[From the 47th Report of the New York State Museum of Natural History.]

ANNUAL REPORT

OF THE

STATE BOTANIST

OF THE

STATE OF NEW YORK. 1893.

Made to the Regents of the University, Pursuant to Chapter 355 of the Laws of 1883.

By CHARLES H. PECK.

ALBANY:
JAMES B. LYON, STATE PRINTER.
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No. 89.

IN SENATE,

JANUARY, 1894.

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STATE BOTANIST.

OFFICE OF THE STATE BOTANIST,
ALBANY, *January*, 1894.

To the Honorable the Regents of the University of the State New York:

I have the honor to present to you my annual report for the year 1893.

Very respectfully.

CHARLES H. PECK.

REPORT.

To the Honorable the Regents of the University of the State of New York:

GENTLEMEN.— I have the honor of communicating to you the following report:

Specimens of plants to represent the flora of the State in the Herbarium of the State Museum have been collected by the Botanist during the past season in the counties of Albany, Cayuga, Dutchess, Essex, Herkimer, Jefferson, Oneida, Onondaga, Rensselaer, Saratoga, St. Lawrence and Sullivan.

Specimens contributed by correspondents were collected in the counties of Albany, Erie, Essex, Kings, St. Lawrence, Suffolk, Richmond and Tompkins.

Specimens of 261 species of plants have been added to the Herbarium of which 245 were collected by the Botanist and 16 were contributed.

Of the added plants 40 belong to species not before represented therein and of these 11 are deemed new species. The remaining specimens, though not representing species new to the Herbarium, are intended to make more complete and satisfactory the exhibit of the species to which they belong.

A list of the species of which specimens have been added is marked A.

Specimens have been contributed to the Herbarium by 15 contributors. Some of these are plants found beyond our limits but they are valuable for reference, comparison and study. A list of the contributors and of their respective contributions is marked B.

A record of species not before reported, together with their localities, time of collection, descriptions of new species and other matters of interest, also descriptions of a few extralimital species of which specimens were sent for identification, will be found marked C.

A record of observations on species previously reported, remarks concerning them and descriptions of new or peculiar forms or varieties will be found under D. An inspection of this part of the report will show that more attention than usual has been given to the study of the variations in our flowering plants and that there are many deficiencies in the descriptions of the Manual. The study of these variations and their causes is a most interesting one and is not without its practical value. It is necessary to give us a more complete knowledge of the limits and behavior of species and to enable us to write complete and satisfactory descriptions of them. It is noticeable that most of our cultivated plants are very variable. By cultivation, selection, crossing and close pollination the natural variations have been fixed and even intensified so that we have varieties apparently as distinct as species themselves. Differences in soil, climate, degrees of moisture and prevailing temperature appear to be causes of variation in some cases but these external influences are not sufficient to explain all cases of variation. For example in a low strip of land lying along the railroad near Narrowsburg, five distinct forms or varieties of the common racemed loosestrife were found. These, so far as could be ascertained, all grew in the same kind of soil and subject to the same external conditions.

In a single patch of the bland or early wild rose growing near the station at Cooperstown Junction, although the patch was but a few feet in diameter, some of the young shoots have infrastipular spines, but most of them, as usual, were destitute of these spines. What should cause the differences noted in these instances? It is sometimes said that plants have an inherent tendency to vary, but this scarcely enlightens us or gives a satisfactory explanation of the results observed. Even the influence of cross pollination and the action of the laws of heredity do not seem a sufficient or satisfactory explanation in all cases. But whatever the hidden or unknown causes of such variations may be the resulting phenomena are certainly interesting to the student of nature and in the case of useful plants they are not without utility. They indicate a peculiar kind of adaptability in the species to varying conditions of growth and to wider fields of usefulness.

Some special effort has been made to perfect the representation of our native pond weeds in the Herbarium. At the time the State Flora was written by Doctor John Torrey nine species of Potamogeton were recorded as inhabiting New York waters. In the Monograph of the Naiadaceæ of North America recently prepared by Doctor Thomas Morong, 27 New York species are recognized. Of these 26 are now represented in the Herbarium. Some of these species are extremely variable and require many specimens to properly represent them in all their variations. Many forms and varieties new to the Herbarium have been collected, also one species new to the Herbarium and one new to the State. *Potamogeton lucens* var. *Connecticutensis* was discovered by Mr. L. H. Hoysradt in Stissing pond several years ago. This still remains its only known locality in our State. From it specimens of this rare form have been obtained. More typical forms were collected in Oneida and Cayuga lakes where the plants are by no means scarce. A list of the New York species of Potamogeton is given in another part of this report. "The Plains" is a name given to a tract of land lying along the upper waters of the Oswegatchie river in the southern part of St. Lawrence county. Being desirous of observing the character of its vegetation this place was visited. It is destitute of trees with the exception of a few scattered poplars and tamaracks. Clumps of willows and of the common meadow sweet with some mountain fly honeysuckle, an abundance of Canadian blueberry and some choke cherry and choke berry bushes are the principal shrubs. The prickly blackberry, *Rubus setosus*, a northern species, is here and the common wintergreen. Goldenrods were abundant, the Canadian goldenrod prevailing and showing marked variations. The willow-leaved goldenrod, *Solidago uliginosa*, which usually grows in swamps and wet places, here grows on dry sandy soil. A peculiar departure from the ordinary habitat was also noticed in two grasses, the white-grained mountain rice, *Oryzopsis asperifolia*, and the purple wild-oat, *Avena striata*. These usually grow in the shade of trees or in woods, but here both were abundant and growing exposed to the full sunlight. The land of this tract is not level but rises gradually as it recedes from the river, and in some

places there are depressions or swales. In these, several species of sedge grow and other plants fond of moist or wet soil. The whole area was strongly suggestive of an old wornout or abandoned farm. There was no evidence of former forest growth on it nor was it clear why trees had not occupied it. One guide claimed that fire had destroyed the timber but I saw no remains of charred trunks to bear out this claim. The indications point rather to poverty of soil as a partial explanation of the absence of forest trees and yet this is evidently not the whole nor a very satisfactory explanation.

The newspapers have recently reported several cases of mushroom poisoning. This emphasizes the importance of a more general and better knowledge of these plants and more care in selecting and eating them. It indicates that the action of the Board of Regents in directing the preparation of life-size colored figures of our edible and poisonous species of fungi and plain and simple descriptions of them was wise and needful. It is very desirable that the appropriation necessary for the publication of these plates and descriptions be made at the coming session of the Legislature. The question is often asked, how shall the edible mushrooms be distinguished from the poisonous or dangerous species. The answer is, there is no simple or peculiar mark or character by which they may be distinguished. It is necessary to know and to be able to recognize each species used for food by its own specific characters. All not known to be safe eating, should be rejected. This is the rule in the case of the higher orders of plants. A considerable number of species are known to be good for food, a few are known to be poisonous, either in root, herbage or fruit and a much larger number, while neither hurtful nor edible, are regarded as either worthless or useful for other than edible purposes. We invariably recognize those used for food by their own specific characters and do not look for any single mark or character by which to distinguish poisonous plants or fruits from edible ones. Sometimes the good and bad are closely related botanically and accidents happen from a failure to recognize specific characters. Thus poison hemlock is sometimes mistaken for sweet cicily, both belonging to the

same family and having a similar general appearance. In the Nightshade family or Solonaceæ we find such food plants as the potato, tomato and eggplant associated botanically with such inedible or hurtful species as tobacco, henbane and thorn apple or stramonium. If we would avoid accidents we must know each species so well that no dangerous species will be mistaken for it. So among fungi we find that really excellent esculent, the royal mushroom, often called Cæsar's mushroom, *Amanita cæsarea*, associated not only in the same genus but even in the same group or section with the delusive and deadly phalloid mushroom, *Amanita phalloides*. Both are attractive in appearence, tender in substance and not at all repulsive in taste or odor, but to eat one is health and life, to eat the other is sickness and death.

But the species of fleshy fungi are so numerous and so similar in structure that much greater care is required in discriminating between the good and the bad, than is necessary in the case of flowering plants. It is scarcely to be expected that people generally will acquire sufficient knowledge to enable them to do this in all cases, but all who desire to use these plants as food may easily acquire from faithful figures and simple descriptions a sufficient knowledge to enable them to distinguish the more common and important species. There are at least 75 edible species found in our State, though many of them are rare or seldom seen in abundance. Some are both common and abundant and these may easily become familiar to those interested. In some countries of Europe where mushroom eating is more common than it is here, it has been found expedient to appoint inspectors of the markets whose duty it is to see that no hurtful species is offered for sale. But if people in the country see fit to run the risk of collecting and eating such as are not known to be safe and edible they must suffer the consequences.

There are certain rules that guide the mycologist and the skilled experimenter in estimating the probable character or edibility of untried species, but to these there are so many exceptions that they are not wholly reliable.

One rule is to reject all which are tough leathery or corky in texture. Even in the absence of any deleterious quality they would at least be indigestible. The fairy ring mushroom, *Marasmius oreades*, is an exception to this rule, for though it is rather

tough it is often eaten with relish and with proper preparation its toughness is overcome. Some species are tender when young though tough when old. Some tough species may be utilized in making soups or in giving flavor to other dishes.

Another rule says reject all such as have an unpleasant taste or odor in the fresh state. The honey colored mushroom may be cited as an exception to this rule. Its taste is harsh and unpleasant when uncooked, but this to a great extent removed by proper cooking, and a very good and harmless meal may be made of it. Some species of Lactarius have a very hot, acrid or peppery taste when fresh, but this in some cases may be dispelled by cooking. Even the delicious lactarius and the chantarelle, whose edible qualities are highly commended, are not very pleasant in flavor when fresh.

In some species of Boleti the flesh where bruised or wounded quickly assumes a blue or greenish-blue color. The rule is to avoid all such species as dangerous.

One author counsels avoidance of all such as have pink or flesh-colored spores. An exception to this rule is found in the plum clitopilus, *Clitopilus prunulus*, which is regarded as a very good mushroom, notwithstanding its pink spores.

Even mushrooms which in good condition are palatable and nutritious may become unfit for food and even hurtful by age and decomposition or by becoming water-soaked or infested by the larvæ of insects. Even too long keeping before cooking has been known to make them deleterious. In one instance a large quantity of a species known to be edible was collected. The family made a meal of a part of them the same day. No evil results followed. The remaining part was reserved till the next day, then cooked and eaten. Those partaking of these stale samples were made sick and vomiting ensued. But all except one soon recovered after the rejection of the noxious material. Even the common edible mushroom is said to keep in good condition longer if cooked soon after it is gathered than if left in its raw state.

Several edible species have when fresh a farinaceous or meal-like taste and odor. From this some have drawn the inference that this is a mark of edible species, or at least that all which

have this flavor are esculent. But there are many exceptions to this, for some when first tasted have a pleasant farinaceous flavor, which is quickly followed by one that is bitter or otherwise unpleasant.

From all this it will readily be seen how difficult it is to devise any general practical rule by which to separate the esculent from the dangerous species.

Probably the phalloid amanita, *Amanita phalloides*, is the one species above all others that causes the most of the deaths attributed to mushroom poisoning. The cap of this species varies somewhat in color, the form, which is entirely white, being the most common with us and the most often mistaken for the common mushroom. Only gross carelessness, however, could make such a mistake, for in this deleterious toadstool the stem is nearly always much longer proportionately than in the mushroom, it has an abrupt and large bulb at its base which is wanting in the mushroom, and its gills or lamellæ on the under surface of the cap are always white, while in the mushroom they are, when young, a beautiful pink or flesh color, but when old this changes to a brown or blackish color.

Considerable time was occupied in the early part of the year, as will be shown by the monthly reports, in preparing an exhibit of specimens of economic fungi for the World's Columbian Exposition. The questions asked me and the remarks of visitors overheard by me while placing this exhibit in position in the Horticultural Building indicate that it may be a valuable part in the Museum's exhibit as an educator of the public. It is composed of 61 species of edible fungi, 63 species of fungi growing on and injurious to wood, 18 species of parasitic fungi which are injurious to cultivated or useful wild plants, and six species that are injurious to noxious weeds and animals, and therefore beneficial to man. A list of the names of these species and varieties is marked E. A preliminary list of Hymenomycetous Fungi inhabiting our principal coniferous trees is marked F.

Respectfully submitted.

CHARLES H. PECK.

ALBANY, *September* 19, 1893.

(A.)

PLANTS ADDED TO THE HERBARIUM.

New to the Herbarium.

Hieracium Marianum *Willd.*
Polygonum Douglassii *Greene.*
Potamogeton Vaseyi *Robbins.*
P. pulcher *Tuckm.*
P. lucens *L.*
Carex glabra *Boott.*
Panicum miliaceum *L.*
Psathyrella tenera *Pk.*
Hydnum subcarnaceum *Fr.*
Merulius tenuis *Pk.*
M. irpicinus *Pk.*
Stereum populneum *Pk.*
Lepidoderma fulvum *Mass.*
Æcidium Actææ *Opiz.*
Phoma enteroleuca *Sacc.*
Cytospora ambiens *Sacc.*
C. carbonacea *Fr.*
Septomyxa persicina *Sacc.*
Discosia magna *Pk.*
Septoria Pisi *West.*
Septoria Scutellariæ *Thum.*
S. conspicua *E. & M.*
Haplosporella Symphoricarpi *Pk.*
Rhabdospora rhoina *Pk.*
Camarosporium metableticum *Trail.*
Volutella stellata *Pk.*
Epicoccum nigrum *Lk.*
Penicillium candidum *Lk.*
Cercospora tenuis *Pk.*
Cladosporium episphæricum *Schw.*
Zygodesmus granulosus *Pk.*
Peronospora Hydrophylli *Waite.*
Peziza Dudleyi *Pk.*
Exoascus Potentillæ *Sacc.*
Diatrype Hochelagæ *E. & E.*
Sphærella Chimaphilæ *Pk.*
Diaporthe decedens *Fr.*
Massariella Curreyi *Tul.*
Melanconis occulta *Sacc.*
Amphisphæria umbrina *Wint.*

Not New to the Herbarium.

Ranunculus circinatus *Sibth.*
R. septentrionalis *Poir.*
R. Pennsylvanicus *L.*
Coptis trifolia *Salisb.*
Thalictrum purpurascens *L.*
Actæa alba *Bigel.*
Asimina triloba *Dunal.*
Nymphæa reniformis *DC.*
Nuphar advena *Ait.*
Dentaria diphylla *L.*
Cardamine rhomboidea *DC.*
Arabis perfoliata *Lam.*
Nasturtium palustre *DC.*
N. hispidum *DC.*
Hesperis matronalis *L.*
Brassica oleracea *L.*
Raphanus sativus *L.*
Viola Canadensis *L.*
V. rostrata *Pursh.*
Silene stellata *Ait.*
Stellaria media *Sm.*
Ailanthus glandulosus *Desf.*
Acer spicatum *Lam.*
A. saccharinum *Wang.*
Prunus Americanum *Marsh.*
P. Persica *B. & H.*
Rubus Millspaughii *Britton.*
R. Canadensis *L.*
R. hispidus *L.*
Fragaria vesca *L.*
Agrimonia parviflora *Ait.*
Rosa blanda *Ait.*
Saxifraga aizoides *L.*
Tiarella cordifolia *L.*
Mitella diphylla *L.*
Ribes Grossularia *L.*
Myriophyllum spicatum *L.*
Callitriche heterophylla *Pursh.*
Sambucus racemosa *L.*
Galium Aparine *L.*
G. asprellum *Mx.*
G. trifidum *L.*
Solidago uliginosa *Nutt.*
S. juncea *Ait.*

Solidago Canadensis *L.*
Aster macrophyllus *L.*
A. Novi-Belgii *L.*
A. acuminatus *Mx.*
A. nemoralis *Ait.*
Erigeron strigosus *Muhl.*
E. Philadelphicus *L.*
Rudbeckia hirta *L.*
Bidens Beckii *Torr.*
Calendula officinalis *L.*
Anthemis Cotula *DC.*
Achillea Millefolium *L.*
Chrysanthemum Leucanthemum *L.*
Prenanthes Serpentaria *Pursh.*
P. altissima *L.*
Lactuca Canadensis *L.*
L. integrifolia *Bigel.*
Sonchus asper *Vill.*
Campanula aparinoides *Pursh.*
Vaccinium corymbosum *L.*
Rhododendron viscosum *Torr.*
R. maximum *L.*
Primula Mistassinica *Mx.*
Steironema lanceolatum *Gr.*
Lysimachia stricta *Ait.*
L. quadrifolia *L.*
L. Nummularia *L.*
Fraxinus Americana *L.*
F. sambucifolia *Lam.*
Apocynum cannabinum *L.*
A. androsæmifolium *L.*
Asclepias tuberosa *L.*
Gentiana linearis *Frœl.*
Lithospermum officinale *L.*
Physalis lanceolata *Mx.*
Mimulus ringens *L.*
M. moschatus *Dougl.*
Veronica Virginica *L.*
Utricularia vulgaris *L.*
Verbena hastata *L.*
Teucrium Canadense *L.*
Pycnanthemum incanum *Mx.*
Blephilia hirsuta *Benth.*
Brunella vulgaris *L.*
Rumex Patientia *L.*
Polygonum aviculare *L.*
P. amphibium *L.*
Asarum Canadense *L.*
Saururus cernuus *L.*
Dirca palustris *L.*
Pinus Banksiana *Lambert.*
P. resinosa *Ait.*
Picea nigra *Lk.*
P. alba *Lk.*
Larix Americana *Mx.*
Elodea Canadensis *Mx.*
Microstylis monophyllus *Lindl.*
Habenaria bracteata *R. Br.*
Cypripedium acaule *Ait.*
Clintonia borealis *Raf.*
Lilium Canadense *L.*
Pontederia cordata *L.*
Juncus militaris *Bigel.*
Luzula vernalis *DC.*
Typha latifolia *L.*
Potamogeton natans *L.*
P. Nuttallii *C. & S.*
P. Spirillus *Tuckm.*
P. lonchites *Tuckm.*
P. amplifolius *Tuckm.*
P. heterophyllus *Schreb.*
P. prælongus *Wulf.*
P. perfoliatus *L.*
P. crispus *L.*
P. zosteræfolius *Schum.*
P. pusillus *L.*
P. major *Morong.*
P. filiformis *Pers.*
P. pectinatus *L.*
Fimbristylis autumnalis *R. & S.*
Scirpus lacustris *L.*
S. sylvaticus *L.*
Eriophorum lineatum *B. & H.*
E. cyperinum *L.*
E. gracile *Koch.*
Carex tribuloides *Wahl.*
C. cristata *Schw.*
C. fœnea *Willd.*
C. straminea *Willd.*
C. mirabilis *Dew.*
C. siccata *Dew.*
C. bromoides *Schk.*
C. Deweyana *Schw.*
C. trisperma *Dew.*
C. canescens *L.*
C. sterilis *Willd.*
C. Muhlenbergii *Schk.*
C. rosea *Schk.*
C. vulpinoidea *Mx.*
C. stipata *Muhl.*
C. laxiculmis *Schw.*

Carex digitalis *Willd.*
C. laxiflora *Lam.*
C. albursina *Sheldon.*
C. Œderi *Ehrh.*
C. gracillima *Schw.*
C. æstivalis *Curt.*
C. debilis *Mx.*
C. virescens *Muhl.*
C. limosa *L.*
C. torta *Boott.*
C Houghtonii *Torr.*
C. squarrosa *L.*
C. utriculata *Boott.*
C. oligosperma *Mx.*
C. intumescens *Rudge.*
C. lurida *Wahl.*
C. communis *Bail*
C. Pennsylvanica *Lam.*
C. longirostris *Torr.*
Panicum latifolium *L.*
P. clandestinum *L.*
Phalaris arundinacea *L.*
Brachyelytrum aristatum *Bv.*
Agrostis alba *L.*
Arrhenatherum avenaceum *Bv.*
Avena striata *Mx.*
Danthonia spicata *Bv.*
D. compressa *Aust.*
Poa annua *L.*
P. compressa *L*
P. debilis *Torr.*
P. serotina *Ehrh.*
Festuca ovina *L.*
F. elatior *L.*
F. nutans *Willd.*
Bromus ciliatus *L.*
B. purgans *L.*
Agropyrum repens *Bv.*
Agropyrum violaceum *Lange.*
Flammula alnicola *Fr.*
Pluteolus expansus *Pk.*
Cortinarius argentatus *Fr.*
Russula uncialis *Pk.*
Cantharellus minor *Pk.*
Coprinus micaceus *Fr.*
Boletus subtomentosus *L.*
Polyporus resinosus *Fr.*
P. salicinus *Fr.*
Poria radiculosa *Pk.*
Porothelium fimbriatum *Fr.*
Corticium incarnatum *Fr.*
C. subaurantiacum *Pk.*
Entomosporium maculatum *Lev.*
Chrysomyxa Pyrolæ *Rostr.*
Ustilago anomala *Kze.*
Sphacelotheca Hydropiperis *DeBy.*
Uromyces Limonii *Lev.*
U. Trifolii *Lev.*
U. Polygoni *Fckl.*
U. Euphorbiæ *C. & P.*
Puccinia Galii *Schw.*
Sphæropsis malorum *Pk.*
Vermicularia liliacearum *Schw.*
Coryneum microstictum *B. & Br.*
Peridermium balsameum *Pk.*
Actinonema Rosæ *Fr.*
Cystopus candidus *Lev.*
C. spinulosus *DeBy.*
C. Amaranthi *Berk.*
Ramularia Armoraciæ *Fckl.*
Fusarium oxysporum *Schl.*
Diatrype virescens *Schw.*
Hypoxylon perforatum *Schw.*
H. atropurpureum *Fr.*
Plowrightia morbosa *Sacc.*
Urocystis Waldsteiniæ *Pk.*

(B.)

CONTRIBUTORS AND THEIR CONTRIBUTIONS.

Mrs. E. G. Britton, New York, N. Y.

Ephemerum crassinervium *Hampe.*
Rhabdoweisia denticulata *B. & S.*
Dicranella heteromalla *Schp.*
Dicranum fulvum *Hook.*
D. flagellare *Hedw.*
D. longifolium *Hedw.*
D. viride *Schp.*
Dicranum fulvellum *Sm.*
D. Sauteri *Sch.*
Cynodontium gracilescens *Schp.*
C. virens *Schp.*
Dicranodontium longirostre *B. & S.*
Didymodon cylindricus *B. & S.*
Barbula tortuosa *W. & M.*

Trichostomum vaginans *Sulliv.*
Blindia acuta *B. & S.*
Ulota crispa *Brid.*
Grimmia conferta *Fnck.*
Racomitrium microcarpum *Brid.*
R. fasciculare *Brid.*
Anacamptodon splachnoides *Brid.*
Aulacomnium palustre *Schwœgr.*
Anomodon apiculatus *B. & S.*
Homalia trichomanoides *B. & S.*
Neckera oligocarpa *B. & S.*
Eurhynchium strigosum *B. & S.*
Plagiothecium denticulatum *B. & S.*
Limnobium montanum *Wils.*
L. eugyrium *Schp.*
L. ochraceum *B. & S.*
Hypnum reptile *Mx.*
H. umbratum *Ehrh.*
H. strigosum *Hoffm.*
Rhynchostegium Jamesii *Sulliv.*

Mrs. P. H. Dudley, New York, N. Y.

Chondrus crispus *Lyng.*

Mrs. E. C. Anthony, Gouverneur, N. Y.

Rudbeckia hirta *L.*

Rev. J. L. Zabriskie, Flatbush, N. Y.

Nostoc sphæricum *Vauch.*
Vollutella stellata *Pk.*
Zygodesmus granulosus *Pk.*

George Green, Katonah, N. Y.

Cladosporium fulvum *Cke.*

S. M. Tracy, Agricultural College, Miss.

Cerebella Paspali *C. & M.*
C. Andropogonis *Ces.*
Cerebella Spartinæ *E. & E.*
Cercospora personata *B. & C.*

R. B. Hough, Lowville, N. Y.

Pinus inops *Ait.*

C. L. Shear, Alcove, N. Y.

Carex debilis *Mx.*
Solenia anomala *Pers.*
Haplosporella Symphoricarpi *Pk.*
Diatrype Hochelagæ *E. & E.*
Melanconis occulta *Sacc.*

Smith Ely Jeliffe, M. D., Brooklyn, N. Y.

Camarosporium metableticum *Trail.* Amphisphæria umbrina *Wint.*

William Herbst, M. D.

Queletia mirabilis *Fr.*

N. Ringuenberg, M. D., Lockport, N. Y.

Asimina triloba *Dunal.*

L. H. Hoysradt, Pine Plains, N. Y.

Carex arcta *Boott.*
C. glabra *Boott.*
C. stenolepis *Torr.*
C. bullata *Schk.*
Lycopodium alopecuroides *L.*
L. Carolinianum *L.*
Asplenium viride *Huds.*

E. S. Miller, Floral Park, N. Y.

Potamogeton pulcher *Tuckm.*

B. D. Halsted, New Brunswick, N. J.

Exobasidium Peckii *Halst.*

W. R. Dudley, Palo Alto, Cal.

Hydnum subcarnaceum *Fr.*
Merulius irpicinus *Pk.*
M. tenuis *Pk.*
Lepidoderma fulvum *Mass.*
Polyporus versicolor *Fr.*
Penicillium candidum *Lk.*
Peziza Dudleyi *Pk.*
Gyromitra sphaerospora *Sacc.*
Dædalea unicolor *Fr.*

(C.)

SPECIES NOT BEFORE REPORTED.

Ranunculus hispidus *Mx.*

North Greenbush. May. This is included, in the New York State Flora, with *Ranunculus repens* as variety *Marilandicus*, but it is now regarded by good botanists as a distinct species. It is one of our earliest flowering buttercups.

Aster leiophyllus *Porter.*

Lake Mohonk and Shokan, Ulster county. Sept. This beautiful aster was at first described by Professor Porter under the name *Aster cordifolius* var. *lævigatus*, but having concluded that it is a distinct species, he has published it as such under the name here given. It certainly appears to me to be a good species easily distinguished from *A. cordifolius* both by the character of its leaves and of its flowers.

Senecio Robbinsii *Oakes.*

Rocky banks of Black river below Brownsville. June. This plant is *Senecio aureus* var. *Balsamitæ* of the Manual, but it has recently been raised to specific rank, a position which, in my opinion, it justly merits. According to Dr. Rusby's description, the typical form of the species is two to three feet high, glabrous, with the root leaves sharply and unequally serrate. In our specimens the root leaves are crenately serrate, the plants are one to two feet high and show a cotton-like tomentum at the insertion of the leaves and also, under a lens, a minute loose tomentum on the leaves and stems and at the base of the involucres. The peduncles originate at nearly the same point at the top of the stem, giving to the corymb an umbellate appearance. In consequence of these variations from the type I would designate our

plant as var. *subtomentosus.* Unlike the typical form our plant grew in thin dry soil covering rocks. It was partly shaded by trees.

Hieracium Marianum *Willd.*

Highland lake, Sullivan county. July. Rare.

Polygonum Douglassii *Greene.*

Rocky summit of Cobble hill near Elizabethtown, Essex county. September.

This was formerly referred to *P. tenue*, but it is easily distinguished from that species by its drooping fruit.

Potamogeton Vaseyi *Robbins.*

Thompson's lake, Albany county. August. Dr. Morong finds it in Greenwood lake, Orange county.

In general appearance it resembles *P. diversifolius*, from which it is easily separated by its larger fruit with the middle keel rounded.

Potamogeton pulcher *Tuckm.*

Riverhead, Suffolk county. *E. S. Miller.* Rare.

Potamogeton major (*Fr.*) *Morong.*

Cayuga and Seneca lakes. August. This is *P. pusillus* of the State Flora where it is credited to Crooked lake on the authority of Dr. Sartwell. In the Manuals it stands as *P. pusillus* var. *major* and *P. mucronatus.* I follow Dr. Morong in considering it a good species and I have adopted the name under which he publishes it.

Carex glabra *Boott.*

Taberg, Oneida county, and Cooperstown Junction, Otsego county. June. In the Taberg station it was growing in the midst of a patch of *C. debilis.* Its heavier spikes and different appearance at once attracted attention.

Carex albursina *Sheldon.*

This plant has been considered a variety of *C. laxiflora* and is subjoined to that species as var. *latifolia* in the Manual. But it

is so constant in its characters and so easily separated from all forms of *C. laxiflora*, by its broad bracts and short inconspicuous staminate spike that I can readily admit its claims to specific rank. We have it from the Helderberg mountains and from Sanfords Corners, Jefferson county. June.

Panicum miliaceum *L.*

Port Jervis and Albany. July. This millet has been introduced and is frequently found growing in waste places about cities and villages. Prof. Dudley reports it at Ithaca, and Dr. Howe at Lansingburgh and in various places in the valley of the lower Hudson.

Psathyrella tenera *n. sp.*

Pileus thin, campanulate, obtuse, moist or subhygrophanous reddish-cinereous when moist, paler when dry, slightly rugulose and atomate; lamellæ broad, adnate, plane or but slightly ascending, subdistant, at first pallid or subcinereous, then umber and finally blackish, white on the edge; stem slender, glabrous, stuffed or hollow, white, with a white floccose mycelium at the base; spores narrowly elliptical, .0005 to .00055 in. long, .0003 broad.

Pileus 3 to 5 lines broad; stem 1 to 1.5 in. long, scarcely half a line thick.

Damp mucky ground in open woods. Pierrepont Manor, Jefferson county. June.

This plant resembles small forms of *Galera tenera* in color and shape, but it is readily distinguished from that species by the darker color of the mature lamellæ and of the spores. The plant is much smaller than *P. gracilis* and *P. graciloides* to which it seems to be related.

Hydnum subcarnaceum *Fr.*

Decayed wood. Ithaca. *Prof. W. R. Dudley.*

Merulius irpicinus *n. sp.*

Resupinate, thin, soft, more or less tomentose beneath, whitish, the margin sometimes free or slightly reflexed; hymenium at first gyrose porose, the dissepiments at length prolonged into subulate or irpex-like teeth, subferruginous; spores subglobose or elliptical, colored, .0002 to .00028 in. long, .00015 to .0002 broad.

Decaying wood. Ithaca. October. *Dudley.*

This species resembles *M. lacrymans* in habit and color, but it is thinner and more fragile, with smaller pores and spores, and it is especially distinguished by the elongated or subulate teeth that project from the older parts of the hymenium. It is referable to the section Coniophori.

Merulius tenuis *n. sp.*

Resupinate, very thin, tender, reddish-brown inclining to liver color, the margin webby-tomentose, whitish; dissepiments narrow, irregular, forming shallow unequal pores; spores colored, .00035 to .0004 in. long, .00025 to .0003 broad.

Much decayed wood. Ithaca. *Dudley.*

The color of the dried specimens resembles that of Persoon's figure of *M. pulcher*, but the dissepiments and pores are different. This species also is referable to the section Coniophori.

Stereum populneum *n. sp.*

Resupinate, very thin, orbicular, often confluent in patches, minutely rimose, brown tinged with liver color, minutely whitish-punctate under a lens, the thin radiate-dentate margin a little paler, at length becoming more or less free; spores oblong, .0005 to .0006 in. long, .00016 broad.

Bark of prostrate trunks of poplar, *Populus tremuloides.* Adirondack mountains. August.

This is distinct from all allied species by its peculiar color, its minutely chinky and punctate hymenium and its subfree dentate margin.

It is related to *S. albobadium.*

Stereum ambiguum *n. sp.*

Resupinate, suborbicular or irregular, soon confluent in patches, one-half to one line thick, dry, subcorky but brittle, tawny-brown and subtomentose beneath; the hymenium tawny-brown becoming paler or grayish tawny with age, rimose when mature, with a faintly pulverulent or pruinose-velvety appearance; the margin yellowish, generally becoming free; spores oblong or subfusiform, .0005 to .0007 in. long, .0002 broad.

Wood and bark of prostrate trunks of spruce, *Picea nigra* Adirondack mountains. June.

This singular species is apparently related to *Stereum abietinum*, to which it was formerly referred, but from which it was seen to be distinct when the spore characters of that species were published.

The thick interior stratum is similar in color to the hymenium and appears to be composed of densely compacted erect fibrils. The hymenium, under a lens, is seen to possess both setæ and metuloids, thus combining the characters of the genera Hymenochæte and Peniophora, and obliterating the distinction of these as *Dædalea confragosa*, in its various forms, destroys the distinction between Trametes and Lenzites. Moreover when these setæ and metuloids are more highly magnified they are found to vary among themselves, being sometimes smooth and sometimes warted, acute or blunt, colored or colorless, and sometimes even partly colored and smooth and partly colorless and warted.

Also the hymenium, though dry and firm in texture, becomes rimose as in many of the species of Corticium with a soft and waxy hymenium.

Lepidoderma fulvum *Mass.*

Decayed wood. Ithaca. *Dudley.*

This is a small form scarcely one line high. The scales of the peridium are white, the few large spores intermingled with those of the prevailing size are .0007 to .0008 in. broad, and the slender threads of the capillitium are sometimes furnished with thickenings as in those of *L. tigrinum*. The plants grow either singly or in groups of three to five.

Æcidium Actææ *Opiz.*

Living leaves of baneberry, *Actæa spicata* v. *rubra*. Adams, Jefferson county. June.

Phoma enteroleuca *Sacc.*

Decorticated branches of apple tree. Bethlehem, Albany county. May.

Our specimens differ from the typical form in growing on decorticated branches and in having the spores slightly broader.

Cytospora ambiens *Sacc.*

Dead stems of raspberry, *Rubus strigosus.* Menands, Albany county. April.

Cytospora carbonacea *Fr.*

Dead branches of elm, *Ulmus Americana.* Elizabethtown. May.

The mass of ejected spores is black when dry.

Septomyxa persicina (*Fres*) *Sacc.*

Rind of squashes. Menands. January.

Var. **nigricans** *n. var.* Forming large irregular black patches; heaps minute; spores oblong, rounded at each end, more or less narrowed in the middle, often two to four-nucleate, colorless, .0003 to .0005 in. long, .00012 to .00016 broad, oozing out and forming a pale wine-colored or peach-colored tendril or mass.

Discosia magna *n. sp.*

Perithecia gregarious, suborbicular, large, .014 to .024 in. broad, black, opaque, even or obsoletely rugulose, ostiolate, rarely confluent; spores oblong-fusoid, curved, obscurely two to three-septate, .0005 to .0008 in. long, the bristle at each end .0004 to .0005 in. long.

Fallen fruit of ash, *Fraxinus Americana.* Elizabethtown. May.

The species is easily known by its large opaque perithecia and simple or obscurely septate spores.

Septoria Pisi. *West.*

Living pea leaves. Adirondack mountains. August.

Septoria Scutellariæ *Thum.*

Living leaves of scull-cap, *Scutellaria galericulata.* Adirondack mountains. July.

Septoria conspicua *E. & M.*

Living leaves of fringed loosestrife, *Steironema ciliatum.* Long Island. July.

Haplosporella Symphoricarpi *n. sp.*

Stroma small .02 to .06 in. broad, often confluent, erumpent, suborbicular, closely surrounded by the ruptured remains of the epidermis, black, the upper surface plane or slightly convex, dotted by the slightly prominent ostiola; spores oblong, colored, continuous, .0006 to .0008 in. long, .0003 broad.

Dead stems of snowberry, *Symphoricarpus racemosus.* Alcove, Albany county. March. *C. L. Shear.*

Rhabdospora rhoina *n. sp.*

Perithecia numerous, sunk in the bark, covered by the slightly pustulated epidermis; spores subfiliform, slender, curved, .0005 to .0006 in. long, oozing out and forming slender yellowish or pallid tendrils.

Dead branches of sumac, *Rhus typhina.* Cooperstown Junction. June.

Volutella stellata *n. sp.*

Sporodochia minute, sometimes confluent in irregular masses which are one to two lines long, covered by the mostly stellately branched brownish-tawny setæ; spores globose or subelliptical, .00016 to .0002 in. long.

Much decayed wood of chestnut. Flatbush. September. *Rev. J. L. Zabriskie.*

This is a peculiar and somewhat aberrant species but it appears to be connected with normal forms by *V. ochracea.* The setæ are variable in length and in ramification. Some are simply dichotomous, others are stellate below and dichotomous above.

Epicoccum nigrum *Lk.*

Dead stems of blackberry lily, *Balamcanda Chinensis.* Menands. May.

Penicillium candidum *Lk.*

On mushrooms, *Agaricus campester*, in a greenhouse. Ithaca. *Dudley.*

Var. *subcandidum.* Fertile hyphæ irregularly branched above, the color at first white, then whitish or cinereous.

Cercospora tenuis *n. sp.*

Spots large, sometimes discoloring the whole leaf, reddish brown; hyphæ fasciculate, short, .0016 in. long, .00016 broad, colored, obscurely septate, the tufts appearing like minute black dots on the upper surface of the leaf; spores very slender, gradually tapering to the apex, continuous or with one to three septa, hyaline, .0016 to .0024 in. long.

Living leaves of hairy bedstraw, *Galium pilosum.* Riverhead. July.

The species is quite distinct from *C. Galii.*

Cladosporium episphærium *Schw.*

On *Daldinia concentrica.* Elizabethtown. May.

Zygodesmus granulosus *Pk.*

Decayed wood of chestnut. Flatbush. August. *Zabriskie.*

Peronospora Hydrophylli *Waite.*

Living leaves of Virginian waterleaf, *Hydrophyllum Virginicum.* Bergen, Genesee county. June.

Peziza Dudleyi *n. sp.*

Cups irregular, one to two inches broad, sessile, externally with a minute appressed white tomentum; hymenium bright yellow inclining to saffron or orange, often rimulose; asci cylindrical; spores oblong, even, binucleate, somewhat granular within, .001 to .0012 in. long, .0005 to .0006 broad; paraphyses filiform, slightly thickened at the tips.

Ground and decayed wood. Ithaca. October. *Dudley.*

This fungus appears to be related to such species as *P. aurantia* and *P. inæqualis*, from both of which it is at once distinguished by its yellow hymenium and larger spores.

Exoascus Potentillæ *Sacc.*

Living leaves of cinquefoil, *Potentiila Canadensis.* Cooperstown Junction. June. Middle Grove. July.

This fungus produces greenish yellow spots on the leaves. These spots are usually convex above, concave below.

Diatrype albopruinosa *Schw.*

Dead branches of oak, maple, hop hornbean, etc. Albany and Rensselaer counties.

Diatrype Hochelagæ *E. & E.*

Decayed wood. Alcove. January. *Shear.*

Sphærella Chimaphilæ *n. sp.*

Perithecia minute, .0025 to .003 in. broad, numerous, mostly hypophyllous, seated on indefinite blackish spots or occupying the whole surface of the leaf; asci subcylindrical, .0016 to .002 in. long; spores crowded in the ascus, subclavate, colorless, .0005 to .0006 in. long, .00016 broad.

Dead and fallen leaves of Princes Pine, *Chimaphila umbellata.* Cooperstown Junction. June. The septum of the spore is obscure.

Diaporthe decedens *Fr.*

Dead stems of hazelnut. Elizabethtown. May.

Massariella Curreyi *Tul.*

Dead branches of basswood, *Tilia Americana.* Selkirk, Albany county. June.

Our specimens are not typical, but may be called Var. *Americana.* Asci very variable in length, .007 to .009 in. long; spores .0016 to .002 in. long; .0005 to .0006 broad.

Melanconis occulta (*Fckl.*) *Sacc.*

Dead branches of poplar. Alcove. *Shear.*

The following species and varieties are described from extralimital specimens sent to me for identification and are not known to belong to our State Flora.

Clavaria Macouni *n. sp.*

Clubs single or clustered, 6 to 10 lines high, obtuse or subacute, dingy greenish-yellow or pale cinereous; spores minute, elliptical, .0002 in. long, .00012 broad.

Among mosses under cedar trees. Canada. September. *Macoun.*

The species belongs to the section Syncoryne.

Clavaria muscoides *L.* var. **obtusa** *n. var.*

Tips of the ultimate branches obtuse. Otherwise like the type. Under cedar trees. Canada. September. *Macoun.*

Hypochnus subviolaceus *n. sp.*

Effused, very thin, floccose-membranaceous, adnate, violet-gray, whitish on the margin; spores subglobose, nearly hyaline, .0002 to .00024 in. broad.

Dead decorticated wood. Canada. September. *Macoun.*

Leptothyrium Spartinæ *n. sp.*

Perithecia minute, depressed, suborbicular elliptical or oblong, sometimes subconfluent in series, rugulose, black, brownish on the margin, easily separable from the matrix; spores narrowly elliptical, subacute, hyaline, .0005 to .0006 in. long, .0002 to .0003 broad, usually containing a single large nucleus, adorned with a filiform appendage at each end.

Dead stems of *Spartina juncea.* Biloxi, Mississippi. September. Number 1835. *S. M. Tracy.*

This is a very distinct species and one that departs from the usual characters of the members of the genus, in its large spores and their filiform appendages. These are sometimes longer than the spore itself. The thin margins of the perithecia have a radiate structure.

Ceratium hydnoides *A. & S.* var. **ramosissimum** *n. var.*

Stromata very numerous, forming patches and dividing above into exceedingly numerous slender snow-white branches which interlace with each other and with those of neighboring stromata and thus form continuous masses.

Var. **subreticulatum** *n. var.* Stromata creeping or ascending, pure white, sparingly branched and uniting with each other in a somewhat reticulate manner.

Both varieties grow on soft much decayed wood. They have a very different appearance but the character of the spores is the same in both and indicates a merely varietal difference.

Canada. *Macoun.*

Zygodesmus tenuissimus *n. sp.*

Effused, pulverulent, very thin, yellowish-gray or subcinereous, the concolorous margin indefinite; the hyphæ short, septate, equalling or exceeding the spore in diameter; spores globose, spinulose, slightly colored, .0003 in. broad.

Decayed wood. Canada. September. *Macoun.*

The species appears to be related to *Z. marginatus* from which it is separable by its thin pulverulent character, short hyphæ and concolorous indefinite margin.

Asterula Tracyi *n. sp.*

Subiculum thin, hypophyllous, composed of slender flexuous septate colored filaments about .00016 in. thick; perithecia very minute, .004 to .005 in. broad, hemispherical or depressed, subastomous, black; asci oblong-clavate, .0011 to .0014 in. long, .0003 to .0004 broad; spores oblong, slightly narrowed toward one end, obscurely 2-to 4-nucleate, colorless, .0003 to .0004 in. long, .00012 to 00015 broad.

Living or languishing leaves of *Spermacoce parviflora.* Biloxi, Miss. August. Number 1842. *Tracy.*

Melogramma effusum *n. sp.*

Stroma effused, thin, superficial, black; perithecia minute, carbonaceous, crowded, convex, opaque, black, white within; asci subcylindrical; spores subfusiform, generally slightly curved, colorless, triseptate, .0008 to .0011 in. long, .00016 to .0002 broad, the second cell usually swollen.

Decayed wood. Canada. *Macoun.*

This species does not harmonize well with the character of the genus to which it is here referred, for the spores in this genus are typically colored. The colorless spores indicate relationship to the genus Zignoella, but the presence of a stroma, which with the perithecia forms a thin rugose carbonaceous crust, shows its relationship to the genus Melogramma and forbids its reference to Zignoella.

Stereum balsameum *Pk.* form reflexum.

Pileus coriaceous, firm when dry, villose-tomentose, obscurely zonate; hymenium smoky-purplish, changing to red where wounded.

Canada. *Macoun.*

(D.)

REMARKS AND OBSERVATIONS.

Anemone Virginiana *L.* var. alba *Wood.*

This variety is common in the hilly parts of Sullivan county, where it is the prevailing form. It sometimes forms patches of considerable extent. It does not, so far as I have seen, mingle with the typical form and I am disposed to think that it is a good variety.

Ranunculus circinatus *Sibth.*

Fine specimens of this water crowfoot were obtained in Cayuga lake. The peduncles become deflexed or curved downwards in fruit.

Silene stellata *Ait.*

A form of this plant occurs near Narrowsburg, Sullivan county, in which all the leaves, or all except those of a single whorl, are opposite. It is not uncommon to find a few of the uppermost and of the lowest ones opposite, but this form is apparently rare. Another form has the leaves beautifully crisped or undulate on the margin.

Prunus Americana *Marsh.*

The flowers of this native plum are usually white. A form occurs near Meadowdale, Albany county, and near Westport Essex county, in which they have the rosy hue of peach blossoms. It might be called variety *rosea.*

Rubus Canadensis *L.*

This low blackberry or dewberry is capable of adapting itself to a great variety of soils and circumstances. These sometimes affect its mode of growth. Plants were found growing among bushes in low swampy ground near Pine Plains, Dutchess county, in which the stem was quite as erect as in *Rubus villosus.* I have indicated in a previous report that whenever, through poverty of soil or for other reasons the prickly stemmed species of Rubus are unable to develop fully or grow freely this starved condition is shown by the failure of the prickles. The same thing has been observed to be the result of an attack of rasp-

berry rust, *Cæoma nitens*, both in the dewberry and the blackberry. Plants badly infested by this rust are generally destitute of prickles.

Rubus setosus *Bigel.*

This northern species occurs in the open region known as "The Plains." This is in the southern part of St. Lawrence county near the headwaters of the Oswegatchie river.

Agrimonia parviflora *Ait.*

Pine Plains. The plants were not yet in flower early in August.

Rosa blanda *Ait.*

The variability of our native roses is the source of considerable difficulty and perplexity in their classification. In the last edition of the Manual this species is said to have no infrastipular spines, yet in a specimen collected at Cooperstown Junction these are plainly present. The stipules are described as dilated, but in another specimen from the same locality, they are very narrow. The fruit is described as globose, but in specimens collected at Thompson's lake, the fruit is pointed at the base and somewhat pyriform. In these specimens also the stipules are very narrow, even on young shoots.

Ribes Grossularia *L.*

Bethlehem. May. An introduced species and escaped from cultivation.

Saxifraga aizoides *L.*

Nearly thirty years ago this plant and its companion, *Primula Mistassinica*, were discovered by Rev. J. A. Paine on the wet and dripping precipices that lie along Fish creek, above Taberg. Both these plants are still abundant in that locality, and the nature of the place is such that nothing but the greed of botanists is likely soon to exterminate them. The yellow saxifrage is especially luxuriant, and often exceeds the dimensions attributed to it in the Manual. It is in flower when the primula is developing its fruit.

Drosera rotundifolia *L.*

This pretty little sundew is common in the Adirondack region. A favorite habitat of it is on decaying trunks of trees lying in the water of lakes and ponds.

Solidago uliginosa *Nutt.*

This pretty goldenrod is common in the Adirondack region. It usually inhabits bogs, marshes or wet places, but sometimes it is found growing in dry soil. It grows in such soil on "The Plains" and on the banks of the upper Oswegatchie river.

Solidago juncea *Ait.*

Though described in the Manual as "smooth throughout," a form occurs on the Helderberg mountains in which the stem and branches are distinctly, though somewhat sparsely, hairy. This is the earliest in flower of the goldenrods about Albany.

Solidago Canadensis *L.*

A form is common on "The Plains" in which the stem is but slightly hairy and the leaves are nearly smooth. They are either sharply serrate or almost entire. This form makes a close approach to *S. serotina.*

Aster nemoralis *Ait.*

Several years ago a single specimen of this neat little aster was brought me by Judge Addison Brown, of New York, who collected it near Hitchings Pond. Recently, fine specimens were collected by myself on the marshy borders of one of the "Five Ponds" in the northern part of Herkimer county. The heads of flowers are large for the size of the plant and vary in number from one to seven in the specimens collected. There was also found on the rocky shore of this pond, near its outlet, a patch of a much larger form of this aster, for which I propose the name variety *major.* Stem one and a half to two feet high; heads of flowers, ten to thirty; leaves larger, two and a half to three inches long, five to seven lines broad, distantly dentate-serrate.

This variety grows in patches, but the typical form, so far as I have observed it, is scattered. In both forms the lower surface of the leaves is minutely resinous or glandular-puberulent, although this character is not noticed in the description of the Manual. The plants in press stick slightly to the drying papers because of this character. This aster occurs also in a marsh near Jayville. It appears thus far to be limited in its range to the northwestern part of the Adirondack region.

Rudbeckia hirta *L.*

A form with the lower half of the rays of a beautiful brown color occurs near Middle Grove. Mrs. Anthony sends the same form from Gouverneur.

Erigeron Philadelphicus *L.*

This handsome fleabane often grows from the crevices of wet shaded or dripping cliffs.

Tragopogon pratensis *L.*

The goatsbeard has been introduced into this country from Europe and is becoming more common each year. It is already beginning to assert itself as a troublesome weed, and those interested should carefully guard their fields and prevent its obtaining a foothold in them. It closely resembles the oyster plant, which sometimes escapes from cultivation, but which seems to be much less common and aggressive. The oyster plant has purple flowers, the goatsbeard, yellow flowers.

Hieracium præaltum *Vill.*

This troublesome weed is gradually extending its range southward. It was observed the past summer at Pierrepont Manor. It has also followed the Carthage and Adirondack railroad eastward and is now found at Jayville. It would be well if farmers would make a special effort to keep this weed in check and also its near relative, the orange hawkweed, *Hieracium aurantiacum.* They are similar in habit and appearance, but one has a yellow flower, the other an orange or reddish blossom. This one is known in some localities as "red daisy." Both form dense patches and spread readily by seed which is easily wafted by the wind by reason of the cottony plumes.

Rhododendron viscosum *Torr.*

This beautiful azalea is abundant about Highland lake, Sullivan county. A single plant was found in which the flowers were as bright and rosy as those of *Rhododendron nudiflorum.* Nearly all the plants have white flowers.

Rhododendron maximum *L.*

This showy shrub grows in great profusion about Barryville and in other places in Sullivan county. The spots in the upper side of the corolla are described as yellow, reddish or orange, but in the Sullivan county plants they appear to me to be constantly green. It may be designated form *viridimaculatum.*

Lysimachia nummularia *L.*

Near Brewerton, Onondaga county, the moneywort has become so well established that it forms extensive carpets over the ground and extends for a considerable distance in the damp woods that skirt the outlet of Oneida lake.

Lysimachia quadrifolia *L.*

At Highland lake a form occurs in which the petals are tipped or margined with orange. The leaves are commonly in whorls of five or six. I have labeled it variety *variegata*, though perhaps it should be considered a form, rather than a variety.

Lysimachia stricta *Ait.*

This loosestrife is very variable. In a small swale near Narrowsburg five forms or varieties of it were collected. The typical form has the leaves lanceolate, opposite and acute at both ends and a rather long and closely flowered raceme with minute subulate inconspicuous bracts. Two varieties have been designated; one, var. *producta*, which has a long loose raceme with conspicuous foliaceous bracts; the other, var. *angustifolia*, which has the leaves narrowly lanceolate or linear and only one or two lines broad, the raceme being rather few flowered.

In the locality mentioned, the typical form, the variety *producta*, a form near var. *angustifolia* and a ternately leaved form of the first two were found growing together and apparently under the same conditions. What should cause these variations?

The narrow leaved form differs from variety *angustifolia* in having the leaves two to three lines broad, instead of one or two lines, and the raceme with numerous flowers. It is therefore intermediate between variety *angustifolia* and the typical form. I call it form *intermedia.*

Commonly the leaves in the typical form are two inches or more in length, but there is a form in which they are less than two inches long. In these short leaved forms the raceme and the pedicels are generally shorter than in the type and the leaves are somewhat blunt at the apex. This might be called form *brevifolia*. The form which bears bulblets in the axils of the leaves and which is generally without flowers might be designated as form *bulbifera*. All of these forms and varieties may have the stem either simple or branched. All of them except variety *angustifolia*, which is found in the Southern States, occur in our State.

The following synopsis will show at a glance the distinctive features here noticed.

Flowers in a loose raceme, bracts subulate, inconspicuous	1
Flowers in a loose raceme, bracts foliaceous, conspicuous	Var. producta
Flowers usually wanting, bulblets in the axils of the leaves	Form *bulbifera*
1 Leaves lanceolate	2
1 Leaves narrowly lanceolate or linear	3
2 Leaves two inches or more in length. (L. stricta).	Form *typica*
2 Leaves less than two inches in length	Form *brevifolia*
3 Leaves one to two lines broad, raceme few flowered,	Var. angustifolia
3 Leaves two to three lines broad, raceme many flowered	Form *intermedia*

Steironema lanceolatum *Gr.*

Port Jervis. July. In the Flora of North America the leaves of this species are said to be "an inch or two long." In all the specimens that I have seen they are longer than this, averaging about three inches.

Campanula aparinoides *Pursh.*

Highland lake. A form with pale blue flowers.

Apocynum androsæmifolium *L.*

Narrowsburg. July. A form *pauciflora*, with flowers smaller and whiter than usual. I do not find this form mentioned in our botanies.

Apocynum cannabinum *L.*

The Indian hemp is very abundant along the Delaware river at Port Jervis and at Narrowsburg. It is often procumbent or spreading in its mode of growth.

Var. *hypericifolium* was collected at Narrowsburg.

Asclepias tuberosa *L.*

Port Jervis. The form with yellow flowers.

Mimulus moschatus *Dougl.*

This plant is native in the Pacific coast States and has probably been introduced here because of its musk-like odor. It was found in a bog near Locust Grove, Long Island, in 1886, by J. A. Bixby. In 1891 it was discovered in a swampy locality near Middle Grove, Saratoga county by Rev. J. H. Wibbe. It still exists in this station and is apparently permanently established. It was also reported to me as being well established in two other stations in Saratoga county; one on the farm of T. H. Fuller, two miles southwest of Middle Grove, and the other on the farm of Robert Morris near Greenfield Center.

Utricularia vulgaris *L.*

This bladder wort makes a luxuriant growth in Cayuga lake. Specimens were obtained there having scapes nearly two feet long and 12 to 16 flowered.

Blephilia hirsuta *Benth.*

Taberg. June. A form with white flowers.

Rumex Patientia *L.*

Pierrepont Manor and Middle Grove. A form of this species with leaves closely resembling those of the yellow dock, *R. crispus*, is becoming quite common. Its whitish root more dense panicles and the larger nearly grainless valves of the fruit easily distinguish it. I have not seen the form described in the Manual, and credited with root leaves two to three feet long.

Larix Americana *Mx.*

On the shore of Highland lake an interesting tree of this sdecies was observed. All the cones on the tree had the edges

of the cone scales incurved in such a way as to give to each scale a globular shape and to expose to view the bracts of the cone. The cone itself presented an appearance which might be compared to a mulberry or blackberry with very large drupelets. Other trees standing near had cones on them of the usual form. There was no appearance of injury to the cones by insects nor by any other agencies. While this may not be a permanent variety, perhaps a mere sport only, for the sake of convenience I designate it as variety *incurva*.

Picea alba *Lk.*

The white spruce is much less frequent in the Adirondack region than the black spruce. I have observed it in Essex county only. It is a handsome tree though generally of small size, branching nearly or quite to the base, and consequently not of much value for timber. There is, however, a large tree on the northern slope of Raven hill, standing near the road between Elizabethtown and Wadhams Mills. It is about two feet in diameter at the base but its branches extend nearly to the ground. The resemblance between the white spruce and some forms of the black spruce is so close that it is not always easy for an unskilled person to separate them. The descriptions of these trees, as given in the Manual, indicate but a part of their distinctive features, and the characters there ascribed to the edges of the cone scales do not in all cases hold good. Having compared these trees at flowering time the following characters seem to me to be the most available ones for distinguishing them.

White Spruce.	Black Spruce.
Young branchlets glabrous. Leaves six to eight lines long. Cones oblong or cylindrical, deciduous before next flowering time. Sterile aments pale, supported on slender whitish pedicels exserted from the basal cup of scales. Fertile aments eight to ten lines long. Young leaves visible at flowering time.	Young branchlets pubescent. Leaves four to seven lines long. Cones ovate or oblong, still on the tree at next flowering time. Sterile aments tinged with red, sessile in the basal cup of scales. Fertile aments five to six lines long. Young leaves not yet visible at flowering time.

These trees are in flower at the same time in the same locality. They were in bloom the past season in the vicinity of Elizabethtown the last week in May.

Microstylis monophyllos *Lindl.*

Up to this time, fruiting specimens only have represented this very rare and delicate little orchidaceous plant in the State Herbarium. Two flowering specimens were found in June near Taberg.

Clintonia borealis *Raf.*

Form *lateralis*. Like the typical form except in having a lateral umbel or two on the side of the scape. These lateral umbels consist of two to five flowers and are usually two or three inches apart. Commonly there is but one, which is one and a half to three inches below the terminal one. When there are two the lower one has fewer flowers than the upper, and this always has fewer than the terminal one. In one specimen there are seven terminal flowers and five in the lateral umbel below them.

I do not deem this a variety, but a mere form which grows intermingled with the typical form. I have observed it in several places in the Adirondack region, where it is not rare, and also near Cooperstown Junction. It seems singular that such an interesting form has not yet been noticed in any of our botanies. It was first recorded by me in the Fortieth Report, p. 73.

Juncus militaris *Bigel.*

Highland lake. July. The plants are plentiful along the shore of the lake, between Myers House and Sand beach. The descriptive character, "rather contracted panicle," given in the Manual, does not apply well to these plants, for they have the panicle large and loose. It is generally about four inches long and nearly as broad. In many of the plants the stem is rather abruptly bent about midway between the insertion of the long leaf and the panicle, or at the place of the large bract-like sheathing base of an abortive upper leaf. Probably this abrupt flexure has suggested the common name "bayonet rush," which is sometimes applied to the plant, and perhaps, also, the specific name "militaris." Nevertheless no notice is taken of this very noticeable character in the description given in the Manual.

Typha angustifolia *L.*

Professor Dudley has described a variety of *Typha latifolia*, under the name *elongata*. In it both the leaves and spikes are elongated, the former being "2 to 3½ meters" long, the latter "often 30 centimeters."

A similar variety of *Typha angustifolia* is found along the shore of Cayuga lake, between the railroad bridge and the outlet. In it the fertile part of the spike is eight to ten inches long. It may be designated var. *longispicata*, though I suspect it is merely a luxuriant development of the common form.

Pontederia cordata *L.*

Specimens of this plant were collected in Highland lake in which the fibrous roots had a beautiful purple color. Var. *angustifolia* Torr. occurs here; also in Stissing pond, Dutchess county.

Potamogeton Nuttallii *Ch. & Sch.*

A form of this species was collected in the upper waters of the Oswegatchie river near Sternbergs, in which the stem branches freely, and the leaves are unusually narrow. It is here characterized as var. *ramosus*. Stem slender, branched; floating leaves with blades 1.5 to 2.5 in. long, 3 to 6 lines broad; submerged leaves 1 to 2 lines broad. The name *P. Pennsylvanicus* Cham. is applied to this species in the Manual. I have followed Dr. Morong in nomenclature.

Potamogeton amplifolius *Tuckm.*

This is one of our most common species. It occurs in all parts of the State, in still or flowing, shallow or deep, soft or hard, warm or cold water. In deep water it is destitute of floating leaves. In Thompson's lake it skirts the whole western and a part of the eastern shore in water four to six or eight feet deep, and is always destitute of floating leaves. The foliage generally has a rufous tint. It seems to avoid more shallow water. The same form occurs in Warner's lake and behaves the same way.

Potamogeton lonchites *Tuckm.*

Specimens were collected in and near the outlet of Seneca lake in which, though in flower, the floating leaves were wanting or

but little different in texture size and shape from the submerged leaves.

Potamogeton heterophyllus *Schreb.*

Specimens referable to form *longipedunculatus* Morong were collected near the outlet of Seneca lake.

Potamogeton lucens *L.*

This species occurs in Oneida and Cayuga lakes. The var. *Connecticutensis* Robbins was collected in Stissing pond near Pine Plains. This is the only station recorded for it in our State.

Potamogeton filiformis *Pers.*

Cedar lake, Herkimer county. July. This is *P. marinus* of the Manual. It is scarcely separable, in some of its forms, from *P. pectinatus* in the absence of fruit, and it has probably been often confused with that species.

Potamogeton pectinatus *L.*

A form of this species is abundant in Warners lake, Albany county, in which the peduncle is whitish and 8 to 12 inches long.

In the N. Y. State Flora nine species of Potamogeton are recorded. The number of species now known to belong to the State is twenty-seven, all of which, except *P. lateralis*, are represented in the Herbarium.

The following is a list of the names of the species, varieties and forms as given in the Monograph of Dr. Morong and in the Manual:

MORONG'S MONOGRAPH.

Potamogeton natans *L.*	
P.	Oakesianus *Robbins.*
P.	Nuttallii *C. & S.*
P.	amplifolius *Tuckm.*
P.	pulcher *Tuckm.*
P.	alpinus *Balb.*
P.	lonchites *Tuckm.*
	Var. Noveboracensis *Morong.*
P.	heterophyllus *Schreb.*
	Form graminifolius (*Fr.*) *Morong.*
	Form longipedunculatus (*Merat*) *Morong.*
	Form maximus *Morong.*
P.	angustifolius *B. & P.*
Potamogeton lucens *L.*	
	Var. Connecticutensis *Robbins.*
P.	prælongus *Wulf.*
P.	perfoliatus *L.*
	Var. Richardsonii *Bennett.*
P.	confervoides *Reichb.*
P.	crispus *L.*
P.	zosteræfolius *Schum.*
P.	obtusifolius *M. & K.*
P.	Hillii *Morong.*
P.	foliosus *Raf.*
	Var. Niagarensis (*Tuckm.*) *Gray.*
P.	pusillus *L.*

Potamogeton major (*Fr.*) *Morong.*	Potamogeton Spirillus *Tuckm.*
P. Vaseyi *Robbins.*	P. filiformis *Pers.*
P. lateralis *Morong.*	P. pectinatus *L.*
P. diversifolius *Raf.*	P. Robinsii *Oakes.*

GRAY'S MANUAL.

Potamogeton natans *L.*	Potamogeton perfoliatus *L.*
P. Oakesianus *Robbins.*	Var. lanceolatus *Robbins.*
P. Pennsylvanicus *Cham.*	P. Tuckermani *Robbins.*
P. amplifolius *Tuckm.*	P. crispus *L.*
P. pulcher *Tuckm.*	P. zosteræfolius *Schum.*
P. rufescens *Schrad.*	P. obtusifolius *M. & K.*
P. fluitans *Roth.*	P. Hillii *Morong.*
	P. pauciflorus *Pursh.*
P. heterophyllus *Schreb.*	Var. Niagarensis *Gray.*
Var. graminifolius (*Fr.*)	P. pusillus *L.*
	P mucronatus *Schrad.*
	P. Vaseyi Robbins.
	P. lateralis *Morong.*
P. Zizii *M. & K.*	P. hybridus *Mx.*
P. lucens *L.*	P. Spirillus *Tuckm.*
Var. Connecticutensis. *Robbins.*	P. marinus *L.*
	P. pectinatus *L.*
P. prælongus *Wulf.*	P. Robbinsii *Oakes.*

Eriophorum lineatum *B. & H.*

Low moist ground near Middle Grove. July.

Carex trisperma *Dewey.*

A form with the leaves more narrow than usual was collected on the boggy shore of Highland lake.

Carex retroflexa *Muhl.*

In the Manual, this sedge is subjoined to *C. rosea* as a variety. It differs considerably from that species in its range as well as in its appearance and characters. I do not find it at all in the northern and northeastern counties of the State, but it is not rare in some of the southern and western counties. *C. rosea* is common everywhere except perhaps in the coldest mountain regions.

Carex rosea *Schk.* var. staminata *n. var.*

Culms very slender but erect or nearly so 12 to 20 inches high, much surpassing the very narrow leaves; spikes commonly 4, distant, each terminated by a conspicuous staminate part sub-

tended by 1 to 6 perigynia, or sometimes one or more wholly staminate, the lowest one either with or without an exceedingly slender setaceous bract; perigynia either horizontally spreading or conspicuously deflexed. Cooperstown Junction. June.

This plant seems to approach variety *Texensis* but it differs in its distant spikes, deflexed perigynia and conspicuous staminate flowers.

Carex æstivalis *Curt.*

This rare sedge is plentiful on the high wooded hills near East Worcester. It grows both in the woods and in open places by the roadside.

Carex retrocurva *Dew.*

This is *C. laxiculmis* Schw, in the Manual. It has a form *serotina*, in which the new growth of the season, after the usual fruiting time, sends up short culms and produces another crop of fruit. In this case the pedicels are rather short and erect and the spikes are few flowered. Taberg and Helderberg mountains.

Carex debilis *Mx.*

A variety *interjecta* Bailey in litt. to C. L. Shear, was discovered by Mr. Shear near Alcove, Albany county, and has since been found by myself near Pierrepont Manor, Jefferson county. It fruits in June. It differs from the ordinary form in its shorter perigynia, which by being loosely arranged on the rachis often give a moniliform appearance to the fertile spikes. The staminate spike usually has 2 to 4 perigynia a short distance below its apex. Sometimes the fertile spikes are also conspicuously staminate at the apex, and occasionally one has a short branch at its base.

Var. *strictior* Bailey. A form of this variety, having culms 12 to 18 inches high and yellowish green foliage, occurs near East Worcester. June. The broad leaves overtop the culms and the spikes are noticeably erect.

Carex Œderi *Ehrh.*

This sedge was found growing with *C. flava* on the shores of Thompson's lake, Albany county. The two were so markedly different in appearance that it is very unsatisfactory to me to make the former a variety of the latter, as is done by some botanists.

Carex Emmonsii *Dew.* var. **elliptica** *Boott.*

In the Eighteenth Report on the State Cabinet of Natural History, p. 155, the characters of this sedge are published. It is described as having the spikes crowded; the perigynia rather long ($1\frac{6}{10}$—$\frac{8}{10}$ of a line long, $\frac{6}{10}$ broad), hirsute, nearly twice the length of the scale; achenium elliptical-triquetrous ($1\frac{1}{10}$ of a line long, $\frac{1}{2}$ a line broad), style deciduous at the base. New York, *Knieskern.*

The variety has a longer body to the perigynium and a longer achenium, and the pubescence is softer and longer, and the proportionate length of the perigynium to the squamæ gives a peculiar aspect to the spike. It has not been noticed by authors: *F. Boott.* Penn Yan; Rochester, *Dewey.*

This sedge has not to this day been properly recognized in the Manual.

Dr. E. C. Howe, who has made a special study of carices and to whom specimens of this plant were sent for examination, considers it a good species, and has sent the following description of it under the name

Carex Peckii *nov. sp.*

Stems 3 to 16 inches high, culm leaves 2 to 5, very short, narrow, radical leaves 3 to 10 inches long, about one line broad; staminate spike small, sometimes inconspicuous; fertile spikes 2 to 3, aggregated, the two uppermost 3 to 8-flowered, the lowest 2 to 6, bracteate; perigynia 1.5 to nearly 2 lines long, about half as wide, elliptical-triquetrous, prominently beaked, strongly hirsute, longer than the ovate acute or acutish-mucronate scarious margined scale, long and tapering at the base; scales centrally green, the sides tinged with brown or purplish-brown; achenia triquetrous-elliptical, strongly 3-ribbed, prominently stipitate, 1 line or more long.

Helderberg mountains, Albany county; Brownville, Jefferson county; Elizabethtown, Essex county. Also collected by the late Professor Dewey in Yates and Monroe counties, and elsewhere in New York by the late Dr. Knieskern.

The largest specimens were collected at Brownville, the smallest near Elizabethtown. The plants grow in thin woods or their borders or where they are partly shaded by trees. The specimens

were collected in June. Doctor Howe considers the species related to *Carex deflexa* rather than to *C. Emmonsii.* Both its peculiar appearance and its distinctive spikes and fruit lead me also to think it is a valid species.

Carex Houghtonii *Torr.*

Near Elizabethtown. May. This rare species has been observed in several places by Prof. Burt and myself in Saratoga and Essex counties, but I am not aware of its occurrence elsewhere in the State. It is an early flowering species, and delights in light sandy soil, through which it extends its creeping rootstocks.

Carex utriculata *Boott.*

A small form of this species is found in the Adirondack region. Its spikes are scarcely more than an inch long, being smaller even than those of variety *minor.*

Setaria viridis *Bv.*

The form of this grass noticed in the Thirty-fourth Report, p. 56, still persists about Albany and in its streets and yards. The same or a similar form is said, by Dr. Vasey in his Monograph of the Grasses of the United States and Canada, p. 38, to occur in the South. It is easily distinguished from the ordinary form of the species, and appears to be very constant in its characters. I have labeled our specimens Var. *purpurascens*, and the grass has been published and essentially characterized under this name by Prof. Dudley in his Catalogue of Cayuga plants, p. 122. Its spike-like panicle is more slender than in the type, 2.5 to 3 inches long, about 6 lines broad, including the setæ, 2.5 to 3 lines exclusive of the setæ, the clusters toward the base separated and verticillate as in *S. verticillata*, the setæ tinged with purple. Its resemblance to *S. verticillata* is closer than to *S. viridis* but its setæ are barbed upwards.

Festuca ovina *L.*

The sheep's fescue is rare with us. A small patch of it was observed on the banks of the Delaware river at Narrowsburg. July. The specimens have the tall culms of variety *duriuscula*, but the panicle is contracted and the leaves involute.

Bromus purgans *L.*

This was considered a distinct species by Linnæus and stands as such in the N. Y. Flora. But modern botanists have generally connected it with *B. ciliatus* as a variety. I could wish it might be restored to its original position, for as far as my observation goes it is easily distinguished from *B. ciliatus* by its smaller, differently colored, less drooping panicle, its fewer spikelets, its more hairy flowers and its different habitat. It likes shade and most often grows in rocky woods. I have not observed it in the Adirondack region where *B. ciliatus* is quite common.

Danthonia spicata *Bv.*

The panicle in this grass is contracted after flowering. It varies in length from less than an inch to two and a half inches. Two forms occur. In one the leaves and sheaths are glabrous except a tuft of hairs at the throat of the sheaths. In the other the leaves and lower sheaths are clothed with long soft hairs. To distinguish this form I designate it Var. *villosa.* Specimens of it were collected at Brownville and Taberg.

Coprinus micaceus *Fr.* var. **granularis** *n. var.*

Pileus sprinkled with whitish granules or furfuraceous scales. Fulton chain, Hamilton county. August.

Polyporus versicolor *Fr.* var. **carneiporus** *n. var.*

Pores dull flesh-color. Ithaca. *Dudley.*

Dædalea unicolor *Fr.* var. **fumosa** *n. var.*

Pores smoky-brown. Dead birch, *Betula lutea.* Ithaca. October. *Dudley.*

Solenia anomala *Pers.* var. **orbicularis** *n. var.*

Receptacles collected in orbicular groups and seated on a conspicuous, dense, persistent, tomentose, tawny subiculum. Dead branches of appletree. Alcove. March. *Shear.*

Tubercularia carpogena *Pk.*

This name is preoccupied and I substitute for it *Tubercularia decolorans.*

Gyromitra sphærospora (*Pk.*) *Sacc.*

Ithaca. *Dudley.* This species was discovered twenty years ago. A single specimen was received from Prof. Dudley, which is the first one I have seen since the original discovery. The species is evidently rare. I am not aware that any specimens except the New York ones are in existence.

Urocystis Waldsteiniæ *Pk.*

Cooperstown Junction. June. Usually every leaf on the diseased plant is affected by the fungus. The attacked plants do not flower so far as observed. In some instances an old dead and dried leaf of the previous year showed the marks of the fungus, thus indicating that the fungus is perennial.

(E.)

LIST OF NEW YORK FUNGI REPRESENTED AT THE WORLD'S COLUMBIAN EXPOSITION AT CHICAGO, IN THE HORTICULTURAL BUILDING, SECTION S, COLUMN 33, SPACE 304.

Specimens from New York State Herbarium.

Exhibitor — Chas. H. Peck, Albany, N. Y.

Edible Fungi.

1 Amanita cæsarea *Scop.*
2 A. rubescens *Fr.*
2*a* A. " Wartless form.
3 Amanitopsis vaginata (*Bull.*) *Roz.*
3*a* A. " var. livida (*Pers.*).
3*b* A. " var. fulva (*Schœff.*)
3*c* A. " var. nivalis (*Grev.*)
4 Lepiota procera *Scop.*
5 L. naucinoides *Peck.*
6 Armillaria mellea *Vahl.*
6*a* A. " clustered specimens.
6*b* A. " var. bulbosa *Peck.*
6*c* A. " var. albida *Peck.*
6*d* A. " var. glabra *Gill.*
6*e* Abortive mushroom.
7 Tricholoma transmutans *Peck.*
8 T. imbricatum *Fr.*
9 T. personatum *Fr.*
10 Clitocybe nebularis *Batsch.*
11 C. media *Peck.*
12 C. infundibuliformis *Schœff.*
12*a* C. " Pressed specimens.
13 C. cyathiformis *Fr.*
14 C. laccata *Scop.*
14*a* C. " Pale irregular form.
14*b* C. " var. amethystina (*Bolt.*)
14*c* C. " var. pallidifolia *Peck.*
14*d* C. " var. striatula *Peck.*
15 Pleurotus ulmarius *Bull.*
15*a* P. " Pressed specimens.
16 P. ostreatus (*Jacq.*) *Fr.*
16*a* P. " Large tuft.
17 P. sapidus *Kalchb.*
18 Hygrophorus virgineus (*Wulf.*) *Fr*
19 H. pratensis (*Pers.*) *Fr.*
20 H. miniatus *Fr.*

21 Lactarius deliciosus (*L.*) *Fr.*
22 L. volemus *Fr.*
23 L. subdulcis (*Bull.*) *Fr.*
24 Russula virescens (*Schœff.*) *Fr.*
25 Cantharellus cibarius *Fr.*
26 Marasmius oreades *Fr.*
27 Cortinarius collinitus (*Pers.*) *Fr.*
28 C. violaceus (*L.*) *Fr.*
29 C. armillatus (*A. & S.*) *Fr*
29*a* C. " Pressed specimens.
30 C. cinnamomeus (*L.*) *Fr.*
30*a* C. " var. semisanguineus *Fr.*
148 Paxillus involutus (*Batsch*) *Fr.*
31 Agaricus arvensis *Schœff.*
32 A. silvicola *Vitt.*
33 A. campester *L.*
33*a* A. " Cultivated form.
34 A. placomyces *Peck.*
35 Coprinus comatus *Fr.*
36 C. atramentarius (*Bull.*) *Fr*
36*a* C. " var. silvicola *Peck.*
37 C. micaceus (*Bull.*) *Fr.*
37*a* C. " var. conicus *Peck.*
38 Boletus scaber *Fr.*
38*a* B. " var. niveus *Fr.*
39 B. subluteus *Peck.*
40 B. subtomentosus *L.*
41 Boletus affinis *Peck.*
42 B. castaneus *Bull.*
43 Polyporus sulphureus (*Bull.*) *Fr.*
43*a* P. " thicker form.
44 Hydnum repandum *L.*
45 H. rufescens *Pers.*
46 H. coralloides *Scop.*
47 Fistulina hepatica *Fr.*
48 Craterellus cornucopioides (*L.*) *Pers.*
49 Clavaria botrytes *Pers.*
50 C. flava *Schœff.*
51 C. cristata *Pers.*
51*a* C. " Large form.
51*b* C. " Dense form.
52 Lycoperdon cyathiforme *Bosc.*
53 Gyromitra esculenta (*Pers.*) *Fr.*
54 Morchella esculenta (*L.*) *Pers.*
55 M. conica *Pers.*
56 M. angusticeps *Peck.*
56*a* M. " Small form.
57 M. deliciosa *Fr.*
58 M. semilibera *DC.*
59 Helvella crispa (*Scop.*) *Fr.*
59*a* H. " Small form.
60 Mitrula vitellina (*Brcs.*) *Sacc.*
60*a* M. " var. irregularis *Peck.*

Fungi Growing on and Injurious to Wood.

61 Panus stipticus (*Bull.*) *Fr.*
62 P. operculatus *B. & C.*
63 Lenzites betulina (*L.*) *Fr.*
64 L. vialis *Peck.*
65 L. sepiaria *Fr.*
65*a* L. " var. porosa *Fr.*
66 Schizophyllum commune *Fr.*
67 Polyporus elegans (*Bull.*) *Fr.*
68 P. osseus *Kalchb.*
69 P. chioneus *Fr.*
70 P. guttulatus *Peck.*
71 P. undosus *Peck.*
71*a* P. " Resupinate form.
72 P. crispellus *Peck.*
73 P. fumosus (*Pers.*) *Fr.*
74 P. adustus (*Willd.*) *Fr,*
74*a* P. " var. carpineus (*Schw.*)
75 P. Weinmanni *Fr.*
76 P. borealis (*Wallr.*) *Fr.*
77 P. pubescens (*Schum*) *Fr.*
78 Polyporus cuticularis (*Bull.*) *Fr.*
79 P. nidulans *Fr.*
80 P. gilvus *Schw.*
81 P. glomeratus *Peck.*
82 P. resinosus (*Schrad.*) *Fr.*
83 P. betulinus *Fr.*
83*a* P. " Spotted specimens.
83*b* P. " Young and old plants.
83*c* P. " Brown pubescent form.
84 P. volvatus *Peck.*
85 P. lucidus (*Leys.*) *Fr.*
86 P. pinicola *Fr.*
86*a* P. " Older plants.
86*b* P. " Pale margined specimens.
86*c* P. " Various forms.
87 P. applanatus (*Pers.*) *Wallr*
87*a* P. " Dusted by its spores.
87*b* P. " Various forms.
88 P. fomentarius (*L.*) *Fr.*

88*a* Polyporus fom. Older plants.
88*b* P. " Elongated forms.
88*c* P. " var. zonatus *Peck.*
88*d* P. " Various forms.
89 P. igniarius (*L.*) *Fr.*
89*a* P. " Old plants.
90 P. nigricans *Fr.*
90*a* P. " Old plants.
90*b* P. " var. applanatus *Peck.*
90*c* P. " subresupinate forms.
91 P. connatus *Fr.*
91*a* P. " Resupinate form.
92 P. carneus *Nees.*
92*a* P. " var. subzonatus *Peck.*
92*b* P. " Resupinate form.
92*c* P. " Various forms.
93 P. conchatus (*Pers.*) *Fr.*
94 P. piceinus *Peck.*
94*a* P. " Resupinate form.
95 P. biformis *Klotz.*
95*a* P. " Resupinate form.
96 P. conchifer *Schw.*
97 P. aureonitens *Pat.*
98 P. hirsutus *Fr.*
98*a* P. " var. albiporus *Peck.*
98*b* P. " var. nigromarginatus (*Schw.*)
99 P. zonatus *Fr.*
100 P. versicolor *Fr.*
100*a* P. " Dark-colored forms.
100*b* P. " Pale-colored forms.
100*c* P. " var. fumosiporus *Peck.*
100*d* P. " Various forms.
101 P. pergamenus *Fr.*
101*a* P. " Effused mycelium.
101*b* P. " var. pseudopergamenus (*Thum.*)
101*c* P. " var. elongatus (*Berk.*)
101*d* P. " Old plants.
02 P. abietinus *Fr.*
102*a* P. " Form zonatus.
102*b* Polyporus abiet. var. irpiciformis *Peck.*
102*c* P. " Resupinate form.
103 Glœoporus conchoides *Mont.*
103*a* " Resupinate form.
104 Poria subacida *Peck.*
105 Trametes suaveolens (*L.*) *Fr.*
106 T. cinnabarina (*Jacq.*) *Fr.*
107 T. Trogii *Berk.*
108 T. mollis *Fr.*
108*a* T. " Resupinate form.
109 T. sepium *Berk.*
109*a* T. " From railroad ties.
110 Dædalea quercina (*L.*) *Pers.*
111 D. unicolor (*Bull.*) *Fr.*
111*a* D. " Old plants.
111*b* D. " Plane form.
111*c* D. " Complicate form.
111*d* D. " var. fumosipora *Peck.*
112 D. confragosa *Pers.*
112*a* D. " Brown specimens.
112*b* D. " var. Cookei *Peck.*
112*c* D. " var. rubescens *Peck.*
112*d* D. " var. Klotzschii *Peck.*
112*e* D. " Irregular forms.
113 Merulius tremellosus *Schrad.*
114 M. lacrimans (*Jacq.*) *Fr.*
115 Irpex cinnamomeus *Fr.*
116 Odontia lateritia *B. & C.*
117 Stereum complicatum *Fr.*
117*a* S. " var. laceratum *Peck.*
145 S. bicolor (*Pers.*) *Fr.*
145*a* S. " Old plants.
146 S. versicolor (*Sw.*) *Fr.*
147 S. sericeum (*Schw.*)
118 Chlorosplenium æruginosum (*Œd.*) *DeN.*
118*a* Wood stained by its Mycelium.
119 Wood permeated by Mycelium.
120 Bark overrun by Mycelium.

Fungi Injurious to Cultivated and Useful Plants.

121 Glœosporium lagenarium (*Pass.*) *S. & R.*
122 Plowrightia morbosa (*Schw.*) *Sacc.*
122*a* P. " on wild red cherry.
122*b* P. " on wild black cherry.
122*c* P. " on beach plum.
122*d* Plowrightia morbosa on cultivated plum.
123 Monilia fructigena *Pers.*
123*a* M. " on plums.
123*b* M. " on pears.
123*c* M. " on twigs and leaves of apricots.

124 Entomosporium maculatum *Lev.*
124*a* E. mac. on pear leaves and fruit.
125 Plasmopara viticola (*B. & C.*) *B. & DeT.*
125*a* Plasmopara "on fruit of wild grape.
125*b* Plasmopara "on leaves of Niagara grape.
126 Phytophthora infestans (*Mont.*) *DeBy.*
127 Peronospora parasitica (*Pers.*) *Tul.*
128 Cladosporium fulvum *Cke.*
129 Cercospora Apii *Fres.*
130 C. beticola *Sacc.*
131 Puccinia Malvacearum *Mont.*
132 Ustilago Maydis (*D. C.*) *Cd.*
132*a* U. "on ears of Indian corn.
133 U. Tritici (*Pers.*) *Jensen.*
134 U. Hordei (*Pers.*) *K. & S.*
135 U. Avenæ (*Pers.*) *Jensen.*
136 Cryptospora Gœppertiana *Kuhn.*
137 Dimerosporium Collinsii (*Schw.*) *Thum.*
138 Hypoderma lineare *Peck.*

Fungi Injurious to Noxious Weeds and Animals.

139 Empusa Muscæ *Cohn.*
140 Sporendonema myophilum *Sacc.*
141 Cystopus candidus *Lev.*
142 Peronospora Linariæ *Fckl.*
143 Puccinia suaveolens (*Pers.*) *Rostr.*
143*a* P. "Later form.
144 Ustilago Cesatii *Wald.*

Recapitulation.

	Species.
Edible fungi	61
Fungi growing on and injurious to wood	63
Fungi injurious to cultivated and useful plants	18
Fungi injurious to noxious weeds and animals	6
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(F.)

PRELIMINARY LIST OF HYMENOMYCETOUS FUNGI INHABITING THE WOOD OR BARK OF THE TRUNKS OR BRANCHES OF OUR PRINCIPAL CONIFEROUS FOREST TREES.

TSUGA CANADENSIS. *Carr.*

Hemlock.

Armillaria mellea *Vahl.*
Tricholoma decorosum *Pk.*
T. multipunctum *Pk.*
Clitocybe ectypoides *Pk.*
Collybia platyphylla *Fr.*
C. abundans *Pk.*
C. rugosodisca *Pk.*
C. succosa *Pk.*
Mycena Leaiana *Berk.*
M. epipterygia *Scop.*
Omphalia lilacifolia *Pk.*
O. Campanella *Batsch.*
Pleurotus porrigens *Pers.*
P. striatulus *Fr.*
Naucoria bellula *Pk.*
N. geminella *Pk.*
Paxillus atrotomentosus *Fr.*
P. panuoides *Fr.*
Panus stypticus *Bull.*
P. lacunosus *Pk.*
Lenzites sepiaria *Fr.*
L. betulinus *Fr.*
Lentinus lepideus *Fr.*
Polyporus lucidus *Leys.*

Polyporus benzoinus *Fr.*
P. pinicola *Fr.*
P. epileucus *Fr.*
P. cæsius *Fr.*
P. undosus *Pk.*
P. crispellus *Pk.*
P. maculatus *Pk.*
P. Weinmanni *Fr.*
P. borealis *Fr.*
Polystictus abietinus *Fr.*
Poria vulgaris *Fr.*
P. subacida *Pk.*
P. Vaillantii *Fr.*
P. rhodella *Fr.*
Trametes cinnabarina *Fr.*
Trametes sepium *Berk.*
Merulius himantioides *Fr.*
M. subaurantiacus *Pk.*
Solenia villosa *Fr.*
Hydnum farinaceum *Fr.*
Mucronella calva *Fr.*
Tremellodon gelatinosum *Pers.*
Stereum sanguinolentum *A. & S.*
S. rugosum *Fr.*
S. radiatum *Pk.*
Hymenochæte tenuis *Pk.*
Corticium amorphum *Pers.*
Dacrymyces deliquescens *Duby.*
Ditiola radicata *Fr.*
Clavaria abietina *Fr.*

PICEA NIGRA *Lk.*

Spruce.

Clitocybe sulphurea *Pk.*
Mycena purpureofusca *Pk.*
M. hiemalis *Osb.*
Omphalia Austini *Pk.*
Lenzites sepiaria *Fr.*
L. heteromorpha *Fr.*
Lentinus lepideus *Fr.*
Polyporus Schweinitzii *Fr.*
P. picipes *Fr.*
P. aurantiacus *Pk.*
P. volvatus *Pk.*
P. dualis *Pk.*
P. carneus *Fr.*
P. pinicola *Fr.*
P. borealis *Fr.*
Polystictus piceinus *Pk.*
P. versicolor *Fr.*
P. balsameus *Pk.*
P. abietinus *Fr.*
P. variiformis *Pk.*
Poria subacida *Pk.*
Poria vaporaria *Fr.*
P. vulgaris *Fr.*
P. odora *Pk.*
P. mutans *Pk.*
P. marginella *Pk.*
Trametes serpens *Fr.*
Merulius Ravenelii *B. & C.*
M. molluscus *Fr.*
Hydnum farinaceum *Fr.*
Caldesiella ferruginosa *Sacc.*
Irpex fuscoviolaceus *Fr.*
Odontia fusca *C. & E.*
Stereum rugosum *Fr.*
S. radiatum *Pk.*
S. ambiguum *Pk.*
Hymenochæte abnormis *Pk.*
Corticium sulphureum *Fr.*
C. subincarnatum *Pk.*
C. subaurantiacum *Pk.*
C. cremoricolor *B. & C.*
Hirneola auricula-Judæ *Fr.*

ABIES BALSAMEA *Mill.*

Balsam fir.

Clitocybe sulphurea *Pk.*
Pleurotus mitis *Pers.*
Lentinus strigosus *Schw.*
Polyporus pinicola *Fr.*
P. volvatus *Pk.*
Polystictus abietinus *Fr.*
Polystictus balsameus *Pk.*
Merulius aureus *Fr.*
Stereum balsameum *Pk.*
Corticum sulphureum *Fr.*
C. amorphum *Pers.*
Hirneola auricula-Judæ *Fr.*

PINUS STROBUS *L.*

White pine.

Tricholoma flavescens *Pk.*
T. rutilans *Schœff.*
Collybia rubescentifolia *Pk.*
Pleurotus striatulus *Fr.*
Lenzites sepiaria *Fr.*
L. vialis *Pk.*
Lentinus lepideus *Fr.*
Paxillus atrotomentosus *Fr.*
P. panuoides *Fr.*
Boletus hemichrysus *B. & C.*
Polyporus osseus *Kalchb.*
P. pinicola *Fr.*
Poria pinea *Pk.*
Merulius lacrimans *Fr.*
Tremella pinicola *Pk.*
T. foliacea *Pers.*
Dacrymyces deliquescens *Duby.*

PINUS RIGIDA *Mill.*

Pitch pine.

Pluteus umbrosus *Pers.*
Lenzites sepiaria *Fr.*
Polyporous circinatus *Fr.*
P. volvatus *Pk.*
P. Weinmanni *Fr.*
Polystictus abietinus *Fr.*
Poria vaporaria *Fr.*
Trametes Pini *Fr.*
Stereum sanguinolentum *Fr.*