*, Pk.
Dry oak woods.
- A. subrufescens*, Ell.
In similar situations.
- A. personatus*, Fr.
Earth in cultivated fields; found also in great abundance
among decaying heaps of hoop-pole shavings, in open woods.
- A. microsporus*, Ell.
Among moss, in swamps.
- A. transmutans*, Pk.
Dry, open woods.

Sub-Genus.—CLITOCYBE.

- A. nebularis*, Batsch.
Hudson: Weehawken—Gerard.
- A. clavipes*, Pers.
Swampy woods.
- A. dealbatus*, Sow.
Grassy places in open ground.
- A. infundibuliformis*, Schæff.
Roadsides and grassy spots.
- A. laccatus*, Scop.
Common; woods and open grounds.
- A. trullissatus*, Ell.
Sandy ground in open woods.

Sub-Genus.—COLLYBIA.

- A. radicans*, Rehl.
Ground around stumps. Gloucester: Newfield—Ellis. Hud-
son: Weehawken—Gerard.

- A. platyphyllus*, Pers.
Dry oak woods.
- Var. repens*, Fr.
Has also been found at Newfield.
- A. velutipes*, Curtis.
On logs.
- A. confluens*, Pers.
Among decaying leaves in low, swampy woods.
- A. acervatus*, Fr.
With the preceding.
- A. illudens*, Schw.
Hudson: Weehawken--Gerard.
- A. conigenoides*, Ell.
On decaying cones of *Magnolia*.
- A. tuberosus*, Bull.
On decaying Agarics.

Sub-Genus.—MYCENA.

- A. rosellus*, Fr.
Among moss, in swamps.
- A. roseocandidus*, Pk.
In similar situations.
- A. galericulatus*, Scop.
Rotten wood, in swamps.
- A. alcalinus*, Fr.
Decaying wood and leaves, in swamps.
- A. sanguinolentus*, A. & S.
Among moss and old leaves.
- A. epipterygius*, Scop.
Rotten logs, among moss, etc.
- A. vitilis*, Fr.
Among decaying leaves, in swamps.

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- A. capillaris*, Schum.
On decaying leaves.
- A. corticolus*, Schum.
Trunks of living trees.
- A. purus*, Pers.
Amongst moss, in swamps.

Sub-Genus.—*OMPHALIA*.

- A. pyxidatus*, Bull.
Among grass, by roadsides, etc.
- A. fibula*, Bull.
Among moss, in wet places.
- A. campanella*, Batsch.
On rotten wood of conifers.

Sub-Genus.—*PLEUROTUS*.

- A. ulmarius*, Bull.
Hudson: Decaying wood, Weehawken—Gerard.
- A. atrocœruleus*, Fr.
Maple trunk.
- A. ostreatus*, Jacq.
Dead trunks and limbs.
- A. septicus*, Fr.
Rotten wood.
- A. algidus*, Fr.
Rotten wood.
- A. applicatus*, Batsch.
Bark of decaying limbs.
- A. salignus*, Pers.
Decaying wood. Hudson: Weehawken—Gerard.
- A. mitis*, Pers.
Hudson: Weehawken—Gerard.
- A. niphetus*, Ell.
Rotten cedar logs and stumps.

Series 2.—HYPORRHODIÆ.

Sub-Genus.—VOLVARIA.

- A. bombycinus*, Schæff.
Decaying railway ties.

Sub-Genus.—PLUTEUS.

- A. roseoalbus*, Fr.
Hudson: Weehawken—Gerard.
- A. leoninus*, Schæff.
Same locality.

Sub-Genus.—ENTOLOMA.

- A. salmoneus*, Pk.
Among moss, in swamps.
- A. indigoferus*, Ell.
In similar situations.

Sub-Genus.—CLITOPILUS.

- A. prunulus*, Scop.
Hudson: Weehawken—Gerard.

Sub-Genus.—LEPTONIA.

- A. serrulatus*, Pers.
Dry ground, under bushes.

Sub-Genus.—NOLANEA.

- A. pascuus*, Pers.
Hudson: Weehawken—Gerard.

Series 3.—DERMINÆ.

Sub-Genus.—INOCYBE.

- A. geophyllus*, Sow.
Open woods.
- A. dulcamarus*, A. & S.
- A. perbrevis*, Wein.
- A. cicatricatus*, E. & E.
- A. murino-lilacinus*, E. & E.

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A. subdecurrens, E. & E.

A. pallidipes, E. & E.

A. tomentosus, E. & E.

A. scabellus, Fr.

All in gravelly ground, among bushes.

A. rimosus, Bull.

Under spruce trees.

A. echinocarpus, E. & E.

Under filbert bushes.

A. lacerus, Fr.

Hudson: Weehawken—Gerard.

Sub-Genus.—*HEBELOMA*.

A. crustuliniformis, Bull.

Under filbert bushes.

A. versipellis, Fr.

With the preceding.

Sub-Genus.—*FLAMMULA*.

A. sapineus, Fr.

On decaying pine wood.

A. carbonaceus, A. & S.

On burnt ground.

Sub-Genus.—*NAUCORIA*.

A. pediades, Fr.

Among grass, by roadsides, etc.

A. semiorbicularis, Bull.

Hudson: Weehawken—Gerard.

Sub-Genus.—*GALERA*.

A. tener, Schæff.

Among grass, by roadsides.

A. ovalis, Fr.

Hudson: Weehawken—Gerard.

A. Hypnorum, Batsch.

Among moss, in wet ground.

Series 4.—PRATELLÆ.

Sub-Genus.—PSALLIOTA.

- A. campestris*, L.
Roadsides and fields.
- Var. rufescens*, Berk.
Ground under red cedars.
- A. arvensis*, Schæff.
Hudson: Weehawken—Gerard.

Sub-Genus.—STROPHARIA.

- A. semiglobatus*, Batsch.
On dung, in fields.

Sub-Genus.—HYPHOLOMA.

- A. sublateritius*, Schæff.
Base of old stumps.
- A. fascicularis*, Huds.
Hudson: Weehawken—Gerard.
- A. olivæsporus*, E. & E.
Among moss, in swamps.

Sub-Genus.—PSILOCYBE.

- A. bullaceus*, Bull.
Hudson: Weehawken—Gerard.

Sub-Genus.—PBATHYRA.

- A. conopileus*, Pers.
Hudson: Weehawken—Gerard.

Series 5.—COPRINARIÆ.

Sub-Genus.—PANÆOLUS.

- A. campanulatus*, L.
On rich ground.

Sub-Genus.—*PSATHYRELLA*.

- A. atomatus*, Fr.
Roadsides, etc.
- A. disseminatus*, Pers.
Base of old stumps.

COPRINUS, Pers.

- C. comatus*, Fr.
In grassy ground.
- C. atramentarius*, Fr.
Rich ground, around stumps, etc.
- C. fimetarius*, Fr.
Around dung heaps.
- C. niveus*, Fr.
On horse dung.
- C. micaceus*, Fr.
Base of old stumps.
- C. ephemerus*, Fr.
In gardens and rich soil.

CORTINARIUS, Fr.

- C. violaceus*, Fr.
In dry oak woods.
- C. cinnamomeus*, Fr., *var. semisanguineus*, Fr.
In damp woods.
- C. bolaris*, Fr.
Hudson: Weehawken—Gerard.
- C. cinnabarinus*, Fr.
Same locality.
- C. collinitus*, Fr.
Same locality.

PAXILLUS, Fr.

P. flavidus, Berk.

Grassy roadsides and bare earth in bottom of a cellar, for several successive years.

P. atrotomentosus, Fr.

Decaying pine logs.

P. strigosus, Pk.

In grassy ground under red cedars.

LACTARIUS, Fr.

L. torminosus, Fr.

Dry oak and pine woods.

L. piperatus, Fr.

In similar situations.

L. vellereus, Fr.

In similar situations.

L. serifluus, Fr.

Hudson: Weehawken—Gerard.

L. deliciosus, Fr.

Borders of woods.

L. zonarius (Bull.), Fr.

Open woods.

L. theiogalus, Fr.

Damp woods.

L. volemus, Fr.

Dry oak woods.

L. subdulcis, Fr.

Woods and open places.

L. Indigo, Schw.

Pine woods.

L. cilicioides, Fr. (*Ag. crinitus*, Schæff.)

Ground in low pine woods.

GOMPHIDIUS, Fr.

- G. rhodoxanthus*, Schw.
Hudson :—Gerard.
- G. pubescens*, Ell. (*Paxillus pubescens* in Prelim. Cat.)
In oak and pine woods.

HYGROPHORUS, Fr.

- H. virgineus*, Fr.
In damp fields.
- H. puniceus*, Fr.
Wet meadows.
- H. cinnabarinus*, Schw.
Wet ground.
- H. coccineus* (Schæff.), Fr.
Wet, mossy ground.
- H. pratensis* (Pers.), Fr.
In fields.
- H. miniatus*, Fr.
Cranberry bog, Iona.
- H. conicus* (Scop.), Fr.
Fields and roadsides.
- H. cerasinus*, Berk.
Sandy woods.
- H. Cantharellus*, Schw.
Hudson : Weehawken—Gerard. Gloucester : Newfield—Ellis.
- H. psittacinus*, Fr.
Hudson : Weehawken—Gerard.
- H. auratocephalus*, Ell.
Low, wet woods.
- H. nitidus*, B. & Rav.
Same habitat.
- H. squamulosus*, E. & E.
Same habitat.

RUSSULA, Fr.

R. furcata, Fr.

Dry oak woods.

R. integra, Fr.

Open woods and groves.

R. nigricans, Fr.

Similar situations.

R. alutacea, Fr.

Dry oak and pine woods.

R. emetica, Fr.

Gloucester : Newfield—Ellis. Hudson : Weehawken—
Gerard.

R. depallens, Fr.

Hudson : Weehawken—Gerard.

R. virescens, Fr.

Gloucester : Newfield—Ellis. Hudson : Weehawken—
Gerard.

R. fæstens, Fr.

Hudson : Weehawken—Gerard.

CANTHARELLUS, Adans.

C. cibarius, Fr.

Dry woods ; common.

C. aurantiacus, Fr.

In swamps ; generally growing from rotten cedar logs.

C. cinnabarinus, Schw.

Ground in open woods.

C. tubæformis, Fr.

Hudson : Weehawken—Gerard.

C. infundibuliformis (Scop.), Fr.

Ground, among leaves in woods.

NYCTALIS, Fr.

N. asterophora, Fr.

Gloucester : Newfield—Ellis. Hudson : Weehawken—
Gerard.

MARASMIUS, Fr.

M. oreades (Bolt.), Fr.

Grassy places, by roadsides, etc.

M. scorodonium, Fr.

On sticks and fragments of wood; mostly under trees in
groves and open woods.

M. ramealis (Bull.), Fr.

On decaying limbs, in swamps.

M. rotula (Scop.), Fr.

On decaying leaves.

M. androsaceus (L.), Fr.

On decaying leaves.

M. perforans, Fr.

On decaying pine leaves.

M. epiphyllus (Pers.), Fr.

On decaying oak leaves.

M. præacutus, Ell.

On decaying cedar leaves and bark.

M. straminipes, Pk.

On decaying leaves, in swamps.

M. glabellus, Pk.

In similar situations.

M. siccus, Schw.

On decaying leaves, in woods and open places.

M. cucullatus, Ell.

Dead twigs of *Vaccinium corymbosum*.

M. nigripes, Schw.

Hudson : Weehawken—Gerard.

M. spongiosus, B. & C.

Decaying leaves.

M. pyrinus, Ell.

Fallen pear leaves.

M. candidus, Fr.

Decaying leaves of pine and cedar.

LENTINUS, Fr.

L. Lecontei, Fr.

On decaying oak stumps.

L. lepideus, Fr.

On pine stumps.

PANUS, Fr.

P. strigosus, B. & C.

On a dead oak tree.

P. stipticus (Bull.), Fr.

On rotten wood; common.

P. dorsalis, Bosc.

On dead pine trees.

TROGIA, Fr.

T. crispa, Fr.

On dead birch limbs.

SCHIZOPHYLLUM, Fr.

S. commune, Fr.

Dead limbs; common.

LENZITES, Fr.

L. betulina (L.), Fr.

On decaying oak stumps.

L. sepiaria (Wulf.), Fr.

On decaying wood of conifers.

L. vialis, Pk.

Gloucester: Newfield—Ellis. Passaic:—E. A. Rau.

L. Cratægi, Berk.

Hudson: Weehawken—Gerard.

L. corrugata, Fr.

Gloucester: Newfield—Ellis. Passaic:—E. A. Rau.

L. bicolor, Fr.

Dead limbs of *Liquidambar*.

POLYPOREÆ.

BOLETUS, L.

B. luteus, L.

Damp woods.

B. granulatus, L.

Under pine trees.

B. subtomentosus, L.

Open grounds.

B. edulis, Bull.

Open grounds.

B. scaber, Bull.

Pine woods.

B. felleus, Bull.

Dry oak woods.

B. strobilaceus, Scop.

In similar situations.

B. Frostii, Russ.

In similar situations.

B. Russellii, Frost.

Dry oak woods. This is probably the *Boletus Betula*, Schw.

B. dichrous, Ell.

Dry oak woods.

B. parasiticus, Bull.

Union: Elizabeth—Gerard.

B. alutarius, Fr.

Hudson: Weehawken—Gerard.

- B. satanas*, Lenz.
Same locality.
- B. pachypus*, Fr.
Same locality.

POLYPORUS, Fr.

- P. brumalis* (Pers.), Fr.
On dead limbs.
- P. arcularius* (Batsch), Fr.
Dead limbs.
- P. perennis* (L.), Fr.
On sandy ground, in pine woods.
- P. oblectans*, Berk.
On the ground in woods, and on decaying cedar logs.
- P. parvulus*, Kl.
On old "coal bottoms."
- P. Ellisii*, Berk.
Ground in damp woods; rare.
- P. Schweinitzii*, Fr.
Base of an old cedar stump.
- P. circinatus*, Fr.
Base of a cedar stump in swampy woods.
- P. poripes*, Fr.
Hudson: Weehawken—Gerard.
- P. picipes*, Fr.
Decaying wood of deciduous trees.
- P. varius* (Pers.), Fr.
In similar situations.
- P. lucidus* (Leyss.), Fr.
Pine stumps and logs; also on wood of deciduous trees.
- P. Curtisii*, Berk.
Ground around stumps.
- P. giganteus*, Fr.
Base of an oak stump.

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- P. anax*, Berk.
Ground around maple trees.
- P. sulphureus*, Fr.
On decaying wood. Seen also growing from a dead place in a living oak tree.
- P. epileucus*, Fr.(?)
Dead limbs.
- P. lacteus*, Fr.
Dead trunks and limbs.
- P. obtusus*, Berk.
Dead standing oaks.
- P. cæsius* (Schräd.), Fr.
On rotten wood.
- P. adustus* (Willd.), Fr.
Old stumps and logs.
- P. chioneus*, Fr.
Decaying limbs.
- P. appianatus* (Pers.), Fr.
Old stumps and logs.
- P. hispidus* (Bull.), Fr.
Dead places in living black oaks.
- P. radiatus* (Sow.), Fr.
Rotten logs.
- P. alutaceus*, Fr.
Hudson: Weehawken—Gerard.
- P. carneus*, Nees.
Old cedar logs.
- P. cinnabarinus*, Fr.
Dead limbs. Hudson: Weehawken—Gerard. Gloucester: Newfield—Ellis.
- P. cupulæformis*, B. & Rav.
Fallen trunks of oak.
- P. pergamenus*, Fr.
Wood of deciduous trees, everywhere.

P. Ribis, Schum.

Dead currant bushes. Burlington: Bordentown—Mr. Geissmar.

P. fomentarius (L.), Fr.

Dead trees. Hudson: Weehawken—Gerard.

P. betulinus (Bull.), Fr.

On dead birch.

P. hirsutus (Wulf.), Fr.

Dead stumps and limbs; common.

P. velutinus, Fr.

In similar situations.

P. versicolor (L.), Fr.

Decaying wood of deciduous trees.

P. abietinus (Dicks.), Fr.

Decaying wood of conifers.

PORIA, Pers.**P. xantha**, Fr.

Under side of pine logs.

P. nitida, A. & S.

On decaying *Magnolia*.

P. vitellina, Schw.

Rotten logs.

P. medulla-panis, Pers.

On an old oak stump.

P. obducens, Pers.

On decaying oak limbs and stumps.

P. vulgaris, Fr.

On decaying pine logs.

P. favillacea, B. & C.

Under side of an old pine board lying on the ground.

P. mollusca, Fr.

On rotten wood buried under decaying leaves.

P. vaporaria, Fr.

On decaying wood of deciduous trees. Gloucester: Newfield
—Ellis. Passaic:—E. A. Rau.

P. aneirina, Sommrft.

On dead limbs.

P. farinella, Fr.

On decaying pine. Camden: Kaighn's Point—Schweinitz.
Gloucester: Newfield—Ellis.

P. tenella, B. & C.

This is probably the same as the preceding.

P. xantholoma, Schw.

On oak stumps only partially decayed.

MUCRONOPORUS, E. & E.

M. igniarius (L.), E. & E.

Dead standing trunks of oak.

M. gilvus (Schw.), E. & E.

Old logs and stumps.

M. contiguus (A. & S.), E. & E.

Dead oak limbs.

M. ferruginosus (Schröd.), E. & E.

On dead maple limbs.

TRAMETES, Fr.

T. Pini, Fr.

Dead places in trunks of living pines.

T. sepium, Berk.

Old, dry oak posts; also on pine and cedar wood.

T. suaveolens, Fr.

Partly-dead trunks of willow trees. Camden:—Martindale.

DÆDALEA, Pers.

D. quercina (L.), Pers.

On old oak stumps.

- D. pallido-fulva*, Berk.
On an old willow log.
- D. confragosa* (Bolt.), Pers.
On dead dogwood.
- D. unicolor* (Bull.), Fr.
Hudson: Weehawken—Gerard.

MERULIUS, Hall.

- M. tremellosus*, Schrad.
On rotten wood.
- M. corium*, Fr.
On dead shrubs.
- M. aureus*, Fr.
Decaying pine logs.
- M. lacrymans* (Wulf.), Fr.
Wood in damp cellars.

POROTHELIUM, Fr.

- P. confusum*, B. & Br.
On decaying maple.

FISTULINA, Bull.

- F. pallida*, B. & Rav.
Dead places in living oaks.
- F. Hepatica* (Huds.), Fr.
Hudson: Weehawken—Gerard.

FAVOLUS, Palis.

- F. Europæus*, Fr.
Dry dead limbs.

HYDNEÆ.

HYDNUM, L.

- H. repandum*, L.
Ground, in damp woods.
- H. graveolens*, Delast.
Ground, in low woods. Gloucester: Newfield—Ellis. Passaic:—E. A. Rau.
- H. zonatum*, Batsch.
Ground, in pine woods.
- H. ferrugineum*, Fr.
In similar situations.
- H. adustum*, Schw.
Decaying limbs lying on the ground. Gloucester: Newfield—Ellis. Passaic:—E. A. Rau.
- H. caput-medusæ*, Bull.
Dead place in a living oak.
- H. ochraceum*, Pers.
Dead limbs and stumps.
- H. Ellisii*, Thüm.
On pine and cedar wood.
- H. cinereum*, Schw.
On rotten wood.
- H. farinaceum*, Pers.
On old pine wood.
- H. pallidum*, C. & E.
On old oak stumps.
- H. Stevensoni*, B. & Br.
Dead cedar limbs.

IRPEX, Fr.

- I. cinnamomeus*, Fr.
Decaying oak limbs.

I. *Tulipiferæ*, Schw.

On trunks of *Magnolia*.

I. *mollis*, B. & C.

Gloucester: Newfield—Ellis. On dead oak trees. Hudson:
Weehawken—Gerard.

I. *sinuosus*, Fr.

On dead trunks of cherry.

RADULUM, Fr.

R. *orbiculare*, Fr.

On dead *Rhus venenata*.

R. *molare*, Fr.

On fallen oak limbs.

GRANDINIA, Fr.

G. *tabacina*, C. & E.

On decaying red cedar.

G. *granulosa*, Fr.

Bark of dead oak limbs.

PHLEBIA, Fr.

P. *merismoides*, Fr.

On decaying Pepperidge.

ODONTIA, Fr.

O. *imbriata* (Pers.), Fr.

On decaying limbs.

O. *fusca*, C. & E.

On rotten cedar.

KNEIFFIA, Fr.

K. *candidissima*, B. & C.

On dead wood of red cedar.

K. *setigera*, Fr.

On dead limbs and wood of oak; also on *Magnolia* and pine.

THELEPHOREÆ.

CRATERELLUS, Fr.

- C. cornucopioides* (L.), Fr.
Open woods; common.
- C. pistillaris* (Schæff.), Fr.
Ground, in dry woods.

THELEPHORA, Ehr.

- T. anthocephala* (Bull.), Fr.
Dry, sandy woods.
- T. caryophyllea* (Schæff.), Fr.
Hudson: Weehawken—Gerard.
- T. griseo-zonata*, Cke.
In moist, sandy ground.
- T. terrestris*, Ehr.
In similar situations.
- T. amorpha*, Fr.
Morris: Hope—Schweinitz.
- T. palmata* (Scop.), Fr.
Sandy woods.
- T. cristata*, Fr.
Incrusting grasses and rubbish.
- T. laciniata*, Pers.
Hudson: Weehawken—Gerard.
- T. pallida*, Schw.
Bare soil in shady places. Gloucester: Newfield—Ellis.
Passaic:—E. A. Rau.
- T. sebacea*, Pers.
Incrusting grasses, etc.

STEREUM, Fr.

- S. purpureum*, Pers.
Old Pepperidge logs.

- S. striatum*, Fr.
Hudson: Weehawken—Gerard. Passaic:—E. A. Rau.
- S. hirsutum* (Willd.), Fr.
Old logs.
- S. frustulosum* (Pers.), Fr.
Hudson: Weehawken—Gerard. Gloucester: Newfield—
Ellis. On rotten oak logs and stumps.
- S. spadiceum*, Fr.
On oak stumps and logs; common.
- S. sulphuratum*, B. & Rav.
On dead white oak limbs.
- S. acerinum* (Pers.), Fr.
Bark of living oak trees.
- Var. nivosum*, Fr.
On bark of living red cedar.
- S. radiatum*, Pk.
On decaying pine wood.
- S. scriblitum*, Berk. & Cke.
Hudson: Weehawken—Gerard.
- S. versicolor*, Fr.
Dead limbs and stumps; common everywhere.

HYMENOCHÆTE, Lev.

- H. rubiginosa* (Schrad.), Lev.
Old oak stumps.
- H. tabacina* (Pers.), Lev.
Dead limbs; common.
- H. corrugata*, Berk.
Dead limbs; very common.
- H. spreta*, Pk.
Old oak stumps.
- H. agglutinans*, Ell.
Stems of dead and living shrubs.

ARTOCREAS, Berk.

A. Micheneri, Berk.

Dead maple limbs.

CORTICIUM, Fr.

C. arachnoideum, B. & C.

Under side of decaying wood and bark lying on the ground.

C. rubrocanum, Thüm.

On dead, dry limbs of *Quercus coccinea*.

C. læve, Pers.

Dead trunks and limbs of deciduous trees.

C. calceum (Pers.), Fr.

On bark of pine logs.

C. giganteum, Fr.

Same habitat.

C. incarnatum, Fr.

Dead limbs of deciduous trees.

C. lilacino-fuscum, B. & C.

Dry wood and bark of deciduous trees.*

C. chlorascens, B. & Br.

Rotten wood.

C. glabrum, B. & C.

On trunks of dead *Magnolia*.

C. subgiganteum, B. & C.

On dead *Magnolia*.

C. echinosporum, Ell.

Under side of decaying pine logs.

C. ochroleucum, Fr.

Dead maple limbs.

Var. spumeum, B. & Rav.

Pine logs.

* Including *C. subrepandum* of the Preliminary Catalogue.

- C. ceraceum*, B. & C.
On dead limbs of *Cornus*.*
- C. fusisporum*, C. & E.
Decaying wood.
- C. brunneolum*, B. & C.
On bark of living red cedar.
- C. effuscatum*, C. & E.
Decaying wood and bark in swampy woods.
- C. polygonium*, Pers.
On limbs.
- C. prasinum*, B. & C.
On decaying oak chips. Indigo blue, becoming pale green.
- C. colliculosum*, B. & C.
On dead *Rhus venenata*. This is probably not distinct from *Radulum orbiculare*, Fr. It often extends along the trunk for several feet, the hymenium being in some parts nearly smooth, and in others bearing strong tubercular teeth.

PENIOPHORA, Cke.

- P. cinerea* (Fr.), Cke. (*Corticium cinereum* in Prelim. Cat. Includes also *C. fumigatum*.)
On various dead limbs.
- P. papyrinum* (Mont.), Cke.
Same habitat as the preceding species.
- P. velutina* (Fr.), Cke.
Decaying wood and bark.
- P. flavidoalba*, Cke.
Rotten maple.

CONIOPHORA, Pers.

- C. Ellisii*, B. & C.
On cedar wood and bark.
- C. puteana*, Schum.
On decaying wood.

* Replaces *C. molle* of the Preliminary Catalogue.

EXOBASIDIUM, Woron.

E. *Vaccinii*, Woron.

Living leaves of various species of *Vaccinium*.

Var. *discoidea*, Ell.

Transforming the leaves of *Rhododendron viscosum*.

Var. *Andromedæ*, Pk.

On *Andromeda ligustrina*.

CYPHELLA, Fr.

C. *fulva*, B. & Rav.

On dead limbs of Alder.

C. *capula*, Holmsk.

Decaying herbaceous stems.

SOLENIA, Pers.

S. *ochracea*, Hoff.

Bark of dead birch.

S. *candida*, Pers.

Dead cedar bark.

S. *poriæformis* (DC.), Fekl.

Dead bark and wood.

S. *fasciculata*, Pers.

Rotten wood.

S. *sulphurea*, Sacc. & Ell.

On dead *Magnolia*.

CLAVARIEÆ.

CLAVARIA, Vaill.

C. *cristata* (Holmsk.), Pers.

Ground, in dry woods.

C. *cinerea*, Bull.

Ground, in open woods.

- C. inæqualis*, Müll.
Among leaves in swampy woods.
- C. aurea*, Schæff.
.Ground, in woods.
- C. vernalis*, Schw. (*C. clavata*, Pk., in Prelim. Cat.)
Bare soil in low ground.
- C. fragrans*, E. & E.
Ground, in wet woods.
- C. mucida*, Pers.
On rotten wood.
- C. botrytis*, Pers.
Hudson: Weehawken—Gerard.
- C. fusiformis*, Fr.
Same locality.
- C. molaris*, Berk.
Hudson: Weehawken—Gerard. Gloucester: Newfield—
Ellis.
- C. apiculata*, Fr.
Warren: Manunka Chunk—Schweinitz.
- C. compressa*, Schw.
New Jersey:—Schweinitz.
- C. subcorticalis*, Schw.
Hudson: Weehawken—Gerard.

LACHNOCLADIUM, Lev.

- L. semivestitum*, B. & C.
Low, wet woods.
- L. subsimile*, Berk.
Low, wet woods.
- L. Micheneri*, B. & C.
On decaying leaves.

COLOCERA, Fr.

- C. cornea*, Fr.
On rotten wood; common.

GUEPINIA, Fr.

G. spathularia, Fr.

On old railway ties, etc.; common.

TYPHULA, Fr.

T. muscicola, Fr.

Among moss in wet places.

PISTILLARIA, Fr.

P. micans, Fr.

Dead herbaceous stems.

P. clavulata, Ell.

Dead stems of *Desmodium*.

COHORT II.—TREMELLINEÆ

TREMELLINÆ.

TREMELLA, L.

T. foliacea, Pers.

Dead oak limbs; common.

T. frondosa, Fr.

On decaying oak wood.

T. albida, Huds.

On various dead limbs.

T. stipitata, Pk.

On an old oak railway tie.

EXIDIA, Fr.

E. glandulosa (Bull.), Fr.

Common on dead limbs.

HIRNEOLA, Fr.

- H. Auricula-Judæ (L.), Fr.
On fallen trunks and limbs.

NÆMATELIA, Fr.

- N. nucleata, Schw.
Dead limbs.
- N. encephala (Willd.), Fr.
Dead oak bushes.

DACRYOMYCES, Nees.

- D. deliquescens (Bull.), Duby.
Decaying pine.
- D. stillatus, Nees.
On decaying pine.

HYPSILOPHORA, Cke.

- H. fragiformis (Nees), Cke. (*Hormomyces aurantiacus* in Prelim. Cat.)
On rotten wood.

DITIOLA, Fr.

- D. radicata, Fr.
Decaying pine.

COHORT III.—GASTEROMYCETES.

HYPOGEÆ.

OCTAVIANA, Vitt.

- O. Stevensii Berk., var. Ravenelii, B. & C.
On low, sandy ground.

RHIZOPOGON, Fr.

- R. rubescens, Tul.
Ground, among leaves in sandy woods.

PHALLOIDEÆ.

PHALLUS, Mich.

- P. impudicus*, L.
Open grounds, gardens, etc.
- P. duplicatus*, Bosc. (*P. togatus*, Kalch.)
Grassy ground, under red cedars.

CORYNITES, B. & C.

- C. Ravenellii*, B. & C.
In gardens. Union: Elizabeth. Ocean: Toms River, and
Bergen: Fort Lee—Gerard. Gloucester: Newfield—Ellis.

LYCOPERDINEÆ.

GEASTER, L.

- G. hygrometricus*, Pers.
Sandy ground; common.
- G. umbilicatus*, Fr. (*G. mammosus*, Chev., in Prelim. Cat.)
In similar situations.
- G. minimus*, Schw.
In similar situations.
- G. rufescens*, Fr.
Hudson: Hoboken—Torrey Catalogue, 1819.

BOVISTA, Pers.

- B. subterranea*, Pk.
In hard-trodden paths.

LYCOPERDON, L.

- L. lilacinum* (B. & M.), Spig. (*L. cyathiforme*, Bosc., in Prelim. Cat.)
In grassy ground, roadsides, etc.
- L. pusillum*, Fr.
Ground, in open places.

- L. gemmatum*, Fr.
Among moss in swamps.
- L. molle*, Pers.
Ground, under red cedars.
- L. Wrightii*, B. & C.
Open grounds.
- L. cupricum*, Bon.
Ground, in open, grassy woods.
- L. pyriforme*, Schæff.
Around the base of old stumps.
- L. giganteum*, Batsch.
Hudson: Weehawken—Gerard.
- L. atropurpureum*, Vitt.
Hudson: Weehawken—Gerard. Gloucester: Newfield, under red cedars.

SCLERODERMA, Pers.

- S. Bovista*, Fr.
In cultivated ground.
- S. vulgare*, Fr.
Ground, in door-yards, etc.
- S. flavidum*, E. & E.
Sandy ground.
- S. Geaster*, Fr.
Open grounds, Newfield.

ARACHNION, Schw.

- A. album*, Schw.
Roadsides and fields.

MITREMYCES, Nees.

- M. cinnabarinus* (Corda), De Ton.
Bergen: Fort Lee—Gerard.
- M. lutescens*, Schw.
On wet banks by the roadside.

POLYSACCUM, DC.

P. Pisocarpium, Fr.(?)

Roadsides and cultivated fields. Popularly known as "Devil's Snuff-box."

NIDULARIÆ.

CYATHUS, Haller.

C. striatus (Huds.), Hoff.

Decaying wood lying on the ground.

C. vernicosus (Bull.), DC.

On the ground.

CRUCIBULUM, Tul.

C. vulgare, Tul.

On decaying herbaceous stems.

SPHÆROBOLUS, Tode.

S. stellatus, Tode.

On rotten wood.

COHORT IV.—UREDINEÆ.

PUCCINIACEÆ.

PHRAGMIDIUM, Link.

P. mucronatum, Lk.

Living rose leaves.

P. obtusum, Lk.

Living leaves of black raspberry.

P. speciosum, Fr.

Stems of wild rose.

PUCCINIA, Pers.

- P. graminis**, Pers.
Gloucester: Newfield—Ellis. Union: Elizabeth—Gerard.
- P. Zizaniæ**, Schw.
Camden: Kaighn's Point—Schweinitz.
- P. arundinacea**, Hedw.
On *Phragmites vulgaris*. Camden:—Martindale.
- P. striola**, Lk.
Leaves of grasses.
- P. coronata**, Corda.
Leaves of grasses and *Carices*.
- P. Polygonorum**, Lk.
Leaves of *Polygonum*.
- P. Menthæ**, Pers.
Leaves of various mints.
- P. Compositarum**, Schw.
Gloucester: Newfield — Ellis. Hudson: Weehawken — Gerard.
- P. Hieracii** (Schum.), Mart.
Hudson: Weehawken—Gerard.
- P. Galiorum**, Lk.
Leaves of *Galium*.
- P. Noli-tangeris**, Corda.
Leaves of *Impatiens*.
- P. Violarum**, Lk.
Leaves of *Viola cucullata*.
- P. Epilobii**, DC.
Leaves of *Epilobium*.
- P. Circææ**, Pers.
Leaves of *Circæa*.
- P. Prunorum**, Lk.
Leaves of beach plum.

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P. Anemones, Pers.

Bergen :—Gerard.

P. Caricis, DC.

Leaves of *Carices*.

P. Helianthi, Schw.

Leaves of *Helianthus*.

P. Smilacis, Schw.

Leaves of *Smilax*.

P. Sorghi, Schw.

Leaves of Indian corn.

P. Xanthii, Schw.

Leaves of *Xanthium*. Gloucester: Newfield—Ellis. Union:
Elizabeth—Gerard.

P. Ellisi, Thüm.

Leaves of *Andropogon*.

GYMNOSPORANGIUM, DC.

G. macropus (Schw.), DC.

Living branches of red cedar.

G. Ellisi, Berk.

On white cedar limbs.

G. biseptatum, Ell.

Living branches of white cedar.

Var. foliicolum, Farlow.

Living leaves of white cedar.

G. clavipes, C. & P.

Living branches of red cedar.

UROMYCES, Lev.

U. appendiculatus, Lev.

Leaves of *Phaseolus*.

U. Polygoni, Eckl.

Leaves of *Polygonum*.

U. Toxicodendri, B. & C.

Hudson: Weehawken—Gerard.

U. Spermacocis, Schw.

Gloucester: Leaves and stems of *Diodia teres*, Newfield—
Ellis. Hudson: Weehawken—Gerard.

U. Lespedezæ, Schw.

On *Lespedeza frutescens* and *L. violacea*. Gloucester: New-
field—Ellis. Hudson: Weehawken—Gerard.

U. Euphorbiæ, C. & P.

Leaves of *Euphorbia maculata*.

U. Howei, Pk.

Leaves of *Asclepias Syriaca*.*

U. Hyperici, Schw.

Leaves of *Hypericum*.

U. triquetra, Cke.

Hudson: Weehawken—Gerard.

U. Caladii, Schw.

Leaves of *Arisema triphyllum*.

COLEOSPORIUM, Lev.

C. Solidaginis (Schw.), Thum.

Leaves of different species of *Solidago*.

C. miniatum, Pers.

On rose leaves and stems.

MELAMPSORA, Cast.

M. Salicina, Lev.

On willow leaves. Union: Plainfield—G. F. Meschutt.

M. Populina, Lev.

On poplar leaves.

UREDIO, Lev.

U. luminata, Schw.

On *Rubus strigosus*.*U. *Asclepiadis* in Preliminary Catalogue.

- U. rimosa*, Lk.
 Morris: Hope—Schweinitz.
- U. Euphorbiæ*, E. Fr.
 Bergen: Fort Lee—Gerard.
- U. Vacciniorum*, DC.
 On leaves of *Vaccinium*.
- U. Potentillarum*, Lk.
 On *P. Canadensis*.
- U. Rosæ*, E. Fr.
 Hudson: Weehawken—Gerard.
- U. pyrolata*, Kornicke.
 Leaves of *Pyrola*.
- U. Cichoriacearum*, DC.
 Hudson: Weehawken—Gerard.
- U. Menthæ*, Pers.
 Same locality.
- U. ribicola*, C. & E.
 Same locality.

ÆCIDIACEÆ.

RÆSTELIA, Reb.

- R. cornuta*, Tul.
 Leaves of mountain ash, Northern New Jersey.
- R. lacerata*, Tul.
 Leaves of apple trees.
- R. transformans*, Ell.
 Leaves and fruit of *Pyrus arbutifolia*.
- R. aurantiaca*, Pk.
 On quince and *Crataegus parvifolia*.
- R. Botryapites*, Schw. (*R. Ellisii*, Pk.)
 Leaves of *Amelanchier*.*

**R. cancellata* of the Preliminary Catalogue has not been found in the State.

PERIDERMIIUM, Chev.

P. Fini, Chev.

On branches of *Pinus rigida*, and on small seedlings of *P. inops*.

P. cerebrum, Pk.

Branches of *Pinus rigida*.

ÆCIDIDIUM, Pers.

Æ. Euporbiæ, Pers.

On leaves of *Euphorbia maculata*.

Æ. Nesææ, Ger.

On *Nescea*.

Æ. Berberidis, Pers.

On leaves of *Berberis vulgaris*.

Æ. crassum, Pers.

On leaves and petioles of *Fraxinus*.

Æ. Ranunculacearum, DC.

On *Ranunculus* leaves.

Æ. Ranunculi, Schw.

On leaves of *R. abortivus*.

Æ. Compositarum, Mart.

On leaves of various plants of the order Compositæ.

Æ. Violæ, Schum.

Gloucester: Newfield—Ellis. Morris: Budd's Lake—E. A. Rau. Leaves of *Viola cucullata*.

Æ. myricatum, Schw.

Leaves of *Myrica cerifera*.

Æ. Caladii, Schw.

Leaves of *Arisæma triphyllum*.

Æ. Calthæ, Grev.

Morris: Budd's Lake—E. A. Rau.

COHORT V.—USTILAGINACEÆ.

USTILAGINEÆ.

USTILAGO, Pers.

†*U. segetum* (Bull.), Dittm.

On wheat and oats. Gloucester: Newfield—Ellis. Hudson:
Weehawken—Gerard.

U. Maydis, Oda.

On the ears of Indian corn. Gloucester: Newfield—Ellis.
Hudson: Weehawken—Gerard.

U. Junci, Schw.

On *Juncus effusus*.

U. utriculosa, Tul.

On inflorescence of *Polygonum*.

U. syntherismæ, Schw. (*U. Rabenhorstiana*, Kuhn.)

On *Panicum sanguinale*.

TUBERCINIA, Fr.

T. Scabies, Berk.

On potatoes.

UROCYSTIS, Rabh.

U. magica, Pass. (*U. cepulæ*, Frost.)

On onion bulbs.

†*U. carbo*, Tul., in Preliminary Catalogue.

Sub-Class 2.—ASCOMYCETES.**COHORT I.—GYMNOASCEÆ.****EXOASCEÆ.***** TAPHRINA, Tul.**

- T. Pruni**, Fekl.
On plums.
- T. deformans** (Berk.), Tul.
On peach leaves.
- T. purpurascens**, Robinson.
Leaves of *Rhus copallina*.
- T. Potentillæ** (Farlow), Johanson.
Leaves of *Potentilla Canadensis*.
- T. aurea** (Pers.), Fr.
Leaves of *Populus tremuloides*.
- T. cœrulescens** (Mont. & Desm.), Tul.
Leaves of *Quercus coccinea* and *Q. alba*.
- T. alnitorqua**, Tul.
On alder catkins. Morris: Parsippany—Trelease.

COHORT II.—PYRENOMYCETES.**PERISPORIACEÆ.****Series 1.—ERYSIPHEÆ.****SPHÆROTHECA, Lev.**

- S. Castagnei**, Lev.
On living leaves of Rosaceæ, Compositæ, etc.
- S. Mors-uvæ** (Schw.), B. & C.
On gooseberry leaves.

* *Ascomyces* in Preliminary Catalogue.

PODOSPHÆRA, Kunze.

- P. tridactyla** (Wallr.), De By. (*P. Kunzei*, Lev., in Prelim. Cat.)
On cherry leaves.

PHYLLACTINIA, Lev.

- P. suffulta** (Reb.), Sacc. (*P. guttata*, Lev., in Prelim. Cat.)
On various living leaves, *Corylus*, *Cornus*, etc.

UNCINULA, Lev.

- U. Ampelopsidis**, Pk. (*U. spiralis*, B. & C.)
On leaves of *Ampelopsis quinquefolia* and of *Vitis* (cult.)
- U. Salicis** (DC.), Winter. (*U. adunca*, Lev., in Prelim. Cat.)
On leaves of *Populus* and *Salix*.

MICROSPHÆRA, Lev.

- M. Vaccinii** (Schw.?), C. & P.
On leaves of *Vaccinium corymbosum*, *V. Pennsylvanicum*, etc.
- M. quercina** (Schw.), Burrill. (*M. extensa*, C. & P., in Prelim. Cat.)
On white oak leaves.
- M. Alni** (DC.), Winter. (*M. penicillata*, Lev., *M. pulchra*, C. & P.)
Living leaves of birch. On leaves of *Cornus*. Hudson:
Weehawken—Gerard.

ERYSIPHE, Hedw.

- E. Cichoracearum**, DC. (Including *E. lamprocarpa*, Lev., in Prelim. Cat.)
On leaves of *Phlox* and *Bidens*.
- E. communis** (Wallr.), Fr.
Hudson: Weehawken—Gerard.
- E. Martii**, Lev.
On pea vines.

Series 2.—PERISPORIEÆ.

EUROTIUM, Lk.

- E. herbariorum* (Wigg.), Lk.
On poorly-dried herbarium specimens.

MYRIOCÓCCUM, Fr.

- M. Everhartii*, Sacc. & Ell.
On rotten wood.
- M. consimile*, E. & E.
On basswood barrel bottom in a cellar.

APIOSPORIUM, Kunze.

- A. (?) erysiphoides*, Sacc. & Ell.
On bark of decaying *Magnolia*.

MELIOLA, Fr.

- M. nidulans* (Schw.), Cke.
Leaves of *Vaccinium corymbosum*.
- M. fenestrata*, C. & E.
On scales of pine cones.

CAPNODIUM, Mont.

- C. elongatum*, Berk. & Desm.
On various living leaves, peach, etc.
- C. australe*, Mont.
Leaves and branches of pine trees.

ASTERINA, Lev.

- A. nigerrima*, Ell.
(Not a good species.)
- A. Ilicis*, Ell.
Living leaves of *Ilex glabra*.

- A. (?) *Plantaginis*, Ell.
Living leaves of *Plantago major*.
- A. *Gaultheriæ*, Curtis.
On *Gaultheria procumbens*.
- A. *Pearsoni*, E. & E.
On blackberry canes.

MICROTHYRIUM, Desm.

- M. *Smilacis*, De Not.
Dead stems of *Smilax*.
- M. *Juniperi* (Desm.), Sacc.
Living leaves of *Juniperus Virginiana*.

HYPOCREACEÆ.

*CORDYCEPS, Fr.

- C. *militaris* (L.), Lk.
Dead chrysalides of "May bug" (?) buried in the ground in woods.
- C. *ophioglossoides* (Ehr.), Tul.
Parasitic on *Elaphomyces granulatus*. Rare.
- C. *clavulata*, Schw.
Grows on some large species of scale insects on the branches of *Clethra alnifolia*.
- C. *Sphingum* (Tul.), Sacc.
On dead larva (in cocoon).

EPICHLOE, Fr.

- E. *typhina* (Pers.), Fr.
Culms of living grasses. Not common.
- E. *Hypoxyton*, Pk.
Living leaves of *Panicum*. Rare.

* *Torrubia* in Preliminary Catalogue.

HYPOCREA, Fr.

- H. rufa* (Pers.), Fr.
On dead limbs of *Andromeda*.
- H. contorta* (Schw.), Fr.
On logs, bark and wood.
- H. consimilis*, Ell.
Dead limbs of *Azalea*.
- H. chlorospora*, B. & C.
On rotten wood.
- H. minima*, Sacc. & Ell.
On old cedar bark.
- H. armeniaca*, B. & C.
Same habitat.
- H. olivacea*, C. & E.
On decaying pine boards.
- H. citrinella*, Ell.
Dead limbs of *Vaccinium*.
- H. citrina* (Pers.), Fr.
Decayed wood.

HYPOMYCES, Fr.

- H. rosellus* (A. & S.), Tul.
Union: Decaying leaves, Plainfield—G. F. Meschutt.
- H. Geoglossi*, Ell.
On living *Geoglossum glabrum*.
- H. Lactifluorum*, Schw.
On some *Lactarius*. Newfield and Weehawken.
- H. aurantius* (Pers.), Fekl.
On old *Polyporus versicolor*.
- H. polyporinus*, Pk.
On old *Polyporus versicolor*.
- H. lateritius* (Fr.), Tul.
On *Lactarius*.

NECTRIA, Fr.

(1.) Sporidia continuous, asci many-spored.

N. cucurbitula, Curr.
Dead pine limbs.

(2.) Sporidia uniseptate, asci 8-spored.

N. cinnabarina (Tode), Fr.
Limbs of deciduous trees.

N. rubicarpa, Cke.
Dead trunks of *Magnolia*.

N. Celastri, Schw.
Dead stems of *Celastrus scandens*.

N. verrucosa, Schw.
Dead limbs of *Morus*.

N. coccinea (Pers.), Fr.
Dead trunks of *Magnolia*.

N. punicea (Kze.), Fr.
Dead stems of *Ilex glabra*.

N. aureofulva, C. & E.
Dead trunks of *Magnolia*.

(3.) Sporidia 6 to 10-septate.

N. aurigera, B. & Rav.
Dead limbs of *Chionanthus*.

N. fulvida, E. & E.
Decaying oak limbs.

DIALONECTRIA, Cke.

(1.) Sporidia continuous.

D. vulpina, Cke.
On rotten wood.

(2.) Sporidia uniseptate.

D. sanguinea (Sibth.), Fr.
Rotten wood.

- D. *Peziza* (Tode), Fr.
Hudson: Weehawken—Gerard.
- D. *Thujana*, Rehm.
Dead foliage of *Cupressus thyoides*.
- D. *truncata*, Ell.
Old bark of *Cupressus thyoides*.
- D. *depauperata*, Cke.
Dead *Leucothoë racemosa*.
- D. *squamulosa*, Ell.
Decaying wood.
- D. *Brassicæ*, Ell. & Sacc.
Dead cabbage stalk.
- D. *episphæria* (Tode), Fr.
On old *Hypoxylon*.
- (3.) Sporidia 2 to 5-septate.
- D. *chlorinella*, Cke.
Rotten wood.

LACIONECTRIA, Sacc.

- L. *lasioderma*, Ell.
On *Valsa lutescens*.

GIBBERELLA, Sacc.

- G. *pulicaris* (Fr.), Sacc.
Dead herbaceous stems.
- G. *Saubinetii* (Mont.), Sacc.
On rye straw.

ACROSPERMUM, Tode.

- A. *compressum*, Tode.
Fallen grape leaves.
- A. *viridulum*, B. & C.
Fallen pear leaves.

SPHÆRIACEÆ.*

Series 1.—CHÆTOMIÆ.

CHÆTOMIUM, Kunze.

- C. elatum*, Kze.
On straw.
- C. pusillum*, E. & E.
On basswood barrel bottom.
- C. sphærospermum*, C. & E.
Basswood barrel bottom.
- C. olivaceum*, C. & E.
Decaying stems of *Erigeron*.
- C. Kunzeanum*, Zopf. (*C. chartarum* in Prelim. Cat.)
On exposed paper.

Series 2.—SORDARIÆ.

SORDARIA, Ces. & De Not.

- S. ampicornis*, Ell.
On rabbit dung.
- S. coprophila*, De Not.
On cow dung.
- S. humana*, Fekl.
On human ordure.
- S. lutea*, E. & E.
Rotten wood.
- S. lignicola*, Fekl.
Same habitat.
- SPORORMIA, De Not.
- S. minima*, Awd.
On cow dung.
- S. intermedia*, Awd.
Same habitat.

*The species included under *Sphæria* in the Preliminary Catalogue, have been distributed among the different genera of SPHÆRIACEÆ, but may be recognized by their specific names, which remain unchanged.

Series 3.—TRICHOSPHERIÆ.

BYSSOSPHERIA, Cke.

- B. luteobasis*, Ell.
On decaying oak.
- B. solaris*, C. & E.
Rotten wood.
- B. aquila* (Fr.), Cke.
Dead limbs of oak, etc.
- B. subiculata* (Schw.), Cke.
Rotten maple.

LASIOSPHERIA, Ces. & De Not.

- L. hirsuta*, Fr.
On rotten wood.
- L. canescens* (Pers.), Karst.
Rotten wood.
- L. ovina* (Pers.), Ces. & De Not.
Rotten wood.
- L. pezizula*, B. & C.
Rotten oak and maple.
- L. Scopula*, C. & P.
On old pine boards and wood.

CHÆTOSPHERIA, Tul.

- C. atrobarba*, C. & E.
On decorticated oak stumps.
- C. Clavariarum* (Desm.), Masee.
On *Clavaria cristata*.

VENTURIA, De Not.

- V. barbula*, B. & Br., *var. foliicola*, Ell.
On dead leaves of pine.
- V. Gaultheriæ*, E. & E.
Living leaves of *Gaultheria*.

- V. *cupressina*, Rehm.
Dead foliage of *Cupressus thyoides*.
- V. *ditricha*, Fr.
On fallen leaves of *Betula*.
- V. *Kalmiæ*, Pk.
On partly dead leaves of *Kalmia glauca*.
- V. *pulchella*, C. & P.
Fading leaves of *Cassandra calyculata*.
- V. *pezizoidea*, S. & E.
Fallen leaves of *Leucothoë racemosa*.
- V. *orbicula* (Sz.), C. & P.
White oak leaves.

Series 4.—MELANOMMEÆ.

ROSELLINIA, Ces. & De Not.

- R. *aerata* (C. & E.), Sacc.
Wood of red cedar.
- R. *millegrana* (Schw.), Sacc.
Decorticated oak.
- R. *arctæspora* (C. & E.), Sacc.
Dead wood of *Andromeda*.
- R. *xylariæspora* (C. & E.), Sacc.
Same habitat.
- R. *ligniaria* (Grev.), Nits.
Decorticated limbs.
- R. *abietina*, Fekl., var. *trichota*, C. & E.
Pine limbs.
- R. *mammiformis* (Pers.), Ces. & De Not.
Rotten wood.

MELANOMMA, Fekl.

- M. *fuscidulum*, Sacc.
Decorticated oak roots.

MELANOPSAMMA, Niessl.**M. graopsis, Ell.**

Decorticated pine poles.

M. melanostigma (C. & E.), Ell.

Oak limbs.

Series 5.—CERATOSTOMEÆ.**CERATOSTOMA, Fr.**(1.) *Sporidia colored.***C. fallax, Cke. & Sacc.**

On pine wood recently cut.

C. subulatum, Ell.Dead stems of *Enothera*.**C. carpophilum, Ell.**

Old chestnut burrs.

C. avocetta, C. & E.

Rotten wood.

C. caminata, C. & E.

On decorticated maple.

(2.) *Sporidia hyaline (Ceratostomella, Sacc.)***C. albocoronata, Ell.**

On rotten wood.

C. capillare, Ell.

Decayed catkins of alder.

C. cirrhosa (Pers.), Sacc.

Rotten oak logs.

C. barbirostris (Dufour), Sacc.

Cast-off maple bark.

HYPSTHECA, E. & E.***H. subcorticalis (C. & E.), E. & E.**

Loosened bark of oak.

H. thujina, E. & E.

Dead foliage of white cedar.

* *Sphaeronema subcorticalis* in Preliminary Catalogue.

Series 6.—**AMPHISPHERIÆ.**

AMPHISPHERIA, Ces. & De Not.

- A. bispherica** (C. & E.), Sacc.
Dead apple tree limbs.
- A. atrograna** (C. & E.), Sacc.
Decorticated *Liquidambar*.

TREMATOSPHERIA, Fekl.

- T. pertusa** (Pers.), Fekl.
Old oak stump.

WINTERIA, Rehm.

- W. crustosa**, E. & E.
Decorticated wood.
- W. rhoïna**, E. & E.
Dead *Rhus copallina*.

CARYOSPORA, De Not.

- C. putaminum** (Schw.), De Not.
On peach pits.

OHLERIA, Fekl.

- O. rugulosa**, Fekl.
Old oak stumps.
- O. modesta**, Fekl.
Same habitat.

ZIGNOELLA, Sacc.

- Z. albocincta** (C. & E.), Sacc.
Decaying pine wood.
- Z. pæcilostoma** (B. & Br.), Sacc.
On dead *Vaccinium corymbosum*.
- Z. funicola** (Ell.), Sacc.
On old cotton cord.

- Z. diaphana* (C. & E.), Sacc.
Bleached wood of pine and oak.
- Z. atriella* (C. & E.), Sacc.
Rotten *Kalmia*.
- Z. cariosa* (C. & E.), Sacc.
Rotten wood and bark.
- Z. Eckfeldtii* (Ell.), Sacc.
Decorticated chestnut.
- Z. inflata* (Ell.), Sacc.
Old oak wood.
- Z. soluta* (C. & E.), Sacc.
Old pine boards.
- Z. subvestita*, E. & E.
Dry, bleached roots of *Vaccinium*.

STRICKERIA, Korb.

- S. Kochii*, Korb. (*Teichospora pezizoides*, S. & S.)
Bark of living *Robinia*.
- S. obducens* (Fr.), Winter.
Decorticated limbs.
- S. vetusta*, Ell.
Dead place in a living maple.

Series 7.—LOPHIOSTOMEÆ.**LOPHIOSTOMA, De Not.**

(1.) Sporidia pluriseptate, brown.

- L. subcollapsum*, E. & E.
Bark of living *Nyssa*.
- L. scelestum*, C. & E.
Decorticated oak and maple wood.
- L. caulium* (Fr.), Ces. & De Not.
Dead clover stems.

(2.) Sporidia pluriseptate hyaline.

- L. *sexnucleatum*, Cke.
Bark of grape vines.

(3.) Sporidia muriform.

- L. *tingens*, Ell.
Decorticated maple.
- L. *minus*, Ell.
Dead limbs of *Nyssa*.
- L. *fenestræ*, C. & E.
Wood of *Morus*.

(4.) Sporidia filiform.

- L. *vermisporum*, Ell.
Dead stems of *Enothera*.

Series 8.—CUCURBITARIÆ.

CUCURBITARIA, S. F. Gray.

- C. *elongata* (Fr.), Grev.
On dead locust.
- C. *Berberidis* (Pers.), S. F. Gray.
On dead barberry.
- C. *Comptoniæ*, C. & E.
On dead stems of *Comptonia*.
- C. *Coremæ*, E. & E.
On dead *Hudsonia*.

Series 9.—SPHÆRELLOIDÆ.

SPHÆRELLA, De Not.

(1.) Sporidia uniseptate.

- S. *subcongregata*, E. & E.
Dead stems of *Erigeron*.
- S. *smilacina*, E. & E.
Dead stems of *Smilax*.
- S. *granulata*, E. & E.
Dead stems of *Baptisia tinctoria*.

- S. baptisiæcola**, Cke.
With the preceding.
- S. colorata**, Pk.
Living leaves of *Kalmia angustifolia*.
- S. maculæformis** (Pers.), Awd.
Fallen oak leaves.
- S. punctiformis** (Pers.), Rabh.
Same habitat.
- S. sentina** (Fr.), Sacc.
Fallen pear and apple leaves.
- S. cinerascens**, Fckl.
Fallen cherry leaves.
- S. petiolicola** (Desm.), Awd.
Petioles of *Robinia*.
- S. Sarraceniæ** (Schw.), Ell.
Dead leaves of *Sarracenia*.
- S. nyssæcola**, Cke.
Fallen leaves of *Nyssa*.
- S. Gaultheriæ**, C. & E.
Living leaves of *Gaultheria*.
- S. Muhlenbergiæ**, Ell.
Dead leaves of *Muhlenbergia*.
- S. Ilicis**, Ell.
Living leaves of *Ilex glabra*.
- S. hypericina**, Ell.
Fallen leaves of *Hypericum*.
- S. pardalota**, C. & E.
Fallen leaves of *Myrica*.
- S. polystigma**, E. & E.
Fallen oak leaves.
- S. Platani**, E. & M.
Living leaves of *Platanus*.
- S. Lactucæ**, E. & K.
Living leaves of *L. Canadensis*.

S. Thalictri, E. & E.

Living leaves of *Thalictrum*.

(2.) *Sporidia* continuous (*Læstadia*, Sacc.)

S. echinophila (Schw.), Cke.

Chestnut burrs.

S. Magnoliæ, Ell.

Fallen *Magnolia* leaves.*

S. verbascicola (Schw.), Cke. (?)

On dead mullein stalks.

S. Bidwellii, Ell.

On dried-up grapes.

S. Kalmiarum (Schw.), Cke.

Fallen leaves of *Kalmia*.

S. Andromedæ (Schw.), Cke.

Fallen leaves of *Andromeda*.

(3.) *Sporidia* cylindrical, 3-pluriseptate (*Sphærulina*, Sacc.)

S. myriadea (DC.), Cke.

Fallen oak leaves.

DIDYMELLA, Sacc.

D. castanella (C. & E.), Sacc.

Dead chestnut limbs.

D. Rauii, E. & E.

Dead twigs of *Rosa*.

D. lophospora, S. & S.

Various dead herbaceous stems.

D. subexserta, C. & E.

Dead stems of *Lactuca Canadensis*.

Series 10.—PLEOSPOREÆ.

PHYSALOSPORA, Niessl.

P. oxystoma, Sacc. & Ell.

Dead culms of *Phleum pratense*.

* Specimens of *Spheria Magnoliæ*, Schw., in herb. Schw., are different.

- P. pinicola*, E. & E.
Decaying pine limbs.
- P. Orontii*, E. & E.
Leaves of *Orontium*.
- P. quercifolia*, E. & E.
Dead leaves of *Quercus coccinea*.

PLEOSPORA, Rabh.

- P. herbarum* (Pers.), Rabh.
Dead herbaceous stems.
- P. denotata* (C. & E.), Sacc.
Dead clover stems.
- P. rubicunda*, Niessl.
Old corn stalks.
- P. calvescens*, Tul.
Dead stems of *Chenopodium*.
- P. ambleia* (C. & E.), Ell.
Decorticated limbs.
- P. antiqua*, E. & E.
Outer bark of grape vines.

PYRENOPHORA, Fr.

- P. trichostoma*, Fr.
On decaying straw.

DIDYMOSPHERIA, Fekl.

- D. cupula* (Ell.), Sacc.
Fallen oak leaves.
- D. adelphica* (Cke.), Sacc.
Dead stems of *Phytolacca*.
- D. aquatica*, E. & E.
Bottom of cedar water-bucket.

KALMUSIA, Niessl.

K. pachyascus (C. & E.), Sacc.

Oak barrel staves.

K. surrecta (Cke.), Sacc.

Poplar board.

LEPTOSPHERIA, Ces. & De Not.

(1.) Sporidia colored.

L. doliolum (Pers.), De Not.

Dead herbaceous stems.

L. planiuscula (Riess.), Ces. & De Not. (*Sphæria Virginica*, C. & E., in Prelim. Cat.)

Dead stems of *Lepidium*.

L. clavigera (C. & E.), Sacc.

Dead stems of *Phytolacca*.

L. culmifraga (Fr.), Ces. & De Not.

Dead culms of grasses.

L. Ogilviensis (B. & Br.), Sacc.

Dead stems of *Erigeron* and *Aster*.

L. orthogramma (B. & C.), Sacc.

Old corn stalks.

L. latebrosa, Ell.

Basal sheaths of old *Andropogon*.

L. Bocconiæ (C. & E.), Sacc.

Dead stems of *Bocconia* (cult.)

L. Tephrosiæ (C. & E.), Sacc.

Dead stems of *Tephrosia Virginiana*.

L. comatella (C. & E.), Sacc.

Dead stems of *Asparagus*, etc.

L. distributa (C. & E.), Sacc.

Dead stems of *Desmodium*.

L. consessa (C. & E.), Sacc.

Dead stems of *Helianthus tuberosus*.

L. dumetorum, Niessl.

Dead branches of *Lonicera*.

- L. discors*, Sacc. & Ell.
Dead culms of *Spartina* lying on the beach.
- L. sticta*, Ell. & Everhart.
Same habitat.
- L. marina*, Ell. & Everhart.
Same habitat.
- L. Spartinae*, Ell. & Everhart.
Same habitat.
- L. Xerophylli*, Ell.
Dead leaves of *Xerophyllum*.

(2.) *Sporidia hyaline* (*Metasphaeria*, Sacc.)

- L. dissiliens* (C. & E.), Ell.
Dead stems of *Desmodium*.
- L. hyalospora*, Sacc.
Old corn stalks.
- L. defodiens*, Ell.
Dead *Juncus effusus*.
- L. boucera* (C. & E.), Ell.
Dead herbaceous stems.
- L. sublanosa* (Cke.), Ell.
Decorticated *Andromeda*.
- L. aulica* (C. & E.), Ell.
On dead stems of *Solidago* and *Lonicera*.
- L. leiostega*, Ell.
Various dead twigs and limbs.
- L. subcutanea* (C. & E.), Ell.
Decorticated pear limbs.
- L. squamata* (C. & E.), Ell.
Bark of dead pine limbs.

OPHIOBOLUS, Sacc.

- O. porphyrogonus* (Tode), Sacc. (*Sphaeria rubella* in Prelim. Cat.)
On old tomato vines.

CRYPTOSPHERIA, Grev.

- C. vexata**, (C. & E.), Sacc.
Dead limbs of *Vaccinium*.
- C. secreta** (C. & E.), Sacc.
Dead limbs of *Viburnum*.
- C. fissicula**, C. & E.
Dead stems of rose.

PHYSALOSPORA, Niessl.

- P. phomopsis** (C. & E.), Sacc.
Dead stems of *Desmodium*.
- P. Ilicis** (Schleich.), Sacc.
Fallen leaves of *Ilex opaca*.
- P. Catarisæ** (C. & E.), Sacc.
Dead stems of *Nepeta Cataria*.

Series II.—MASSARIEÆ.

MASSARIA, De Not.

- M. inquinans**, Fr.
Dead (oak?) limbs.
- M. vomitoria**, B. & C.
Dead maple limbs.
- M. epileuca**, B. & C.
Dead mulberry limbs.
- M. bufonia**, Tul.
Outer bark of living white oaks.

MASSARIOVALSA, Sacc.

- M. sudans**, B. & C.
Bark of dead maple.

Series 12.—CLYPEOSPHÆRIÆ.

CLYPEOSPHÆRIA, Fckl.

- C. *Hendersonia* (Ell.), Sacc.
Dead red raspberry canes.
- C. *aliquanta* (C. & E.), Sacc.
Dead stems of *Smilax*.

ANTHOSTOMELLA, Sacc.

- A. *picacea* (C. & E.), Sacc.
Decorticated maple limbs.
- A. *sepebilis* (B. & C.), Sacc.
Dead stems of *Smilax*.
- A. *ostiolata*, E. & E.
Dead limbs of *Lindera Benzoin*.

Series 13.—GNOMONIÆ.

GNOMONIA, Ces. & De Not.

(1.) Sporidia 1-septate (*Eugnomonia*).

- G. *Myricæ*, C. & E.
Fallen leaves of *Myrica*.
- G. *setacea* (Pers.), Ces. & De Not.
Fallen oak leaves.
- G. *clavulata*, Ell.
Fallen black oak leaves.

(2.) Sporidia continuous (*Gnomoniella*, Sacc.)

- G. *Sassafras*, Ell.
Fallen leaves of *Sassafras*.

OPHIOCERAS, Sacc.

- O. *bacillatum* (Cke.), Sacc.
- O. *longisporum* (Ell.), Sacc.

Series 14.—VALSEÆ.

VALSA, Fr.

(1.) Sporidia allantoid, hyaline.

Sub-Genus.—EUTYPELLA.

- V. *stellulata*, Fr.
On dead limbs of deciduous trees.
- V. *ventricosa*, C. & E.
On dead limbs of *Ailanthus*.
- V. *goniostoma*, Schw.
On dead *Rhus*.
- V. *Platani*, Schw.
On dead *Platanus*.
- V. *rugiella*, C. & E.
Bark of dead maple.
- V. *tetraploa*, B. & C.
Bark of dead cherry.
- V. *juglandina*, C. & E.
On *Juglans regia*.
- V. *venusta*, Ell.
On *Robinia pseudacacia*.
- V. *lutescens*, Ell.
On *Quercus coccinea*.
- V. *Vitis*, Schw.
On grape vines.
- V. *rufescens*, Schw. (*V. rhoiphila* in Prelim. Cat.)
On *Rhus*.

Sub-Genus.—LEUCOSTOMA.

- V. *nivea* (Hoff.), Fr.
Bark of *Populus*.
- V. *subclypeata*, C. & P.
On *Rubus* and *Sassafras*.
- V. *leucostoma* (Pers.), Fr.
On dead peach limbs.

- V. Colliculus (Wormsk.), Cke.
On *Pinus Strobus*.
- V. caryigena, B. & C.
On *Hicoria*.
- V. chlorodisca, C. & E.
On dead limbs of *Hicoria*.
- V. leiphæmioides, B. & C.
White oak limbs.

Sub-Genus.—EUVALSA.

Microspore: sporidia scarcely over .008 mm. long.

- V. ceratophora, Tul.
Dead limbs of deciduous trees.
- V. cenisia, De Not.
Dead limbs of red cedar.
- V. Abietis, Fr.
Pine and red cedar limbs.
- V. subcuticularis, C. & E.
On dead limbs of *Ilex opaca*.
- V. pulchelloidea, C. & E.
Bark of *Quercus*.
- V. parasitica, C. & E.
On old *Massaria sudans*.
- V. delicatula, C. & E.
On *Andromeda* and *Vaccinium*.
- V. glandulosa, Cke.
On *Ailanthus*.
- V. Macluræ, C. & E.
On *Machura aurantiaca*.
- V. rimiricola, Schw.
On *Myrica asplenifolia*.

Mesospore: sporidia .008 to .012 mm. long

- V. multiplex, C. & E.
Bark of oak wood.

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- V. *Liquidambaris*, Schw.
On *Liquidambar*.
- V. *decidua*, C. & E.
On *Azalea*.
- V. *Americana*, B. & C.
On alder and other trees.
- V. *Myricæ*, C. & E.
On *Myrica cerifera*.
- V. *excorians*, C. & E.
On dead *Pyrus arbutifolia*.
- V. *lasiostoma*, Ell.
Dead white oak limbs.

Macrospore: sporidia over .012 mm. long.

- V. *conscripta*, C. & E.
On *Myrica asplenifolia*.
- V. *clausa*, C. & E.
On oak bark.
- V. *ambiens* (Pers.), Fr.
On apple, *Nyssa*, etc.
- V. *salicina* (Pers.), Fr.
On *Salix*.
- V. *obtecta*, C. & E.
On *Clethra alnifolia*.
- V. *pauperata*, C. & E.
Bark of *Acer rubrum*.
- V. *laurina*, C. & E.
On *Sassafras*.
- V. *ligustrina*, Cke.
Dead *Andromeda ligustrina*.

Sub-Genus.—QUATERNARIA

- V. *quaternata* (Pers.), Cke.
On *Acer rubrum*.

Sub-Genus.—CALOSPHERIA.

- V. pulchella (Pers.), Fr.
On dead peach limbs.
- V. microtheca, C. & E.
On dead limbs of *Andromeda*.

(2) Sporidia ovate, fusoid or rod-shaped.

Sub-Genus.—CRYPTOSPORELLA.

- V. albofusca, C. & E.
On *Quercus minor*.
- V. Ampelopsidis, Ell.
On *Vitis quinquefolia*.
- V. farinosa, Ell.
Dead white oak sprouts.
- V. phomaspora, C. & E.
On dead *Myrica cerifera*.

Sub-Genus.—CRYPTOSPORA.

- V. corylina, Tul.
On dead limbs of *Corylus*.
- V. cinctula, C. & P.
Dead limbs of *Castanea*.

(3) Sporidia one or more septate.

Sub-Genus.—CHOROSTATE.

- V. oxyspora, Pk.
Dead limbs of birch. Union: Plainfield—Meschutt.
- V. myinda, C. & E.
On *Acer rubrum*.
- V. personata, C. & E.
On *Robinia pseudacacia*.
- V. sociata, C. & E.
On *Lindera Benzoin*.

- V. leiphæmia, Fr.
 On white oak limbs.
- V. ocularia, C. & E.
 On *Ilex glabra*.
- V. paulula, C. & E.
 On limbs of *Nyssa*.
- V. tuberculosa, Ell.
 On *Amelanchier Canadensis*.
- V. corymbosa, C. & E.
 On *Vaccinium corymbosum*.
- V. binocularata, Ell.
 On *Magnolia*.
- V. Comptoniæ, Schw.
 On *Myrica asplenifolia*.
- V. cercophora, Ell.
 On *Ilex glabra*.
- V. thelebola, Fr.
 On dead alder.
- V. luteola, Fr.
 On white oak limbs.
- V. obscura, Pk.
 On red raspberry canes.
- V. personata, C. & E.
 Dead *Robinia*.

Sub-Genus.—CALOSPORA.

- V. aculeans, (Schw.), Cke.
 On *Rhus copallina* and *R. venenata*.
- V. inconspicua, C. & E.
 On dead alder.
- V. Pennsylvanica, B. & C.
 On dead cherry limbs.

DIAPORTHE, Nitschke.

- D. cryptica*, Nits.
On dead branches of *Lonicera*.
- D. aculeata* (Schw.), Sacc.
Dead stems of *Phytolacca*.
- D. orthoceras* (Fr.), Sacc.
Dead stems of wormwood.
- D. euspina*, C. & E.
Dead stems of *Chenopodium*.
- D. apiculosa*, Ell.
Dead stems of *Erigeron*.
- D. incrustans*, Nits.
Same habitat.
- D. Asclepiadis*, E. & E.
Dead stems of *Asclepias*.
- D. mucronulata*, Sacc.
Dead stems of *Solidago*.
- D. Desmazierii*, Niessl.
Dead stems of *Brunella vulgaris*.
- D. Phaseolorum*, C. & E.
Old bean vines.
- D. discrepans*, Sacc.
Dead stems of *Rumex acetosella*.
- D. biglobosa* (C. & E.), Sacc.
Dead limbs of *Sassafras*.
- D. salviæcola*, C. & E.
Dead stems of *Salvia officinalis*.
- D. tumulata*, C. & E.
Decaying limbs of *Corylus*.
- D. gallophila*, Ell.
Dead canes of *Rubus villosus*.
- D. Desmodii*, Pk.
Dead stems of *Desmodium*.
- D. densissima*, Ell.
Dead shoots of *Quercus coccinea*.

EUTYPA, Tul.

E. lata (Pers.), Tul.

Dead oak limbs.

E. Acharii, Tul.

On old oak wood.

E. spinosa (Pers.), Tul.

Decaying wood of maple.

E. leioplaca (Fr.), Cke.

Decorticated limbs. Morris: Hope—Schweinitz. Gloucester:
Newfield—Ellis.

E. ludibunda, Sacc.

Dead branches of *Genista*. (?)

E. velutina, Sacc.

Dead standing trunk of oak.

E. subtecta (Fr.), Fckl.

Bark of willow log.

ENDOXYLA, Fckl.

E. parallela (Fr.), Fckl.

On decaying pine.

MELANCONIS, Tul.

M. modonia, Tul.

Dead limbs of chestnut.

M. Meschuttii, E. & E.

Dead limbs of birch. Union: Plainfield—Meschutt.

M. biansata, E. & E.

With the preceding.

PSEUDOVALSA, De Not.

P. profusa (Fr.), De Not.

On dead locust trees.

P. sigmoidea, C. & E.

Dead oak limbs.

CRYPTOSPORA, Tul.

C. *Betulæ*, Tul.

Dead limbs of birch. Union: Plainfield—Meschutt.

Series 15.—DIATRYPEÆ.

DIATRYPE, Fr.

D. *platystoma* (Schw.), Berk.

Dead maple limbs.

D. *stigma* (Hoff.), Fr.Dead oak, hickory, *Magnolia* and *Sassafras* limbs.D. *tremellophora*, Ell. (*D. disciformis*, Hoff., in Prelim. Cat.)On dead trunks of *Magnolia*.D. *albopruinosa* (Schw.), Cke.

On dead oak limbs.

D. *Duriæi*, Mont.Dead limbs of *Nyssa*.D. *hystrix* (Tode), Fr.

Dead limbs of maple.

D. *fbrictata*, C. & E.

On dead red cedar.

D. *anomala*, Pk.

Dead limbs of hazel.

D. *grandinea*, B. & Rav.

Bark of dead scarlet oak.

D. *minima*, Ell. & Everhart.Dead shoots of *Magnolia*.D. *megastoma*, E. & E.

Dead trunks of alder.

DIATRYPELLA, Ces. & De Not.

D. *quercina* (Pers.), Nits.

Dead oak limbs.

D. *verrucæformis* (Ehr.), Nits.

Dead alder limbs.

- D. favacea** (Fr.), Ces. & De Not.
Dead birch limbs. Union: Plainfield—Meschutt.
- D. olivacea**, C. & E.
Dead Pepperidge.
- D. irregularis**, C. & E.
Dead pear limbs.
- D. Cephalanthi** (Schw.), Sacc.
On dead *Cephalanthus*.
- D. prominens**, Howe.
Bark of dead *Platanus*.
- D. Comptoniæ**, E. & E.
Dead stems of *Myrica asplenifolia*.

Series 16.—MELOGRAMMEÆ.

MELOGRAMMA, Tul.

- M. fuliginosum** (M. & N.), Ell.
On dead *Quercus*, *Vaccinium*, *Vitis*, *Juniperus*, *Rubus*, *Lonicera*,
Rosa, *Rhus*, *Prunus*, *Acer*, *Juglans*, *Hicoria*, *Azalea*, *Sassafras*,
Andromeda, *Pyrus* and on various other kinds of wood; common.

VALSARIA, De Not.

- V. insitiva** (Tode), Ces. & De Not.
On dead limbs of hickory.
- V. cineta** (Curr.), Sacc.
On dead limbs of red oak.
- V. æthiops** (C. & E.), Sacc.
On dead limbs of *Morus*.
- V. clethræcola** (C. & E.), Sacc.
On dead limbs of *Clethra*.
- V. apatosa** (C. & E.), Sacc.
On dead limbs of *Nyssa*.
- V. nigrofacta** (C. & E.), Sacc.
On dead limbs of *Sassafras*.

- V. *moroides* (C. & P.), Sacc.
On dead limbs of alder.
- V. *Peckii* (Howe), Sacc.
On dead *Kalmia latifolia*.
- V. *quadrata* (Schw.), Sacc.
Bark of cherry, oak and maple.

Series 17.—XYLARIÆ.

XYLARIA, Fr.

- X. *corniformis*, Fr.
On dead *Magnolia*. *Sphaeria flabelliformis*, Schw., is an abnormal state of this species.
- X. *Hypoxyton* (L.), Grev.
Dead wood and limbs, old railway ties, etc.
- X. *fliformis* (A. & S.), Fr.
Decaying leaves of *Magnolia*.
- X. *subterranea* (Schw.), Sacc.
New Jersey—Schweinitz.

USTULINA, Tul.

- U. *vulgaris*, Tul.
On old stumps and logs.

NUMMULARIA, Tul.

- N. *Bulliardii*, Tul.
Dead standing trunks of oak.
- N. *discreta* (Schw.), Tul.
Bark of dead apple trees.
- N. *hypophœa* (B. & Rav.), Cke.
On dead trunks of *Magnolia*.
- N. *microplaca* (B. & Rav.), Cke.
On dead *Sassafras*.

DALDINIA, Ces. & De Not.

- D. concentrica* (Bolt.), Ces. & De Not.
Dead shrubs and limbs.
- D. vernicosa* (Schw.), Ces. & De Not.
Dead white oak.

HYPOXYLON, Bull.

- H. coccineum*, Bull.
Dead beech bark, Northern New Jersey—E. A. Rau.
- H. Howeanum*, Pk.
Dead oak shrubs.
- H. marginatum* (Schw.), Berk.
Dead oak limbs.
- H. annulatum* (Schw.), Mont.
Same habitat.
- H. rubiginosum* (Pers.), Fr.
Decaying oak limbs and wood.
- H. perforatum* (Schw.), Fr.
Dead oak shrubs.
- H. fuscum* (Pers.), Fr.
Dead alders.
- H. atropunctatum* (Schw.), Cke.
Dead oaks. Northern New Jersey. (?)
- H. punctulatum*, B. & Rav.
Dead oak trunks and limbs.
- H. cohærans* (Pers.), Fr.
Bark of beech. Hudson: Weehawken—Gerard.
- H. epiphloeum*, B. & C.
Dead *Magnolia*.
- H. multiforme*, Fr.
On birch. Passaic:—E. A. Rau.
- H. serpens* (Pers.), Fr.
On rotten maple.

DOTHIDEACEÆ.

PHYLLACHORA, Fekl.

- P. Ulmi** (Duv.), Fekl.
Living elm leaves.
- P. Trifolii** (Pers.), Fekl.
Living leaves of *Trifolium*.
- P. Lespedezæ** (Schw.), Sacc.
Living leaves of *Lespedeza*.
- P. graminis** (Pers.), Fekl.
On living grasses.
- P. Pteridis** (Reb.), Fekl.
Fronds of *Pteris aquilina*.
- P. flabella** (Schw.), Thüm.
Same habitat.
- P. Junci** (Fr.), Fekl.
Living culms of *Juncus effusus*.
- P. Solidaginis** (Schw.), Sacc.
Living leaves of *Solidago*.
- P. fructigena** (Schw.), Sacc.
Camden: Decayed apples, near Camden—Schweinitz.
- P. Muhlenbergiæ** (Ell.), Sacc.
Dead culms of *Muhlenbergia*.
- P. Aristidæ** (Schw.), Sacc.
Dead culms of *Aristida*.

EURYACHORA, Fekl.

- E. Heliopsidis** (Schw.), Cke.
Dead stems of *Helianthus*.

DOTHIDEA, Fr.

- D. moricola**, C. & E.
Dead limbs of *Morus*.
- D. ribesia** (Pers.), Fr.
Dead currant bushes.

D. tetraspora, B. & Br.

On *Maclura* and *Lonicera* dead branches.

D. smilacicola, Ck. & Ger.

Dead stems of *Smilax*.

D. excavata, C. & E.

Dead branches of *Magnolia*.

PLOWRIGHTIA, Sacc.

P. morbosa (Schw.), Sacc.

Limbs of cherry and plum trees.

TUBERACEÆ.

ELAPHOMYCES, Nees.

E. muricatus, Fr. (*E. granulatus*, Fr., in Prelim. Cat.)

Dry soil in open oak woods.

COHORT III.—DISCOMYCETES.

HYSTERIACEÆ.

HYSTERIUM, Tode.

H. subrugosum, C. & E.

Old oak stumps.

H. pulicare, Pers.

Dead oak bark.

H. Rousselii, De Not.

Decaying and exposed wood.

H. australe, Duby.

Hudson: Weehawken—Gerard.

H. complanatum, Duby.

Exposed oak wood.

GLONIUM, Schw.

- G. lineare (Fr.), De Not.
Decorticated limbs and wood.
- G. parvulum, Ger.
Old dry oak wood.
- G. simulans, Ger.
On exposed wood.
- G. stellatum, Muhl.
Rotten logs.

ANGELINA, Duby.

- A. rufescens (Schw.), Duby.
Decaying oak stumps.

LOPHODERMIIUM, Chev.

- L. maculare (Fr.), De Not.
Fallen leaves of deciduous trees.
- L. pinastri (Schrad.), Chev.
Fallen pine leaves.
- L. exaridum, C. & P.
Dried-up leaves of *Kalmia*.
- L. arundinaceum (Schrad.), Chev.
On sheaths of dead *Phleum pratense*.

HYPODERMA, DC.

- H. virgultorum, DC.
Dead stems and branches of shrubs.
- H. commune (Fr.), Duby.
Dead herbaceous stems.

AILOGRAPHUM, Lib.

- A. vagum, Desm.
On fallen leaves.
- A. culmigenum, Ell.
Dead sheaths of *Andropogon*.

- H. *Smilacis*, Schw.
Dead stems of *Smilax*.
- H. *Cookeanum*, Ger.
Bark of dead oak and hickory limbs.
- *H. *vulvatum*, Schw.
Decorticated oak and maple limbs, also on bark.
- H. *Gerardi*, C. & P.
Exposed oak wood, limbs, etc.
- H. *viticolum*, C. & P.
Dead shoots of grape vines.
- H. *hyalinum*, C. & P.
Decaying wood.
- † H. *Prostii*, Duby.
Cast-off maple bark.
- H. *Mori*, Schw.
Dead limbs of *Morus*.
- H. *Nova-Cæsariense*, Ell.
Outer bark of living pines.
- H. *gloniopsis*, Ger.
Decaying wood.

SPOROMEGA, Cda.

- S. *degenerans* (Fr.), Cda.
Rotten *Vaccinium*.
- S. *cladophila* (Lev.), Duby.
Twigs of *Vaccinium*.
- S. *grisea* (Schw.), Cke.
Dead stems of *Smilax*.

LOPHIUM, Fr.

- L. *fusisporum*, Cke. (*L. mytilenum*, Fr., in Prelim. Cat.)
On pine wood.

* Replaces *H. flexuosum* of the Preliminary Catalogue.

† Replaces *H. ellipticum* of the Preliminary Catalogue.

DICHÆNA, Fr.

D. quercina (Pers.), Fr.

Living branches of white oak.

D. strumosa, Fr.

Living branches of oak (*Q. coccinea*).

ELVELLACEÆ.

Series 1.—ELVELLEÆ.

MORCHELLA, Dill.

M. esculenta (L.), Pers.

Ground, in open places.

HELVELLA, L.

H. lacunosa, Afz.

Vegetable mold in open woods.

MITRULA, Fr.

M. paludosa, Fr.

Decaying limbs or other vegetable material lying partly in the water.

LEOTIA, Hill.

L. lubrica (Scop.), Pers.

Sandy soil in woods.

VIBRISSEA, Fr.

V. truncorum (A. & S.), Fr.

Decaying limbs, twigs and petioles lying partly in the water.

GEOGLOSSUM, Pers.

G. glabrum, Pers.

Ground, among moss, in low woods.

G. hirsutum, Pers.

With the preceding species.

G. rufum, Schw.

Morris: Hope—Schweinitz. Gloucester: Newfield—Ellis.

G. luteum, Pk.

Ground, in wet woods.

PEZIZACEÆ.

Series 1.—PEZIZÆ.

PEZIZA, L.

Sub-Genus.—ALEURIA.

P. acetabulum, L.

Ground, around stumps.

P. badia, Pers.

New Jersey—Schweinitz.

P. repanda, Wahl.

Decaying wood.

P. vesciculosa, Bull.

Manure heaps.

P. macropus, Pers.

Bare soil in open woods.

P. cerea, Sow.

Among rubbish in yards.

P. nebulosa, Cke.

Rotten wood.

P. granulata, Bull.

On manure.

P. constellatio, B. & Br.

Ground, under bushes.

P. orthotricha, C. & E.

Among moss on trunk of a tree.

Sub-Genus.—LACHNEA.

Sec. I.—SARCOSCYPHÆ.

P. melastoma, Sow.

Rotten wood.

- P. stygia*, B. & C. (?)
Wet ground among fallen leaves.
- P. hemisphærica*, Wigg.
Vegetable mold and rotten wood.

Sub-Genus.—*DASYSCYPHÆ*.

- P. floccosa*, Schw.
Decaying limbs.
- P. ochracea*, Schw.
Pine wood. Camden: Kaighu's Point—Schweinitz.
- P. virginea*, Batsch.
Decaying herbaceous stems.
- P. nivea*, Fr.
Decaying wood.
- P. abdita*, Ell.
Pine board in cellar.
- P. albopileata*, Cke.
Fallen leaves of *Magnolia*.
- P. virginella*, Cke. .
Fallen leaves of *Vaccinium*.
- P. calycina*, Schum.
Bark of dead pine limbs.
- P. bicolor*, Bull.
Same habitat.
- P. lachnoderma*, Berk.
Same habitat.
- P. fuscidula*, C. & E.
Fallen oak leaves.
- P. pollinaria*, Cke.
Same habitat.
- P. chameleontina*, Pk.
Decaying pine wood.
- P. varicolor*, Fr.
Old oak stumps.

- P. hyalina*, Pers.
Decaying pine wood.
- P. miniopsis*, Ell.
Outer bark of living maples.
- P. rhabdocarpa*, Ell.
Dead twigs of *Comptonia*.
- P. acerina*, C. & E.
Fallen maple leaves.
- P. cupressina*, Batsch.
Dead foliage of white and red cedar.
- P. echinulata*, Awd.
Fallen oak leaves.
- P. myricacea*, Pk.
Twigs of *Myrica*.
- P. incondita*, Ell.
Among mosses in swamps.
- P. nyssægena*, Ell.
Decaying nutlets of *Nyssa*.
- P. gracilipes*, Cke.
Fallen petals of *Magnolia*.
- P. nigrescens*, Cke.
Decaying stems of *Erigeron*.
- P. fumosella*, C. & E.
Decaying pine leaves.

Sub-Genus.—MOLLISIA.

- P. Enotheræ*, C. & E.
Dead stems of *Enothera biennis*.
- P. aquifolia*, C. & E.
Fallen holly leaves.
- P. fumigata*, E. & E.
Rotten *Magnolia*.
- P. introviridis*, C. & E.
Old oak stumps.

- P. glenospora*, E. & E.
Rotten *Magnolia*.
- P. astericola*, C. & E.
Dead stems of *Aster*.
- P. atrata*, Pers.
Dead herbaceous stems.
- P. atrovirens*, Pers.
Rotten maple wood.
- P. atrocinerea*, Cke.
Dead stems of *Polygonum*.
- P. subatra*, C. & P.
Dead stems of *Nesaea*.
- P. cinerea*, Batsch.
Decaying limbs and herbaceous stems.
- P. pulverulenta*, Lib.
Decaying pine leaves.
- P. luteodisca*, Pk.
Dead *Juncus effusus*.
- P. dinemasporioides*, E. & E.
Old *Andropogon*.
- P. Osmundæ*, C. & E.
Dead fronds of *Osmunda*.
- P. raphidospora*, Ell.
On rotten pine wood.
- P. theioides*, C. & E.
Rotten wood.

Sub-Genus.—TAPESIA.

- P. culcitella*, C. & E.
Wood of old oak stumps.
- P. phlegmacea*, Ell.
Rotten wood.
- P. aurelia*, Pers.
Decaying oak and fallen twigs and leaves.

- P. prolificans*, Ell.
Decorticated oak.
- P. fusca*, Pers.
Oak stumps.
- P. subiculata*, Schw.
Decaying limbs on wet ground.
- P. sanguinea*, Pers.
Decaying oak wood.
- P. chlora*, Schw.
Old oak stumps and logs.
- P. radiocincta*, Cke.
Dry, hard oak wood.
- P. Lentaginis*, Schw.
On *Viburnum Lentago*.
- P. pruinata*, Schw.
Morris: Decaying wood and bark, Hope—Schweinitz.

Sub-Genus.—PRIALEA, Fr.

Sec. I.—HYMENOSCYPHA.

- P. scutula*, Pers.
Fallen twigs and petioles.
- P. cyathoidea*, Bull.
Dead herbaceous stems.
- P. culmicola*, Desm.
Culms of grasses.
- P. simulans*, Ell.
Fallen leaves.
- P. introspecta*, Cke.
Rotten *Magnolia*.
- P. diaphanula*, Cke.
Same habitat.
- P. erigeronata*, Cke.
Decaying stems of *Erigeron*.
- P. atriella*, Cke.
Dead culms of *Andropogon*.

- P. cervinula*, Cke.
Dead leaves of *Carex*.
- P. mauriatria*, C. & E.
Rotten wood.
- P. denigrata*, Kze.
Dead culms of *Fustuca tenella*.
- P. melatephra*, Lasch.
Dead culms of *Carex*.
- P. Andropogonis*, B. & C.
Dead leaves of *Andropogon*.
- P. abdita*, Ell.
Fallen petioles of *Juglans regia*.
- P. protrusa*, B. & C.
Fallen leaves of *Magnolia*.
- P. stictoidea*, C. & E.
Dead culms of *Juncus tenuis*.
- P. Pteridis*, A. & S.
Dead stipes of *Pteris aquilina*.
- P. vinosa*, A. & S.
Decaying wood.
- P. rubella*, Pers.
Rotten wood and bark.
- P. chrysocoma* (Bull.), C & E.
Rotten wood and bark.
- P. paulopuncta*, C. & E.
Maple bark.
- P. regalis*, C. & E.
Outer bark of living apple trees.
- P. tenella*, C. & E.
Dead fronds of *Osmunda*.
- P. exigua*, Cke.
Decaying stems of *Erigeron*.
- P. coccinella*, Somm.
Decorticated limbs.

- P. vulgaris**, Fr.
Decaying wood.
- P. aureofulva**, Cke.
Decaying maple limb.
- P. corneola**, C. & P.
Dead stems of *Linaria vulgaris*.
- P. macrospora**, Fekl.
Dry, hard oak stumps.
- P. resinæ**, Fr.
On old pitch on pine trees.

HELOTIUM, Tode.

- H. subtile**, Fr.
Fallen pine and cedar leaves.
- H. virgultorum**, Fr.
Dead herbaceous stems.
- H. citrinum**, Fr.
Rotten wood.
- H. confluens** (Schw.), Fr.
Rotten wood.
- H. herbarum** (Pers.), Fr.
Dead herbaceous stems.
- H. epiphyllum** (Pers.), Fr.
Fallen maple leaves.
- H. albovirens**, Cke.
Rotten wood.
- H. album**, Schum.
Dead culms of grasses.
- H. aurantiacum**, Cke.
Fallen leaves.
- H. gracile**, C. & P.
Dead herbaceous stems.
- H. rhizogenum**, E. & E.
Exposed dead roots of *Andropogon*.

H. naviculasporum, Ell.

Fallen maple leaves.

H. renisporum, Ell.

Fallen and partly decayed leaves.

H. salicellum, Fr.

Morris: Willow twigs, Hope—Schweinitz.

CHLOROSPLENIUM, Fr.

C. æruginosum (Eder), De Not.

Decaying oak.

C. epimyces, Cke.

On old *Corticium*.

C. versiforme (Pers.), Karst.

Decaying oak. Passaic:—E. A. Rau.

Series 2.—BULGARIÆ.

BULGARIA, Fr.

B. inquinans (Pers.), Fr.

Decaying oak wood.

B. sarcoides (Jacq.), Fr.

Decaying oak and maple wood.

B. purpurea, Fekl.

Same habitat.

OMBROPHILA, Fr.

O. purpurascens, Fr.

Decaying leaves.

O. subaurea, Cke.

Same habitat.

O. aurea, Ell.

Rotten cedar.

O. albofusca, Ell.

Rotten bark of *Magnolia*.

Series 3.—**DERMATEÆ.**

DERMATEA, Fr.

- D. furfuracea** (Roth), Fr.
Dead alders.
- D. tabacina**, Cke.
Bark of living oak trees.
- D. olivacea**, Ell.
Stems of dead shrubs.
- D. tetraspora**, Ell.
Dead limbs of *Quercus coccinea*.
- D. lobata**, Ell.
Dead limbs.
- D. carnea**, C. & E.
Bark of dead maple.
- Var. pallida*, Ell.
Bark of dead *Rhus venenata*.
- D. cucurbitaria**, Cke.
Outer bark of living white oaks.
- D. Kalmiæ** (Pk.), Cke.
Dead *Kalmia latifolia*.

URNULA, Fr.

- U. craterium** (Schw.), Fr.
Decaying limbs.

TYMPANIS, Tode.

- T. conspersa**, Fr.
On dead apple limbs.
- T. alnea** (Pers.), Fr.
Dead alders.
- T. viticola** (Schw.), Fr.
Bark of grape vines.
- T. fasciculata**, Schw.
Dead *Viburnum*.

CENANGIUM, Fr.

- C. pulveraceum* (A. & S.), Fr.
Dry, dead limbs and wood.
- C. turgidum*, Schw.
Living limbs of *Quercus coccinea*.
- C. Cephalanthi* (Schw.), Fr.
Dead branches of *Cephalanthus*.
- C. acuum*, C. & P.
Dead pine leaves. (*P. rigida* and *P. Strobilus*.)
- C. triangulare* (Schw.), Fr.
Dead limbs of white oak. Gloucester: Newfield—Ellis.
Passaic:—E. A. Rau.
- C. urceolatum*, Ell.
Dead *Andromeda*.

Series 4.—PATELLARIÆ.

PATELLARIA, Fr.

- P. atrata*, Fr.
Weather-beaten wood.
- P. rhabarbarina*, Berk.
Old blackberry canes.
- P. lignyota*, Fr.
Rotten wood.
- P. aureo-coccinea*, B. & C.
Dead culms of *Andropogon*.
- P. clavata*, Ell.
Dead herbaceous stems.
- P. connivens*, Fr.
Dry decorticated oak limbs.
- P. cylindrospora*, Ell.
Rotten wood.
- P. ferruginea*, C. & E.
Dead stems of *Desmodium*.

- P. fuscoatra*, Rehm.
Dead oak twigs.
- P. gnaphaliana*, C. & E.
Dead stems of *Gnaphalium*.
- P. imperfecta*, Ell.
Old corn stalks.
- P. subsidua*, C. & E.
Dry limbs of *Morus*.
- P. tuberculosa*, Ell.
Decaying leaves of *Andropogon*.
- P. nigrovirens*, Sacc. & Ell.
Decorticated oak.

Series 5.—**ASCOBOLEÆ.**

ASCOBOLUS, Tode.

- A. furfuraceus*, Pers.
On cow dung.
- A. Leveillei*, Boud., var. *Americana*, C. & E.
On cow dung.
- A. pilosus*, Fr.
On cow dung.
- A. polysporus* (Karst), Auersw.
On cow dung.

Series 6.—**PHACIDIACEÆ.**

PHACIDIUM, Fr.

- P. dentatum*, Fr.
Fallen oak leaves.
- P. Trifolii*, Boud.
Living clover leaves.
- P. sphæroideum*, C. & E.
Dead leaves of *Kalmia*.

RHYTISMA, Fr.

- R. acerinum** (Pers.), Fr.
On maple leaves.
- R. Vaccinii** (Schw.), Fr.
Hudson: Weehawken—Gerard.
- R. decolorans** (Schw.), Fr.
Fallen leaves of *Andromeda*.
- R. Solidaginis** (Schw.), Fr.
Leaves of *Solidago*. Gloucester:—Ellis. Hudson:—Gerard.

Series 7.—STICTIDÆ.

STICTIS, Pers.

- S. radiata** (L.), Pers.
Dead limbs.
- S. pustulata**, Ell.
Dead clover stems.
- S. sphæroboloidea** (Schw.), Ell.
Dry dead limbs of *Cornus*.
- S. Sesleriæ**, Lib.
Base of dead culms of *Andropogon*.
- S. dryophila**, C. & E.
Dead oak limbs.
- S. fimbriata**, Schw.
Scales of old pine cones.
- S. quercifolia**, C. & E.
Fallen oak leaves.
- S. stigma**, C. & E.
Dry dead limbs of *Cornus*.
- S. stereicola**, B. & C.
On *Stereum frustulosum*.
- S. linearis**, C. & E.
Decorticated limbs.

PROPOLIS, Cda.

- P. grisea*, C. & E.
Bark of dead white cedars.
- P. lobata*, C. & E.
Bark of dead maple.
- P. versicolor*, Fr.
Various kinds of decaying wood and limbs.
- P. rhodoleuca* (Sommerf.), Fr. (*P. conorum*, Ell., in Prelim. Cat.)
On scales of old pine cones.
- P. Leonis*, Tul.
Outer bark of living pines.
- P. glauca*, Ell.
Dead oak limbs.

AGYRIUM, Fr.

- A. rufum* (Pers.), Fr.
Bleached oak and maple wood.
- A. herbarum*, Fr.
Dead stems of some fern.
- A. sexdecemsporum*, Fekl.
Rotten wood.

Series 8.—TRIBLIDIACIÆ.

TRIBLIDIUM, Reb.

- T. insculptum*, Cke.
Dead limbs of *Hicoria*.
- T. hiascens* (B. & C.), Cke.
Outer bark of *Quercus coccinea*.

Sub-Class 3.—HYPHOMYCETES.***COHORT 1.—MUCEDINEÆ.**

Sec. I.—AMEROSPORÆ.

CHROMOSPOREÆ.**CHROMOSPORIUM, Cda.****C. vitellinum, S. & E.**On rotten oak wood, and on some decaying *Polyporus*.**MICROSTROMA, Niessl.****M. Juglandis (Bereng.), Sacc.**Living leaves of *Juglans*.**OOSPORA, Wallr.****O. candidula, Sacc.**

Old paper exposed to the weather.

O. cuboidea, S. & E.

Decaying oak wood.

O. ovalispora (Berk.), Sacc. (*Torula ovalispora* in Prelim. Cat.)

Old barrel bottom.

MONILIA, Pers.**M. Martinii, E. & S.**

On cobs of boiled corn.

Var. incendiarum, E. & M.

Shrubs recently killed by fire.

* In this Catalogue the HYPHOMYCETES and SPHEROPSIDÆ have been placed as sub-classes, thus giving them apparently the same rank as the other sub-classes, but this has been done more as a matter of convenience in classification, as many members of these two groups are not autonomous, being in fact only stages in the growth of various ascomycetous fungi.

M. fasciculata, Cda.

Hudson: Weehawken—Gerard.

M. aureo-fulva, C. & E. (*Oidium simile*, Berk.)

Rotten wood and bark.

M. fructigena, Pers.

On dried-up plums and peaches.

M. megalospora (B. & C.), Sacc. (*Oidium megalosporum* in Prelim. Cat.)

Rotten wood.

POLYSCYTALUM, Riess.

P. sericeum, Sacc.

Oak leaves on limbs recently cut.

OIDIUM, Lk.

O. monilioides, Lk.

Living leaves of grass.

O. erysipheoides, Fr.

Various living leaves.

TRICHODERMA, Pers.

T. lignorum (Tode.), Harz.

On decaying wood.

PAPULASPORA, Preuss.

P. candida, Sacc.

On old *Geoglossum*.

ASPERGILLEÆ.

ASPERGILLUS, Lk.

A. glaucus (L.), Lk.

On various decaying substances.

A. clavatus, Desm.

On hen dung.

A. pulvinatus, B. & C.

Dead stems of *Smilax*.

PENICILLIUM, Lk.

- P. glaucum*, Lk.
Various decaying substances.
- P. repens*, C. & E.
Rotten wood.

HAPLARIA, Lk.

- H. chlorina*, E. & E.
Rotten *Magnolia* wood.

RHINOTRICHUM, Cda.

- R. ramosissimum*, B. & C.
Rotten wood.
- R. repens*, Preuss.
Rotten wood.
- R. Curtisii*, Berk.
Rotten wood.

SPOROTRICHUM, Lk.

- S. sulfureum*, Grev.
Old barrel bottom and decaying leaves.
- S. anceps*, S. & E.
On old *Diatrype*.
- S. æruginosum*, Schw.
Rotten wood.

BOTRYTIS, Lk.

- B. geniculata*, Cda.
On old *Hypoxyylon*.
- B. nebularis*, C. & E.
Rotten wood.
- B. atrofumosa*, C. & E.
Decaying wood.
- B. epigæa*, Lk.
Rotten wood, partly covered with earth.

B. atroviridis, C. & E.

Decaying wood.

B. fuliginosa, C. & E.

Decaying wood.

B. acinorum, Pers.

Dried-up grapes.

B. patula, Sacc. & Berlese.

On red raspberry canes.

POLYACTIS, Lk.

P. vulgaris, Lk.

Buckwheat straw.

P. streptothrix, C. & E.

Decaying leaves of *Orontium*.

SEPEDONIUM, Lk.

S. chrysospermum (Bull.), Fr.

On decaying *Boleti*.

S. flavidum, S. & E.

On decaying *Polyporus*.

VERTICILLIUM, Lk.

V. pyramidale, Bon.

Dead leaves of grasses.

V. lateritium, Berk.

Rotten potatoes.

V. capitatum, Bon., *var. botryoides*, Sacc.

On old *Physarum*.

V. agaricinum, Cda., *var. clavisedum*, Sacc.

On old *Geoglossum*.

Sec. II.—DIDYMOSPORÆ.

DIPLOCLADIUM, Bon.

D. minus, Bon.

On decaying fungi.

TRICHOHECIUM, Lk.

- T. roseum (Pers.), Lk.
 Various decaying substances.
- T. griseum, Cke.
 Leaves of *Panicum*.

Sec. III.—PHRAGMOSPORÆ.

DACTYLIUM, Nees.

- D. dendroides (Bull.), Fr.
 On decaying *Agaricus*.
- Var. leptosporum, Sacc.
 On decaying bark.

RAMULARIA, Unger.

- R. variabilis, Fekl.
 On mullein leaves.
- R. Armoraciæ, Fekl.
 On hotse-radish leaves.
- R. Desmodii, Cke.
 Leaves of *Desmodium*.
- R. arvensis, Sacc.
 On leaves of *Potentilla*.
- R. Plantaginis, E. & M.
 Leaves of *Plantago major*.
- R. Andromedæ, E. & M.
 Leaves of *Leucothoë racemosa* and *Vaccinium corymbosum*.
- R. Orontii, E. & M.
 Leaves of *Orontium aquaticum*.
- R. Tulasnei, Sacc.
 On strawberry leaves.

Sec. IV.—STAUROSPORÆ.

TITÆA, Sacc.

- T. Clarkei, E. & E.
 On old *Dichæna strumosa*.

COHORT II.—DEMATIÆ.

Sec. I.—AMEROSPOBÆ.

CONIOSPOREÆ.

CONIOSPORIUM, Lk.

C. Arundinis, Cda.

On decaying culms of *Andropogon*.

C. gramineum, E. & E.

Dead culms of *Poa compressa*.

TORULA, Pers.

T. herbarum, Lk.

Dead herbaceous stems. Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

T. sparsa, B. & C.

Hudson: Weehawken—Gerard.

T. opaca, Cke.

Dead branches of *Azalea*.

T. binale, C. & E.

Decaying oak wood. Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

T. bigemina, C. & E.

Old logs of *Nyssa*. Same localities.

T. sphaeriiformis, C. & E.

Decorticated oak limbs. Same localities.

T. abbreviata, Cda.

Hudson: Weehawken—Gerard.

STACHYBOTRYS, Cda.

S. lobulata, Berk.

On exposed paper.

PERICONIA, Tode.

P. byssoides, Pers.

On decaying herbaceous stems.

GONATROBOTRYUM, Sacc.

G. maculicolum (Winter.), Sacc.

Leaves of *Rhus*.

GONYTRICHUM, Nees.

G. fulvum, Ell.

Decaying grasses.

VIRGARIA, Nees.

V. globigera, S. & E.

Decaying bark of *Magnolia*.

V. indivisa, Sacc.

On old pine wood.

MENISPORA, Pers.

M. ciliata, Cda.

Rotten wood.

M. glauconigra, C. & E.

Decaying maple and oak.

M. cobaltina, Sacc.

Droppings of larvæ and decaying leaves.

CAMPSOTRICHUM, Ehrb.

C. flagellum, C. & E.

Decaying herbaceous stems.

TRICHOSPORIUM, Fr.

T. sphæricum, Sacc.

Dead culms of Indian corn.

GLENOSPORA, B. & C.

- G. *Curtisii*, Berk. & Desm.
Living limbs of *Nyssa*.

COLLETOTRICHUM, Cda.

- C. *lineola*, Cda.
Leaves of *Sorghum* (cult.)

ELLISIELLA, Sacc.

- E. *caudata*, Sacc.
Dead leaves of *Chrysopogon nutans*.

ZYGODESMUS, Cda.

- Z. *fuscus*, Cda.
Rotten wood.
- Z. *bicolor*, C. & E.
Rotten wood and bark.
- Z. *rubiginosus*, Pk.
Wood of old railway ties.
- Z. *chlorochætes*, Ell.
Old corn stalks.
- Z. *olivascens*, B. & C.
Rotten wood.

STREPTOTHRIX, Cda.

- S. *atra*, B. & C.
Dead limbs. Hudson: Weehawken—Gerard. Gloucester:
Newfield—Ellis.
- S. *fusca*, Cda.
Hudson: Weehawken—Gerard.

CHALARA, Cda.

- C. *acuaria*, C. & E.
Decaying pine leaves.

Sec. II.—DIDYMOSPORÆ.

CLADOSPORIÆ.

FUSICLADIUM, Bon.

- F. dendriticum* (Wallr.), Fckl.
On apples and apple leaves.
- F. pirinum* (Lib.), Fckl.
On pear leaves and on pears.
- F. fasciculatum*, C. & E.
On stems and leaves of *Euphorbia*.

CLADOSPORIUM, Link.

- C. herbarum*, Lk.
Decaying herbaceous stems.
- C. carpophilum*, Thum.
On peaches.
- C. epiphyllum*, Nees.
Decaying leaves.
- C. punctulatum*, S. & E.
Leaves of *Euonymus*.
- C. delectum*, C. & E.
Fallen *Magnolia* leaves.
- C. tuberum*, Cke.
On decaying sweet potatoes.
- C. graminum*, Lk.
Decaying grass leaves.
- C. fulvum*, Cke.
Living tomato leaves.
- C. lycoperdinum*, Cke.
Fruit of tomatoes.
- C. epimyces*, Cke.
Decaying *Agarics*.

EPOCHNIUM, Lk.

- E. macrosporoideum*, Berk.
Rotten maple.

Sec. III.—PHRAGMOSPORÆ.

CLASTERISPORIÆ.

CLASTERISPORIUM, Schw.

- C. caricinum*, Schw.
Living leaves of *Carex*.
- C. Hirudo*, Sacc.
Decaying oak bark.
- C. herculeum*, Ell.
Dead limbs.
- C. larvatum* (C. & E.), Sacc.
On red cedar poles.

SEPTONEMA, Corda.

- S. spilomeum*, Berk.
Exposed oak and chestnut wood.
- S. tabacinum*, E. & H.
Pine wood and bark.
- S. rude*, Sacc.
Decaying wood. Gloucester: Newfield—Ellis. Hudson:
Weehawken—Gerard.
- S. toruloides*, C. & E.
On old pine boards. Same localities.

HELMINTHOSPORIUM, Link.

- H. arctæsporium*, C. & E.
Dead limbs of *Vaccinium*.
- H. brachytrichum*, C. & E.
Rotten wood.

- H. inconspicuum*, C. & E.
Dead leaves of Indian corn.
- H. inflatum*, B. & Rav.
Bark of dead oak limbs.
- H. interseminatum*, B. & Rav.
Old potato stems.
- H. macrocarpon*, Grev.
Dead shoots of *Magnolia*.
- H. persistens*, Cke.
Maple and alder bark.
- H. subopacum*, C. & E.
Rotten wood of *Kalmia*.

CERCOSPORA, Fr.

- C. Acetosella*, Ell.
Leaves of *Rumex Acetosella*.
- C. Apocyni*, E. & K.
Leaves of *Apocynum*.
- C. lactea*, E. & E.
Leaves of *Gerardia*.
- C. clavata* (Ger.), Pk.
Leaves of *Asclepias Syriaca*.
- C. Ampelopsidis*, Pk.
Leaves of *Vitis quinquefolia*.
- C. Asclepiadis*, Ell.
Leaves of *Asclepias*.
- C. canescens*, E. & M.
Leaves of *Phaseolus* (cult.)
- C. Dioscoreæ*, E. & M.
Leaves of *Dioscorea*.
- C. flagellaris*, E. & M.
Leaves of *Phytolacca*.
- C. Ilicis*, Ell.
Leaves of *Ilex glabra*.

C. *Liriodendri*, E. & H.

Leaves of *Liriodendron*.

C. *Magnoliæ*, E. & H.

Leaves of *Magnolia*.

C. *Smilacis*, Thüm.

Leaves of *Smilax*.

C. *Symplocarpi*, Pk.

On *Symplocarpus fetidus*. Morris: Budd's Lake—E. A. Rau.

C. *Diodiæ*, Cke.

Leaves of *Diodia teres*.

C. *grisea*, C. & E.

Leaves of *Polygala*.

C. *pulvinula*, C. & E.

Leaves of *Ilex opaca*.

C. *nymphæacea*, C. & E.

Leaves of *Castalia* and *Nymphœa*.

C. *Gaultheriæ*, E. & E.

Leaves of *Gaultheria*.

HETEROSPORIUM, Klotzsch.

H. *Ornithogali*, Kl.

Dead leaves of *Ornithogalum*.

H. *Allii*, E. & M.

Dead stems and leaves of *Allium vineale*.

DENDRYPHIUM, Cda.

D. *Ellisii*, Cke.

Decaying bark.

D. *Harknessii*, Ell.

Bark of cedar logs.

ACROTHECIUM, Cda.

A. *obovatum*, C. & E.

Decaying wood.

POLYTHRINCIUM, Kze.

P. Trifolii, Kze.

On living leaves of *Trifolium pratense*.

Sec. IV.—DICTYOSPORÆ.

SPORIDESMIEÆ.

SPORIDESMIUM, Link.

S. polymorphum, Cda.

Exposed wood. Gloucester: Newfield—Ellis. Hudson:
Weehawken—Gerard.

S. aurantiacum, B. & C.

Decorticated limbs. Same localities.

S. antiquum, Cda.

Same localities. On weather-beaten poplar.

S. hysteroideum, C. & E.

Same localities. On bleached wood.

S. lepraria, B. & Br.

Same localities. On weather-beaten wood.

S. conglobatum, C. & E.

Same localities. On decorticated limbs.

S. rude, Ell.

Living leaves of *Magnolia*. Same localities.S. Peziza, C. & E. (*Septonema bicolor*, Pk., in Prelim. Cat.)

On dead limbs. Same localities.

TETRAPLOA, B. & Br.

T. Ellisii, Cke.

Old corn stalks. Same localities.

SPEIRA, Cda.

S. punctulata, C. & E.

Bleached wood of *Vaccinium*. Same localities.

MACROSPORIUM, Fr.

- M. chartarum*, Pk.
Paper exposed to the weather.
- M. Iridis*, C. & E.
Dead leaves of *Iris*.
- M. Porri*, C. & E.
Living leaves of onion.
- M. abruptum*, C. & E.
Dead stems of *Phytolacca*.
- M. stilbosporoideum*, B. & C.
Leaves of *Crataegus*.
- M. atrichum*, C. & E.
Dead stems of *Erigeron*.
- M. fasciculatum*, C. & E.
Old bean pods.
- M. Maydis*, C. & E.
Leaves of Indian corn.
- M. caudatum*, C. & E.
Dead stems of *Phytolacca*.
- M. inquinans*, C. & E.
Decaying herbaceous stems.
- M. leptotrichum*, C. & E.
Rotten wood.
- M. Solani*, E. & M.
Leaves of potato.
- M. Catalpæ*, E. & M.
Leaves of *Catalpa*.
- M. Martindalei*, E. & E.
Leaves of *Magnolia*.

MYSTROSPORIUM, Cda.

- M. orbiculare*, C. & E.
Fading leaves of holly.
- M. aterrimum*, B. & C.
Stems of *Smilax*.

SEPTOSPORIUM, Cda.

- S. maculatum*, C. & E.
Bark of *Magnolia* logs.
- S. praelongum*, Sacc.
Sticks and pieces of wood lying on the ground.
- S. velutinum*, C. & E.
Maple bark.

ALTERNARIA, Nees.

- A. tenuis*, Nees.
Dead poplar limbs.

Sec. V.—HELICOSPORIÆ.

HELICOSPORIUM, Nees.

- H. olivaceum*, Pk.
Decaying pine and oak. Gloucester: Newfield—Ellis.
Hudson: Weehawken—Gerard.
- H. Mulleri* (Cda.), Sacc. (*Helicoma Mulleri* in Prelim. Cat.)
Maple bark.
- H. ellipticum*, Pk.
Spruce lumber closely packed.
- H. microscopicum*, Ell.
Decaying alder catkins.
- H. auratum*, Ell.
Decaying maple. Gloucester: Newfield—Ellis. Hudson:
Weehawken—Gerard.
- H. velutinum* (Ell.), Sacc.
Magnolia bark.
- H. thysanophorum*, E. & H.
On pitchy bark of pine.

COHORT III.—STILBEÆ.

Sec. I.—AMEROSPORÆ.

STILBUM, Tode.

- S. erythrocephalum*, Ditm.
On rabbit dung:
- S. vulgare*, Tode.
Dead oak limbs.
- S. parvulum*, C. & E.
Rotten wood.
- S. aciculosum*, E. & E.
Decaying leaves of *Orontium*.
- S. atrocephalum*, Ell.
Maple wood and bark.
- S. rhoidis*, B. & C.
Dead limbs of *Rhus copallina*.
- S. æruginosum*, Desm.
Rotten maple.
- S. smaragdinum*, A. & S.
Rotten pine.

MARTINDALIA, Sacc. & Ell.

- M. spironema*, S. & E.
On elm and maple barrel staves.

CERATIUM, A. & S.

- C. hydroides*, A. & S.
Rotten wood.

ARTHROSPORIUM, Sacc.

A. compositum, Ell.

Dead limbs of *Kalmia* buried under decaying leaves.

ISARIA, Pers.

I. farinosa (Dicks.), Fr.

On dead chrysalides buried in moss or earth in low woods.

I. arachnophila, Ditm.

On a dead spider.

SPOROCYBE, Fr.

S. Azaleæ (Pk.), Sacc. (*Periconia Azaleæ* in Prelim. Cat.)

Dead buds of *Azalea*.

GRAPHIUM, Oda.

G. pubescens, C. & E.

Dead twig of *Smilax*.

G. Linderæ, E. & E.

Leaves of *Lindera Benzoin*.

G. laxum, Ell.

Withered leaves of *Phaseolus* (cult.)

Sec. II.—PHRAGMOSPORÆ.

PODOSPORIUM, Schw.

P. rigidum, Schw.

Dead stems of *Ampelopsis*.

ARTHROBOTRYUM, Ces.

A. robustum, C. & E.

Old maple bark.

COHORT IV.—TUBERCULARIACEÆ.

MUCEDINEÆ.

Sec. I.—AMEROSPORÆ.

TUBERCULARIA, Tode.

T. nigricans, Lk.

Dead maple limbs.

T. Celastri, Schw.

Hudson: Weehawken—Gerard.

T. vulgaris, Tode.

Dead cherry limbs.

GRANULARIA, Sacc.

G. eurotioides, S. & E.

On old *Pachyma cocos*.

DENDRODOCHIUM, Bon.

D. rubellum, Sacc., var. *microsporum*, Sacc.

Bark of *Magnolia*.

D. macrosporum, S. & E.

On dead herbaceous stems.

ILLOSPORIUM, Mart.

I. coccinellum, Cke.

On dry cedar boards.

I. pallidum, Cke.

On old corn husks.

I. pezizula, S. & E.

Decaying bark of *Magnolia*.

I. helicoideum, S. & E.

Decaying culms of grass.

I. acaroides, S. & E.

Decaying leaves of *Magnolia*.

- A. candida**, Pers. **ÆGERITA**, Pers.
Rotten wood.
- H. fumosa**, C. & E. **HYMENULA**, Fr.
On pine leaves.
- C. lactea**, S. & E. **CYLINDROCOLLA**, Bon.
Rotten wood of *Kalmia*.
- S. citrinum**, Sacc. **SPHÆRIDIDIUM**, Fres.
Dead pine limbs.
- S. pubescens**, S. & E. **STIGMATELLA**, B. & C.
On decaying leaves and rotten wood.
- S. Cragini**, E. & S. **SCORIOMYCES**, Ell. & Sacc.
In soil around decaying stumps.
- P. tomentosa**, Fr. **PERIOLA**, Fr.
On potatoes.
- V. flexuosa**, C. & E. **VOLUTELLA**, Tode.
Decaying leaves and stems.
- V. diaphana**, Ell.
Decaying leaves of *Orontium*.
- V. comata**, Ell.
Decaying petioles of *Robinia*.
- V. ciliata** (A. & S.), Fr. (*V. Hyacinthorum*, Berk., ? in Prelim. Cat.)
On decaying leaves.

Sec. II.—PHRAGMOSPORÆ.

FUSARIUM, Desm.

- F. *roseum*, Lk.
On old corn stalks, etc.
- F. *diplosporum*, C. & E.
Old potato stalks.
- F. *heterosporum*, Nees.
On grains of rye.
- F. *episphæricum*, C. & E.
On old *Diatrype*.
- F. *rimosum*, Pk.
On cut surface of corn stalks.
- F. *Schweinitzii*, E. & H.
Dead stems of grape vines.
- F. *Andropogonis*, Cke.
Dead culms of *Andropogon*.
- F. *pallido-roseum*, Cke.
Dead stems of *Phytolacca*.
- F. *scolecoides*, S. & E.
Dead limbs of *Robinia*.
- F. *thujinum*, Ell.
Dead limbs of white cedar.
- F. *lateritium*, Nees.
Dead limbs of *Ailanthus*.
- F. *miniatum*, Sacc.
In cups of *Cyathus vernicosus*.

Sec. III.—HELICOSPORÆ.

EVERHARTIA, Sacc. & Ell.

- E. *hymenuloides*, S. & E.
On leaves of *Sorghum nutans*.

DEMATIÆ.

Sec. I.—AMEROSPORÆ.

EPICOCOCCUM, Lk.

E. purpurascens, Ehrh.

On decaying wood and on old exposed paper.

E. neglectum, Desm. (*E. sphærospermum*, Berk., in Prelim. Cat.)

On leaves and stalks of *Zea Mays*.

E. Durizæanum, Mont.

Decaying leaves of *Orontium*.

MYROTHECIUM, Tode.

M. Verrucaria (A. & S.), Ditm.

On decaying leaves.

M. inundatum, Tode.

On decaying *Agarics*.

Sub-Class 4.—SPHÆROPSIDÆ

SPHÆRIOIDÆ.

Sec. I.—HYALOSPORÆ.

PHYLLOSTICTA, Pers.

P. acericola, C. & E.

Living leaves of maples.

P. Orontii, E. & M.

On leaves of *Orontium*.

P. Fraxini, E. & M.

On leaves of *Fraxinus*.

P. sphæropsoidea, E. & E.

— Leaves of horse chestnut.

P. bataticola, E. & M.

Leaves of sweet potato.

2M

- P. clethricola*, E. & M.
Leaves of *Clethra alnifolia*.
- P. Catalpæ*, E. & M.
Leaves of *Catalpa*.
- P. pyrina*, Sacc.
Leaves of apple trees.
- P. phomiformis*, Sacc.
Leaves of white oak.
- P. phaseolina*, Sacc.
Leaves of *Phaseolus helvolus*.
- P. Chenopodii*, West. (?)
Leaves of *Chenopodium album*.
- P. Nesæææ*, Pk.
Leaves of *Nesæa verticillata*.
- P. Phytolaccae*, Cke.
Leaves of *Phytolacca decandra*.
- P. cruenta* (Fr.)
Leaves of *Polygonatum*.
- P. Myricæ*, Cke.
Leaves of *Myrica cerifera*.
- P. serotina*, Cke.
Leaves of *Prunus serotina*.
- P. Gaultheriæ*, E. & E.
Living leaves of *Gaultheria*.

PHOMA, Fr.

- P. nebulosum*, Berk.
Old potato vines.
- P. longissimum*, Berk.
Dead stems of *Chenopodium*.
- P. fibricola*, Berk.
Decorticated pine wood.
- P. acuum*, C. & E.
Dead pine leaves.

- P. nigrofacta*, Ger.
Hudson: Weehawken—Gerard.
- P. fibriseda*, C. & E.
Same locality.
- P. uvicola*, B. & C.
Dried-up grapes.
- P. ampelina*, B. & C.
Shoots of grape vines.
- P. Loniceræ*, Cke.
Hudson: Weehawken—Gerard.
- P. consorta*, C. & E.
Decorticated maple.
- P. glandulosum*, Cke.
Hudson: Weehawken—Gerard.
- P. Phytolaccæ*, B. & C.
Same locality.
- P. clypeata*, C. & E.
Same locality.
- P. lanceolata*, (C. & E.)
Dead *Asparagus* stems.

AOSPHÆRIA, Berk.

- A. cornuta*, Cke.
On decaying *Erigeron*.

SPHÆRONEMA, Fr.

- S. acerinum*, Pk.
On maple bark. Gloucester: Newfield—Ellis. Hudson:
Weehawken—Gerard.
- S. corneum*, C. & E.
Dead stems of *Enothera biennis*. Same localities.
- S. pruinatum*, B. & C.
Dead limbs of *Amelanchier*.
- S. clethrincola*, Ell.
Dead stems and branches of *Clethra*. Same localities.

VERMICULARIA, Tode.

V. atramentaria, B. & Br.

Dead herbaceous stems. Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

V. Dematium (Pers.), Fr.

Dead herbaceous stems. Same localities.

V. compacta, C. & E.

Dead canes of *Rubus occidentalis*, and on *Vitis*.

Var. Ruborum, C. & E.

Hudson: Weehawken—Gerard.

V. venturioidea, C. & E.

Dead stems of *Lactuca Canadensis*.

V. Coptina, Peck.

Morris: Budd's Lake—E. A. Rau. Living leaves of *Coptis trifolia*.

CEUTHOSPORA, Fr.

C. foliicola, Rabh.

Hudson: Weehawken—Gerard.

ASTEROMA, DC.

A. Rosæ, DC.

Living rose leaves. Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

CYTISPORA, Fr.

C. Rosarum, Grev.

Morris: Hope—Schweinitz.

C. leucosperma (Pers.), Fr.

Hudson: Weehawken—Gerard.

C. orthospora, B. & C.

Same locality.

C. leucophthalma, B. & C.

Same locality.

Sec. II.—PHÆOSPORÆ.

SPHÆROPSIS, Mont.

- S. malorum*, Berk.
On old apples.
- S. Alni*, C. & E.
Trunks of living alder.
- S. Ampelopsidis*, C. & E.
Dead stems of Virginia creeper.
- S. clethræcola*, C. & E.
Dead stems of *Clethra alnifolia*.
- S. Cydoniæ*, C. & E.
Dead limbs of quince trees.
- S. diatrypeum*, C. & E.
Dead limbs of *Chionanthus*.
- S. fibriseda*, C. & E.
Decorticated and bleached wood.
- S. ilicicola*, C. & E.
Dead limbs of holly
- S. lanceolata*, C. & E.
On *Asparagus* stems.
- S. opaca*, C. & E.
Dead stems of wormwood.
- S. phacidioides*, C. & E.
Fallen holly leaves.
- S. Finastri*, C. & E.
Dead branches of Scotch pine.
- S. punctum*, C. & E.
Dead limbs of *Lonicera*.
- S. baculum*, Ger.
Hudson: Weehawken—Gerard.
- S. gallæ* (Schw.), B. & C.
On oak galls. Same locality.
- S. rubicola*, C. & E.
Dead stems of *Rubus*.

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- S. ribicola*, C. & E.
Dead stems of *Ribes*.
- S. Rosarum*, C. & E.
Dead rose bushes.
- S. Sassafras*, C. & E.
Dead limbs of *Sassafras*.
- S. Sumachi* (Schw.), C. & E.
Dead limbs of *Rhus*.
- S. valsoidea*, C. & E.
Dead limbs of *Morus*.
- S. connatum*, Ger.
Hudson: Weehawken—Gerard.
- S. Celtidis*, Curt.
Same locality.
- S. quercina*, C. & E.
Dead limbs of white oak. Same locality.
- S. Caryæ*, C. & E.
Same locality.
- S. Rhamni*, Cke.
Same locality.

CONIOTHYRIUM, Corda.

- C. subtile*, Corda.
Bleached wood. Gloucester: Newfield—Ellis. Hudson:
Weehawken—Gerard.
- C. herbarum*, C. & E.
Dead scape of *Yucca filamentosa*. Same localities.
- C. concentricum* (Desm.), Sacc. (*Phoma concentricum* in Prelim. Cat.)
On leaves of *Yucca filamentosa*.

CHÆTOMELLA, Fekl.

- C. Andropogonis*, Cke.
Leaves of *Andropogon*.

Sec. III.—PHÆODIDYMÆ.

DIPLODIA, Fr.

D. herbarum (Cda.), Lev.

Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

Var. *Lactuæ*, C. & E.

Hudson: Weehawken—Gerard.

D. viticola, Desm.

Dead shoots of grape vines.

D. ilicicola, Desm.

Dead limbs of holly. Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

D. asclepiadea, C. & E.

Dead stems of *Asclepias*. Same localities.

D. atramentaria, C. & E.

Dead limbs of *Morus*. Same localities.

D. decorticata, C. & E.

Decorticated *Sassafras*. Same localities.

D. compacta, Cke. & Ger.

Hudson: Weehawken—Gerard.

D. sambucina, Sacc.

On *Sambucus*. Union: Plainfield—Meschutt.

D. Rubi, Fr.

Hudson: Weehawken—Gerard.

D. glandicola, C. & E.

On old acorns. Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

D. hibiscina, C. & E.

Dead limbs of *Hibiscus*. Same localities.

D. hyalospora, C. & E. (*Diplodina Ellisii*, Sacc.)

Dead *Chenopodium*. Same localities.

D. longispora, C. & E.

Decorticated oak limbs. Same localities.

- D. *maura*, C. & E.
 Dead pear limbs. Same localities.
- D. *moricola*, C. & E.
 Dead limbs of *Morus*. Same localities.
- D. *radicina*, C. & E.
 Roots of Osage orange. Same localities.
- D. *thyoidea*, C. & E.
 Wood of white cedar. Same localities.
- D. *Loniceræ*, Fckl.
 Hudson: Weehawken—Gerard.
- D. *compacta*, Cke. & Ger.
 Same locality.
- D. *Chionanthi*, C. & E.
 Same locality.

Sec. IV.—HYALODIDYMÆ.

ASCOCHYTA, Lib.

- A. *Smilacis*, E. & M.
 Living leaves of *Smilax*.

DARLUCA, Cast.

- D. *flum* (Biv.), Cast.
 On *Coleosporium Solidaginis*.

Sec. V.—PHRAGMOSPORÆ.

HENDERSONIA, Mont.

- H. *sarmentorum*, West.
 Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.
- Var. *Rubi*, West.
 Hudson: Weehawken—Gerard.
- H. *Cydoniæ*, C. & E.
 Living quince leaves. Same localities.
- H. *anomala*, C. & E.
 Dead stems of *Tephrosia Virginiana*. Same localities.

- H. collapsa*, C. & E. (*Stagonospora collapsa*, Sacc.)
Dead maple limbs. Same localities.
- H. delicatula*, C. & E.
Dead stems of *Vaccinium*. Same localities.
- H. Lophiostoma*, C. & E.
Dead elm limbs. Same localities.
- H. thyoides*, C. & E.
Dead limbs of white cedar. Same localities.
- H. trimera*, Cooke.
Dead culms of *Festuca*. Same localities.
- H. partita*, B. & C.
Hudson: Weehawken—Gerard.
- H. Robiniæ*, West.
Same locality.
- H. rostrata*, Sacc. & Ell.
Bark of dead pine limbs.
- H. foliorum*, Fekl.
Living apple leaves.
- H. epileuca*, C. & E.
Dead limbs of *Morus*.

Sec. VI.—SCOLECOSPORÆ.

SEPTORIA, Fr.

- S. Graminum*, Desm.
Living leaves of grasses.
- S. Polygonorum*, Desm.
Living leaves of *Polygonum*.
- S. ilicifolia*, C. & E.
On holly leaves. Gloucester: Newfield—Ellis. Hudson:
Weehawken—Gerard.
- S. Liquidambaris*, C. & E.
Living leaves of *Liquidambar*. Gloucester: Newfield—Ellis.
Hudson: Weehawken—Gerard.
- S. kalmicola*, B. & C.
Same localities.

S. tenella, C. & E.

Same localities.

S. CEnotheræ, West.

Same localities.

S. Rubi, West.

Hudson: Weehawken—Gerard.

S. phlyctænoides, B. & C.

On *Phytolacca*.

S. Verbenæ, Ger.

Hudson: Weehawken—Gerard.

S. Lactuæ, Pass.

On lettuce.

S. Liriodendri, B. & C.

Hudson: Weehawken—Gerard.

S. Castanæcola, Desm.

Same locality.

SPHÆROGRAPHIUM, Sacc.

S. hystricinum (Ell.), Sacc. (Under *Sphæronema* in Prelim. Cat.)

Dead trunks of *Viburnum*. Same localities.

S. stellatum (Ell.), Sacc. (Under *Sphæronema* in Prelim. Cat.)

Dead stems of *Ilex glabra*. Same localities.

CORNULARIA, Karst.

C. hispidula (Ell.), Sacc. (*Sphæronema hispidulum* in Prelim. Cat.)

On dead limbs of *Nyssa*.

C. macrospora (B. & C.), Sacc. (*Sphæronema macrospora* in Prelim. Cat.)

On bark of *Robinia*.

MICROPERA, Lev.

M. drupacearum, Lev.

Dead limbs of cherry.

M. tenella, Sacc. & Ell.

On the inner surface of cedar bark, lying on the ground.

NECTRIOIDEÆ.

SPHÆRONEMELLA, Karst.

S. rufa (Fr.), Sacc.

Dead *Magnolia*.

HYSTEROMYXA, S. & E.

H. effugiens, S. & E.

On dead foliage of white cedar.

LEPTOSTROMACEÆ.

LEPTOTHYRIUM, Kunze & Schmidt.

L. dryinum, Sacc.

Living leaves of scarlet oak.

L.(?) *foraminulatum*, S. & E.

Fallen holly leaves.

L. protuberans, Sacc.

Stems of *Oenothera biennis*.

DISCOSIA, Fr.

D. artocreas, Fr.

On fallen oak leaves. Gloucester: Newfield—Ellis. Hudson:
Weehawken—Gerard.

D. maculæcola, Ger.

On living leaves of *Gaultheria*. Same localities.

D. Podisomæ, C. & E.

Same localities.

D. rugulosa, B. & C.

On fallen leaves of hickory.

SACIDIUM, Nees.

S. Pini, Fr.

Living pine leaves. Hudson: Weehawken—Gerard.

LEPTOSTROMA, Fr.

L. litigiosum, Desm.

On *Pteris aquilina*.

L. flicinum, Fr.

Hudson: Weehawken—Gerard.

L. caricinum, Fr.

Dead leaves and culms of *Carices*.

L. petiolorum, C. & E.

Fallen petioles of *Ailanthus*. Gloucester: Newfield—Ellis.

Hudson: Weehawken—Gerard.

L. vulgare, Fr.

Dead herbaceous stems. Hudson: Weehawken—Gerard.

L. Pinastris, Desm.

Same locality.

ENTOMOSPORIUM, Lev.

E. Mespili (DC.), Sacc.

Hudson: Weehawken—Gerard.

E. maculatum, Lev., var. *Cydoniæ* (C. & E.), Sacc. (*Morthiera Mespili*,
var. *Cydoniæ*, in Prelim. Cat.)

On living leaves of quince.

EXCIPULACEÆ.

DINEMASPORIUM, Lev.

D. graminum, Lev.

Dead leaves of *Carex* and of grasses. Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

D. patellum, C. & E.

Dead leaves of *Phytolacca*. Same localities.

D. hispidulum (Schrad.), Sacc.

Dead wood of *Morus*. Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

D. *Robiniæ*, Ger.

Dead branches of *Robinia*.

D. *minimum*, C. & E.

Dead leaves of *Andropogon*. Gloucester: Newfield—Ellis.
Hudson: Weehawken—Gerard.

PILIDIUM, Kze.

P. *quercinum*, Cke.

On fallen oak leaves.

DISCELLA, B. & Br.

D. *effusa*, B. & C.

Hudson: Weehawken—Gerard.

EXCIPULA, Fr.

E. *strigosa*, Fr.

Decorticated limbs. Union: Elizabeth—Gerard.

E. *subcalva*, E. & E.

On fallen oak leaves.

E. *microspora*, C. & E.

On hickory wood and decorticated holly. Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

E. *incurva*, Cke.

Hudson: Weehawken—Gerard.

E. *erumpens*, B. & C., *var. subhispidata*, B. & C.

Same locality.

MELANCONIEÆ.

Sec. I.—HYALOSPORÆ.

GLÆOSPORIUM, Desm. & Mont.

G. *Fragariæ* (Lib.), Mont.

Leaves of *Fragaria*.

G. *Lindemuthianum*, Sacc. & Mag.

Living bean pods.

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G. lagenarium (Pass.)² Sacc. & Roum.

Decaying squashes.

G. affine, E. & K.

Leaves of *Sassafras*.

G. versicolor, B. & C.

Rotten apples.

HAINESIA, Ell. & Sacc.

H. rhoïna, E. & S.

Living leaves of *Rhus copallina*.

MYXOSPORIUM, Link.

M. nitidum, B. & C.

Dead limbs of *Cornus*.

MYXORMIA, B. & Br.

M. convexula, C. & E.

Dead limbs of *Robinia*. Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

Sec. II.—SCOLECO-ALLANTOSPORÆ.

CRYPTOSPORIUM, Kze.

C. epiphyllum, C. & E.

Living leaves of chestnut. Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

C. Loniceræ, C. & E.

Branches of *Lonicera*. Same localities.

C. Nyssæ, C. & E.

Branches of *Nyssa*. Same localities.

C. Solidaginis, C. & E.

Dead stems of *Solidago*. Same localities.

CYLINDROSPORIUM, Unger.

C. Padi, Karst.

Leaves of *Prunus serotina*.

PESTALOZZIELLA, Sacc. & Ell.

P. subsessilis, S. & E.

Leaves of *Geranium Carolinianum*.

Sec. III.—PHÆOSPORÆ.

MELANCONIUM, Lk.

M. bicolor, Nees.

Dead oak limbs. Gloucester: Newfield—Ellis. Hudson:
Weehawken—Gerard.

M. magnum, Berk.

Bark of dead butternut. Same localities.

M. oblongum, Berk.

Bark of dead hickory limbs. Same localities.

M. ramulorum, Cda.

Hudson: Weehawken—Gerard.

M. grande, C. & E.

Same locality.

M. gracile, E. & E.

Dead birch limbs. Union: Plainfield—G. F. Meschutt.

THYRSIDIUM, Mont.

T. botryosporum, Mont.

Dead limbs of birch. Hudson: Weehawken—Gerard.

HARKNESSIA, Cke.

H. hyalina, E. & E.

Dead leaves of *Quercus coccinea*.

H. caudata, E. & E.

Dead white oak leaves.

Sec. IV.—DIDYMOSPORÆ.

MARSONIA, Fisch.

M. Juglandis, Lib.

Leaves of butternut.

M. Martini, S. & E.

Leaves of *Quercus coccinea*.

M. Populi (Lib.), Mont. & Desm.

Leaves of *Populus alba*.

Sec. V.—PHRAGMOSPORÆ.

CORYNEUM, Nees.

C. Kunzei, Cda.

Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

STILBOSPORA, Pers.

S. ovata, Pers.

Dead maple bark.

ASTEROSPORIUM, Kze.

A. betulinum, Pk.

Birch limbs. Union: Plainfield—G. F. Meschutt.

PESTALOZZIA, De Not.

P. monochætoidea, Sacc. & Ell.

Dead limbs of *Spiræa*.

P. foedans, S. & E.

Bark of *Chamæcyparis thyoides*.

P. conigena, Lev.

Dead cones of *Thuja occidentalis*.

P. clavata, C. & E.

On leaves of *Smilax*. Gloucester: Newfield—Ellis. Hudson: Weehawken—Gerard.

P. peregrina, E. & M.

Dead leaves of Austrian pine.

P. hysteriiformis, B. & C.

Living leaves of *Quercus coccinea*.

P. taphrinicola, E. & E.

On *Taphrina*; on white and scarlet oak leaves.

P. pezizoides, De Not.

Bark of grape vines.

P. stellata, B. & C.

Fallen oak and holly leaves. Gloucester: Newfield—Ellis.
Hudson: Weehawken—Gerard.

P. unicornis, C. & E.

Wood of white cedar. Same localities.

P. funerea, Desm.

Hudson: Weehawken—Gerard.

NEMASPORA, Fr.

N. crocea, Pers.

Bark of oak logs.

Sec. VI.—**DICTYOSPORÆ.**

STEGONOSPORIUM, Cda.

S. fenestratum, E. & E.

Twigs of *Clethra alnifolia*.

Sub-Class 5.—PHYCOMYCETÆ.

COHORT I.—MUCORACEÆ.

PILOBOLEÆ.

PILOBOLUS, Tode.

P. crystallinus, Tode.

On manure heaps.

MUCOREÆ.

MUCOR, Mich.

**M. Mucedo*, L.

On horse dung.

M. caninus, Pers.

On mouse dung.

* *M. phycomyces* of the Preliminary Catalogue is omitted as not certainly found in New Jersey.

HYDROPHORA, Tode.

- H. *stercorea*, Tode.
On horse dung.

SPORODINIA, Link.

- S. *dichotoma*, Cda.
Decaying *Boleti*.

SYZIGITES, Ehr.

- S. *megalocarpus*, Ehr.
Decaying *Boleti*.

PERONOSPOREÆ.

CYSTOPUS, De By.

- C. *candidus* (Pers.), Lev.
Leaves of cruciferous plants.
C. *cubicus* (Pers.), De By.
Leaves of sweet potatoes.
C. *Portulacæ*, De By.
Leaves of *Portulaca oleracea*.

PERONOSPORA, Cda.

- P. *infestans* (Mont.), De By.
On leaves of *Solanum tuberosum*.
P. *gangliformis* (Berk.), Tul.
Leaves of *Lactuca Canadensis*.
P. *parasitica* (Pers.), De By.
Leaves of *Lepidium Virginicum*.

PROTOMYCETACEÆ.

PROTOMYCES, Unger.

- P. *Martindalei*, Pk.
On *Cuscuta Gronovii*. Camden :—Martindale. Hudson :
Weehawken—Gerard.

Sub-Class 6.—MYXOMYCETES.**Sub-Division 1.—AMAUROSPORÆ.****Sec. I.—TRICOPHORÆ.****COHORT I.—CALCAREÆ.****PHYSARACEÆ.****BADHAMIA, Berk.**

- B. hyalina*, Berk.
On dead bark.
- B. utricularis* (Bull.), Berk.
Weehawken—Gerard.
- B. inaurata*, Curr. (?)
Bark of oak wood.
- B. rubiginosa* (Chev.), Cke.
Weehawken—Gerard.

PHYSARUM, Pers.

- P. cinereum* (Batsch), Pers.
- P. polymorphum*, Mont.
- P. leucophæum*, Fr.
- P. Schumacheri* (Spreng.), Rost.
- P. sinuosum* (Bull.), Rost.

These species of *Physarum*, except the last, are also reported from Weehawken by Gerard.

FULIGO, Hall.

- F. varians*, Sommf.

On stumps, logs and various other things. *Æthidium ferrincola*, Schw., which is the same, was found on a piece of iron that had been heated in a blacksmith's forge the preceding day.

CRATERIUM, Trent.

- C. leucocephalum* (Pers.), Rost.
C. minimum, B. & C. (?)
 On pine wood.

LEOCARPUS, Link.

- L. fragilis* (Dicks.), Rost.
 On dead limbs lying on the ground.

TILMADOCHIE, Fr.

- T. mutabilis*, Rost.
 On a pine log.
T. nutans (Pers.), Rost.
 On decaying oak.

DIDYMIACEÆ.

CHONDRIODERMA, Rost.

- C. floriforme* (Bull.), Rost.
 On an old oak log.
C. testacea (Schrad.), Rost.
 On dead leaves. Gloucester: Newfield—Ellis.
C. Michellii (Lib.), Rost., *var. stipitatum*, Rost.
 On dead stems of sage. Hudson: Weehawken—Gerard.
Var. sessile, Rost.
 On old leaves.
C. difforme (Pers.), Rost.
 On old leaves.

DIDYMIUM, Schrad.

- D. squamulosum* (A. & S.), Fr.
 On old dead leaves, etc. Gloucester: Newfield—Ellis. Hud-
 son: Weehawken—Gerard.
D. microcarpon (Fr.), Rost.
 On mosses and dead leaves.

SPUMARIACEÆ.

DIACHEA, Fr.

D. leucopoda (Bull.), Rost.

On living and dead leaves, grasses, etc.

SPUMARIA, Pers.

S. alba (Bull.), DC.

On various things.

COHORT II.—AMAUROCHÆTEÆ.

STEMONITACEÆ.

LAMPRODERMA, Rost.

L. Ellisiana, Cke. (*Badhamia penetralis*, C. & E., in Prelim. Cat.)

On pine wood not much decayed. Gloucester: Newfield—
Ellis. Hudson: Weehawken—Gerard.

L. physarioides (A. & S.), Rost.

On rotten wood. Newfield and Weehawken.

L. arcyrioides (Sommf.), Rost.

On rotten wood. Newfield and Weehawken.

COMATRICHA, Preuss.

C. typhina (Roth), Rost.

On rotten wood.

C. confluens, C. & E. (*Stemonitis confluens*, C. & E., in Prelim. Cat.)

C. Friesiana (De By.), Rost.

On rotten wood.

Var. obovata, Rost.

In similar situations. These three species also reported from
Weehawken by Gerard.

C. Persoonii, Rost.

Hudson: Weehawken—Gerard.

STEMONITIS, Gled.

S. fusca, Roth.

On rotten wood.

S. ferruginea, Ehr.

In similar situations.

AMAUROCHÆTACEÆ.

AMAUROCHÆTE, Rost.

A. atra (A. & S.), Rost. (*Reticularia atra*, Fr., in Prelim. Cat.)

On decaying pine.

ENERTHENEMACEÆ.

ENERTHENEMA, Bowm.

E. Berkeleyana, Rost.

On pine wood not much decayed.

Sub-Division 2.—LAMPROSPORÆ.

Sec. I.—ATRICHÆ.

COHORT III.—ANEMÆ.

LICEACEÆ.

TUBULINA; Pers.

T. cylindrica (Bull.), DC.

On rotten wood, etc. Gloucester: Newfield—Ellis. Hudson:
Weehawken—Gerard.

LINDBLADIA, Fr.

L. effusa (Ehrb.), Rost.

Overspreading mosses.

CLATHROPTYCHIACEÆ.

CLATHROPTYCHIUM, Rost.

C. rugulosum (Wallr.), Rost.

On oak wood and bark not much decayed. Gloucester:
Newfield—Ellis. Hudson: Weehawken—Gerard.

ENTERIDIUM, Ehrh.

E. olivaceum, Ehrh.

On old cedar rails.

COHORT IV.—HETERODERMEÆ.

CRIBRARIACEÆ.

DICTYDIUM, Schrad.

D. cernuum (Pers.), Nees.

On rotten cedar.*

CRIBRARIA, Pers.

C. aurantiaca, Schrad.

Rotten wood.

C. intricata, Schrad.

Same habitat.

Sec. II.—TRICHOPHORÆ.

COHORT V.—COLUMELLIFERÆ.

RETICULARIACEÆ.

SIPHOPTYCHIUM, Rost.

S. Casparyi, Rost.

On rotten wood. Specimens of this in my herbarium, locality
not stated, were, I think, found at Newfield.

* Includes *D. umbilicatum*, Schrad.

COHORT VI.—CALONEMEAÆ.

PERICHÆNACEÆ.

PERICHÆNA, Fr.

- P. depressa*, Lib.
On decaying bark.
- P. variabilis*, Rost.
Hudson: Weehawken—Gerard.
- P. corticalis* (Batsch), Rost.
On decaying bark.
- P. Friesiana*, Rost. (*Ophiotheca umbrina*, B. & C., in Prelim. Cat.)
On decaying herbaceous stems.

ARCYRIACEÆ.

HEMIARCYRIA, Rost.

- H. rubiformis* (Pers.), Rost.
On rotten wood.
- H. clavata* (Pers.), Rost.
Same habitat.
- H. serpula* (Scop.), Rost.
Same habitat.

ARCYRIA, Hill.

- A. punicea*, Pers.
Rotten wood.
- A. pomiformis* (Roth), Rost.
Same habitat.
- A. cinerea* (Bull.), Schum.
Same habitat.
- **A. adnata* (Batsch), Rost.
Same habitat.

**A. incarnata* in Prelim. Cat.

- A. nutans* (Bull.), Grev.
Same habitat.

LYCOGALA, Mich.

- L. epidendron*, Buxb.
On rotten wood.

TRICHIACEÆ.

TRICHIA, Hall.

- T. fallax*, Pers.
On rotten wood.
- T. varia*, Pers.
Same habitat.
- T. chrysosperma* (Bull.), DC.
Same habitat.
- T. scabra*, Rost.
Same habitat.
- T. fragilis* (Sow.), Rost. (*Lepidoderma tigrinum* in Prelim. Cat.)
On rotten pine wood.

(The proper place of the two following genera is uncertain.)

CENOCOCCUM, Fr.

- C. geophilum*, Fr.
In cultivated soil.

ZASMIDIUM, Fr.

- Z. cellare*, Fr.
On wine casks in cellars.

SCORIAS, Fr.

- **S. spongiosa*, Schw.
On living branches of alder.

* Belongs in the Pyrenomycetes.

UNDEVELOPED MYCELIA.

SCLEROTIUM, Tode.

- S. Clavus, DC.
In rye and various grasses.
- S. Semen, Tode.
In decaying herbaceous stems.

REIZOCLONIA, DC.

- R. muscorum, Pers.
Among mosses.
- R. bicolor, Ell.
Under bark of pine log.
- R. moniliformis, E. & E.
Under bark of log of *Nyssa*.

SPILOCÆA, Fr.

- S. Scirpi, Lk.
On *Scirpus*. Morris: Hope—Schweinitz.

SUB-KINGDOM V.—PROTOPHYTA.

CLASS I.—CYANOPHYCÆ.

(The fresh-water and terrestrial forms enumerated by Rev. Francis Wille; the marine forms by Isaac C. Martindale.)

RIVULARIÆ.

CALOTHEX, Ag.

- O. confervicola (Roth.), Ag.
Marine. On algæ. Atlantic: On rockweed, Atlantic City—Morse. Hudson: Hoboken and Communipaw—Pike; also in New York Bay—Hooper.
- O. crustacea (Schousb.), Born. & Thur.
Marine. Atlantic: On rockweed—Morse.

- C. scopulorum* (Web. & Mohr), Ag.
 Marine. Hudson: Hoboken—Pike. Atlantic: On wharves,
 Atlantic City—Morse. Cape May: Beesley's Point—Pike.
- C. pulvinata* (Mert.), Ag.
 Marine. Atlantic: On wharves, Atlantic City—Martindale.
- C. Dillwynii*, Hass.
 In fresh-water swamps; frequent.*
- C. gypsophila*, Kütz.
 Fresh water. Morris: Rocky shores of Lake Hopatcong.
- C. radiosa* (Kütz.), Kirch.
 Fresh water. Morris: Morris Pond.
- C. Meneghiniana*, Kirch.
 Fresh water. On submerged wood, etc.; frequent.
- C. Brébissonii*, Kütz.
 Fresh water. On stones in ponds; frequent.
- C. lacucola*, Wolle.
 Fresh water. Morris: Split Rock Pond.

MASTIGONEMA, Fisher.

- M. ærugineum* (Kütz.), Kirch.
 Fresh water. In small ponds; common.†

ISACTIS, Thur.

- I. plana*, Thur.
 Marine. Atlantic: On stones and old oyster shells, Atlantic
 City—Morse.
- I. cæspitosa* (Kütz.), Wolle.
 Fresh water. On submerged stones in shallow water; frequent.
- I. fluviatilis* (Rab.), Kirch.
 Fresh water. Morris: Rocky margins of Green Pond.

* *C. Orsiniana* of the Preliminary Catalogue is omitted as uncertain.

† The other species given in the Preliminary Catalogue are omitted as uncertain.

BRACHYTRICHIA, Zan.

B. Quoyi (Ag.), Born. & Flah. (*Hormactis Quoyi*, Ag.)

Marine. Atlantic: Atlantic City—Morse. Presumably this species.

GLÆOTRICHIA, Ag.

G. natans (Hedw.), Thur.

Fresh water. In small ponds and pools; frequent.

G. Pisum (Ag.), Thur.

Same habitat; parasitic on other aquatic plants.

RIVULARIA, Roth.

R. atra, Roth.

Marine. Atlantic: On stones, Atlantic City—Martindale.

R. polyotis (J. Ag.), Born. & Flah. (*R. hospita*, Thur.)

Marine. Atlantic: On roots of *Spartina* and on oyster shells—Morse.

R. dura, Kütz. (*R. radians* of Prelim. Cat.)

Fresh water. Attached to other aquatic plants in ponds; frequent.

SCYTONEMEÆ.

(All the following species are of fresh-water distribution.)

SCYTONEMA, Ag.

S. tolypotrichoides, Kütz.

On wet rocks; frequent.

S. calotrichoides, Kütz.

On submerged sticks, in ponds; frequent.

S. natans, Breb.

Atlantic: Floating in ponds, Hammonton and elsewhere.

S. Nægeli, Kütz.

On moist rocks, Closter and Godwinville—Austin.

S. myochrous, Ag.

Bergen: On moist ground, Closter—Austin.

S. gracile, Kütz.

Morris: On the rocky shores of Morris Pond.

S. cinereum, Menegh.

Bergen: Godwinville, on moist rocks—Austin.*

SYMPHOSIPHON, Kütz.

S. Austinii, Wood.

Passaic: On wet rocks, Little Falls—Austin.

S. Hofmanni (Ag.), Kütz.

On moist earth, wood and rocks.

TOLYPOTHRIX, Kütz.

T. distorta, Kütz.

In ponds; frequent.

T. ægagropila (Kütz.), Kirch.

Budd's Lake.

T. muscicola, Kütz.

In sluggish waters; frequent.

T. tenuis, Kütz.

In ponds; often very abundant.

SIROSIPHON, Kütz.

S. pulvinatus, Breb.

On moist rocks; frequent.

S. coralloides, Kütz.

Morris: On the rocky shores of Green Pond.

S. compactus, Kütz.

On moist rocks.

S. ocellatus, Kütz.

In swampy places, on submerged sticks; frequent.

* *S. truncicola*, Rab., of the Preliminary Catalogue, probably does not occur as far north as New Jersey.

HAPALOSIPHON, Næg.

H. Braunii, Kütz.

Atlantic: In ponds, on submerged plants, Atsion and Ham-
monton.

H. Brebissonii, Kütz.

In similar situations; frequent.

H. fuscescens, Kütz.

Frequent in ponds.

H. tenuissimus, Grun.

Ponds and wet ground; frequent.

NOSTOCEÆ.

NOSTOC, Vauch.

(A fresh-water genus.)

N. comminutum, Kütz.

On pond-waters; frequent.

N. commune, Vauch.

On wet ground; common.

N. sphæricum, Vauch.

On wet rocks; abundant.

N. rupestre, Kütz.

On moist rocks; frequent.

N. cæruleum, Lyngb.

In ponds and on dripping rocks.

N. pruniforme, Ag.

In ponds; frequent.

N. alpinum, Kütz. (*N. cristatum*, Bailey.)

Bergen: Dripping rocks, Palisades.

ANABÆNA, Bory.

A. flos-aquæ, Kütz.

On stagnant fresh water; common.

Var. circinalis (Rab.), Kirch. (*A. circinalis*, Rab.)

Cape May: Very abundant on a pond at Dennisville.

Var. æstuartii, Wolle.

Same locality.

A. oscillarioides, Bory.

In brackish ditches, southern parts of the State.

A. cupressaphila, Wolle. (*Trichormus incurvus*, Allman.)

On trunks of trees growing in marshes near the water line.

A. torulosa (Carm.), Lagerheim. (*Sphærozyga Carmichaelii*, Harv.)

Marine. Camden: Camden—H. C. Wood. Atlantic: On decaying algæ, Atlantic City—Morse. Hudson: Newark Bay—Pike.

SPHÆROZYGA, Ag.

S. polysperma, Kütz.

Fresh water. Somerset: In pools, Bound Brook—Wolle.

WOLLEA, Born. & Flah.

W. saccata (Wolle), Born. & Flah. (*S. saccata*, Wolle.)

Sussex: Frequent in Cranberry Pond.

CYLINDROSPERMUM, Kütz.

C. macrospermum, Kütz.

Fresh water. In wet places on dead wood, etc.; frequent.

C. limnicola, Kütz.

In similar situations.

OSCILLARIEÆ.

LYNGBYA, Ag.

L. majuscula (Dillw.), Harv.

Marine. Hudson: Newark Bay—Pike. Atlantic: On stems of floating eel-grass, Atlantic City—Morse. Cape May—Martindale. Also from vicinity of New York—Wolle.

L. æstuarii (Jürg.), Liebm. (*L. æruginosa*, Ag.)

Marine. Hudson: Brackish ditches at Hoboken—Bailey; common in salt ponds and marshes about Newark Bay—Pike. Middlesex: Perth Amboy—Wolle. Atlantic: Absecon—Wolle; on floating eel-grass, etc.—Morse. Cape May: In salt ditches—Martindale.

L. luteo-fusca, Ag.

Marine. Hudson: Hoboken—Pike. Atlantic: On wharves between tide marks, Atlantic City—Martindale.

L. tenerrima, Thur.

Marine. Atlantic: On wharves, Atlantic City—Morse.

L. Wollei, Farlow.

Fresh water. Sussex: Lake Hopatcong, Swartswood Pond,

L. pallida (Næg.), Kütz.

Fresh water. On wet soil and old meadow grounds; frequent.

L. obscura, Wolle.

Fresh water. In ponds and pools.

L. Phormidium, Kütz. (*Phormidium Lyngbyaceum*, Kütz.)

Fresh water. On marsh bottoms; frequent.

L. arenarium (Kütz.), Rab.

Atlantic: On moist, low grounds near Atlantic City—Wolle.

L. rupestre (Ag.), Kütz. (*Oscillaria rupestris*, Ag.)

On rocks. Bergen: Palisades.

L. vulgaris (Kütz.), Kirch. (*Phormidium vulgare*, Kütz.)

Fresh water. On moist soil; frequent.

L. cataracta (Rab.), Wolle. (*Phormidium cataractum*, Rab.)

In rapid waters; frequent.*

SYMPLOCA, Kütz.

S. lucifuga, Harv.

Terrestrial. Bergen: On shaded clay banks.

* *Phormidium Julianum*, *P. Navazanum* and *P. rufescens* of the Preliminary Catalogue are omitted as not certainly known from New Jersey.

MICROCOLEUS, Desmaz.

- M. chthonoplastes* (Fl. Daa.), Thur.
 Marine. Atlantic: On the marshes, Atlantic City—Morse.
- M. pulvinatus*, Wolle.
 Fresh water. Ocean: In a mill-race, Bamber—Wolle.
- M. terrestris*, Desmaz.
 Terrestrial. On moist earth; frequent.
- M. anguiformis*, Harv.
 Terrestrial. Same habitat.
- M. hyalinus* (Kütz.), Kirch.
 Fresh water. In ponds, on *Sphagnum*.

OSCILLARIA, Kütz.

- O. subuliformis*, Harv.
 Marine. Atlantic: In brackish water and pools—Martindale.
- O. subtorulosa* (Breb.), Farlow.
 Same habitat.
- O. brevis*, Kütz.
 Fresh water. In marshes; frequent.
- O. tenuis*, Ag.
 In stagnant waters; frequent.
- O. gracillima*, Kütz.
 Fresh water. On small ponds.
- O. limosa*, Ag.
 Terrestrial. On wet earth; frequent.
- O. natans*, Kütz.
 Fresh water. On ponds; frequent.
- O. nigra*, Vauch.
 Fresh water. In wet places; frequent.
- O. Froelichii*, Kütz.
 Fresh water. On sluggish and stagnant waters; frequent.
- O. major*, Vauch.
 Same habitat.

O. littoralis, Carm.

Marine. In salt-water marshes; frequent—Wolle.

O. princeps, Vauch.

Fresh water. Cape May: On pools, Dennisville.

O. imperator, Wood.

Fresh water. Frequent in ponds and pools.

BEGGIATOA, Trevisan.

B. alba, Trev., var. *marina*, Warming.

Marine. Atlantic: On leaves and stems of *Spartina* in brackish ditches—Martindale.

B. arachnoidea, Rab.

With the former—Martindale.

LEPTOTHRIX, Kütz.

L. æruginea (Kütz.), Kirch.

Fresh water. In ponds; frequent.

L. rigidula, Kütz.

Marine. Atlantic: On algæ, Atlantic City—Martindale.

L. ochracea, Kütz.

Fresh water. In ditches and small pools; frequent.

SPIRULINA, Turpin.

S. tenuissima, Kütz.

Marine. Atlantic: Atlantic City, mixed with other minute forms—Martindale. Monmouth: Swimming River—Britton.

CHROOCOCCACEÆ.

GLEOTHECE, Næg.

G. confluens, Næg.

Terrestrial. On wet rocks.

APHANOTHECE, Næg.

A. prasina, Næg.

Fresh water. Occasional; floating on ponds.

MERISMOPIEDIA, Meyen.**M. convoluta**, Breb.

Fresh water. Frequent in ponds.

COELOSPHÆRIUM, Næg.**C. Kützingianum**, Næg.

Fresh water. On stagnant pools; frequent.

CLATHROCYSTIS, Henfrey.**C. roseo-persicina**, Cohn.

Marine. Atlantic: On marshes and on mud and small pebbles, Atlantic City—Morse.

POLYCYSTIS, Kütz.**P. pallida** (Kütz.), Farlow.

Marine. Atlantic: On decaying algæ—Morse.

P. ichthyoblabe, Kütz.

Fresh water. Occasional in small pools.

ENTOPHYSALIS, Kütz.**E. granulosa**, Kütz.

Marine. Atlantic: On shells, Atlantic City—Morse.

GOMPHOSHÆRIA, Kütz.**G. aponia**, Kütz.

Fresh water. In ponds and pools; frequent.

MICROCYSTIS, Kütz.**M. protogenita** (Biaa.), Rab.

Terrestrial. On wet timbers, trunks of trees, etc.

GLÆOCAPSA, Næg.

G. crepidinum, Thur.

Marine. Atlantic: On wharves, Atlantic City—Martindale.

G. magma (Breb.), Kütz.

Terrestrial. On shaded rocks; frequent.

APHANOCAPSA, Næg.

A. virescens, Rab.

On wet stones and rocks.

CHOCCOCCUS, Næg.

C. turgidus, Næg.

Terrestrial. On moist rocks; frequent.

C. rufescens (Breb.), Næg.

Same habitat.

XENOCOCCUS, Thur.

X. Schousboei, Thur.

Marine. Atlantic: Growing on *Lyngbya luteo-fusca*, Atlantic City—Martindale.

CLASS 2.—CHLOROPHYLLÆ.

(All the following are fresh-water or terrestrial.)

PROTOCOCCACEÆ.

SORASTRUM, Kütz.

S. spinulosum, Kütz.

In ponds; frequent.

SCENEDESMUS, Meyen.

S. caudatus, Corda.

In shallow, stagnant water.

S. dimorphus, Kütz.

Same habitat.

S. acutus, Meyen.
Same habitat.

S. obtusus, Meyen.
Same habitat.

OPHIOCYTIUM, Næg.

O. cochleare, A. Br.
Frequent in stagnant ponds.

O. capitatum, Wolle.
Same habitat.

CHARACIUM, A. Br.

C. sessile, Herm.
Sussex: Cranberry Pond, on algæ.

PROTOCOCCUS, Ag.

P. viridis, Ag.
Everywhere common on the shaded side of trees, houses, rocks, etc. Mr. Wolle recognizes a large number of aerial and aquatic forms as varieties of this species.

POLYEDRIUM, Næg.

P. trigonum, Næg.

P. gigas, Wittr.

P. enorme (Ralfs.), Rab.
All found in ponds.

PALMELLACEÆ.

DICTYOSPHERIUM, Næg.

D. Ehrenbergianum, Næg.
In ponds; frequent.

D. reniforme, Bulnh.
Same habitat; occasional.

D. Hitchcockii, Wolle.
Morris: Frequent in Denmark and Split Rock Ponds.

TETRASPORA, Ag.

- T. *lubrica* (Roth), Ag.
In sluggish waters.
- T. *explanata* (Kütz.), Kirch.
On wet timbers.
- T. *bullosa* (Roth), Ag.
In sluggish waters.*

PALMELLA, Lyngb.

- P. *mucosa*, Kütz.
- P. *hyalina*, Breb.
- P. *Mooreana*, Harv.
- P. *miniata*, Deibl.
- P. *botryoides*, Kütz.
All found in marshy ground, on wet timbers, etc.

PORPHYRIDIVM, Næg.

- P. *cruentum*, Næg.
On moist earth; common in green-houses.

BOTRYOCOCCUS, Kütz.

- B. *Braunii*, Kütz.
In ponds.

GLÆOCYSTIS, Næg.

- G. *vesiculosa*, Næg.
In wet places, on old wood, etc.

NEPHROCYTIUM, Næg.

- N. *Agardhianum*, Næg.
In ponds, with desmids.
- N. *Nægellii*, A. Br.
Same habitat.

**T. gelatinosa* of the Preliminary Catalogue has not yet been found in New Jersey.

RHAPHIDIUM, Kütz.**R. polymorphum, Fres.**

In stagnant waters.

R. convolutum (Corda), Rab.

Same habitat.

DIMORPHOCOCCUS, A. Br.**D. cordatus, Wolle.**

Free-swimming in ponds.

EREMOSPHÆRA, De By.**E. viridis, De By.**

In small pools; frequent.

*(PLEUROCOCCUS is not regarded as a valid genus.)***CHYTRIDIEÆ.***(An order of questionable affinities.)***CHYTRIDIUM, A. Br.****C. acuminatum, A. Br.****C. globosum, A. Br.**

Parasitic on various fresh-water algæ.

CLASS 3.—ACHLOROPHYLLÆ.**SACCHAROMYCETES.***(Ferments.)****SACCHAROMYCES, Meyen.****S. cerevisiæ, Meyen.**

The Yeast Plant, which causes the fermentation of saccharine solutions, producing alcohol with the accompanying disengagement of carbonic acid gas.

*Only the most common and best-known forms are here enumerated.

S. Mycoderma, Reess.

"On fermented liquids, sauer-kraut, juices of fruits, etc. On wine and beer, forms the so-called mold, growing on the surface without ordinarily exciting fermentation."*

S. albicans, Reess.

"On the mucous membrane of the mouth, especially of nursing infants, producing the disease known as Thrush."†

SCHIZOMYCETES.‡

(Bacteria.)

BACTERIUM, Cohn.

B. termo, Dujard.

In all decomposing organic substances, including a number of different forms or species.

B. lineola, Cohn.

In various infusions.

BACILLUS, Cohn.

B. subtilis, Cohn.

In various decaying substances.

B. anthracis, Cohn.

"In the blood of animals which have died of splenic fever (Anthrax); the cause of splenic fever in cattle, sheep, etc., and malignant pustule in man."§

B. tuberculosis, Koch.

Accompanying consumption.

SARCINA, Goodsir.

S. ventriculi, Goodsir.

In the stomach of man and the higher animals.

* T. J. Burrill, "The Bacteria," p. 64, (From the Eleventh Report of the Illinois Industrial University.)

† Burrill, *l. c.*

‡ Only the most common and best-known forms are here enumerated. There are numerous other nominal species.

§ Burrill, *l. c.*, p. 51.

SPIRILLUM, Ehrb.

- S. Undula** (Müll.), Ehrb.
In bog-water and various infusions.

MICROCOCOCCUS, Cohn.

- M. luteus**, Cohn.
On boiled potatoes, etc.
- M. aurantiacus**, Cohn.
On boiled potatoes, etc.
- M. ureæ**, Cohn.
In urine.
- M. crepusculum**, Cohn.
In various infusions and decomposing substances, accompanying *Bacterium termo*:
- M. vaccinæ**, Cohn.
In vaccine virus and the pock-pustules of small-pox.
- M. diphtheriticus**, Cohn.
Accompanying diphtheria.
- M. septicus**, Cohn.
In wounds, accompanying pyæmia and septicæmia.
- M. amylovorus**, Burrill.
"The cause of blight in plants, especially of pear and apple trees."*
- M. toxicatus**, Burrill.
"Apparently parasitic on species of *Rhus* (Poison Oak, Poison Ivy), and constituting the poisonous principles of these plants."*

The list of foreign plants introduced on ballast grounds at Camden, Communipaw and Hoboken, printed in the Preliminary Catalogue, is not republished, as many of the species have long ago disappeared from those localities.

* Burrill, *l. c.*, p. 42.

ERRATA AND ADDENDA.

Page 34. For *A. nemorosa*, L., and *forma quinquefolia* (L.), Britt., read *A. quinquefolia*, L.

Page 43. For *C. odorata* (Dryand.), Greene, read *C. odorata* (Dryand.), Woodv. & Wood.

Page 44. For *forma rosea*, Britt., read *forma rosea* (Pursh), Britt.

Page 77. After SAPINDACEÆ, add

CARDIOSPERMUM, L.

Balloon Vine.

C. Halicacabum, L.

Middlesex: Waste places, New Brunswick—Halsted. Fugitive from tropical America.

Page 238. After Star-grass, Yellow-eyed Grass, insert

H. erecta, L.

In dry, open places. Common throughout the State.

Page 378. After Camden: On cherry trees—Eckfeldt, insert

LECANACTIS, Eschw.

L. premnea (Ach.), Tuck.

Camden: On *Liriodendron*—Eckfeldt.

Page 378. Add to XYLOGRAPHA, Fr.,

X. parallela (Ach.), Fr.

Northern part of the State, on dead wood—Eckfeldt.

Page 380. For *A. stellaris*, Tuck., read *A. quintaria*, Nyl.

For *A. lædiosa*, read *A. tædiosa*.

After *A. polymorpha*, insert

A. impallens, Nyl.

Atlantic: On *Ilex*, Atlantic City, rare—Eckfeldt.

Page 381. For *Coniocybe pollida*, read *C. pallida*.

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TABULATION OF NUMBER OF PLANTS ENUMERATED.

ANTHOPHYTA.

ANGIOSPERMÆ.

DICOTYLEDONÆ. POLYPETALÆ.	NATIVE					Total Native.	Naturalized.	Adventive and Fugitive.	Total Species, Varieties and Forms.
	Of the more Northern Flora.	Of the more Southern Flora.	Of the more Western Flora.	Marine and Coast Flora.	Throughout the State.				
Ranunculacææ.....	27		2	1	5	35	2	5	42
Magnoliacææ.....		1			1	2			2
Anonacææ.....			1			1			1
Menispermacææ.....					1	1			1
Berberidææ.....	2					2		1	3
Nymphiacææ.....	1		2	1	4	8		1	9
Sarraceniæææ.....					1	1			1
Papaveracææ.....	5		1			6	1	5	12
Cruciferææ.....	13	1	1	1	5	21	9	15	45
Capparidææ.....	1					1		1	2
Cistinææ.....		8		2	4	12			12
Violariææ.....	9	8	1		4	22		2	24
Polygalææ.....	1	8	1		2	12			12
Caryophyllææ.....	8	5	1	4	2	20	7	11	38
Portulacææ.....	1					1	1	1	3
Elatinææ.....					1	1			1
Hypericinææ.....	4	6	1		5	16	1		17
Malvacææ.....				2		2	3	7	12
Tiliacææ.....	1		1			2			2
Linææ.....			1		2	3		1	4
Geraniacææ.....	3				5	8		5	13
Rutacææ.....	1		1			2		1	3
Simarubææ.....							1		1
Illicinææ.....		3			2	5			5
Celastrinææ.....			1		3	4			4

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ANTHOPHYTA.

ANGIOSPERMÆ.

DICOTYLEDONÆ. POLYPETALÆ.	NATIVE						Naturalized.	Adventive and Fugitive.	Total Species, Varieties and Forms.
	Of the more Northern Flora.	Of the more Southern Flora.	Of the more Western Flora.	Marine and Coast Flora.	Throughout the State.	Total Native.			
Rhamnææ		1	1		1	3		1	4
Ampelidææ	5		1		4	5			5
Sapindacææ			2		1	8		1	9
Anacardiææ	1				4	5			5
Leguminosææ	7	21	5	1	15	49	8	19	76
Rosacææ	31	3	3	2	19	58	2	13	73
Saxifragææ	12	1	1			14		2	16
Crassulacææ	1					1		3	4
Droseracææ		1			2	3			3
Hamamelidææ	1	1				2			2
Haloragææ	3	7		1	2	13			13
Melastomacææ		3				3			3
Lythraricææ		1	3	2	1	7	1		8
Onagrariææ	6	6	2	2	7	23		1	24
Cucurbitacææ			1		1	2			2
Cactææ					1	1			1
Ficoidææ				1		1		1	2
Umbelliferææ	14	3	4	4	6	31	3	5	39
Araliacææ	4		1		1	6		1	7
Cornacææ	5				3	8			8
Total Polypetalææ	167	88	39	24	115	433	39	103	575
GAMOPETALÆ.									
Caprifoliacææ	12	3			3	18		4	22
Rubiacææ	7	6	1	1	5	20		1	21
Valerianææ							1	1	2
Dipsacææ							1	1	2
Compositææ	40	45	13	12	63	178	14	31	223

ANTHOPHYTA.

ANGIOSPERMÆ.

DICOTYLEDONÆ. GAMOPETALÆ.	NATIVE					Total Native.	Naturalized.	Adventive and Fugitive.	Total Species, Varieties and Forms.
	Of the more Northern Flora.	Of the more Southern Flora.	Of the more Western Flora.	Marine and Coast Flora.	Throughout the State.				
Campanulacææ.....	4	3	1	.....	6	14	.....	1	15
Vacciniacææ.....	5	4	.....	.....	5	14	.....	.....	14
Ericacææ.....	8	6	.....	.....	11	25	.....	.....	25
Monotropææ.....	.....	.....	.....	.....	2	2	.....	.....	2
Diapensiacææ.....	.....	1	.....	.....	.....	1	.....	.....	1
Plumbaginææ.....	.....	.....	.....	1	.....	1	.....	.....	1
Primulacææ.....	4	1	1	.....	4	10	.....	4	14
Ebenacææ.....	.....	1	.....	.....	.....	1	.....	.....	1
Oleacææ.....	3	1	1	.....	.....	5	.....	2	7
Apocynacææ.....	2	.....	2	.....	1	5	1	.....	6
Asclepiadææ.....	4	3	.....	.....	6	13	.....	.....	13
Gentianææ.....	6	5	.....	4	4	19	.....	1	20
Polemoniææ.....	2	.....	3	.....	1	6	.....	1	7
Hydrophyllacææ.....	1	.....	1	.....	.....	2	.....	.....	2
Asperifoliææ.....	3	1	2	.....	1	7	3	7	17
Convolvulacææ.....	1	5	.....	.....	3	9	.....	6	15
Solanacææ.....	.....	1	.....	.....	1	5	3	7	15
Scrophularinææ.....	11	7	3	2	14	37	6	5	48
Orobanchacææ.....	2	.....	.....	.....	1	3	.....	2	5
Lentibulariææ.....	2	9	.....	.....	.....	11	.....	.....	11
Bignoniacææ.....	.....	1	1	.....	.....	2	.....	.....	2
Pedaliniææ.....	.....	.....	.....	.....	.....	.....	.....	1	1
Acanthacææ.....	.....	1	1	.....	.....	2	.....	.....	2
Verbenacææ.....	.....	1	.....	.....	3	4	.....	3	7
Labiataæ.....	13	9	5	.....	14	41	6	19	66
Plantaginææ.....	.....	3	.....	2	1	6	2	1	9
Total Gamopetalæ.....	130	117	40	22	149	461	37	98	596

ANTHOPHYTA.

ANGIOSPERMÆ.

DICOTYLEDONÆ. APETALÆ.	NATIVE						Naturalized.	Adventive and Fugitive.	Total Species, Varieties and Forms.
	Of the more Northern Flora.	Of the more Southern Flora.	Of the more Western Flora.	Marine and Coast Flora.	Throughout the State.	Total Native.			
Illecebracæ	1				1	2	1		3
Amarantacæ				2		2	3	3	8
Chenopodiacæ				10		10	5	7	22
Phytolaccacæ					1	1			1
Polygonacæ	7	1	2	4	9	23	6	3	32
Podostemacæ	1					1			1
Aristolochiacæ	2					2			2
Piperacæ		1				1			1
Laurinæ					2	2			2
Thymelæacæ			1			1			1
Loranthacæ		1				1			1
Santalacæ					1	1			1
Euphorbiacæ		6		1	3	10	1	4	15
Urticacæ	9	2			1	12		5	17
Platanacæ					1	1			1
Juglandæ	4				3	7			7
Myricacæ	1	1			1	3			3
Cupuliferæ	10	9	1		12	32		1	32
Salicinæ	8	2	2		6	18	1	5	24
Empetracæ				1		1			1
Ceratophylleæ					1	1			1
Total Apetalæ	43	23	6	18	42	132	17	28	177

ANTHOPHYTA.

ANGIOSPERMÆ.

MONOCOTYLEDONÆ.	NATIVE						Naturalized.	Adventive and Fugitive.	Total Species, Varieties and Forms.
	Of the more Northern Flora.	Of the more Southern Flora.	Of the more Western Flora.	Marine and Coast Flora.	Throughout the State.	Total Native.			
Hydrocharideæ.....		1				2	3		3
Orchideæ.....	26	8	2			9	45		45
Hæmodoraceæ.....		4					4		4
Irideæ.....		1				4	5	2	7
Amaryllideæ.....						1	1		1
Dioscoreaceæ.....						1	1		1
Liliaceæ.....	20	13	1			6	40	3	45
Pontederiaceæ.....		1				3	4		4
Xyrideæ.....		5					5		5
Commelinaceæ.....		3	1				4	1	5
Juncaceæ.....	4	9	3	4		7	27		27
Typhaceæ.....	1			1		2	4		4
Aroideæ.....	2					5	7		7
Lemnaceæ.....	6					3	9		9
Alismaceæ.....	3	2	6			2	13		13
Naiadaceæ.....	13	3	3	3		6	28		28
Eriocaulææ.....		2				1	3		3
Cyperaceæ.....	70	36	18	8		49	181	1	182
Gramineæ.....	36	28	10	16		34	124	25	164
Total Monocotyledonæ.....	181	116	44	32		135	509	28	558

GYMNOSPERMÆ.

Conifera.....	7	2	2			2	13		13
Grand Total Anthophyta.....	528	346	131	96		443	1548	121	250

PTERIDOPHYTA.

Isoetæ	4	1	.....	5	.....	5
Selaginellæ.....	2	.....	.....	2	.....	2
Lycopodiaceæ.....	4	3	.....	1	8	3
Ophioglossaceæ	5	.....	.....	2	7	7
Filicineæ.....	34	4	2	1	6	47
Equisetaceæ.....	4	.....	1	.....	2	7
	53	7	4	1	11	76

The total number of species and varieties hitherto detected in the State, and enumerated as follows, may thus be stated :

Dicotyledonæ	1,348
Monocotyledonæ	558
Total Angiospermæ.....	1,906
Total Gymnospermæ.....	13
Total Anthophyta.....	1,919
Isoetæ	5
Selaginellæ.....	2
Lycopodiaceæ	8
Ophioglossaceæ	7
Filicineæ.....	47
Equisetæ.....	7
Total Pteridophyta.....	76
Sphagna.....	42
Musci.....	312
Hepaticæ.....	90
Characeæ.....	17
Total Bryophyta.....	461
Lichenes.....	329
Algæ.....	987
Fungi.....	1,705
Total Thallophyta.....	3,021
Cyanophyceæ	111
Chlorophyllæ.....	34
Achlorophyllæ.....	19
Total Protophyta.....	164
Total number of species and varieties enumerated.....	5,641

C.

Carey.....Carey, John.
 Carr.....Carriere, Elie A.
 Carringt.....Carrington, Benjamin.
 Carruth.....Carruthers, Wm.
 Cast.....Castagne, Louis.
 Cass.....Cassini, A. H. G.
 Cav.....Cavanilles, Antonio J.
 Ces. & De Not.
 Cesati and De Notaris.
 Ces.....Cesati, Vincenzo.
 Chaix.....Chaix, Dominique.
 Cham.....Chamisso, Adalbert.
 Chapm.....Chapman, A. W.
 Chev.....Chevallier, Francois F.
 Clarion.....Clarion, Jean.
 Cleve.....Cleve, P. T.
 Commers.....Commerson, Philibert.
 Cogn.....Cogniaux, A.
 C. & E.....Cooke and Ellis.
 Cke.....Cooke, M. C.
 C. & P.....Cooke and Peck.
 Cda.....Corda, August K. J.
 Coult. & Rose.
 Coulter and Rose.
 Crouan.....Crouan (Frères).
 M. A. Curtis.....Curtis, Moses Ashley.
 Curtis, W.....Curtis, Wm.

D.

Darl.....Darlington, Wm.
 De By.....De-Bary, H. Anton.
 Decne. & Planch.
 Decaisne and Planchon.
 Decne.....Decaisne, Joseph.
 DC.....De Candolle, A. P.
 A. DC.....De Candolle, Alphonse.
 Delp.....Delponte, J. B.
 Desf.....Desfontaines, René.
 Desv.....Desvaux, Augustin N.
 Dethard.....Detharding, Georg G.
 De Ton.....De Toni, G. B.
 Dewey.....Dewey, Chester.
 Dicks.....Dickson, James.
 Dietr.....Dietrich, David N. F.
 Dill.....Dillen, John J.
 Dillw.....Dillwyn, Lewis W.
 Doell.....Doell, J. C.

Delise.....Delise, Dominic F.
 Don.....Don, George.
 Drev. & Hayne.
 Dreves and Hayne.
 Drumm.....Drummond, James.
 Dryand.....Dryander, Jonas.
 Duby.....Duby, Jean E.
 Duchesne.....Duchesne, Antoine N.
 Dudley.....Dudley, William R.
 Dufour.....Dufour, Jean Marie L.
 Durand.....Durand, Elias.
 Durieu.....Durieu de Maisonneuve.
 Dumort.....Dumortier, Bartholemy C.
 Dumont.....Dumont de Courset, G. L. M.
 Du Roi.....Du Roi, Johann P.
 Dun.....Dunal, Michel F.
 De Not.....De Notaris, Guiseppe.

E.

Eaton.....Eaton, Amos.
 Eaton, D. C.....Eaton, Daniel Cady.
 Eddy.....Eddy, C. W.
 Ehrb.....Ehrenberg, Christian G.
 Ehrh.....Ehrhart, Balthasar.
 Ehrh.....Ehrhart, Friedrich.
 E. & E.....Ellis and Everhart.
 E. & M.....Ellis and Martin.
 Ell.....Ellis, J. B.
 Ell.....Elliott, Stephen.
 Endl.....Endlicher, Stephan L.
 Engelm.....Engelmann, Geo.
 Eschw.....Eschweiler, Franz G.

F.

Farlow.....Farlow, W. G.
 Fée.....Fée, Antoine L. A.
 Fisch.....Fischer, Friedrich E. L.
 Fisch. & Meyer.
 Fischer and Meyer.
 Flærk.....Flærke, Heinrich G.
 Flot.....Flotow, Julius von.
 Forsk.....Forskarl, Pehr.
 Forst.....Forster, J. R.
 Franc.....Francisi.
 Fr.....Fries, Elias.
 Th. Fr.....Fries, Theodor M.
 Frœl.....Frœlich, Joseph A.

Frost.....Frost, Chas. C.
 Fckl.....Fuekel, Leopold.
 Funck.....Funck, Heinrich C.

G.

GærtnGärtner, Joseph.
 Gärtn. f.....Gärtner, Karl F.
 Gaill Gaillon, Benjamin.
 Gaudich Gaudichaud-Beaupre, C.
 J. Gay.....Gay, Jacques.
 Ger Gerard, Wm. R.
 Geyer.Geyer, Karl A.
 Ging.....Gingens, F. C. J.
 GloxGloxin, Benj. P.
 GoldieGoldie, John.
 Good.....Goodenough, Samuel.
 GottscheGottsche, Karl M.
 GrayGray, Asa.
 Greene Greene, Edward Lee.
 Greene, B. D. Greene, B. D.
 GregGregory, Wm.
 GrevGreville, Robert K.
 Griseb..... Grisebach, Heinrich R. A.
 Gronov.....Gronovius, Jan Fredrik.
 Grun.....Grunow, A.
 Gunn.....Gunner, Johan E.
 GmelGmelin, Johann F.

H.

HackHackel, E.
 Hall.....Haller, Albert von.
 Hampe.....Hampe, Ernst.
 HassHassall, Arthur H.
 HasskHasskarl, Justus K.
 HarveyHarvey, Wm. H.
 HawHaworth, Adrian H.
 Heist.....Heister, Lorenz.
 HillHill, John.
 HitchcockHitchcock, Edward.
 Hobson.....Hobson, J.
 Hoffm.....Hoffmann, Geo. F.
 HollickHollick, Arthur.
 HolmskHolmskiold, Theodor.
 Hook. f.....Hooker, Joseph D.
 HookHooker, Wm. J.
 Hook. & Tayl.
 Hooker and Taylor.

Hook. & Wils.
 Hooker and Wilson.
 Hooper.....Hooper, John.
 HoppeHoppe, David H.
 HorkelHorkel, Johann.
 Hornsch.....Hornschuh, Friedrich.
 HostHost, Nicolaus T.
 Huds.....Hudson, Wm.
 Huebn.....Huebener, J. W. P.
 Hull.....Hull, John.
 H. B. K.... { Humboldt, Bonpland and
 Kunth.

I.

IvesIves, E.

J.

JacobsenJacobsen, J.
 JacqJacquin, Nicolaus J.
 JægerJæger, August.
 James.James, Thomas F.
 JurJuratska, Jacob.
 JussJussieu, Adrien de.

K.

Kalm.....Kalm, Pehr.
 KarstKarsten, Herrman.
 Ker.....Ker, John B.
 KirchKirchner, O.
 Kjellman.....Kjellmann, F. R.
 KlKlotzsch, Johann F.
 KochKoch, W. D. J.
 KöhneKöhne, Emil.
 KærbrKærber, Gustav W.
 KörnickeKörnicke, Friedrich.
 Kuhlw.....Kuhlewein.
 KützKützing, Friedrich T.
 KunthKunth, Karl S.
 KunzeKunze, Gustav.

L.

LagLagasca, Mariano.
 Lagerst.....Lagerstedt, N. G. W.

Lap.....La Marck, J. B. A. P.
 Lamour.....Lamouroux, Jean V. F.
 Lawson.....Lawson, Geo.
 Le Conte.....Le Conte, John.
 Ledeb.....Ledebour, Karl F. von.
 Lehm.....Lehmann, Johann G. C.
 Le Jolis.....Le Jolis, Auguste.
 Lesqx. & James.
 Lesquereux and James.
 Lenz.....Lenz, Harold O.
 Lév.....Léveillé, Joseph H.
 Leyss.....Leysser, Friedrich W. von.
 L'Hér.....L'Héritier, C. L.
 Libert.....Libert, Marie Anne.
 Lightf.....Lightfoot, John.
 Lindb.....Lindberg, Sextus O.
 Lindenb.....Lindenberg, Johann B. W.
 Lindl.....Lindley, John.
 Lk.....Link, Heinrich F.
 L.....Linnaeus, Carolus.
 L. f.....Linnaeus, Carolus (Filius).
 Lois.....Loiseleur-Delongchamps, J.
 Lund.....Lundell, P. M.
 Lyell.....Lyell, Chas.
 Lyngb.....Lyngbye, Hansen C.

M.

Mann.....Mann, Wenzeslaus.
 Marsh.....Marshall, Humphrey.
 Mart.&Koch..Martens and Koch.
 Martin.....Martin, Geo.
 Mart.....Martius, Karl F. P. von.
 Mass.....Massalongo, Abramo B.
 Masee.....Masee, Geo.
 Maxim.....Maximowicz, C. J.
 Medikus.....Medikus, Friedrich C.
 Meisn.....Meisner, Charles F.
 Menegh.....Meneghini, Guiseppe.
 Menz.....Menzies, Archibald.
 Mert.....Mertens, H.
 Meyer, E.....Meyer, E. H. F.
 Meyen.....Meyen, Franz J. F.
 Michx.....Michaux, Andre.
 Michx. f.....Michaux, F. Andre.
 Milde.....Milde, Julius.
 Mill.....Miller, Philip.
 Mitch.....Mitchell, John.
 Mitt.....Mitten, Wm.

Möhr.....Möhring, Paul H. G.
 Mönch.....Mönch, Konrad.
 Mohr.....Mohr, Daniel M. H.
 Mont.&Berk..Montagne and Berkeley.
 Mont. & Desm.
 Montagne and Desmazieres.
 Mont.....Montagne, Jean F. C.
 Moore.....Moore, Thos.
 Moq.....Moquin-Tandon, Alfred.
 Morong.....Morong, Thos.
 Mudd.....Mudd, Wm.
 Muell. Arg...Mueller, Johann.
 C. Muell.....Mueller, Carl.
 Mühl.....Mühlenberg, Henry L.
 Munro.....Munro, Wm.
 Murr.....Murray, J. A.
 Myrin.....Myrin, Claes G.

N.

Næg. & Hepp.
 Nægeli and Hepp.
 Næg.....Nægeli, Karl.
 Neck.....Necker, Noel J. de.
 Nees.....Nees von Esenbeck, C. G.
 Nitsch.....Ni'schke, Theodor.
 Nordst.....Nordstedt, O.
 Norm.....Norman, J. M.
 Nutt.....Nuttall, Thomas.
 Nyl.....Nylander, Wilhelm.

O.

Oakes.....Oakes, Wm.
 Oakes & Tuck.
 Oakes and Tuckerman.
 Olney.....Olney, Stephen G.
 Ort.....Ortega, Casimiro G.
 Oth.....Oth, Karl A.

P.

Paine.....Paine, John A.
 Pall.....Pallas, Peter S.
 Pk.....Peck, Chas. H.
 Presl.....Presl, Carl B.
 Pers.....Persoon, Christian H.
 Perty.....Perty, Maximillian.
 Philippi.....Philippi, Rudolf A.

Planch Planchon, Gustave.
 Poir Poiret, J. L. M.
 Poll Pollich, Johann A.
 Porter Porter, Thomas C.
 Prince Prince, Wm.
 Prings Pringsheim, Natan.
 Pursh Pursch, F. T.

R.

Rabh Rabenhorst, Ludwig.
 Raddi Raddi, Guiseppe.
 Raf Rafinesque-Schmalz, C. S.
 Ralfs Ralfs, J.
 Rav Ravenel, Henry W.
 Red Redoute, Pierre J.
 Rehm Rehm, Heinrich.
 Reichard Reichard, Johann J.
 Reichenb Reichenbach, H. G.
 Reinsch Reinsch, Paul.
 Relh Relhan, Richard.
 Retz Retzius, A. J.
 Rich Richard, Achille.
 Richards Richardson, John.
 Ridd Riddell, John.
 Robbins Robbins, J. W.
 Robinson Robinson, Benjamin L.
 Roem. & Schult.
 Roemer and Schultes.
 Rosanoff Rosanoff, Sergius.
 Rost Rostafinski, J. Th. von.
 Rostk Rostkovius, Friedrich W. G.
 Rostk. & Schmidt.
 Rostkovius and Schmidt.
 Roth Roth, Albrecht W.
 Rottb Rottbøll, Christen F.
 Rudge Rudge, Edward.
 Ruiz & Pav Ruiz and Pavon.
 Russell Russell, J. L.
 Russow Russow, Edmond.

S.

S. & E Saccardo and Ellis.
 Sacc Saccardo, P. A.
 Salisb Salisbury, Richard A.
 Sartw Sartwell, Henry P.
 Sav Savi, Gaetano.
 Schæff Schæffer, Jacob C.
 Schær Schærer, Ludwig E.

Scheele Scheele, A.
 Schimp Schimper, W. P.
 Schk Schkuhr, Christian.
 Schleich Schleicher, J. C.
 Schleid Schleiden, Matthias J.
 A. S Schmidt, Adolf.
 Schott Schott, Heinrich W.
 Schrad Schrader, Heinrich A.
 Schrank Schrank, Franz von P.
 Schreb Schreber, J. D. C. von.
 Schmid Schmidel, Casimir C.
 Schult Schultes, Joseph.
 Schum Schumann, J.
 Schwægr Schwægrichen, C. F.
 Schw Schweinitz, L. D. de.
 Schw. & Torr.
 Schweinitz and Torrey.
 Scop Scopoli, Johann A.
 Scribner Scribner, F. Lamson.
 Sibth Sibthorp, John.
 Sieb. & Zucc. Siebold and Zuccarini.
 Sims Sims, John.
 H. L. S. Smith, Hamilton L.
 Sm Smith, Jas. E.
 W. Sm Smith, Wm.
 Soland Solander, Daniel.
 Sommerf Sommerfelt, Soren C.
 Sow Sowerby, James.
 Spach Spach, Edward.
 Spenner Spenner, F. K. L.
 Spreng Sprengel, Kurt.
 Spring Spring, Anton F.
 Spruce Spruce, Richard.
 Stack Stackhouse, John.
 Sterns Sterns, Emerson E.
 Steud Steudel, Ernst G.
 Stizenb Stizenberger, Ernst.
 Sturm Sturm, Jacob.
 Sull. & Lesqx. Sullivant and Lesquereux.
 Sulliv Sullivant, Wm. S.
 Sw Swartz, Olof.

T.

Tenney Tenney, Sanborn.
 Thomas Thomas, David.
 Thüm Thüemen, Felix von.
 Thunb Thunberg, Carl P.
 Thurber Thurber, George.
 Thur Thuret, Gustav.

632 GEOLOGICAL SURVEY OF NEW JERSEY.

TimmTimm, Joachim C.
 TodeTode, Heinrich J.
 T. & G.....Torrey and Gray.
 Torr.....Torrey, John.
 TournTournefort, Joseph P. de.
 TrattTrattinick, Leopold.
 Trin Trinius, Karl B.
 TuckTuckerman, Edward.
 Tul..... Tulasne, Louis R.
 Turn. & Borr.
 Turner and Borrer.
 TurnerTurner, Dawson.
 TurpTurpin, Pierre J. F.

U.

Underw..... Underwood, L. M.

V.

Vahl.....Vahl, Martin.
 V. H..... Van Heurck, Henri.
 Vasey Vasey, Geo.
 Vauch Vaucher, Jean P. E.
 Vent Ventenat, Etienne P.
 Vill Villars, Dominique.
 Vilt Viltardini, Carlo.

W.

Wahl.....Wahlenberg, Georg.
 WallrWallroth, K. F. W.
 WalpWalpers, Wilhelm G.

Walt.....Walter, Thos.
 WatsWatson, Sereno.
 Wang.....Wangenheim, F. A. J.
 Web.....Weber, Friedrich.
 Web. & Mohr.
 Weber and Mohr.
 WeiheWeihe, Karl E. A.
 WeinWeinmann, J. A.
 Weiss Weiss, Fr. Wilhelm.
 Wender..... Wenderoth, Georg W. F.
 West Westendorp, G. D.
 WiggersWiggers, H. A. L.
 Willd.Willdenow, Karl F.
 Wille.....Wille, N.
 Wils.....Wilson, William.
 Wimmer.....Wimmer, Friedrich.
 WinterWinter, Georg.
 WithWithering, Wm.
 Witt.....Wittering, William.
 Wittr. & Lund.
 Wittrock and Lundell.
 Wittr.Wittrock, Veit B.
 WolleWolle, Francis.
 Wood.....Wood, Alphonso.
 WoodWood, H. C.
 WoronWoronin, Max.
 Wulf.....Wulfen, Franz X.

Z.

Zanard Zanardini, Giovanni.
 Zopf..... Zopf, W.

INDEX OF GENERA.

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