A FLORA OF NORTHERN NEW HAMPSHIRE

BY

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FOREWORD

The Vascular Flora of Coös County, New Hampshire was published in 1924 as Vol. 37, No. 3 of the Proceedings of the Boston Society of Natural History. In October, 1961 Arthur Stanley Pease indicated in correspondence that the manuscript for a second edition was "practically ready for publishing, all save the slight detail of the need of a Macenius." Recognizing the value of an up to date and expanded flora of this region, the New England Botanical Club appointed a committee to secure its publication. The committee, consisting of Professor J.P. Poole chairman, and Professors S.K. Harris and A.R. Hodgdon and Mr. R.C. Bean, reported eventual success in raising funds and early in 1963 Professor Pease turned his manuscript over to the Club. The funds making the publication possible were contributed by the Northern New England Academy of Science, by the Randolph Foundation of Randolph, New Hampshire where Professor Pease spent his summers, by the New England Botanical Club, by one anonymous donor, and by Professor Pease himself.

Unfortunately Professor Pease did not live to see the Flora in print. He died on 7 January 1964 at the age of eighty-two; he had actively collected through the season of 1962. It seems only fitting that the publication should stand as a memorial to an amateur botanist whose years of intense activity and truly professional competence has placed him as one of the important contributors to the New England flora.

The footnotes and catalogue were retyped and edited and the index was prepared by S.K. Harris; proofreading was done by R.C. Bean and S.K. Harris.
The precursor of the present work appeared in July, 1924, as volume 37, number 3 of the Proceedings of the Boston Society of Natural History under the title of Vascular Flora of the Coos County, New Hampshire (here referred to as the Vascular Flora). In its preface acknowledgement was made to those who, by field collections, identifications, or encouragement in publication, had assisted in its production. Since that time continued collections, by others and by me, and various segregations have increased the number of entities (taxa) treated from 1297 to 1689, and a more abundant representation of plants already known in the area—an increase of about 46%, for example, in the genus Carex—has greatly extended our knowledge of local distribution. Further, the appearance in 1950 of the eighth edition of Gray's Manual has so materially altered details of nomenclature as to make the previous work less usable. These considerations and the fact that the Vascular Flora has long been out of print and hard to obtain have lead the author to believe the time to be ripe for a new and thoroughly revised treatment. In the preparation of this the materials in the herbarium of the New England Botanical Club (in Cambridge, Massachusetts), our most detailed collection from this area, have been restudied, and many plants in the Gray Herbarium and other public and private collections have also been scrutinized. The introduction has been rewritten, many of its statistics revised, and its conclusions corrected, so that the present volume is essentially a new work, as the change title implies.

For the facilities afforded at the Gray Herbarium of Harvard University I wish to express gratitude to Professors† B.L. Robinson,† M.L. Fernald, R.C. Rollins, Dr. G.R. Cooley, Dr. R.C. Foster, Dr. R.E. Schultes,† Mr. C.W. Weatherby, Dr. C.E. Wood, and the Misses† M.A. Day, R.D. Sanderson, M.W. Stone, and L. Schwarten. For similar help in the herbarium of the New England Botanical Club I am indebted to Messrs.† F.W. Hunnewell, and R.J. Eaton; for information about other collections to Professors† A.S. Goodale,† I.M. Johnston, S.K. Harris, A.R. Hodgdon, and O.L. Clark; also to Messrs. R.C. Bean, H.S. Clapp,† W. Deane, E.P. Dickinson, S.B. Krochmal, D.J. Lennox, A. Lincoln, Jr.,† V.D. Lowe, C.V. Morton, C. Schweinfurth, P.L. Steele,† F. Tuckerman, T.W. Wallace, the Rev. F.C. Seymour, and T.W. Wells. Dr. and Mrs. A. Lóve, Dr. L.C. Bliss, and Mr. W.A. Harris have given helpful suggestions; Professors† W.O. Crosby and M.P. Billings and Mr. T.W. Wells have suggested useful geological criticisms, and Mr.† E.J. Palmer has furnished identifications for some of the difficult species of Crataegus, as have Messrs. Hodgdon and Steele in the genus Rubus. For encouragement in other ways I am indebted to His Excellency, Hugh Gregg, former governor of New Hampshire, and F.W. Solloway, Esq., as well as to Professors N. Polunin, J.P. Poole, and Drs.† C.E. Kobuski, and F. Verdoorn, and to the chairman of the New Hampshire Planning and Development Commission, Mr. John Pillsbury.

Despite the increase in data over the Vascular Flora the size of this book has been kept down by a greater use of abbreviations. Synonymy has been omitted, save in the very few instances in which the nomenclature differs from that in the eighth edition of Gray's Manual.

This work being the product of leisure moments of an interested amateur, can hardly avoid suffering at some points, as in the determinations of Crataegi and Rubi, from dependence upon the authority of professionals. My gratitude to them I have already expressed, but I have tried not to commit them to any statements save such as they have themselves already published or authorized elsewhere.
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INTRODUCTION

LOCATION AND AREA

COOS, the largest and northernmost of the counties of New Hampshire, has an irregular, somewhat trapezoidal, form, reaching its northern point at Crown Monument, the boundary of New Hampshire, Maine, and Quebec (north latitude 45° 18' 20''), its southern at Hart Ledge in Hadley Grant (latitude 44° 5' 0''), and extending from the Maine line at Mt. Royce in Bean Purchase (west longitude 71° 0' 50'') to the Vermont line at the Connecticut River in the western corner of Dalton (longitude 71° 45' 53''). The distance between the first two points named is about 85.5 miles; its width, between the two latter points is about 37.5 miles. The north and west boundaries are natural, for from Crown Monument westward to the headwaters of Hall Stream they follow the watershed between the Magalloway and Connecticut Rivers on the one side and the St. Francis on the other; the western line follows Hall Stream and the Connecticut River (a small area at the junction of these two streams, east of the village of Beecher Falls, being in Vermont). The southern boundary, separating Coos from Grafton and Carroll counties (in Central New Hampshire), is the most irregular, and is entirely artificial, as is the straight line which forms the entire eastern border and divides this county from Maine (1).

The space thus included contains a land area of about 1791 square miles (as compared with 1058 in the state of Rhode Island and 1978 in Delaware), or 1,168,000 acres (2), divided into 43 townships and unorganized areas known as grants, purchases, or locations, varying in size from Green Grant (ca. 1.5 x 2 miles) to Pittsburg (ca. 19 miles from north to south and 20 from east to west, with a length from northeast to southwest of nearly 29 miles). From north to south and east to west in order are the following townships and grants: Pittsburg (including Hubbard, Webster, and Carlisle of older maps), Colebrook Academy Grant, Atkinson & Gilmanton Academy Grant, Clarksville, Dartmouth College Grant (on the latest topographic maps called Second College Grant), Dix Grant, Wentworth Location, Dixville, Stewartstown, Colebrook, Erving Location, Columbus, Errol, Millsfield, Odell, Stratford, Cambridge, Dummer, Stark, Northumberland, Success, Milan, Berlin, Kilkenny, Lancaster, Shelburne, Gorham, Randolph, Jefferson, Whitefield, Dalton, Bean Purchase, Martin Location, Green Grant, Pinkham Grant, Thompson & Meserve Purchase, Low & Burbank Grant, Carroll, Sargent Purchase, Cutts Grant, Bean Grant, Crawford Purchase (with which I here combine Chandler Purchase of the last topographic map), Hadley Grant (on latest maps called Hadley Purchase).

The most reliable maps of northern N.H. (though inaccurate in some details of nomenclature) are those of the U.S. Geological Survey—some in cooperation with the Corps of Engineers of the U.S. Army—, in particular the following quadrangles (some partly in Maine or Vermont; the dates are those of the surveys rather than of the publication, which is sometimes in more than one edition): Moose Bog (1927), Second Lake (1927), Indian Stream (1925), Errol (1930), Dixville (1930), Averill, Vt. (1926), Milan (1930), Percy (1930), Guildhall, Vt. (1931-1933), Gorham (1936-1937), Mt. Washington (1934-1935), Whitefield (1934-1935), Littleton (1929-1932), North Conway (1942), and Crawford Notch (1946). Older maps still of some use are: (1) the Walker Lithographic and Publishing Company's Latest Map of Northern New Hampshire (1892 and 1905), based on the atlas volume of the Geology of New Hampshire, and including the area north of Lancaster, Kilkenny, Berlin, and Success—small in scale and with many errors; (2) the National Publishing Company’s (later the Scarborough Publishing Company’s) Topographic Map of the White Mountains and Central New Hampshire (1902 and later editions), for the area south of that in last-mentioned map; (3) various small but accurate maps in the Appalachian Mountain Club's
TEXT - Fig. 1. - Map of Coos County
Guide to Paths in the White Mountains (16th ed. (1960))-based on the U.S. topographic sheets but with additional data from L. F. Cutter, C. W. Blood, et al.; (4) maps of the U.S. Forest Service covering the White Mountain National Forest and adjacent regions (last edition 1941); (5) the Soil Survey of Coös County, New Hampshire (1943); (6) special maps such as that in A.K. Chittenden’s Forest Conditions of northern New Hampshire, U.S. Department of Agriculture, Bureau of Forestry, Bull. 55 (1905), and large-scale blue-prints of the Connecticut Valley Lumber Company, for the northern part of the state. For notes on other older maps cf. C.H. Hitchcock in Mount Washington in Winter (1871), 27-29; id. in Geology of New Hampshire, 1 (1874), 227-247; W. Upham in the same, 1, 67-68 (on maps of the White Mountains); A. H. Bent, Bibliography of the White Mountains (1911), 83-88.

HYDROGRAPHY

From the peak of Mt. Washington flow, in three different directions, waters which enter the ocean at three different points, and in the basins of the three rivers receiving these waters (the Connecticut, Androscoggin, and Saco) lies the whole area of Coös County. About three-fifths of the county drains into the Connecticut, nearly two-fifths into the Androscoggin, and a small but important remainder into the Saco, of the main stream of which less than half a mile is within the county limits. On the hydrography of northern New Hampshire cf. W. Upham in Geol. of N.H. 1 (1874), 298-312; also C.H. Hitchcock in the same work, 1, 169-192; J.H. Huntington in the same, 1, 221-226. Opposite p. 300 is a colored map of the three basins. On a larger scale, distinguishing the tributary systems of the Magalloway, Upper Ammonoosuc, Israel, Moose, and Ammonoosuc from the larger basins of which they form a part, is the map in A. K. Chittenden, op. cit. For the flow of water in the different rivers see the Reports of the N.H. Forestry Commission, 1903-04, 135-219; 1905-06, 43-160. The fall of the streams is, in general, rapid (3). From its source in Fourth Lake (2600 feet, 2 1/2 acres) the Connecticut descends, in a distance of about 77 miles, to an elevation of about 780 feet at the western corner of Dalton. Lake Magalloway, at the head of the Magalloway system, the principal northern branch of the Androscoggin system, has an elevation of 2300 feet; in the 39 miles to Lake Umbagog the Magalloway River falls to 1245 feet, and where the Androscoggin enters Maine, 86 miles from Lake Magalloway, it is but 690 feet above the sea. The main descent of the Saco from its source at Saco Lake in Carroll—it falls 580 feet in 2.6 miles (4)—lies outside our area, but its tributaries, the Dry (or Mt. Washington) River, the Rocky Branch, and the Ellis River, show a very rapid fall, as do many tributaries of the Connecticut and the Androscoggin. Long stretches of more gradual descent, usually bordered by extensive alluvial meadows, are found on the Connecticut from Pittsburg to Dalton, on the Magalloway below Aziscoos Falls (Maine), on the Androscoggin from Lake Umbagog to Errol Dam, from Dummer to Berlin, and from Gorham to the state line in Shelburne. Warm and shallow oxbow ponds are found especially in Wentworth Location, Errol, and Dummer on the Androscoggin, and in Stewartstown, Stratford, Northumberland, and Lancaster on the Connecticut.

Of the lakes the largest is Umbagog, lying partly in Maine and partly in New Hampshire (cambridge and Errol), the greatest length of which in a straight line is about eight miles, and the greatest breadth about two and one-half miles, the area being about 15.8 square miles (about 8 square miles being in New Hampshire) (5). First(Connecticut)Lake in Pittsburg is about 4 1/4 miles long, with an area of 2807 (6) acres; Second Lake (Pittsburg) is about 3 1/2 miles long (area 1286 acres), Third Lake (Pittsburg) about 1 1/4 miles long (area 278 acres), and Back Lake (Pittsburg) ca. 358 acres. The large artificial Lake Francis (Pittsburg) impounds about seven miles of the Connecticut River (ca. 3000 acres). Big Diamond Pond (Stewartstown; 179 acres), Big Greenough Pond (Wentworth Location; 253 acres), Akers Pond (Errol; 309 acres), Millsfield Pond (Millsfield; 160 acres), Nash Stream Bog (Odell; 223 acres), Big Dummer Pond (Dummer; 117 acres),
Christine Lake (191 acres) and South Pond (123 acres) in Stark, Cedar Pond (Milan; 78 acres), Success Pond (Success; 290 acres), Head Pond (Berlin; 86 acres), Cherry Pond (Jefferson; 86 acres), Martin Meadow Pond (Lancaster; 117 acres), and Forest Lake (Dalton and Whitefield; 191 acres) have areas under half a squaremile. With the exception of the deep valleys of the Presidential Range and its vicinity, the county is well provided with small ponds and bogs, these being especially frequent in Pittsburg (with a water acreage of 8165 acres), from Wentworth Location through Errol (5365 acres) to Stark, and in Lancaster, Whitefield, and Jefferson. The lakes and ponds are of three chief types of shore-line: (1) boulder-bordered glacial ponds with a rather constant water-level; (2) muddy-bottomed ponds, often surrounded by encroaching peat-bogs; (3) ponds with levels artificially controlled by dams and liable to great change as the water is drawn off and large spaces of mud are exposed. More and more frequently small ponds are having their levels raised by the action of beavers—animals very uncooperative with botanists. Sandy shores are rare; among the eighty ponds examined in the preparation of this work the only sandy beaches of consequence are at small parts of the borders of Third Lake, Christine Lake, Success Pond, and Head Pond. Sandy bottoms are also infrequent. A number of tarns occur at high altitudes, including the Lakes of the Clouds (7) at about 5040 feet; Star Lake, 4900 feet; Spaulding Lake, 4250 feet; Hermit Lakes, ca. 3860 feet; Desolation Pond, 3800 feet; Stub Hill Pond, ca. 3480 feet; Long Mountain Pond, 3375 feet; Carter Lakes, ca. 3400 feet, Unknown Pond, ca. 3200 feet; and several others over 2000 feet.

**OROGRAPHY**

Large areas of the county lie at an elevation of 2000 feet or more. Indeed, the northern part of Pittsburg and nearly all of Eving Location, Kilkenny, Low & Burbank Grant, Thompson & Reserve Purchase, Sargent Purchase, Bean Grant, Cutts Grant, and Hadley Grant, and more than three-fourths of Bean Purchase lie above this level. Noteworthy ranges are the following (peaks in italics have more or less extensive ledges or other bare areas at or near their summits):

1. The mountains along the northern border from Crown Monument (2590 feet) westward, rising to 3000 feet at Mt. Bon Durban near Lake Magalloway and 2909 feet at Mt. Prospect near Third Lake, and becoming an extensive plateau at the headwaters of Hall Stream (8).

2. Along the east and southeast of Pittsburg and close to or crossed by the Maine line lie Mt. Kent (3100 ft.), Mt. Carmel, or, as it is more generally known, Rump Mtn. (3647), Prospect or Striped Mtn. (2725), after which these hills swerve away to the southwest, with Stub Hill (3607), Mt. Magalloway (3360), Mt. Pisgah (3074), and the Crystal Mts. (3250).

3. The Dixville Mts., both north and south of Dixville Notch, reaching their highest point at Dixville Peak (3482). Table Rock, the most spectacular of several pinnacles rising above Dixville Notch, is about 2640 feet in elevation.

4. A crest of mountains and high connecting ridges from Goback (or Bowback) Mtn. in Stratford (3503) eastward to Sugarloaf (3701) and Whitcomb Mtn. (3350), thence south and west to Long Mtn. (3640) and the Percy Peaks (3418 and 3220).

5. The Pilot-Pliny Range runs southward from near Groveton, with a number of summits, including Mt. Hutchins (3710) and Mt. Cabot (4080) at which point it is joined by a high ridge from the northeast, including Green Ledge (ca. 2480), Square Mtn. (2700), Nigger Nose (2945), The Horn (3905), and The Bulge (3920). From Cabot the range continues over Terrace Mtn. (3640), Round Mtn.—now Mt. Weeks; see Appalachia, 27 (1961)(3890), south to Mt. Waumbeck (4005) and west to Mt. Starr King (3913), with Mt. Pliny 3605 as an offshoot.
6. The Crescent Range, beginning with the low Boy (or Bois) Mtn. in Jefferson (2220), runs east and northeast to Mt. Randolph (3070), Mt. Crescent (3230), Black Crescent Mtn. (3265), Jericho Mtn. (2483), and Mt. Forist (2046), at Berlin.

7. The Mahoosuc Range, starting from Mt. Hayes (2566) in Gorham, extends northeastward to Cascade Mtn. (2606), Bald Cap Dome (3090), Mt. Success (on some maps called Mt. Ingalis; 3590), in the township of Success, and then passes on to yet higher peaks in Maine. This range, traversed by the Appalachian Trail, may be considered as a northeastward prolongation of the Presidential Range, broken at Gorham by the narrow valley of the Androscoggin River. In its botanical character, however, it is different from the Presidential Range.

8. The Baldface Range runs from Maine southwest into Bean Purchase, where are situated West Royce Mtn. (3202), Mt. Meader (2783), Eagle Crag (3020), and North Baldface Mtn. (3591), after which the range continues into Carroll County.

9. The Moriah-Carter Range is, in part, roughly parallel to that last mentioned, from which it is separated by the valley of the Wild River, and it includes the peaks of Shelburne Moriah Mtn. (3748), Middle Moriah Mtn. (3758), Mt. Moriah (or Gorham Moriah; 4041), Imp Mtn. (3708), North, Middle, and South Carter Mtn. (4539, 4621, and 4458, respectively), Mt. Hight (4690), Carter Dome (4843), and Mt. Wildcat (4397).

10. The Presidential or Great Range starts at Pine Mtn. (2494) in Gorham, and passes in a southwest and south direction, with the "Northern Peaks" of Mt. Madison (5363), Mt. John Quincy Adams (5450), Mt. Adams (5798), Mt. Sam Adams (5585), Mt. Jefferson (5715), Mt. Clay (5532), and Mt. Washington (6288). Here the range splits; the main portion (called the "Southern Peaks") continues to the southwest, with Mt. Monroe (5385), Mt. Franklin (5004), Mt. Pleasant (4761), Mt. Clinton (4310), Mt. Jackson (4052), and Mt. Webster (3910). From Mt. Washington there reaches to the south the large plateau known as Boott Spur (5500), from which extend two considerable ridges, one being the Montalban Ridge, running nearly south, including Mts. Isolation (4005), Davis (3820), Stairs (3460), Resolution (3428), Crawford (3129), Hope (2529), and Hart Ledge (209), and the other, the Rocky Branch Ridge, without significant summits in our area. Important ravines on the east side of the Mt. Washington group are, from south to north, the Gulf of Slides, Tuckerman Ravine, the Ravine of Raymond Cataract, Huntington Ravine (by the early botanists known as the "Grand Gulf," to be carefully distinguished from the Great Gulf), and the Great Gulf, with its branches, the Clay Ravine (or Sphinx Basin), Jefferson Ravine, and Madison Gulf. On the north side of the Northern Peaks (i.e., Mts. Madison to Clay) lie Bumpus Basin, the valley of Snyder Brook, King Ravine, the Ravine of the Cascades, the Ravine of the Castles, Burt Ravine, and the Ammonoosuc Ravine; to the southwest of Mt. Washington lies the important botanical locality of Oakes Gulf. Some of these "ravines", as they are called in the usage of the region, are properly glacial cirques, and are designated above by asterisks. This is true of most of those of botanical interest, in which the steep cliffs of the headwalls often furnish late snowdrifts and moist outcrops favorable for the presence of a varied flora. The late Professor J. W. Goldthwait, in an article on "Glacial Cirques near Mt. Washington" (9), believed that these cirques antedate the continental ice-sheet of the Pleistocene period. The Presidential Range as a whole, from Gorham to Bartlett, is about 22 miles in length. For traces upon it of an old "Presidential Upland" or penplain at 4000-5000 feet, including the Alpine Garden, Bigelow Lawn, etc., cf. R. P. Goldthwait, op. cit., 7-9 but also W. F. Thompson in Appalacchia, 26 (1960), 147-151.

11. The Dartmouth Range extends west-southwest from Jefferson Notch in Thompson & Meserve Purchase to Mts. Dartmouth (3721) and Deception (3658). It is almost completely
wooded save the small outlying summit of Pine Peak (2790). With this range may also be grouped the nearby north and south range of Cherry Mt., with Mt. Martha as its highest (3554) and Owl’s Head (3263) as its most conspicuous peak.

12. Of low elevation but because of its circumneutral soils of great botanical interest is a range entirely in Lancaster, running east and west and comprising Mt. Prospect (2059), Mt. Pleasant (1952), and Mt. Orne (1839).


Other scattered heights are, of course, found in various parts of the county. Especially interesting botanically are the Diamond Peaks (2071) in Dartmouth College Grant, the Devil’s Slide (1700) in Stark, and Cape Horn (2055) in Northumberland—not to be confused with a bend on the Mt. Washington Carriage Road similarly designated.

CLIMATE

The features of the climate of northern New Hampshire to be here especially noted are temperature, precipitation (rain and snow), wind velocity, and amount of sunshine. In view of the differences between different years, instrumentation, and observers I may be permitted to present data of several sorts. J. H. Huntington in his account (10) of the climatology of the state shows (on p. 124) the annual isothermal lines for the whole year, and (p. 126) the lines of equal summer temperatures (isotherals) and of equal winter temperatures (isochimenaIs). From these it appears that the annual isotherm of 42°F. passes through Shelburne, Gorham, Randolph, and Carroll; that of 41°F. through Success, Berlin, Milan, Kilkenny, Stark, Lancaster, Jefferson, and Whitefield; that of 40°F. through Cambridge, Errol, Dixville, Erving Location, Columbia, and Stratford; while the summit of Mt. Washington lies as a sort of island enclosed by the isothermal line of 25°F. The isotheral line of 65°F. (nearly corresponding to the isochimenal of 19°), traverses Shelburne, Gorham, Randolph, Jefferson, Lancaster, and Whitefield; that of 63°F. (nearly matching the isochimenal of 17°), Success, Berlin, Milan, Dummer, Stark, Stratford, and that of Northumberland; that of 62°F. (running a little north of the isochimenal of 16°), through Errol, Dixville, and Colebrook; while for the summit of Mt. Washington the corresponding summer line represents 47°F. Since the line of perpetual snow in our mountains is normally at the isothermal of 35.6°F. for the months of June to September (11), it can be seen that at the present time the conditions for permanent snow on Mt. Washington do not obtain, though W. Upham remarks (12) that "In no other part of the Northern hemisphere, except north-eastern China, does the isothermal line, which represents the mean temperature of our state, sink so near to the equator—that is, our average temperature is unusually low for the latitude (44°16')...our mean temperature is what might be expected were our geographic position five degrees farther north" (i.e., as far north as the Bay of Islands in Newfoundland, central Anticosti, the Lake of the Woods, or Vancouver. In the same volume of the Geology of N.H. 144-145, Huntington gives mean monthly temperatures for four localities in Coos County: Shelburne, Stratford, Whitefield, and Mt. Washington. These and some more recent data from Pittsburg and Berlin I have copied in the Vascular Flora. A still more recent set, for 1949, I subjoin from the publications of the U.S. Weather Bureau (13) observing, however, that that year was the warmest and driest in the 62 years on record. The first figure, then, for each point of observation is the actual mean for 1949, and to secure the normal figure for that locality and that month one must subtract from it any positive figure given in the following parenthesis and add to it any negative figure given in the parenthesis. Thus the normal mean annual temperature for First Lake would be 37.7, for Berlin 41.4, for Pinkham Notch 39.6, and for Mt. Washington-
ton 28.9. After the Mt. Washington figures I have placed a column with mean monthly data for Hebron in northern Labrador, representing averages for 1905-1911 (14).

<table>
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<th>Month</th>
<th>First Lake</th>
<th>Berlin</th>
<th>Pinkham</th>
<th>Mt. Washington</th>
<th>Hebron</th>
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<td>Jan.</td>
<td>15.8 (4.5)</td>
<td>23.0 (8.1)</td>
<td>22.7 (5.8)</td>
<td>12.0 (6.0)</td>
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<td>Feb.</td>
<td>16.0 (4.4)</td>
<td>21.7 (5.5)</td>
<td>22.1 (5.7)</td>
<td>10.3 (5.3)</td>
<td>5.5</td>
</tr>
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<td>Mar.</td>
<td>21.7 (-0.3)</td>
<td>27.9 (1.0)</td>
<td>29.3 (4.9)</td>
<td>13.2 (1.7)</td>
<td>5.1</td>
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<td>Apr.</td>
<td>37.0 (1.9)</td>
<td>42.0 (2.5)</td>
<td>40.9 (4.7)</td>
<td>22.9 (-0.5)</td>
<td>18.9</td>
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<td>May</td>
<td>49.4 (0.9)</td>
<td>52.7 (0.5)</td>
<td>52.3 (2.3)</td>
<td>36.2 (0.5)</td>
<td>31.6</td>
</tr>
<tr>
<td>Jun.</td>
<td>61.5 (3.5)</td>
<td>65.1 (3.6)</td>
<td>63.3 (4.4)</td>
<td>49.1 (3.7)</td>
<td>36.8</td>
</tr>
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<td>Jul.</td>
<td>65.3 (3.6)</td>
<td>68.8 (2.4)</td>
<td>66.5 (3.8)</td>
<td>52.0 (2.8)</td>
<td>44.6</td>
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<td>Aug.</td>
<td>62.3 (1.2)</td>
<td>65.9 (1.9)</td>
<td>64.3 (3.4)</td>
<td>49.3 (1.3)</td>
<td>46.9</td>
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<tr>
<td>Sep.</td>
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<td>54.4 (-1.9)</td>
<td>53.0 (-1.1)</td>
<td>38.7 (-2.3)</td>
<td>41.3</td>
</tr>
<tr>
<td>Oct.</td>
<td>47.3 (4.6)</td>
<td>49.4 (3.8)</td>
<td>49.1 (5.5)</td>
<td>35.3 (5.6)</td>
<td>32.0</td>
</tr>
<tr>
<td>Nov.</td>
<td>27.3 (-2.9)</td>
<td>31.4 (-1.8)</td>
<td>30.1 (-1.5)</td>
<td>16.1 (-3.5)</td>
<td>23.1</td>
</tr>
<tr>
<td>Dec.</td>
<td>19.8 (3.2)</td>
<td>24.0 (3.7)</td>
<td>24.6 (4.6)</td>
<td>11.8 (3.2)</td>
<td>6.0</td>
</tr>
<tr>
<td>Year</td>
<td>39.6 (1.9)</td>
<td>43.9 (2.5)</td>
<td>43.2 (3.6)</td>
<td>28.9 (2.0)</td>
<td>27.9</td>
</tr>
</tbody>
</table>

From Climatological Data, 56, part 13 (1949), 372, I here extract, for the same four stations and for Fabyans, maximum and minimum temperatures for 1949—very significant in determining what species are sufficiently tolerant of cold or heat to survive—and also the dates of the latest 32-degree
frost of spring and of the earliest such frost of autumn—both important in fixing the length of the growing season. In the more elevated towns summer frosts are occasional, and on Mt. Washington frequent. Twice in recent years there have been at Randolph, in each of the summer months, frosts sufficiently severe to kill unprotected beans and squashes in the gardens. Antevs well remarks (16) that on Mt. Washington winter extends from November to April (i.e., fully half the year); and the other seasons only two months each.

<table>
<thead>
<tr>
<th>Temperature Extremes and Freezing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>First Lake</td>
</tr>
<tr>
<td>Pinkham Notch</td>
</tr>
<tr>
<td>Fabyans</td>
</tr>
<tr>
<td>Mt. Washington</td>
</tr>
</tbody>
</table>

Naturally the higher mountains are more exposed to frosts, for, as Huntington remarks (19), although in calm winter weather the temperature in the valleys falls lower than at some much higher elevations, yet in stormy and windy weather the reverse is true, and there is a gradual decrease of temperature according to height, amounting to about 1°F. of temperature for every 354 (20) feet of altitude. C.H. Hitchcock well declares (21) that the climate of Mt. Washington corresponds with that of middle Greenland at about 70° north. The summit is thus "an arctic island in the temperate zone." (21a) The severity of the winters on the Presidential Range is strikingly described in two volumes, viz., C.H. Hitchcock, J.H. Huntington, S.A. Nelson, et al., Mt. Washington in Winter (1871), based on the experience of observers on the summit from November, 1870, to May, 1871, and R.S. Monahan, Mount Washington reoccupied, with comparable experiences from October, 1932, to May, 1933. See also C.F. Brooks in Appalachia 23 (1940), 194-202 on "The Worse Weather in the World."

The rainfall of the state in general is considerably in excess of the amount normal for its latitude (22), and the particularly low temperatures of the northern and elevated portions of New Hampshire cause "the condensation of a large amount of moisture from the warm south and southwest winds, inducing a more abundant rainfall than could be looked for in our latitude." In some parts of Coös county also easterly storms of considerable duration are accompanied by abundant precipitation. Statistics from the unusually dry year 1949 I draw from the Climatological Data, vol. 36, part 13, 369-370, placing in the first column actual figures for that year and in the second the adjusted normal mean, obtained by adding to the figure for the year the amount of deviation it shows from normal. Amounts are reckoned in inches.

<table>
<thead>
<tr>
<th></th>
<th>1949</th>
<th>Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Lake</td>
<td>41.3</td>
<td>46.1</td>
</tr>
<tr>
<td>Dixville Notch</td>
<td>42.6</td>
<td>44.8</td>
</tr>
<tr>
<td>Milan</td>
<td>31.8</td>
<td>39.3</td>
</tr>
<tr>
<td>York Pond (Berlin)</td>
<td>37.2</td>
<td>45.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1949</th>
<th>Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berlin</td>
<td>29.7</td>
<td>39.0</td>
</tr>
<tr>
<td>Jefferson</td>
<td>36.5</td>
<td>---</td>
</tr>
<tr>
<td>Pinkham Notch</td>
<td>47.5</td>
<td>59.4</td>
</tr>
<tr>
<td>Mt. Washington</td>
<td>62.9</td>
<td>77.0</td>
</tr>
</tbody>
</table>

A somewhat higher normal figure for Mt. Washington is given by Antevs (23), who finds the average for the years 1872-1890 to be 82.2 inches, and notes that for the years 1872-1886 the range of mean annual precipitation is from 55.8(1875) to 114.5(1878). Monthly mean figures which he gives also clearly bring out the fact that the highest precipitation occurs in the growing months of June to September (the monthly range is from 4.2 inches in February to 10.3 inches in July). Sample total annual snowfalls show considerable variations, e.g., at Stratford from 55.7 inches (1868) to 126.8 inches (1869) (24), and at Pittsburg from 120.0 inches (1919), to 143.3
inches (1921) (25). For Mt. Washington C.F. Brooks (26) estimates a snowfall of 200 inches, though the effect of prevailing northwest winds is to blow much of the snow from higher levels into deep drifts on sheltered lee slopes (e.g., Tuckerman Ravine (27) and the southeastern side of Mt. Jefferson, there the snow (blown over from winter northwest winds) lies longest in the early summer, and its melting moisture encourages a late and brief but vigorous growth of some of our rarer species (28).

From the Climatological Data for 1961 (repeated in Appalachia, 28, 36) I add a table on precipitation, reckoned in inches.

<table>
<thead>
<tr>
<th></th>
<th>Rain</th>
<th>Snow and Sleet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan.</td>
<td>3.00</td>
<td>23.9</td>
</tr>
<tr>
<td>Feb.</td>
<td>5.88</td>
<td>25.0</td>
</tr>
<tr>
<td>Mar.</td>
<td>3.85</td>
<td>24.1</td>
</tr>
<tr>
<td>Apr.</td>
<td>10.69</td>
<td>59.6</td>
</tr>
<tr>
<td>May</td>
<td>3.00</td>
<td>6.5</td>
</tr>
<tr>
<td>June</td>
<td>5.75</td>
<td>.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Rain</th>
<th>Snow and Sleet</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>5.17</td>
<td>Trace</td>
</tr>
<tr>
<td>Aug.</td>
<td>4.11</td>
<td>Trace</td>
</tr>
<tr>
<td>Sept.</td>
<td>5.09</td>
<td>.0</td>
</tr>
<tr>
<td>Oct.</td>
<td>2.52</td>
<td>5.7</td>
</tr>
<tr>
<td>Nov.</td>
<td>6.38</td>
<td>40.6</td>
</tr>
<tr>
<td>Dec.</td>
<td>4.64</td>
<td>41.1</td>
</tr>
<tr>
<td>YEAR</td>
<td>60.08</td>
<td>224.5</td>
</tr>
</tbody>
</table>

It has been pointed out by L.H. Harvey (29) that frequency as well as total amount of rainfall is important in its influence upon plant growth (30). The frequency and duration of cloudiness on the higher peaks of the White Mountains is notorious, and J.W. Dawson remarks: (31) "When the summer mists roll around the summit of Mt. Washington, it is in every respect the precise counterpart of an islet anywhere on the coast of America from Cape Breton to the Arctic seas."

A third chief climatic factor, wind, is important when combined with those of temperature, precipitation, and sunshine, but also, especially at high altitudes, for its effects upon the growth and development of scrub. For the winter of 1870-1871 observers on Mt. Washington recorded the following velocities of the wind, measured in miles per hour: (32) Nov. 72 m.p.h., Dec. 105, Jan. 100, Feb. 98, Mar. 89, Apr. 89, May 63. J.H. Huntington states that the greatest velocity measured on Mt. Washington up to his writing was 140 m.p.h., to which figure R.S. Monahan (op. cit., 6;62) would correct the report of 186 m.p.h. on 11 Jan., 1878. Other reports are 170 in Dec. 1881 (34), 180 on 16 Dec., 1876 (35), and 182 on 1 Apr., 1879 (36). The record to date seems to be 231 m.p.h. on 12 Apr., 1934 (37). But, quite apart from record velocities, it should be noted that the observers of 1870-1871 reported winds of 60 m.p.h. or more on 20 days in December, 12 in January, 11 in February, 11 in March, and 5 in April. For 1938-1939 the average number of days each month of winds of hurricane force (75 m.p.h.) ranged from 0 in August to 21 in March. On one occasion when 96 m.p.h. was recorded at the summit, at the Base Station, 2677 feet below, there was not enough wind to stir the anemometer. (38) A.K. Chittenden (39) cites evidence collected by the Weather Bureau to indicate a 9 or 10% increase in wind-velocity per 100 feet increase in altitude, and Brooks (40) notes that on the summit of Mt. Washington the average velocity is four times that in lowlands, which, with air 3/4 as dense, makes the wind-pressure about twelve times that in lowland stations, rising to 80 lbs. per sq. ft. of surface (as contrasted with 20 lbs. per sq. ft. in Boston during the 1938 hurricane (41). The effects of the wind upon vegetation will be considered below.

A fourth ingredient of the Mt. Washington climate is found in the percentage of sunny days as compared, in part, at least, with those of fog. Here the reader may be asked to compare the table in Appalachia, 28 (1962), 36, for the year 1961, from which it appears that only one month (January) reached as high an average as 68%. 

11
TEXT - Fig. 2. - Soils of Coös County
GEOLOGY (42) IN RELATION TO THE FLORA

The underlying formations of northern New Hampshire form a complex of igneous and metamorphic rocks, the latter being sedimentary deposits laid down on the sea-floor perhaps 350,000,000 years ago, (43) and then more or less altered and crystallized during the intrusion of igneous masses, mostly granites and traps. Among igneous formations are the granitic group (Conway, Albany, Chocorua, and other granites), the gneissic group, (44) of which Hitchcock recognizes various subdivisions, and a basic group of syenite and diorite, richer in lime and soda and poorer in potash than the granites (45). The metamorphic rocks, which form most of the Presidential Range, (46) include (1) the Littleton Formation of schists (quartz, acid feldspar, muscovite, sillimanite, fibrolite, and andalusite), which are very durable and hence form rather meagre soils; (2) the Coös Group, of staurolite schist, argillaceous mica schist, quartzite, and fossiliferous limestone, limited to a narrow strip about 35 miles in length, from Columbia north to the Canadian boundary, but producing a very fertile soil; (3) a calcareous area, (47) extending alongside of the Coös Group, from Columbia through Colebrook, Stewartstown and Clarksville into the southern part of Pittsburg, an area about 16 miles long by 4 broad, composed of an easily eroded mica schist impregnated with calcareous materials and with bands of impure siliceous limestone, the whole disintegrating into a soil of more than common fertility, a considerable portion of which is under cultivation (47a). The ponds in this area (e.g., Ladd Pond in Stewartstown and Lime Pond in Columbia) and some smaller sloughs are marly in character, and cedarswamps—in frequent elsewhere in Coös County—occupy many hollows. Rock outcrops, as at Beaver Brook Falls in Colebrook, contain species of much interest, and the upland woods are uniformly rich in vegetation. About a score of species in our flora are apparently limited to this one formation (48). (4) Most of the northern half of Coös County is underlain by slates of the Lisbon and Lyman groups, and (5) of Cambrian age, all forming rather rich soils. An area which might be expected to yield a few species not found elsewhere in this county is situated (49) in the extreme northeastern part of Pittsburg, a few miles southwest of Crown Monument, where there are said to be beds of serpentine. In various places in Europe and in America at Mt. Albert in Gaspe, in the asbestos region of Theford Mines, Que., near Mt. Orford, Que., and in northern Vermont, serpentine exhibits a meagre but peculiar flora. Inaccessibility has thus far prevented adequate botanical exploration of this particular part of Coös County.

From this mountainous area, composed of the formations just described, late palaeozoic erosion removed a very considerable amount of surface material (50), perhaps wearing the White Mountains nearly down to sea-level. Later the whole region was elevated, and parts of an early peneplain or "Presidential Upland" may perhaps be seen at about 5500 feet at various points on the Presidential Range, such as Bigelow Lawn, the Alpine Garden, Boott Spur, Mt. Clay, and Monticello Lawn (51).

Northern New Hampshire was deeply buried by the Pleistocene ice-sheet—in the Wisconsin stage, (32)—which, advancing, about 20,000 to 25,000 years ago, in a southerly to south-southerly direction, but occasionally veering around obstacles (33), rasped and ploughed the surface, and left as the common soil of the area (34) a till consisting of boulders, cobbles, gravel, sand, and clay, of which the larger part, pushed along beneath the ice itself, was probably transported only to comparatively short distances. Clear evidence that an ice-sheet passed over the tops of our highest mountains is furnished by the presence, on the summit of Mt. Washington, of erratic boulders and pebbles, and also, at levels of from 5000 to 5300 feet, of perched boulders, of definite striæ or groovings in the bed-rock, and of glacially rounded "sheep-backs" or roches moutonnées (55). Whether the ten glacial cirques on the Presidential Range, all facing either NW, NE, or SE, were formed (by local glaciers) before, during, or subsequent to the Wisconsin glaciation has been actively debated (56).
Among modern formations important are the continuing deposits by streams of sand and silt, also the continued accumulation of organic soils of vegetable origin, such as peat and black muck. The almost universal upland soil of Coos county, then, is unmodified glacial drift or till, and the important lowland soil is modified (i.e., washed and stratified) drift.

A recent soil-map of Coos County (57) shows in great detail the presence of a large number of technically differentiated types of soil, and is useful particularly for agricultural purposes. But these types, which appear largely physical in their character, have not as yet been correlated by botanists with the ranges, habitats, and local abundance of our indigenous Coos County flora. On the other hand, chemical differentiations have been tested at various points by E.T. Wherry (58), who finds that in the lowest few hundred feet of the spruce-fir forest the upland peat is mostly subacid and Ericaceae (except Gaultheria hispidula and Vaccinium myrtilloides) are rare, while at about 3600 feet conifers are smaller, soils blacker and more acid, and Ericaceae more frequent (e.g., Rhododendron canadense and Vaccinium angustifolium), and still higher, above the treeline, in an autogenous black damp humus or alpine peat, with a uniformly mediacid reaction, the heaths show a further increase. On the most exposed broken rocks, with little organic soil, there are chiefly Rhododendron lapponicum and Diapensia lapponica. Soils of minamic acid reaction are found in the White Mountains only in springy places, particularly on the head-walls of cirques, and exhibit Habenaria dilatata, H. obusata, and Castilleja septentrionalis. The only ferns Wherry observed above treeline were in mediacid alpine peat on rocky ledges: Dryopteris Phlegopteris, D. spinulosa (probably var. americana), and a variety of Athyrium Filix-femina, the last-named ascending practically to the summit of Mt. Washington.

The effect of the Wisconsin ice-sheet upon the presumably more or less homogeneous flora which preceded it was to drive it southward (59) to the limits of Pleistocene glaciation, as far south as New Jersey (60). The vexed question of the possible existence of refuges on nunataks—hills surrounded but not covered by ice-sheets—, on which "relief-species" may have persisted all through the glacial period, is of great significance for the history of the flora of certain supposedly driftless areas, such as the Torngat Mts. in Labrador, the Long Range in Newfoundland, the higher parts of the Shickshock Mts. in Gaspé, the Magdalen Is., parts of Anticosti, the cliffs of Bic, Que., certain islands in Lake Superior, and the famous driftless area of Wisconsin, Minnesota, and Iowa, and the arguments in favor (by E. Warming, M.L. Fernald, and others) and against (by V.C. Wynne-Edwards and others) are judiciously reviewed by H.M. Raup (61). In the White Mountains, at any rate, where the ice-sheet clearly overwhelmed the highest peaks, it seems difficult to imagine such refugia (62).

The recession—perhaps about 20,000 years ago—of the glaciers from their line of farthest southward advance was a slow process, (63) but they were apparently closely followed by the harder species of plants (64). These ascended mountains and persisted there through later warmer and drier periods, because only on such summits, with constant moisture, could they exist at such low latitudes (65). Trapped on these islands of subarctic or arctic climate, they have, with a few exceptions, lost (or lacked) the power of adapting themselves to a wider area, with more varied climatic conditions (66). This would be the explanation of many montane cases of disrupted ranges (67), which have presented a problem to zoologists as well as to botanists, for the animals must be, to some extent, affected by the ranges of those plants upon which they depend (68). In the course of time these isolated species, if not displaced by more aggressive (69) and adaptable ones from lower elevations, may, if rather fluid in character, like many species of Poa, Calamo-grostis, and Salix (70), develop into well-marked endemics (71); others, more conservative, keeping more rigidly their original characteristics.
I have dwelt at length upon postglacial conditions upon the mountains, since these involve a particularly striking and interesting flora. It may be remarked, however, that the "return of the native" covered the rest of our area as well, with plants of more southern extension reaching it by two principal gateways, the valley of the Connecticut and that of the Androscoggin, and it is in the towns situated lowest upon these streams that the greatest number of the less hardy and adventurous species are to be found. Thus Shelburne contains a considerable number of species not elsewhere known in our area, and several species are limited in the county to Shelburne in the one valley and Dalton and Lancaster in the other. The Shelburne flora is more southern in character than that of Dalton and Lancaster, which lie much farther distant (along the river) from the sea. In Lancaster the most noteworthy station for southern plants is upon Mt. Prospect. Small enclaves of southern species are also found farther north, as on the east side of Head Pond in Berlin and on the talus protected by the high cliffs of the Devil's Slide in Stark. There is very great likeness, almost identical, between the northern boundary of these southern species and the isothermal line of 50° for April, May, and June (as shown on a map in the Geology of New Hampshire, 1,574), which A.E. Verrill(72) proposed as a boundary between the Canadian and Alleghenian birds. W.F. Flint (72) considered 600 feet of altitude as the most convenient boundary between the Canadian and Alleghenian zones of plant life, and pointed out that on the western edge of this state this line is most strikingly formed by the Fifteen Mile Falls on the Connecticut, the head of which is in the southern part of Dalton.

Some southern species ascend the Saco valley and are found on its warmer slopes in Hadley Grant, but the summit of Crawford Notch, like that of Pinkham Notch (each about 1900 feet above sea), proves an effective barrier to their northward extension (as also to that of the rattlesnake).

Some larger aspects of the same question appear when we seek the wider geographic affinities of our alpine flora. Asa Gray (73) attempted a statistical investigation of this flora as part of a larger study, and drew up a list of species found only in the alpine regions of the White Mountains, the Green Mountains, the Adirondacks, and Katahdin, in which were included 33 species (all, as it happens, occurring in the White Mountain area). Of these he considered two as endemic in these regions, two others as North American, and the other 29 as identical with European species. Further, of 12 subalpine species, i.e., species found both in the treeless area and also in the somewhat transitional zone below it, and all occurring in the White Mountains, he found 9 to be European. In a subsequent article (74) he corrected these figures, making 37 alpine species (32 of them European) and 16 subalpine (11 European). That is, of our distinctively alpine species over 86% were to be regarded as European. C.H. Hitchcock (75), following data of Nathan Barrows, with an estimate based on 54 strictly alpine species, reached 79% as the proportion of European species. Since these calculations further light has been cast upon the distribution of our species, and various segregations have been proposed for species which were formerly tentatively (and at times hastily) considered as identical with Old World types, so that a revised calculation seems needed. In such the following may be listed as essentially alpine, with indication of their distribution outside our limits. (In a few cases these species may, even in our latitude, exceptionally descend to lower levels.) The data are taken from the eighth edition of Gray's Manual (75a). Hybrids and mere color forms are omitted, also a few varieties of doubtful status, in cases where the species to which they belong is also in our flora. Brackets ( ) indicate that some other form of the species here designated occurs in the area—e.g., Eurasia—which they enclose. Plants in this list labeled "Eurasia" are most of them to be regarded as circumboreal.
Lycopodium Selago (incl. var. appressum) annotinum, var. pungens clavatum, var. monostachyon
Larix laricina, var. depressa
Juniperus communis, var. saxatilis
Festuca prolifera
Poa alpigena

glaucap
Fernaldiana
Trisetum spicatum, var. pilosiglume
Deschampsia atropurpurea
Calamagrostis Pickeringii

nubila
canadensis, var. scabra
Agrostis borealis
Phleum alpinum
Hierochloe alpina
Scirpus cespitosus, var. callosus
Carex capitata

scirpoidea
Bigelowii
lenticularis, var. albimontana
atratiformis
capillaris
Juncus trifidus

Eurasia; South America (?)
Eurasia
Greenland-Alaska (Eurasia)
Labrador-Alaska (?)
Eurasia
Europe
Eurasia
Eurasia
Labrador-New York
Labrador-Minnesota (Eurasia)
Eurasia
Newfoundland-New York
Endemic
Eurasia
Eurasia
Eurasia
Eurasia
Eurasia
Eurasia; South America
Eurasia
Europe
Labrador-White Mountains
Labrador-Yukon
Eurasia
Eurasia
Luzula spicata
  confusa
Salix herbacea
  Uva-ursi (75b)
  argyrocarpa
  planifolia
Betula minor
  glandulosa
Oxyria digyna
Polygonum viviparum
Arenaria groenlandica
Silene acaulis, var. excapa
Barbarea orthoceras
Cardamine bellidifolia
Saxifraga rivularis
Spiraea latifolia, var. septentrionalis
Sibbaldia procumbens
Potentilla norvegica, var. labradorica
Robbinsiana
Geum Peckii
Rubus Chamaemorus
Empetrum nigrum
  atropurpureum
Viola palustris
Epilobium palustre, var. labradoricum
  Hornemannii
  alpinum
Eurasia
Eurasia
Eurasia
Greenland-New York
Labrador-White Mountains
Labrador-Alberta
Labrador-New York
Arctic-South Dakota
Eurasia
Eurasia
Greenland-New York
Eurasia
Eurasia
Eurasia
Eurasia
Labrador-Michigan
Eurasia
Labrador-Alaska (Europe)
Endemic
Nova Scotia and White Mountains
Eurasia
Eurasia
Labrador-New England
Eurasia
Greenland-White Mountains (Eurasia)
Eurasia
Eurasia
Rhododendron lapponicum
Loiseleuria procumbens
Phyllodoce caerulea
Cassiope hypnoides
Arctostaphylos alpina
Vaccinium uliginosum, var. alpinum angustifolium
Diapensia lapponica
Veronica alpina, var. unalaschcensis
Castilleja septentrionalis
Euphrasia Oakesii
Williamsii
Rhinanthus borealis
Houstonia caerulea, var. Faxonorum
Solidago macrophylla, var. thyrsoides
Cutleri
Aster puniceus, var. oligocephalus
Gnaphalium supinum
Achillea borealis
Arnica mollis
Prenanthes trifoliata, var. nana
Boottii

Eurasia
Eurasia
Eurasia
Eurasia
Eurasia
Greenland-Minnesota (Eurasia)
Labrador-New York
Eurasia
Greenland-Alaska (Eurasia)
Labrador-Alberta
Labrador-White Mountains
Newfoundland-White Mountains
Greenland-New York
St. Pierre & Miquelon-White Mountains
Labrador-White Mountains
Maine-New York
Labrador-Mackenzie
Europe
Eurasia
Quebec-British Columbia
Labrador-New York
Maine-New York

To the 74 items above enumerated about 95 more might be added which are by no means limited to the alpine zone but are found at home both in it and in the lowlands, such species as Picea mariana, Hierochloë odorata, Veratrum viride, Listera cordata, Potentilla tridentata, Ledum groenlandicum, and Kalmia polifolia. Of the 74 alpine species 42 (57%) occur also in Eurasia—i.e., are circumboreal—; four (5%) are European but not as yet known to be Asiatic, and four more (5%) reach their eastern limit in Greenland, leaving 28 (38%) which, as at present known, are
exclusively North American (76). Some of these range from Labrador southward and westward, a smaller group from Newfoundland, St. Pierre, and Miquelon. Of these North American species nearly all reach their southern limit in the eastern United States on or near the mountains of northern New England or New York, Calamagrostis Pickeringii, like the subalpine Paronychia argyrocoma, var. albimontana, having outlying stations in the Merrimac valley in Essex County, Massachusetts (77). One or two species (Lycopodium Selago (?) and Carex capitata) are found also in southern South America, a disjunct range such as is discussed by C. Darwin, Origin of Species (1859), ch. 12, who points out that Dr. Hooker has shown that between forty and fifty phanerogams of Tierra del Fuego, forming no inconsiderable part of its scanty flora, are common to North America and Europe, remote as these areas in opposite hemispheres are from each other.

Only two species of the 74 in the alpine list (2%) are at present to be considered as endemics. In the Vascular Flora three others were so recognized (Geum Peckii, Euphrasia Williamsii, and Houstonia caerulea, var. Faxonorum) (78); but it was there admitted (p. 103) that further investigations of the alpine flora of eastern Canada might at any moment show that these species were not strictly endemic, which has come to pass. From a large number of endemics which the early collectors ascribed to the White Mountains most have now dropped from the list, while of the two remaining, Calamagrostis nubila is as yet somewhat tenuously established (on the basis of a single collection), and Potentilla Robbinsiina, endemic in the White Mountains rather than on the Presidential Range (since it also occurs on Mt. Lincoln in Grafton County) has nearly related congeners (especially the Siberian P. elegans C. & S.; cf. Fernald in Rhod. 33 (1931), 59), and may itself turn up elsewhere. It is commonly held (79) that abundant endemism is characteristic of lands of great age, especially of mountains the vegetation of which has been long undisturbed by geological paroxysms, while absence or rarity of endemism is a general feature of glaciated areas. A comparison of the alpine floras of the White Mountains and the Shickshocks might seem to confirm this view, though the granitic tableland of Tabletop Mountain (79a) approaches the White Mountain flora.
FIORISTIC CONDITIONS

Any brief description of the flora of an area as large as this must necessarily be inadequate, (1) from the difficulty of so subdividing the different habitats as to characterize typical plant-associations as distinct, on the one hand, from associations found at particular localities, and, on the other, from groupings so extensive and composite as to correspond to no single plant-society occurring in nature (80), and also (2) from the impossibility of selecting as a basis of classification any one principle acceptable to all students, irrespective of whether they assume as their primary criterion the humidity of the soil, its chemical or its physical composition (81), life zones controlled by temperature or by altitude (82), amount of sunshine (83), stages of forest growth, or combinations of two or more of these elements.

The subdivisions here employed are frankly artificial rather than strictly natural, but should enable anyone familiar with the species involved to visualize the more characteristic types of vegetation in this area, especially the more unusual conditions obtaining upon the Presidential Range. I shall employ, then, two main divisions into habitats: (1) essentially natural and largely undisturbed by human action, and (II) more or less modified by man, listing under each of these heads several subdivisions.

Ia. Primeval evergreen forest, chiefly of Picea rubens; but with a good deal of Abies balsamea, originally covered most of the hills and mountains as well as considerable areas at lower altitudes. Frequent occurrence of the name "Black Mountain", -- even retained at times on hills now completely denuded to a white rock--arises from an original growth of spruce, and old descriptions of various parts of the county, recollections of old inhabitants, the frequent and large red spruce stumps still to be seen in the woods, and occasional large heaps of sawdust bear eloquent testimony, in their different ways, to the former abundance of this important and noble tree. Lumbering operations through many years and, much more effectively, the cutting of pulp-wood have so destroyed the original growth that extensive forests of soft wood are now to be found only (a) at heights, mostly over 4000 feet, where the small size of the trees renders them economically unprofitable for cutting; (b) in some places thus far immune by reason of their inaccessibility; (c) in forest reservations, such as the White Mountain National Forest, the New Hampshire State Forest, and small reservations of certain societies and some summer hotels. Conditions have greatly changed since the publication in 1905 of A.K. Chittenden's Forest Conditions of northern New Hampshire (84) (and its colored map indicating forests still standing) (85), destruction having been greatly accelerated of late years.

Pinus Strobus was once probably more abundant than at present, and it was one of the first trees to be culled by settlers, in a period when spruce was apparently little valued. Yet its original abundance is hard to determine, and its occurrence in primeval growth is, within our limits, somewhat rare; H.M. Raup (86) gives reasons for thinking that it was rare in the primeval forest. Its growth with us is further limited by its failure to ascend to any considerable elevation above sealevel. Chittenden (87) says that it was found at nearly all situations in New Hampshire below 1500 feet, and though pines at higher altitudes than that may still be found, yet the best development is unquestionably at lower levels, in spots usually accessible and hence early cut, our trees being mostly of second growth. Large pines seem early to have been found in Atkinson & Gilmanton Academy Grant, for the Geology of New Hampshire (88) mentions one as 7 ft. 4 in. in diameter at the butt, and 3 ft. 1 in. at 90 ft. from the butt, scaling 12,000 ft.; another in Dartmouth College Grant scaled 5000 ft.
Woods in which *Picea rubens* predominates (89) extend through the so-called "Canadian" zone, diminishing in size and gradually yielding to *Abies balsamea* as the scrub growth on the mountains (see below) in the "Hudsonian" zone is reached. Characteristic and frequent in these woods are the following species: *Lycopodium lucidulum, Dryopteris Phegopteris, D. spinulosa*, var. *americana, Clintonia borealis, Betula lutea, B. papyrifera* and var. *cordifolia, Ribes lacustre, Pyrus americana, Oxalis montana, Acer spicatum, A. pensylvanicum, Viola incognita, V. renifolia, Gaultheria hispidula, Linnaea borealis*, var. *americana, and Solidago macrophylla*, while more occasional are *Sectopus amplexifolius*, var. *americana, S. roseus*, var. *perspectus, Habenaria obtusata, Goodyera repens*, var. *ophioides, Listera cordata, Monotropa uniflora*, and *Galium kamtschaticum*, with *Amelanchier Bartramiana, Pyrola minor*, and *Viburnum edule* at the higher levels or in the colder glens. The late E.B. Cook, a careful observer, informed me of two trees of *Thuja occidentalis* at ca. 3500 ft. on Durand Ridge, Mt. Adams, but my attempt to find them was fruitless, the region having been severely deforested (90).

Zonation upon the Mt. Washington Range was early recognized by the Rev. Manasseh Cutler in 1784, who (91) describes three zones: "1st covered with a thick growth of wood; 2nd with mosses and a variety of other small vegetables; the 3rd, above the limits of vegetation, covered 10 or 11 months in the year with snow." Jacob Bigelow (92) more precisely defined: (1) the region of forest trees, up to 4000 feet; (2) a region of dwarf evergreens, 4000-5000 feet; (3) an alpine region of 5000-6255 feet, and most subsequent writers, though varying in their figures, have accepted the same classification (93).

The upper primeval forest passes, by gradual reduction in stature, into the "scrub" or *Krummholz* of the Hudsonian zone, *Picea rubens* of the lower woods being completely replaced by shallow-rooted *Abies balsamea* (94) and, at its upper limits, by *Picea mariana*, an altitudinal replacement paralleled by a similar latitudinal one, for as one nears the northern limit of forest trees *Picea rubens* is the first to disappear, then *Abies balsamea*, and later *Picea mariana, Larix laricina*, and birches and aspen, (95). *Abies* in the White Mountain scrub forest is often accompanied by *Betula minor* and *Pyrus americana*.

Chittenden (96) reckons scrub as extending from 4200 ft. up to the limits of tree growth at from 4500 to 5200 ft., according to the gradient or exposure, the upper line running highest in protected V-shaped valleys, like that of Snyder Brook (up to 4800 ft.), and lowest on exposed and narrow ridges, like the Knife Edge on Mt. Adams (97). This habit of scrub is well paralleled on other mountains, not only Mt. Marcy (98) and neighboring Adirondack peaks (99), but also Mt. Mansfield, Mt. Katahdin (100), high barrens in Cape Breton (101), and the Shickshocks in Gaspé. It should be carefully noted that no distinct "timberline" or even "tree-line" exists in the White Mountains in the sense in which it is found in the Rocky Mts. or the Alps, i.e., a line at which trees not greatly reduced in size or merchantable character abruptly cease (102). What in the White Mountains is commonly known as the tree-line is that at which arborescent species, already reduced to dwarfed or prostrate shrubs, at last disappear altogether, and give place to alpine fells of various types. Extremes of altitude for this disappearance are found by R.F. Griggs (103) at 3800 ft. on an exposed ridge on the Glen Boulder Trail, and in the presence, in a sheltered spot, of a fir growing only 50 or 75 ft. below the summit of Mt. Washington (104). Clearly, then, the upper limit of scrub is determined by other factors than mere altitude (105). C.H. Shaw (106) considers the chief causes for tree-line which have been advanced by different writers (107): (1) temperature, in which he finds little probability (108); (2) shortness of the growing season; (3) dry killing, i.e., excessive winter desiccation (109) because of violent winds—which, combined with point 6, seems possible; (4) miscellaneous other reasons, such as intense radiation, (110) summer frosts, soil-temperature, etc., mostly open to the same objections as the first reason cited above; (5) snow, especially the
formation of deep snow-banks late in melting and hence seriously reducing the growing season—an important consideration in the western mountains and locally effective here, as in Tuckerman Ravine and on the southeast side of Mt. Jefferson; and (6), the most probable cause, namely, high winds (111), directly uprooting (112), or shearing off (113) exposed branches, and reducing normally upright trees to prostrate carpets (114)—a state to which Picea mariana more readily accommodates itself than does Abies balsamea (115). Indirect effects are the blowing away of the normal protective covering of snow (116) and the permitting of undue transpiration and consequent desiccation (117). Most scrub firs are stunted in stature (118), with disproportionately stocky trunks, short, close branches (119), or, if some are longer, with very unsymmetrical limbs, extending like flags away from the prevailing (usually northwest) winds (120). Harvey has observed (121) that the scrub firs have an elliptical cross-section of trunk, with the longer axis parallel to the prevailing wind (probably a result of the development of mechanical tissue on the lee side), and with great development of bark. The fact that the winds are not only powerful but spasmodic, in intense gusts, increases the strain upon woody and rigid vegetation (122), while the poverty of the soil and the short growing season often prevent adequate lignification (123).

Considerable age is found in some of the scrub firs, which grow slowly, as may be seen from the time needed for trails cut through the scrub to grow up again. To obtain more precise information on the rate of growth, in July, 1923, I made a series of measurements along the Watson Path on the exposed Gordon Ridge of Mt. Madison, the results of which are here given. In the upper fir forest of the Hudsonian zone only a few measurements were taken, all of Abies balsamea:

<table>
<thead>
<tr>
<th>Height in feet</th>
<th>Diameter in inches (at height of one foot)</th>
<th>Number of rings in cross-section</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>7.0</td>
<td>60</td>
</tr>
<tr>
<td>22</td>
<td>5.5</td>
<td>63</td>
</tr>
<tr>
<td>26</td>
<td>12.0</td>
<td>90</td>
</tr>
</tbody>
</table>

At tree-line, where the trees were already much reduced in height, the following typical cases were found:

<table>
<thead>
<tr>
<th>Height in feet</th>
<th>Diameter in inches</th>
<th>Number of rings</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>4.0</td>
<td>52</td>
</tr>
<tr>
<td>8</td>
<td>2.0</td>
<td>68</td>
</tr>
<tr>
<td>6</td>
<td>1.5</td>
<td>20</td>
</tr>
</tbody>
</table>

Above 4800 feet the firs, exposed to the full force of the northwest wind, were usually less than three feet high and very often essentially prostrate, and the following measurements were obtained:

<table>
<thead>
<tr>
<th>Diameter in inches</th>
<th>Number of rings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.7</td>
<td>52</td>
</tr>
<tr>
<td>4.0</td>
<td>50</td>
</tr>
<tr>
<td>0.7</td>
<td>10</td>
</tr>
</tbody>
</table>

In the same area Picea mariana grew less rapidly:

<table>
<thead>
<tr>
<th>Diameter in inches</th>
<th>Number of rings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>40</td>
</tr>
<tr>
<td>1.2</td>
<td>66</td>
</tr>
<tr>
<td>1.0</td>
<td>42</td>
</tr>
<tr>
<td>1.0</td>
<td>68</td>
</tr>
</tbody>
</table>
Betula minor above 4800 ft. furnished the following figures:

<table>
<thead>
<tr>
<th>Diameter in inches</th>
<th>Number of rings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>26</td>
</tr>
<tr>
<td>0.7</td>
<td>8</td>
</tr>
<tr>
<td>1.2</td>
<td>15</td>
</tr>
<tr>
<td>0.7</td>
<td>14</td>
</tr>
</tbody>
</table>

Another set of measurements is given by Antevs (124) based on observations upon Abies balsamea, Picea mariana, Salix Uva-ursi, and Betula minor near the scrub-forest line about Mt. Monroe and Franklin. G.E. Nichols (125) found on Cape Breton barrens a waist-high Larix laricina 150 years old. C.W. Townsend and G.M. Allen (126) report from southern Labrador 54 rings in the section of a scrubby fir two inches in diameter and only 13 inches above the ground. W.C. O’Kane (127) found scrub firs in the White Mountains three feet high and over 100 years old, and R.S. Monahan, on the subject of “Timberline” (128), quotes O’Kane (in the Boston Transcript of 19 March, 1924) as reporting from Mt. Washington a spruce three feet high and 363 years old—a figure so aberrant as to make further verification desirable, for a hemlock examined by me in Randolph with almost 400 rings is in quite a different category. If one combines these somewhat inadequate figures it would appear that the evergreens (Abies and Picea) have a greater longevity than the deciduous Salix and Betula; also that Picea mariana grows more slowly than Abies balsamea and possibly attains a higher average age. The interesting question is raised by Griggs (129) whether all these scrub trees are holding their own, and after observing many winter-killed firs and the almost complete lack of 10-25-year old trees from scrub zones he thinks that they are failing and may not last long, the consequent recession of the tree-line—somewhat parallel to that observed by Fr. Marie Victorin on Anticosti (130)—perhaps suggesting the beginning of a return to severer climatic conditions.

But dismissing these gloomy forebodings let us return to a description of the picturesque miniature forest (131) formed by the scrub, the floor of which is covered by a deep spongy growth of mosses and moisture-retaining hepatics, where we may observe dwelling serenely under the protecting canopy of the stunted firs some of the following species: Dryopteris spinulosa, var. americana, Clintonia borealis, Maianthemum canadense, Streptopus roseus, var. perspectus, Listera cordata, Coptis groenlandica, Mitella nuda, Oxalis montana, Cornus canadensis, Gaultheria hispidula, Pyrola minor, Trillium boreale, and Linnaea borealis, var. americana, while in sheltered openings in the scrub, enjoying the sun but screened from the wind, are Lycopodium annotinum, var. pungens, Ribes lacustre, R. glandulosum, Kalanchoe angustifolia, Ledum groenlandicum, Rhododendron canadense, Vaccinium uliginosum, var. alpinum, V. caespitosum, V. angustifolium, V. Vitis-idaea, var. minus, Solidago macrophylla, and its var. thyrsoides. These species, as noted by Harvey (132) in his study of Mt. Katahdin, are not properly alpine plants, but are also found abundantly at lower levels. Lycopodium annotinum, var. pungens and Solidago macrophylla, var. thyrsoides are, strictly speaking, subalpine modifications of types found at lower altitudes, or perhaps, at M.L. Fernald suggested to me, the nomenclatorially typical Solidago macrophylla may be southern derivative of the arctic-alpine var. thyrsoides.

Steep gravelly slopes in the scrub belt, particularly disturbed rock and earth slides, are commonly overgrown with Abies crispa and Betula papyrifera, var. cordifolia, two species also often found along the courses of subalpine brooks, and on account of their pliant habit well adapted to the precarious conditions of exposure to avalanches of snow (133).

I b. The larger rivers (Connecticut, Upper Ammonoosuc, Magalloway, and Androscoggin) are often lined by woods which, though seldom primeval, may perhaps, when long undisturbed,
reproduce fairly well the original forest, such as *Thuja occidentalis* (usually in a narrow fringe just above high-water mark). *Tsuga canadensis, Salix nigra, Juglans cinerea* (Farmer & Moore, *Gazetteer of N.H.* (1823), 202, speak of much of the valley land of Northumberland as originally covered with this species), *Umbus americana, Acer saccharinum,* and *A. Negundo,* while in the alluvial sandy or mucky soil beneath grow *Equisetum arvense, E. pratense, E. hýmăle,* var. *affine, E. scirpoides, Osmunda regalis,* var. *spectabilis, Matteuccia pseŭdoveinea, Taxus canadensis, Bromus latifolius, B. ciliatus, Schizachne purpurascens, Poa alsodes, Elymus virgínicus, E. Wiegandii, Hystrix patula,* var. *Bigeloviana, Agrostis perennans, Cinna latífolia, Brachýelytrum erectum, Oryzopsis asperifolia, Panicum clandestínum, Carex Tuckermanii, Luzula acuminata, Smilacina stellata, Smilax herbaea, Corylus cornuta, Ranunculus abortívus, var. *acrolástus, R. septentrionalis, Anemone quinquefolia, Clematis virginíana, Dalibarda repens, Amphiarpí bracteata, Rhus radicans, Celastrus scandens, Parthenocissus inserta, Sium suave, Contosellum chinesiense, Cornus stolonífera, Pyrola rotundífolia,* var. *americana, P. asarífolia, Scutelíllaria lateríflora, S. epílobífolia, Helianthus décapétalas.* The more open parts of the alluvial banks may contain *Calamagrostis canadensis, Mühlenbergia glomérata, Rosa blanda, Aþios americana, Vítis novae-angliae, Vaccinium cespítosum, Lysimachia ciliata, Aster puniceus, A. simplex, Solidago gigantea, var. *leítophílla.* On river gravels and islands covered at high water are *Deschampsia caespítosa,* var. *glauca, Carex törta, Salix lucida* and its var. *angustífolia, S. cordata, Prunus depressa, Apocynum medíum, and A. sibíricum.* In wet meadows along the larger streams is found *Carex arcta,* and *Salix pellíla* follows the upper courses of the Connecticut and Androscoggin systems, but does not descend far along them, reaching its southern limits at Dalton on the Connecticut and Cambridge on the Androscoggin.

I c. The aquatic flora of the county has received unduly little attention, despite the helpful observations of Messrs. Kendall, Goldsborough, and Doolitle in Pittsburg (1904) and Messrs. Krochal and Richards in various towns (1948), and it is consequently difficult to present satisfactory general conclusions. The cold alpine tarns offer few vascular plants save *Isoëtes maricata* in the Lakes of the Clouds (134), but a fairly rich aquatic vegetation is found in the warm, shallow, and rich-bottomed ox-bows of the Connecticut and Androscoggin Rivers and in occasional lowland ponds, such as Ladd Pond in Stewartstown, Lime Pond in Columbia, Head Pond in Berlin, and Cherry, Little Cherry, and Mud Ponds in Jefferson. In these *Pontederia cordata* is sometimes the most conspicuous plant, but various species of *Sparganium* and *Potamogeton* also occur, and some of the following may be expected: *Najas flexis, Elodea canadensis, E. Nudiflorus, Vallisneria americana, Scirpus subterminalis, S. Torreyi, S. validís,* var. *creber, S. acutus, Ceratophyllum demersum, Nuphar microphyllum, N. variétatum, Nympháea odorátus,* various species of *Myriophyllum, Nymphoides cordata, Utricularia purpurea, U. infláta,* var. *minor, U. gerníncapó, U. vulgaris,* and *U. minor.* On the muddy shores appear various species of *Equisetum, Typha latifólia, Alisma tríviale,* A. subordinátum, several *Sagittárias, Glycería boreális, Leersia ořzoídes, Dúlichium arundínaeum,* several species of *Eleocharis,* several of Carex, *Juncus pelócarpus, Polygonum amphibíum, var* *stílpulaeum, Drosera intermédia,* *Hyperícum boreális,* *H. virgínicum,* *Ludwigia palustris,* var. *americana, Cicuta bulbífera, Sium suave, Scutelíllaria epílobífolia,* and *Utricularia intermédia.* More abundant in ponds with firmer bottoms are *Eriocaulon septangulare* and *Lobelia Dortmanni,* while the strand vegetation of such may include *Lycópodium inductum, Rynchosporá capitállata, R. alba,* *R. fusca, Carex flava* and var. *fer-tilis, Ranunculus repítans* and var. *ovalís, Vaccinium Oxyccócos, V. macrócarpon,* and *Utricularia cornuta.* *Spirodela polyrhiza* and species of *Callitriche* have so far been noted chiefly in rather small pools (or the latter on damp ground). Not a few of the larger lakes and ponds have had their levels artificially raised by flooding for storage purposes, or by the labors of beavers, and the draining off of the water in dry seasons leaves large areas of mud with much refuse but little natural vegetation (135). Strand vegetation is infrequent compared with the sandy ponds of Carroll County and southward.
I d. More or less floating peat-bogs, surrounding and encroaching upon small ponds (136), are a frequent feature of some parts of Coös County (particularly in Jefferson), though naturally rare among the higher mountains with steep slopes, narrow valleys, and rapid run-off of water. Numerous also are the similar but increasingly drier peat-bogs which have in many places entirely replaced the little ponds which they once surrounded; (e.g., Wheeler's Bog in Shelburne.) Advancing as pioneers most closely to the water's edge and along sluggish tributary or outlet streams are Calla palustris, Myrica Gale and its var. subglabra, Potentilla palustris, Chamaedaphne calyculata, and Bidens cernua; after these may come a tough and safe but yielding and quivering turf mainly composed of Carex lasiocarpa, var. americana, C. rostrata and its var. urticulata, C. oligosperma (and, in thinner places, C. canescens, var. disjuncta), interspersed with Scheuchzeria palustri, var. americana, Rhynchospora alba, Carex limosa, C. pauculata, var. irriga, C. Michauxiana, Juncus canadensis, Smilacina trifolia, Calopogon pulchellus, Pogonia ophioglossoides, Sarracenia purpurea, and Hypericum virginicum. Farther from the shore the growth becomes less grassy and more bushy, with such low shrubs as Myrica Gale and the var. subglabra, Ledum groenlandicum, Rhododendron canadense, Kalmia polifolia, and Andromeda glaucophylla, accompanied by an undergrowth of Eriophorum spissum, E. virginicum, Carex trisperma, C. pauciflora, and Vaccinium Oxycoccos. This stage of the swamp is increasingly intruded upon by Picea mariana and Larix laricina, which, with the aid of taller shrubs (Pyrus floribunda, P. melanocarpa, Rosa nitida, Nemopanthus macronus, Kalmia angustifolia, and Viburnum cassinoides), form the transition to the surrounding forest.

High peat-bogs on some of the secondary mountains (Mt. Success, parts of the Carter-Moriah Range, Mt. Clinton, and Mt. Jackson—all at about 3500-4000 ft.), often encroached upon by scrubby woods of Abies balsamea, Picea rubens, and P. mariana, have a more limited flora, of which Scirpus cespitosus, var. callosus, Eriophorum spissum, Rubus Chamaemorus, and Vaccinium Oxycoccos are the most noteworthy species, with Geocaulon lividum and Melampyrum lineare in the damp edges of the surrounding scrub. On the flora of slides cf. E. Flacens in Appalachia, N.S. 24 (1958), 189-190. Alnus crispa is here characteristic.

I e. Shaded cliffs and rocky talus slopes, particularly in basic or circumneutral soils, such as are found at the Diamond Peaks in Dartmouth College Grant, Beaver Brook Falls in Colebrook, the Devil's Slide (137) in Stark, Cape Horn in Northumberland, Mt. Prospect in Lancaster, the Ice Gulch in Randolph, the Alpine Casade in Gorham, parts of Shelburne, and at Hart Ledge in Hadley Grant, show various species of primarily southern distribution, some of them found in Coös County only at these stations: Cystopteris fragilis and the var. Mackayi, Asplenium Trichomanes, A. platynuron, Polypodium virginianum, Agropyron trachycaulum, var. novae-angliae, Hystrix palula, var. Bigelowiana, Sphenopholis intermedius, Polygonum Douglasii, P. cilinode, P. scandens, Chenopodium Boscianum, Arenaria stricta, Silene ariflora, Clematis verticillaris, Aquilegia canadensis, Adlumia fungosa (perhaps escaped), Cardamine pensylvanica, var. Brittoniana, C. parviflora, var. arenicola, Arabis hirsuta, var. pygmaea, A. Drummondii, Saxifraga virginica, Fragaria vesca and its var. americana, Potentilla fruticosa, Geranium Robertianum, Rhus radicans, var. Rydbergii, Celastrus scandens, Parthenocissus inserta, I. dubia, Vitis novae-angliae. Circaea quadriradiata, Panax quinquefolius, Cornus rugosa, Satureja vulgaris, var. neogaea, Viburnum acerifolium, Campanula rotundifolia, Antennaria Brainerdii, and Epipodium rugosum. A more northern and rarer element includes Woodsia glabella, Dryopteris fragrans, var. remotiuscula, Draba lanceolata, and Epilobium ciliatum.

I f. The largest natural open spaces—apart from water surfaces—are presented by those parts of the Presidential Range which rise above the tree-line. Here there is not a little diversity, caused, in part, by differences in the moisture of the soil, in part by its chemical constituents, and also by
the exposure and the degree of disintegration (or resistance to erosion) of the underlying rocks (138). The piles of loose, weathered and frost-split rock which constitute a large part of the peaks of Mts. Madison, Adams, Jefferson, and Washington, and which are sometimes called "Felsenmeer" or "fjell-field" (139), support little or no vegetation save occasional small herbs which have sprung up in little pockets of soil or on the top of individual rocks, but the greater part of the alpine region is occupied by sedgy "lawns" (140), composed of gray rocks interspersed in a dull brownish growth of Carex Bigelowii, relieved at its lower borders and in protected hollows by frost-caused soil-creep (140a) prostrate green patches of Abies balsamea and Picea mariana. Other frequent species of this area are Carex brunnescens and var. sphaerostrachya and Empetrum nigrum, with spots of greater disintegration of rock (and hence more gravelly soil) (141) showing Lycopodium Selago, Poa Fernaldiana, Agrostis borealis and var. americana, Juncus trifidus, Luzula spicata, L. confusa, Salix Uva-ursi, Arenaria groenlandica, Potentilla tridentata, Rhododendron lapponicum, Diapensia lapponica, Solidago Cutleri, Prenanthes trifoliata, var. nana, and P. Boottii, while of more local occurrence are Lycopodium sabinaefolium, var. stichense, Carex capitata, C. scirpoidea, Silene acaulis, var. escapa, Potentilla Robbinsiana, Arctostaphylos alpina, Euphrasia Oakesii, E. Williamsii, and Gnaphalium supinum.

C. Schröter (142), as quoted by J.W. Harshberger (143), divides the plants of the fell-field into (1) earth-inhabiting, (2) shingle-inhabiting, and (3) rock-inhabiting; while Harvey (144) considers the ecological development on Mt. Katahdin to be (1) crustaceous lichens, (2) reindeer and Iceland moss formation, (3) alpine tundra, (4) Krummholz, (5) Abies-Picea forest, (6) Pinus Strobus, (7) deciduous forest, each of these stages gradually working upward. Inasmuch, however, as his stages 1 and 2 concern plants of a lower scale than those included in the present work, No. 6 is of very doubtful application to the Presidential Range, and further encroachment of No. 4 upon No. 3 is uncertain (145), it has seemed better in my classification—which does not profess to be an ecological treatment—to attempt to describe the more striking conditions rather than to assume any particular theories of succession and development (146). I may, however, in passing emphasize the fact that our mountain-top species are commonly low in stature, in cushions (e.g., Diapensia lapponica), decumbent with intertwined branches (e.g., Empetrum nigrum, Loiseleuria procumbens), forming tough mats (Carex Bigelowii, Luzula spicata), often with deeply buried shoots (Salix herbacea, Vaccinium Vitis-Idaea, var. minus), or with rosettes (Potentilla Robbinsi). For similar characteristics of the mountain flora in Scotland cf. W.G. Smith in A.G. Tansley, Types of British Vegetation (1911), 313, in Greenland T.W. Bocher, Meddelelser om Grønland, 104, no. 4 (1933), 98. On the adaptations of the leaves of alpine species to meet extremes of temperature, moisture, and wind, see E. Warming, Uber Gronlands Vegetation (1888), 383-385, who notes ericoid leaves (as in Empetrum), hairy leaves (e.g., Ledum), needle-like leaves (e.g., Cassiope hypnoides and Silene acaulis), leaves with waxy surface (Vaccinium uliginosum), and thick-coated leaves (e.g., Diapensia lapponica and Vaccinium Vitis-Idaea).

The Presidential Range contains no extensive upland meadows like those which in the Alps receive their moisture from a constant supply of melting ice and snow. But there are a number of springs and little pools at high levels (Madison Spring, Star Lake, Peabody Spring, Storm Lake, Spaulding Spring, McGinley Spring, the springs in the Alpine Garden, the Lakes of the Clouds, etc.), which are surrounded by moist grassy meadows or bordered by wet peaty banks, and somewhat similar conditions obtain at the heads of many of the brooks which descend from the range into the cirques, particularly the Ravine of the Castles, King Ravine, the Great Gulf and its branches, Huntington Ravine, Tuckerman Ravine, the Gulf of Slides, and Oakes Gulf. In most of these the snow lies late in deep drifts, and hence, despite their rather sheltered situations and often their southern exposure, vegetation is late in starting (147). The differences in flora between the heads of the V-shaped valleys and those of the cirques is generally noticeable, being probably caused, in
large part, by the presence in the cirques of considerable areas of damp cliffs and other spaces free from trees, and the absence of large brooks that scour away the soil and vegetation (148). In some instances, particularly in Tuckerman Ravine, the species of these habitats descend along the brooks to the open shelves of steep slopes far below the normal elevation of "tree-line", while a few, such as *Sibbaldia procumbens*, *Angelica atropurpurea*, and *Heracleum maximum*, do not ascend to the upper levels but are confined to the head-walls of the cirques. These species constitute the "alpine meadow societies" of Harvey (149), who distinguishes three stages: (1) the pioneers in cracks and at the bases of dripping cliffs, (2) the meadow stage, with increasing water in the substratum, and (3) the shrub stage, when waste and decay have begun to set in sufficiently. This last, he thinks, precedes the encroachment of the mesophytic forest from below, but, as said above, I should prefer to assume for the White Mountains—barring any decided change in climate—a more stable condition in these different zones than does Harvey. In this general group of moist alpine meadow and rill species belong *Festuca prolifera*, *Poa saltuensis*, *Agropyron trachycaulum*, var. *novae-angliae*, *Trisetum spicatum*, var. *pilosiglume*, *Deschampsia atropurpurea*, *Calamagrostis Pickeringii*, *C. canadensis* and var. *robusta* and *seabra*, *Phleum alpinum*, *Hierochloe odorata*, *H. alpina*, *Carex canescens* and var. *subfoliacea*, *C. brunnescens* and var. *sphaerostachya*, *C. Bigelovii*, *C. lenticularis* and vars. *Blakei* and *albimontana*, *C. atratiformis*, *C. debilis*, var. *strictor*, *C. capillaris*, *Luzula parviflora*, var. *melanocarpa*, *L. confusa*, *Veratrum viride*, *Habenaria dilatata*, *Salix herbacea*, *S. Peasei*, *S. Uva-ursi*, *Oxycia digyna*, *Polygonum viviparum*, *Stellaria calycantha*, *Thalictrum polygonum*, *Cardamine bellidifolia*, *Saxifraga rivularis*, *Spiraea latifolia*, var. *septentrionalis*, *Sibbaldia procumbens*, *Geum Peckii*, *Viola palustris*, *V. pallens*, *V. adunca*, var. *minor*, *Epilobium angustifolium*, *E. palustre* and var. *labradoricum*, *E. Hornemannii*, *E. alpinum*, *Angelica atropurpurea*, *Heracleum maximum*, *Loiseleuria procumbens*, *Phyllodoce caerulea*, *Cassiope hypnoides*, *Vaccinium cespitosum*, *V. angustifolium*, *Veronica alpina*, var. *un alaschensis*, *Castilleja septentrionalis*, *Rhinanthus borealis*, *Houstonia caerulea*, var. *Faxonorum*, *Campanula rotundifolia*, *Solidago macrophylla*, var. *thyrsoida*, *Aster paniculatus*, var. *oligocephalus*, *A. foliaceus*, *Anaphalis margaritacea* and var. *subalpina*, *Gnaphalium supinum*, *Achillea borealis*, *Arnica mollis* and var. *petiolaris*, and *Prenanthes Boottii*. Toward the lower borders or under the lee of scrub may be found thickets of *Salix argyrocarpa* and *S. planifolia*.

Distinctively alpine species may occasionally be found at far lower levels, e.g., in cold ravines like the Devil's Hop-yard in Stark and the Ice Gulch in Randolph, where the presence of ice beneath the rocks all through the summer and protection from the sun's rays produce a cold atmosphere in which, amid a somewhat scrubby growth of *Picea mariana*, appear *Betula nana*, *Epilobium Hornemannii*, *Vaccinium uliginosum*, var. *alpinum*, *Galium kantschaticum*, and *Viburnum edule*. Some other species, though not means alpine, are yet common to these valleys and to the scrub at high altitudes. In other cases species normally found at high elevations appear sporadically, sometimes washed down by streams, especially near waterfalls, at moderate altitudes. Thus E. Tuckerman (in *Am. Jour. Sci.* (1) 45 (1843), 42, n. 1) says *Arenaria groenlandica* grows "on the sandy plain of the Ammonoosuc...doubtless brought down from the mountains by spring freshets," *Carex scirpioidea* grows by a railroad near Crawford's, *Juncus trifidus* in a railroad-cutting in Randolph, *Geum Peckii* at Thompson Falls in Pinkham Grant and on cliffs by Blue Brook, in Bean Purchase (150), and *Castilleja se septentrionalis* formally grew by the highway near Pinkham Notch Camp in Pinkham Grant. *Vaccinium Vitis-Idaeae*, var. *minus* and *Potentilla tridentata*, in fact, reach a high vegetative development in some of their stations at low levels, as in Randolph and Shelburne. The occurrence of *Lycopodium Selago* in a pasture at West Stewartstown, of *Agrostis borealis* in Dartmouth College Grant, of *Calamagrostis Pickeringii* in Lancaster, and of *Arnica mollis*, var. *petiolaris* in Shelburne may also be noted. Similar cases in the distribution of these species occur elsewhere in New England outside our limits, especially in northern Maine, where *Castilleja*, for example, is a regular species of river banks; *Calamagrostis Pickeringii* occurs
in the Pemigewasset Valley and at Andover, Mass., and *Paronychia argyrocoma*, var. *albimontana* at Fryeburg, Me., and near the mouth of the Merrimac River (150a).

Conversely, not a few plants, some of them cosmopolitan weeds, occasionally ascend to alpine levels, particularly along the Mt. Washington Carriage Road and the most used trails. A list of such seems hardly significant, but instances will be found noted in their proper places in the following catalogue, e.g., under that ubiquitous weed, *Hieracium aurantiacum*. The appearance of *Larix laricina* as a scrub tree in a few isolated specimens is worthy of passing notice; it has been designated *L. depressa*; for its similar appearance on Mt. Katahdin cf. *Rhodora*, 3(1901), 164; 169.

I shall now discuss those habitats which have been modified by the influence of man, whether intentional or involuntary, first reminding the reader that if one should, from some elevated point of view, scan an "improved" agricultural district in our area, he would find its vegetation, in bulk, predominantly exotic--i.e., fields, gardens, orchards, and meadows being nearly all populated by imported or adventive species--, but if he were similarly to scrutinize any forested area nearly 100% of what he could see--i.e., of its vegetative bulk--would be indigenous.

II a. Burned lands constitute one of the most conspicuous groups of modified habitats. Among the larger areas damaged by fire may be mentioned the Pilot Range and adjacent Upper Ammonoosuc valley, the western part of the Mahoosuc Range, the Wild River valley from the Baldface Range to the Carter-Moriah Range, and Pine Mountain in Gorham. The year 1903 was particularly destructive in this respect, but since that time much has been done to improve conditions, though a fire on Mt. Madison in 1921 gives warning of an ever present danger. Chittenden's map indicates the larger "burns", and his plate 6, fig. 1, gives a view of a typical burned area, while plate 7, fig. 1, shows such land after ten years of growth (151). The causes and effects of fires in our region have been well treated by Chittenden (152), who also discusses the forest growth which follows such damage (153). The trees which most quickly occupies the burned district is *Prunus pensylvanica*, of which as many as 1200 seedlings have been counted in a square rod (154). Other plants soon appearing are *Peridium aquilinum*, var. *latiusculum*, *Rumex Acetosella*, *Corydalis sempervirens* (especially on burned or sun-drenched ledges), *Rubus idaeus*, var. *strigosus*, *Epilobium angustifolium*, *Aralia hispida*, *Gaultheria procumbens*, *Vaccinium myrtillus*, *V. angustifolium*, var. *laevisfolium* and *nigrum*, *Solidago canadensis* and other species, *Aster acuminates*, *Anaphalis margaritacea*, var. *intercedens*, *Gnaphalium macounii*, and *Erechtites hieracifolia*. Soon after there appear several *Salices* (especially *S. Bebbiana*), *Populus tremuloides*, *P. grandidentata*, *Betula papyrifera*, and, in places where there is enough moisture, *Acer pensylvanicum* and *A. spicatum*. Successive burnings tend to increase the herbaceous element of this flora at the expense of the arboreous (as measured by percentage of species).

Open ledges, especially those on the secondary mountains, such as the Percy Peaks, Green Ledge, rocky hills about Berlin, Mt. Hayes, Mt. Crawford, and North Baldface, are often caused by the destruction of the peaty humus by fires, sometimes recently, the mountains about Crawford Notch about 1803, and Mt. Crawford about 1815 (155). These ledges have, individually, rather small numbers of species, mostly comprised--in addition to the usual forest plants advancing to the edge of the cliffs--in the following list: *Selaginella rupestris*, *Woodssia ilvensis*, *Pinus resinosa*, *Deschampsia flexuosa*, *Calamagrostis neglecta*, *Agrostis scabra*, *Muhlenbergia glomerata*, *Carex aenea*, *Polygonum ciliolata* (especially on the talus of such ledges), *Paronychia argyrocoma*, var. *albimontana*, *Arenaria groenlandica*, var. *glabra*, *Corydalis sempervirens*, *Amelanchier stolonifera*, *Empetrum atropurpureum*, *Aralia hispida*, *Rhododendron canadense* (in the moister pockets), *Kalmia angustifolia*, *Arctostaphylos Uva-ursi*, *Vaccinium myrtillus*, *V. angustifolium*, var. *laevisfolium*, *V. Vitis-idaea*, var. *minus*, *Melampyrum lineare*, and *Solidago Randii*. 28
II b. The flora of recent cuttings in some respects resembles that of burns, both habitats having in common the sudden admission of intense sunlight where there was previously shade. But though Prunus pensylvanica is also frequent here it is by no means the dominant species that it is in burned lands, and the succeeding forest is much more decidedly influenced by that which went before, the seeds and young plants of which have not been so thoroughly eliminated by logging as they are by fire. Hardwoods, to be sure, tend to replace conifers, but in the reproduction the proportion of conifers in the new forest growth increases with the elevation and the gradient, as in the original forest (156). Noteworthy in cuttings, however, both of conifers and of hardwoods, are a few species which often quickly appear but with the gradual increase of shade do not long persist, such as Rubus idaeus, vars. strigosus and canadensis (both particularly well developed in the rotting corduroys and other decaying wood so abundant after logging operations, and fruiting most abundantly from two to five years after logging), Sambucus pubens, and Aster acuminatus. Along logging and tote roads, where the ground is more clear for herbaceous species than in the adjacent slash, such plants as the following have been found, largely introduced in feed for the horses used in logging, and sometimes long persisting and disclosing the course of a road when otherwise it would be invisible: Dactylis glomerata, Avena sativa, Calamagrostis canadensis, Carex crinita and its var. gynandra, Rumex mexicanus, R. maritimus, var. fuciglum, Ranunculus repens, Geum macrophyllum, Trifolium agrarium, Melilotus officinalis, M. alba, Zizia aurea, Prunella vulgaris, var. lanceolata, Galeopsis Tetrahit, Scrophularia lanceolata, Veronica officinalis, Gnaphalium sylvaticum, Artemisia vulgaris, and Cirsium muticum.

II c. Dryish second-growth woods of Populus tremuloides, P. grandidentata, Betula populifolia, B. papyrifera, Fagus grandifolia, Acer spicatum, and A. saccharum (with occasional Abies balsamea and Picea rubens) may contain as undergrowth Lycopodium annotinum and var. acrifolium, L. clavatum and var. megastachyon, L. obtusum and var. dendroides, L. complanatum and var. flabelliforme, Pteridium aquilinum, var. latisulcata, Carex novea-angliae, C. arctica, Uvularia sessilifolia, Malaxis unifolia, Viola septentrionalis, Aralia nudicaulis, Chimaphila umbellata, var. cisalantica, Pyrola virens, var. paucifolia, P. elliptica, Gaultheria procumbens, Aponium androsaemifolium, Diervilla Lonicera, Solidago caesia, S. juncea, S. arguta, Aster cordifolius, Antennaria canadensis, A. neodictya, Lactuca canadensis and varieties, Prenanthes altissima, Hieracium paniculatum, and H. scabrum. At the borders of old pastures, partly shaded by woods, many of these species may be found, as well as the following, which are at home in more sunny openings in the woods, especially in sandy soil: Lycopodium trisachyum, Agropyron trachycaulm, Schizachne purpurascens, Oryzopsis asperifolia, Panicum boreale, P. xanthophyllum, Carex communis, Lilium philadelphicum, and Comptonia peregrina.

II d. Low or swampy second-growth woods, under the shade of Acer spicatum, A. pensylvanicum, A. saccharum, A. rubrum, and Fraxinus nigra, such smaller plants as Equisetum sylvaticum, var. pauciramosum and its f. multiramosum, Osmunda Claytoniana, Dryopteris noveboracensis, D. disjuncta, D. Pleoprotea, D. spinulosa, var. intermedia, Athyrium filix-femina, Bromus ciliatus, Glyceria meliccardia, G. striata, Cinna latifolia, Brachyelytrum erectum, var. septentrionale, Carex disperma, C. brunnescens, C. bromoides, C. Deweyana, C. projecta, C. crinita and vars., C. scabrata (especially along rills), C. arctata, C. leptoneruia, C. intumescens and var. Fernaldii, Arisaema atrorubens, Uvularia sessilifolia, Clintonia borealis, Maiestanthenum canadense, Medeola virginiana, Trillium erectum, T. undulatum, Cyripedium acaule and f. albiflorum, Habenaria viridis, var. bracteata, H. hyperborea, H. dilatata, H. orbiculata, H. macrophylla, H. finibriata, Copis groenlandica, Chrysosplenium americanum (in springs and pools), Tiarella cordifolia, Hamamelis virginiana, Pyrus americana, Rubus pubescens, Hedera verticillata, Nemopanthus mucronata, Impatiens capensis, Viola incognita, V. rotundifolia, Epilobium glandulosum, var. adenocaulon, Circaea alpina, Osmorhiza claytoni,

II e. In old and moist, usually upland, second growth, upon rich soil, in woods predominatingly of Acer saccharum, besides the species in the preceding list, there may also be looked for, among arborescent species, Ostrya virginiana, Betula leuea, B. papyrifera and its var. cordifolia, Fagus grandifolia, Tilia americana (a convenient diagnostic tree, by which to recognize rich woods), and Fraxinus americana, and of smaller plants, Botrychium matricariifolium, B. lanceolatum, var. angustum, and B. virginianum (almost always found where the two preceding species grow), Dryopteris Goldiana, Polystichum acrostichoides, Athyrium thelypteroides, Adiantum pedatum—another indicator of rich woods—Taxus canadensis, Festuca obtusa, Milium effusum, Carex radiata, C. cephaloidea, C. plantaginea, C. platyphylla, Allium tricoccum, Erythronium americanum, Polygonatum pubescens, Laportea canadensis, Pilea pumila, Claytonia caroliniana, Ramunculus abortivus and var. eucycos, R. recurvata, Actaea rubra and f. neglecta, A. pachypoda, Caulophyllum thalictroides, Sanguinaria canadensis, Dicentra cucullaria, D. canadensis, Dentaria diphylla, Ribes triste, Agrimonia gryposepala, A. striata, Impatiens pallida, I. capensis, Viola cucullata, V. rotundifolia, V. Selkirkii (especially around the bases of sugar maple trees), V. renifolia and var. Brainerdii, V. pensylvanica, var. leioarpa, V. canadensis, Dirca palustris, Circaeaa canadensis, Aralia racemosa, Panax trifolius, Hydrocotyle americana, Sanicula marilandica, S. trifoliate, Osmorhiza Claytoni, O. longistylos, O. chilensis, Cynoglossum boreale, Epifagus virginiana, and Eupatorium rugosum. If these woods be rocky we may also sometimes expect Dryopteris marginalis, Hystrich pataula, var. Bigeloviana, Oryzopsis racemosa, Carex pedunculata, C. Sprengelii, C. laxiflora, Hepatica americana, H. acutiloba, and Rubus odoratus. Such woods as just described are scarce in the immediate vicinity of the Presidential Range, but common in the Lyman, Lisbon, and Cambrian groups. This forest at places passes for virgin hardwood, but where I have had opportunity of examining it I should judge it to be rather the result of a culling many years ago of the soft woods, which has given the hardwood species a better chance for a nearly unmixed growth, as seems to be the view of Chittenden (158), who describes this type of forest and gives statistics of the size and relative frequency of its chief constituent trees.

II f. Open meadows and swales contain, in addition to the ordinary introduced grasses, clovers, and weeds, the following characteristic species: Onoclea sensibilis, Dryopteris Thelypteris, D. cristata, Glyceria canadensis, G. striata, G. grandis, Poa palustris, Calamagrostis canadensis, Muhlenbergia mexicana, Phalaris arundinacea, Scirpus rubrotinctus, S. atrovirens, var. georgianus, S. atrovirens and var. brachypodum, Eriophorum viride-carinatum, Carex vulpioidea (apparently adventive), C. stipata, C. canescens and vars. disjuncta and subloita, C. cephalantha, C. angustior, C. cribita and var. gynandra, C. leptalea, C. lenticularis, C. striata, C. pallescens, C. gracillima, C. debilis, var. Rudgei, C. hystricina, C. lurida, C. vesicaria, var. japonica, Luzula multiflora, Veratrume viride, Lilium canadense, Sisyrinchium montanum, var. crebrum, Iris versicolor, Habenaria pseudae, H. fimbriata, Salix lucida, S. pyrifolia, S. cordata, S. discolor, S. gracilis, var. textoris, S. sericea, Ainus rugosa, var. americana, Polygonum sagittatum, Arenaria lateriflora, Thalictrum polygamum, Caltha palustris, Fragaria virginiana and var. terrae-novae, Geum aleppicum, var. strictum, G. rivale, Rubus of various species, Impatiens capensis, Viola cucullata, V. pallens, Epipodium strictum, E. leptophyllum, E. glandulosum, var. adenocaulon, Hydrocotyle americana, Zizia aurea, Heracleum maximum, Lysimachia terestris, Gentiana linearis (erratic in appearance and disappearance; one year acres may be blue with it, a couple of years later at the same spot may be unable to find any), Menitha arvensis and varieties, Chelone glabra, Veronica scutellata, V. americana (in rills), Calium palustre, C. tinctorum, C. asprellum,
Campanula aparinoïdes, *Eupatorium maculatum*, *E. perfoliatum*, *Aster punicus*, *A. umbellatus*, *Erigeron pulchellus*, *E. philadelphicus*, *Petasites palmites*, *Senecio Robbinsii*, and *Cirsium muticum*. Of the weeds it may be noted that large areas have been ruined by *Hieracium aurantiacum*, mostly since about 1900, and small ones have been almost completely appropriated by *Hierochloë odorata*. *Carum Carvi* in its abundance, habit, and habitat corresponds very nearly to *Daucus Carota* in southern New England and Vermont (which with us is known from only one collection).

II g. Pastures are occupied in their drier parts by *Lycopodium clavatum* and var. *megastachyon*, *L. complanatum* and var. *flabelliforme*, *Botrychium multifidum* and var. *intermedium*, *B. dissectum and f. obliquum*, *B. simplex*, *Dennstaedtia punctilobula*, *Pteridium aquilinum*, *var. latiusculum*, *Juniperus communis*, var. *depressa*, *Poa pratensis*, *Dianthus spicata*, *Panicum lanuginosum* and varieties, *Carex umbellata*, *Juncus Greenei*, *Spiranthes lacera*, *S. Romanzoffiana*, *Malaxis unifolia*, *Spiraea latifolia*, *S. tomentosa*, *Rubus idaeus*, var. *strigosus*, *R. canadensis*, *R. allegheniensis*, *Lechea intermedia* and var. *juniperina*, *Viola septentrionalis*, *Oenothera perennis*, *Vaccinium myrtillus*, *V. angustifolium*, *V. lasiophyllum* and *nigrum*, *Verbascum Thapsus*, *Prunella vulgaris*, var. *laceolata*, *Veronica serpyllifolia*, *Houtonia caerulea*, *Lobelia spicata*, *L. inflata*, *Solidago nemoralis*, *S. rugosa*, *S. canadensis*, *S. graminifolia*, var. *Nuttallii*, *Antennaria neglecta*, *A. neodioica*, *A. petaloidea*, *Anaphalis margaritacea*, var. *intercedens*, *Achillea Millefolium*, *Cirsium vulgare*, *C. pumilum*, *C. arvense*, *Taraxacum erythrospermum*, *Hieracium Pseudoselago*, and *H. aurantiacum*. In more boggy spots appear *Carex scoparia*, *C. flava* (a calciphile), varieties of *Juncus effusus*, *Liparis Loezelli*, *Salix Bebbiana*, *Spiraea tomentosa*, *Hypericum mutilum*, *H. canadense*, *Rhododendron canadense*, and *Kalmia angustifolia*. Such pastures, if ungrazed, grow up through the invasion of *Abies balsamea*, *Picea glauca* (which attains its best development from Whitefield, Lancaster, and Berlin northward as an old-pasture rather than as a forest tree), *P. rubens*, *Pinus Strobus*, etc., to second-growth forest of the types described in II c and II d above, with increasing shade gradually excluding most of the species just mentioned.

II h. The adventive weeds of cultivated fields and road sides are similar to those found farther south in New England, which, together with the various escapes from agricultural and horticultural cultivation, are fully treated in the catalogue, so that they need not be here recounted. Since the principal industries of the county are nearly all connected with wood products, the number of plants introduced by them is far smaller than would be the case were the manufactures either concerned with wool or more general in character. Casual plants of town dumps (noted in their places in the catalogue) are not here listed, but it may be observed that the following species are usually so closely confined to the ballast or the immediate vicinity of railroads as to make clear the manner of their introduction: *Bromus tectorum*, *Eragrostis poaeoides*, *E. pectnacea*, *E. multiflora*, *Agropyron Smithii*, *Hordeum brachyantherum*, *Holcus mollis*, *Panicum miliaceum*, *P. virgatum*, *Cyperus filiculmis*, var. *macilentus*, *Bulbostylis capillaris* and var. *crebra*, *Polygonum cilinodae*, var. *erectum*, *Polygonella articulata*, *Chenopodium leptophyllum*, *Atriplex patula*, var. *hastata*, *Salsola Kali* and var. *tenifolia*, *Achna alissina*, *Mollugo verticillata*, *Spergularia rubra*, *Sagina procumbens*, *Agrostemma Github*, *Silene antirrhina*, *Fumaria officinalis*, *Camelina sativa*, *Neslia paniculata*, *Erucastrum gallicum*, *Sisymbrium alissimum*, *S. Loezelli*, *Descurainia Sophia*, *Erysimum inconspicuum*, *Sanguisorba canadensis*, *Medicago lupulina*, var. *glandulosa*, *Petasites candidum*, *Lespedeza capitata*, var. *velutina*, *Vicia angustifolia*, var. *segetalis*, *V. tetrasperma*, *V. hirsuta*, *Lathyrus pratensis*, *Linum usitatissimum*, *Euphorbia supina*, *E. vermiculata*, *E. glyptostemon*, *Viola fimbriata*, *V. adunca*, *Collomia linearis*, *Lycopus arvensis*, *Echium vulgare*, *Amsinckia barbata*, *Lappula ehinata*, *Sthaeyus palustris*, var. *pilosa*, *Datura Stramonium*, var. *Tatula*, *Linaria canadensis*, *Chaenorhinum minus*, *Plantago indica*, *Lonicera tatarica*, *Campanula divaricata*, *Grindelia squarrosa*, *Solidago pubera*, *Aster linariifolius*, *Ambrosia psilostachya*, var. *coronopisofolia*, *Helianthus laetiflorus* and var. *subhomboides*, *H. tuberosus*, *Artemisia biennis*,
*A. ludoviciana*, var. *gnaphalodes*, *Senecio viscosus*, *Cichorium Intybus*, and *Lactuca Scariola*, var. *integri folia*. The Canadian National Railway, with its considerable shipments from the West, is responsible for many of these adventive species, but all the railroads in northern New Hampshire have, by acid sprays, made their lines much less interesting to botanists.

Despite increasing population (chiefly caused by urban growth), Coös County is rapidly reverting to a wild state, for according to the U.S. Census figures (159) the number of farms has decreased from 1895 in 1900 (about the peak year of development) to 1136 in 1940, and the percentage of land in farms from 23.8 in 1910 to 16.2 in 1940 (160). The towns still standing highest in amount of improved land are, in order (161), Lancaster, Colebrook, Stewartstown, and Columbia (162), which seems to indicate that, aside from the fertile area about Lancaster and the calcareous district from Columbia northward, the rest of the county is better adapted to the growth of forests than to agriculture.
The earliest climber of Mt. Washington, Darby Field in 1642, was not a botanist, but the account of his ascent (164), which may have been made via Boott Spur, recognizes one type of plant, the "low savins, which they went upon the top of sometimes" (165). Nicholas Austin in 1774 (according to L.S. Mayo in *Appalachia* 16(1950), 194, following Gov. John Wentworth), mentions from the Summit of Mt. Washington whortleberry shrubs and a similar shrub new to him as the entire flora. In July, 1784, the first company of scientists approached the mountain by way of Ellis and Cutler Rivers. The Rev. Manasseh Cutler, of Ipswich Hamlet (later Hamilton), Mass., and the Rev. Daniel Little, of Wells, Me., were two of the earliest members of the American Academy of Arts and Sciences, and among others in this party were Col. Whipple of Dartmouth (now Jefferson), N.H., and the Rev. Jeremy Belknap of Dover, N.H. (the historian of New Hampshire). Cutler's records described what appear to have been *Empetrum nigrum* and *Castilleja septentrionalis* ("a vegetable resembling narcissus in the bloom; later described as like a tulip and identified as *Bartsia pallida*" (166). Further, he distinguished three zones of vegetation, forest, open summits above vegetation, and an intermediate area. In 1804 Cutler again climbed Mt. Washington, this time with Professor W.D. Peck of Harvard College and others, and some of Peck's specimens from this trip were examined in 1811 by F. Pursh (167), who lists (168), on Peck's authority, from the White Mountains, the following seven species: *Diapensia oblongifolia*, *D. cuneifolia*, *Acalea pro-cumbens*, *Menziesia caerulea*, *Dryas tenella*, *Geum Peckii*, and *Bartsia pallida*, as well as other species which he does not actually cite as collected by Peck. But Pursh's records were early discredited by William Oakes (169) and have been later shown (170) to rest in some cases upon confusions of locality or identity. Several plants which Cutler and Peck found are also recorded by B.S. Barton in the *Philadelphia Medical and Physical Journal* (171). In 1816 Dr. Jacob Bigelow, Dr. Francis Boott, and several others ascended Mt. Washington by way of Cutler River, and on 25 August Francis Boott made another ascent with J. Wright Boott, attested by some of Francis Boott's collections, which are now perhaps our oldest extant White Mountain specimens in this country (for most of Boott's Herbarium was given to W. J. Hooker, according to A. Gray in *Am. J. Sci.* 37 (1864), 289 ff.). Bigelow recognized the three zones: forest to 4000 feet, scrub 4000-5000 feet, and alpine from 5000-6225 (the summit of Washington) (172), and attempted a catalogue of the plants found, recognizing seventy species (173).

In 1823 B.D. Greene (son-in-law of President Quincy of Harvard College) botanized on the Southern Peaks, and a promising young medical student, Henry Little, also made collections, as in 1824 did Dr. J. Barratt of Norwich, Vt. A sheet of *Agrostis alba* which he collected at Lancaster is probably our earliest extant Coös County specimen from outside the immediate mountain area.

William Oakes, of Ipswich, Mass., made in 1825 the first of many visits, collecting around the head of the gulf which Edward Tuckerman later named for him, and being part of the time accompanied by Charles Pickering. Sometime before 1829 Thomas Nuttall, Curator of the Harvard Botanic Garden, had discovered several rare species, and a pupil of Barratt, named E.W. Southwick, had collected twenty-one (174).

In furtherance of a flora of New England planned by Oakes (174a), Dr. J.W. Robbins, of Uxbridge, Mass., in 1829 made a five months' collecting trip, a fortnight or so of it in the White Mountains, exploring the whole range (including the Great Gulf) and also collecting at Cherry Pond in Jefferson two new species which Oakes in 1841 dedicated to him: *Potamogeton Robbinsii* and *Eleocharis Robbinsii*. Robbins possibly had the company of J. Wright Boott, for a specimen of *Prenanthes Boottii* in the DeCandolle herbarium at Geneva was collected by J.W. Boott in "the White Mountains--North America above the woods J.W. Boott 1829".
The many visits of Edward Tuckerman to the Great Range began in 1837, when he was twenty (175). In 1839 there came Henry D. Thoreau and his brother, John, who found 42 of the 46 species they had hoped for there (176). Possibly Thomas Wentworth Higginson in 1840, and certainly Jacob Bigelow again in 1841 fall in the interim before the significant year 1842, which was marked by another visit from Higginson, the first of many by William Boott, and a trip by Asa Gray, in company with young Tuckerman, on which Gray detected and gathered in Tuckerman Ravine the hybrid since called Salix Grayi Schneider (S. argyrocarpa x planifolia). The next year Oakes stayed for nearly two months—this contrast to the earlier brief visits being made possible by better hotel accommodations—, made many ascents, and collected all the species till then reported for the White Mountains, save the discredited reports of Pursh. A.W. Chapman writes Tuckerman (10 Mar., 1846) of having collected a good set of White Mountain plants in August, 1843, but they were, he says, all lost. In 1845 Oakes had the pleasure of taking Sir Charles Lyell up Mt. Washington, and the next year he discovered Sibbaldia procumbens in "Hardscrabble" (since Boott's and Tuckerman's Gulf) (177).

During the fifties and sixties various botanists came to Mt. Washington, and William Boott, Tuckerman, and others made collections helpful for extending ranges, though adding little to the number of species known. Yet Henry Willey on 28 July, 1867, wrote Tuckerman he had just found at Berlin Falls a fern new to New England, Aspidium i.e., Dryopteris fragrans, and on 29 Aug., 1868, wrote of finding it at the Cascade (Alpine Cascade or Crystal Cascade?).

In the decade of the seventies W.F. Flint and J.H. Huntington distributed fifty sets of a series of over fifty alpine species (178), and the brothers Edwin and Charles Edward Faxon began their long succession of detailed collections from many mountain stations, continuing from 1872 to 1902, while the well-known collector C.G. Pringle was active from 1877-1880. The interest of Walter Deane, localized first at Shelburne, later at Whitefield, and then again at Shelburne, began in 1880 and lasted to his death in 1930, and T. O. Fuller (from 1883 to 1900), J. R. Churchill (from 1889 to 1895), G. G. Kennedy (from 1890 to 1895), E. F. Williams (from 1880) 1894 to 1907, continuing the Faxon tradition (179), and W. W. Eggleston (from 1898 to 1901), with many other enthusiastic amateurs, added much to our data for distribution, while occasional visits from professionals, like W. G. Farlow, J. M. Greenman, B. L. Robinson, A. S. Hitchcock, and (1917) M. L. Fernald, furnished a needed critical stimulus.

The following list of collectors has been assembled from several sources: (1) definite statements in botanical or historical journals; (2) references in letters, such as the correspondence of Oakes and Robbins; (3) certain marginalia entered by the late Dr. Frederick Tuckerman in his copy of the Vascular Flora, concerning especially the visits of his uncle, Edward Tuckerman; (4) a few data gleaned from old hotel registers; and, most important of all, (5) statements on herbarium labels. Not all the names are equally significant, in fact, a considerable number are those of observant amateurs who gathered and contributed specimens to Mr. Walter Deane (e.g., the Misses Bell, Blaney, Blook, Brackett, Brown, Christensen, Cresfield, Dike, Drake, Gauthier, Greenough, Lowell, Margesson, Putnam, Sanger, Stone, Stowell, Tappan, Wetherbee, et al., Mrs. Drown, Mrs. McMillan, and Mrs. Sheffield, and Messrs. Philbrook and Sprague) or to the author (e.g., Mrs. Allen, Mrs. French, and Mrs. Ripley, the Misses Pease and Wells, and Messrs. Bridgman, Leavitt, Lowe, Nichols, Wellman, et al.). Doubtless many additions might be made to the list, especially in the case of more transient visitors—for a suggestion of how many, see the citations for Arenaria groenlandica!
<table>
<thead>
<tr>
<th>Year</th>
<th>Collector(s)</th>
<th>Notes</th>
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<tbody>
<tr>
<td>1784</td>
<td>M. Cutler</td>
<td></td>
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<tr>
<td>1804</td>
<td>Cutler, W.D. Peck</td>
<td></td>
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<tr>
<td>1816</td>
<td>J. Bigelow, F. Booth, J. W. Booth</td>
<td></td>
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<tr>
<td>1819</td>
<td>C.B. Emerson</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Before 1824 J. Locke</td>
<td></td>
</tr>
<tr>
<td>1824</td>
<td>J. Barratt, T. Nuttall</td>
<td></td>
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<tr>
<td>1825</td>
<td>W. Oakes, C. Pickering</td>
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<tr>
<td>1826</td>
<td>Oakes</td>
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<tr>
<td>1827</td>
<td>Oakes, Pickering</td>
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<tr>
<td>1828</td>
<td>B.D. Greene</td>
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<tr>
<td>1829</td>
<td>J. W. Booth, J.W. Robbins</td>
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<tr>
<td>1837</td>
<td>E. Tuckerman</td>
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<td>1838</td>
<td>Tuckerman</td>
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<tr>
<td>1839</td>
<td>J. Bradford, H.D. and J. Thoreau, Tuckerman</td>
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<tr>
<td>1840</td>
<td>T.W. Higginson (?), G. Hunt, Tuckerman</td>
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<tr>
<td>1841</td>
<td>Bigelow, E.W. Southwick</td>
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<td>1842</td>
<td>W. Booth, A. Gray, Higginson, Tuckerman</td>
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<td>1843</td>
<td>R.C. Alexander, A. W. Chapman, Oakes, Tuckerman</td>
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<td>1844</td>
<td>Oakes, Tuckerman</td>
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<td>1845</td>
<td>C. Lyell, Oakes, Tuckerman</td>
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<td>1846</td>
<td>Lowell, Oakes, Tuckerman</td>
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<td>1847</td>
<td>Lowell, Oakes (?), Tuckerman</td>
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<td>1848</td>
<td>Tuckerman</td>
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<td>1849</td>
<td>Tuckerman</td>
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<tr>
<td>1852</td>
<td>J. L. Russell, Tuckerman</td>
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<tr>
<td>1853</td>
<td>W. Booth, Tuckerman (?)</td>
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<tr>
<td>1855</td>
<td>W. Booth (going as far afield as Lime Pond, Columbia for <em>Sagittaria cuneata</em>), Tuckerman</td>
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<tr>
<td>1856</td>
<td>G. Engelmann (?). He was at Echo Lake, and may have come into this county</td>
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<tr>
<td>1857</td>
<td>W. Booth</td>
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<tr>
<td>1858</td>
<td>J. Blake, D.C. Eaton, E.S. Hoar, T.P. James, H.D. Thoreau, Tuckerman</td>
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<tr>
<td>1859</td>
<td>G.L. Goodale, H. Lyman, Tuckerman</td>
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<tr>
<td>1860</td>
<td>Tuckerman</td>
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<tr>
<td>1861</td>
<td>W. Booth, J.W. Dawson, W.W. Denslow</td>
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<tr>
<td>1862</td>
<td>Blake, J.W. Chickering, H. Mann, Jr.</td>
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<tr>
<td>1863</td>
<td>G.G. Kennedy, Mann. In 1863 or 1864 W. Booth</td>
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<tr>
<td>1864</td>
<td>Chickering, Tuckerman</td>
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<tr>
<td>1865</td>
<td>W. Booth, J. Robinson, Tuckerman, H. Willey</td>
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<tr>
<td>1866</td>
<td>C.F. Austin (?), C.E. Smith, Tuckerman</td>
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<td>1867</td>
<td>Willey</td>
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<tr>
<td>1868</td>
<td>Goodale (?), Willey</td>
<td></td>
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</tbody>
</table>
1869  Mrs. C. Brimblecom, Goodale (?), Tuckerman
1870  Goodale (?), H.G. Jesup, A.M. Knapp
1871  Before 1871 N. Barrows (Geol. of N.H. 1 (1874), 568-569)
1871  W.F. Flint, Goodale (?)
1872  C.E. Faxon, E. Faxon, Goodale (?), J.L. Russell (?), E.H. Whorf
1873  W. Boot
1874  W. Boot, Chickering, Miss F.C. Prince, A.P. Garber, T. Morong, J. Robinson
1875  Chickering, E. & C.E. Faxon, F. Tuckerman, L.F. Ward
1876  J.A. Allen, Flint, J.H. Huntington, F. Tuckerman, Willey (?).
1881  Deane, E. & C.E. Faxon, Manning
1882  Deane, W.G. Farlow, E. & C.E. Faxon, A.E. Philbrook, Mrs. L.D. Pychowska, Mr. Rudkin, F. Lamson-Scribner
1884  E.P. Bicknell, A.P. Chadbourne, Deane, Farlow, E. & C.E. Faxon, C.W. Janks, C.R. Lamb, Manning, Miss Minns, Philbrook
1885  Miss H.L. Brown, Deane, Farlow, E. & C.E. Faxon, Miss Minns
1886  Grant Allen, Miss P.P. Drake, E. & C.E. Faxon, Harriet E. Freeman, Fuller, Hitchcock, Lamb, Philbrook, Mrs. L.D. Pychowska, Miss G.M. Sanger
1887  E. & C.E. Faxon, Greenough, Miss Minns, W.N. Suksdorf (specimens of this date ascribed to W.C. Cusick may really belong to Suksdorf) for Cusick is said never to have visited N.H.).
1888  Miss A. Abbott (Mrs. E. Bartow), E. & C.E. Faxon, Miss Minns, Philbrook, Mrs. A.T. Slosson.
1890  J.R. Carret, Churchill, E. & C.E. Faxon, E.H. Hitchings, G.G. Kennedy, Miss Prince
1892  G. Cutter, Miss Prince, "Dr. Richardson."
1893  O. Bangs, Miss E.W. Cook, Farlow, E. & C.E. Faxon, G.S. Miller, Jr., E.F. Williams
1894  J.W. Blankinship, Miss Cook, Deane, L. Doring, D.C. Eaton, Miss C.M. Endicott, Farlow, E. & C.E. Faxon, Fuller, D.P. Penhallow, E.F. Williams
1896  Brewster, Cutter, Deane, E. & C.E. Faxon, E.D. Merrill, Pease, Miss E. Richards, E.F. & H.J. Williams
1899  Eggleston, E. & C.E. Faxon, Pease, Mrs. E.H. Terry, E.F. Williams
C.H. Bissell, J.B. Dandeno, Davis, F. Endicott, F.F. Forbes, Fuller, W.S. Hunt, Pease
Miss Cook, Eggleston, Forbes, A.H. Moore, Pease, B.L. Robinson, J. Robinson, H.E. Sargent, E.F. Williams
Bissell, Davis, Deane, C.E. Faxon, D.W. Fellows, Forbes, A.S. Hitchcock, Moore, Pease, J. Robinson, Mrs. Terry, R.A. Ware, E.F. Williams
Deane, E.G. Floyd, J.W. Harshberger, Moore, Pease, B.L. Robinson, Mrs. Terry, E.F. Williams
Deane, A. Doolittle, Miss E. Evans, E.L. Goldsborough, W.C. Kendall, R.B. Mackintosh, Moore, Mrs. G.F. Moore, Pease, R.H. True
Deane, Purdie
Deane, E.M. Evans, Moore, Mrs. G.F. Moore, Pease, L.A. Wardwell, E.F. Williams
Deane, Miss Endicott, Floyd, Mrs. N.F. Flynn, Moore, Pease, E.F. Williams
Deane, Mrs. G.N. McMillan, Moore, Pease, Philbrook, G.B. Wellman
Deane, F.G. Floyd, Moore, Pease, H. St. John
V. Bailey, E.B. Bartram, Deane, T.W. Edmondson, Miss E. Locke, B. Long, Mrs. McMillan, Moore, Pease
W.H. Blanchard, Deane, H.S. King, St. John
Miss H.C. Blaney, F.W. Hunnewell, Mrs. McMillan, Moore, Pease, St. John, Mrs. G. Sheffield
A. Carter, Deane, G.G. Hedgcock, J.R. Lunt, Moore, Pease, Wellman, S. Wilson
Miss M. Church, Miss C.M. Cresfield, Deane, Edmondson, Forbes, F.W. Grigg, Miss A.P. Lowell, Moore, Pease, S.N.F. Sanford, Miss S.D. Sheppard, A.C. Sprague
Miss L.M. Brown, H.T. Burbank, Deane, Miss N. Dike, Miss C.A. Gauthier, G.L. Goodale, Miss A.E. Margesson, Moore, Pease, Mrs. Sheffield, Miss J.H.D. Stone, Wellman, Miss A. Wetherbee
Miss A. Blook, Miss E. Brackett, Deane, Mrs. E.S. Drown, Miss M. Greenough, Moore, Pease, Mrs. J.W. Ripley, P. Spaulding, Miss R.K. Stowell
A.L. Andrews, Miss A.W. Christensen, Deane, Miss E. Dulin, A.W. Evans, Farlow, M.L. Fernald, Miss Gauthier, A.S. Hitchcock, Miss L.L. Howe, V.D. Lowe, Pease, Philbrook, H. Richards
J.F. Collins, Deane, V. Leavitt, Mrs. J.L. Morse, Munster, Pease, Spaulding
Mrs. A.G. Balch, C.O. Billings, Deane, O.A. Lathrop, J.L. Morse, Pease, Philbrook, Sprague, Miss M.S. Tappan
Deane, Mrs. C.H. French, R.B. Mackintosh, Pease, A. Rehder, R.A. Ware.
H.P. Baker, Deane, Pease, Ware, Miss L. Wells (Mrs. J.M. Macfarlane)
Miss Christensen, A.S. Goodale, Miss N. Johnson, Lowe, Eliz. L. & R.B. Mackintosh, Pease, Miss B. Putnam, Ware.
Miss Brown, Hunnewell, Eliz. L. & R.B. Mackintosh, Pease, Miss Wells (Mrs. Macfarlane)
Pease
S.K. Harris, Mrs. S. Kennedy, H.N. Moldenke, Pease, S. Rushmore, Sprague
D.S. Carpenter, Pease
F.M. Graves, E.M. Kittredge, Pease
H. Bishop, Harris, E.P. Killip, Pease, C.E. White, Jr.
N.C. Fassett, Pease, P.C. Standley, R.H. True
Harris, W.H. Harrison, H.P. Nichols, Pease
Fassett, Harris, Harrison, Lowe, Pease
1934 R.C. Bean, Harrison, Mrs. Macfarlane, Pease, F.L. Steele
1935 Harrison, Pease, Jessie F. Smith, Steele
1936 P.W. Bridgman, Harrison, Pease, Steele
1937 Pease, Steele
1938 G.R. Fessenden, A. Lincoln, Jr., Pease, Steele
1939 H.I. Brown, Pease, F.C. Seymour, Steele
1940 Pease, Steele, C.A. Weatherby
1941 R.C. Bean, Pease, Steele
1942 Pease, Jeanette E. Graustein
1943 Pease
1944 H.S. Clapp, A.R. Hodgdon, Pease, A.F. Yeager
1945 Pease
1946 Pease, Steele
1947 Pease, F.C. Schmid, Steele
1948 Mrs. H. Allen, R.C. Bean, Harris, K.P. Jansson, S.B. Krochmal, Pease, T. Richards, Schmid, Steele
1949 Clapp, Fasset, Miss M. Gale, R.N. Harrington, Harris, Hodgdon, Krochmal, Pease, Schmid, Steele, Dorothy & D. Wade, R.K. Warren
1950 Harris, Lowe, Pease, Schmid, Steele
1951 Harris, Pease, Schmid, R.M. Schuster, Steele, H.K. Svenson
1952 Mrs. Allen, D.J. Lennox, Lincoln, Pease, Schmid, Steele
1953 Hodgson, Lincoln, Pease, Steele
1954 Hodgson, Pease, A. Rich, C. Schweinfurth, Steele
1955 Hodgson, F.W. Kilbourne, Pease, Schweinfurth, Steele, T.W. Wells
1956 Harris, Lincoln, Pease, Steele
1957 Pease, Steele
1958 Hodgson, Pease, R.B. Pike, Steele, Wells
1959 Hodgson, Lincoln, Askell & D. Love, Pease, Steele

In connection with an international botanical congress at Montreal in the summer of 1959 a three-day excursion to Mt. Washington attended by about twenty delegates and led by Professor and Mrs. A. Love of the Institut botanique of the University of Montreal made various collections particularly in the fields or groups in which the members were professionally interested. Among those participating were Messrs. Ehrendorffer and Gams from Austria, Beschel (from Austria, Greenland, and Canada), Mosquin (Canada), Bocher (Denmark), Valentine (England), Reese (Germany), Barkman (Netherlands), Hedberg, Hultén, Lindquist, and Löve (from Sweden), Favarger (Switzerland), L.C. Bliss, Br. Fabius, et al. from the United States. (This statement is based upon a letter from Mrs. Löve, who has also given me a mimeographed flora of the alpine zone of the Presidential Range and several ecological descriptions).


The significant part played by botanists in the exploration of the Presidential Range is recognized in numerous localities named for them, which include Cutler River (named by the Cutler-Belknap
party), Bigelow Lawn, Booth Spur (for Francis Booth), Booth Gulf (an obsolete name for Tuckerman Ravine), Oakes Gulf (named by Tuckerman), Robbins Springs and Robbins Plain (names used by Oakes in letters to Robbins 6 Aug., 1843 and 13 July, 1844, perhaps for the Alpine Garden), Tuckerman Ravine (named by Oakes (?)) and in use as early as 1848 for the previous Hardscrabble), Huntington Ravine, and Hitchcock Fall, while still others lie in parts of the White Mountains outside our limits.

Portraits of botanists still living I have not tried to collect, but it may be of interest to know where likenesses of earlier ones may be seen, hence the following list is appended, without any approach to exhaustiveness. An asterisk (*) after a name means that the library of the Gray Herbarium possesses an unpublished portrait;†that there is a wood-cut in J.E. Humphrey's article on "Botany and Botanists in New England" in N.E. Mag. 14 (1896), 27-44. Still surviving botanists are not here included.

Cutler
Peck
Bigelow
Oakes
F. Booth
Emerson
Tuckerman
Greene
Lowell
Nuttall
Pickering
Robbins
Thoreau
Higginson
Gray
Lyell
D.C. Eaton
G.L. Goodale
E. Faxon
C.E. Faxon
Hitchcock
Huntington
Pringle
Davenport
Deane
Farlow
Suksdorf

Life, Journals, and Correspondence of Rev. Manasseh Cutler, 1 (1888), frontisp. †
A.H. Bent, Bibliogr. of the White Mountains (1911), opp. 10; also Memoir of Jacob Bigelow (1880), frontisp. †
Bent, l.c. †
Bent, l.c.
R.C. Waterston, Memoir of G.B. Emerson (1884), frontisp. †
Bent, op. cit., opp. 87. †
Sketch of Life of J.A. Lowell (1863), frontisp.; Old Residents' Hist. Assoc. of Lowell, 2 (1882), frontisp.; C.C. Smith, Memoir (1898), frontisp.
His Chronolog. Hist. of Plants (1879), frontisp. †
A photograph in the W.J. Beal collection at Michigan Agr. Coll., and a copy in the archives of Chronica Botanica (Biolog. Inst. of Univ. of Utrecht, Nederland).
Riverside ed. of works, frontispieces to vols. 1 and 10.
Thomas Wentworth Higginson, the Story of his Life (1914), frontisp.
T.G. Bonney, Charles Lyell and mod. Geol. (1895), frontisp.; Dupree; l.c.
Bot. Gaz. 20 (1895), pl. xxvi. †
Rhodora, 25 (1923), opp. 117; Bot. Gaz. 78 (1924), 453.
Rhodora, 2 (1900), 107.
Rhodora, 20 (1918), opp. 117.
A.H. Bent, op. cit., opp. 87. †
A.H. Bent, l.c.
Rhodora, 13 (1911), opp. 225; also H.B. Davis, Life and Work of C.G. Pringle (1936), frontisp.
Rhodora, 10 (1908), frontisp.
Rhodora, 35 (1933), opp. 69.
Rhodora, 22 (1920), frontisp.
Fuller, Endicott, Hunt, and Davis ("FEHD" of the Among the Clouds list) are shown together on a sheet of *Saxifraga rivularis* in the New England Botanical Club herbarium, the picture having been taken in 1900 as they were starting to collect in the Great Gulf.

Bicknell  

Churchill  
*Rhodora*, 36 (1934), frontisp.; also p. 4; 23 (1921), pl. 132.

J.F. Collins  
*Rhodora*, 44 (1942), opp. 93.

Kennedy  
*Rhodora*, 21 (1919), opp. 25.

Penhallow  

Williams  
*Rhodora*, 33 (1931), frontisp.

Purdie  

Mrs. Terry  

Bissell  

B.L. Robinson  

Harshberger  
*Life and Work of John W. Harshberger, Ph.D.* (1928), frontisp.

J. Robinson  
*Rhodora*, 31 (1929), opp. 245.

Fernald  
*Rhodora*, 53 (1951), opp. 33.

Nichols  
*Appalachia*, 23 (1941), opp. 390.

Weatherby  
BIBLIOGRAPHY OF CATALOGUES AND ARTICLES DEALING WITH THE FLORA OF THIS AREA

Many botanical writers, from Manasseh Cutler to the present, have mentioned a few of the striking plants of the alpine region, without giving any formal lists, and many manuals and works of a larger scope, from F.T. Pursh's *Flora Americana Septentrionalis*, 2 ed., 1 (1816) (180), to the eighth edition of Gray's *Manual* (1950), incidentally mention such plants, but of more definite catalogues the following are the most significant.


J. BARRATT in *The Classic or College Monthly*, 2 (1842), 182-185, who lists 21 species collected in 1841 by his pupil, E.W. Southwick. Reprinted, with changed pagination, together with Southwick's Notes of a Tour of the White Hills of N.H., to which it is in the nature of an appendix (cf. C.A. Weatherby in *Rhodora*, 23 (1921), 177).

(W. Oakes was in 1842 asked to prepare a catalogue of alpine plants for the *Final Report of the Geol. Surv. of the State of N.H.* and collected much material for that purpose, but never published; cf. A. Gray in *Am. J. Sci.* 2 ser. 7 (1849), 140).

W.S. CLARK and E. Tuckerman in J. H. Spaulding's *Historical Relics of the White Mountains*, 3 ed. (1855), 94-97 (later editions have differing pagination), listing 61 alpine species and 33 lowland plants occurring in the alpine region.

A. GRAY in *Am. Journ. of Sci. and Arts*, 2 ser. 22 (1856), 230-231, names 33 species of alpine plants from the White Mountains, Adirondacks, Green Mountains, and Katahdin (not distinguished, but all occurring in the White Mountains), and 12 subalpine species, and in vol. 23 (1857), 62-63, he corrects his figures to 37 and 16 respectively (but includes *Saxifraga stellaris*, var. *comosa* from Katahdin). Cf. two letters of Charles Darwin to Gray in 1855 asking for information about American alpine plants; Darwin, *Life and Letters*, 1 (1887), 420-424.


W.F. FLINT in the *Geol. of N.H.* 1 (1874), 395-413, gives a catalogue of the plants of the state (over 1000 species), those ascending to the alpine or subalpine region being marked M (of these are 58), and those limited to that area labelled M (49 species).

N. BARROWS furnished data used by C.H. Hitchcock in the same work (1, 568-574), with a list of 58 Canadian species ascending to the alpine and subalpine region and 54 limited to that area.

W.F. FLINT and J.H. HUNTINGTON in *Appalachia*, 1 (1877), 100-106, with various other information, have lists of the plants in bloom on four different dates during the summer--a total of 67 species of alpine and subalpine plants.

(B.P. MANN in *Appalachia*, 1 (1877), 185-186, reported a plan for the systematic observation of White Mountain plants by means of a check-list.)

C.H. HITCHCOCK, *Geol of N.H.* 1 (1888), 60, for 50 alpine and 50 subalpine species.

G.S. MILLER, Jr., in *Proc. Boston Soc. of Nat. Hist.* 26 (1895), 177 ff., in an article on the small mammals in the New Hampshire mountains, gives (178-179) a list of plants found by him and O. Bangs in 1893 on Mt. Washington at an elevation of over 5000 feet, containing 81 species and varieties. The determinations were assisted by E. Faxon.

"FEHD" (T.O. FULLER, F. ENDICOTT, W.S. HUNT, and W.R. DAVIS) in *Among the Clouds*, 24 (1900), in the issues of July 20, 21, 23, 25, 26, 27, and 28: *Mountain Flora*. A list of 105 species found in the alpine and subalpine regions by members of the Appalachian Mountain Club during a field meeting on Mt. Washington.


J.W. HARSHBERGER, *Phytogeogr. Surv. of N. America* (1911), 373-377, gives, with other very unreliable information, a list (376-377) of 49 species found in New Hampshire only on alpine summits.

Mrs. A.D. WILDE, *Plants of Mt. Washington, N.H.* A List of most of the Plants to be found in the alpine and sub-alpine Regions of Mt. Washington and the Great Range. Intended for members of the Appalachian Mountain Club at their field meeting on Mt. Washington in 1920. It is a pamphlet based on the "FEHD" list, and contains 125 species. It was also reprinted (with the omission of Paronychia) in *Appalachia*, 15 (1921), 211-214, under the same title.


STUART K. HARRIS, *Plants of the Presidential Range*. Keys and drawings, published in instalments in *Appalachia*, as follows: I. Heath's, 23 (1940), 24-34; II. Saxifrage and Rose Families, 23 (1941), 320-328; III. Composites, 24 (1942), 54-63; IV. Several Families, 24 (1943), 360-367; V. Ferns and Conifers, 25 (1944), 85-92; VI. Rush, Lily, and Orchis families, 25 (1945), 342-350; VII. Grasses, 26 (1946), 66-76; VIII. Willows and Birches, 26 (1947), 370-377; IX. Several Families, 27 (1948), 55-65; X. Sedges, 27 (1949), 312-320.

In addition to the above catalogues many articles have appeared on individual species of White Mountain plants, or on selected topics concerning the flora of the Presidential Range or other parts of Coös County. These have been scrutinized to secure data for species occurring in our limits, and various localities cited in them have been verified by the inspection of specimens or the rediscovery of old stations. Naturally such verification has not usually been attempted in the case of species of general distribution, for it would often be easier to find five new localities than to rediscover one old one; accordingly, for species otherwise well represented, such references have usually been disregarded. For rare species, however, particularly for those not otherwise known in our area, much greater pains have been taken, and some important stations recovered. A few, such as that of the ferns which about 1870 graced the cliffs about Berlin Falls, have apparently been destroyed.

The following list, though not exhaustive, contains the more important of these articles and discussions, and many additional titles might be cited dealing primarily with the cryptogamic flora. Some additional titles of a more general character may be gleaned from A.H. BENT'S Bibliography of the White Mountains (1911), and Miss H.E. STOCKBRIDGE’S Bibliography of the southern Appalachian and White Mountain Regions (1911).


M. CUTLER. *Life, Journals, and Correspondence of Rev. Manasseh Cutler, LL.D.*, 1 (1888), 96-110, containing an account of the visit of Cutler, Belknap, and others in 1784 (cf. *Appalachia*, 14 (158-159), and (110-113) of that of Cutler, N. Bowditch, and Professor W. D. Peck in 1804. For the former trip cf. also J. BELKNAP, *Journals of a Tour to the White Mountains in July, 1784* (printed from the ms by Charles Deane in 1876); and J. BELKNAP in *Trans. Am. Philos. Soc.* 2 (1786), 42-49: *Description of the White Mountains in New Hampshire* (45-46) tells a little of the flora, but in a very general way. Belknap’s *Hist. of N.H. 3* (1792), 96-127, in the chapter on *Forest-trees and other vegetable Productions*, has nothing specifically relating to our area.

B.S. BARTON in *Phil. Med. and Phys. Journ.* 1 (1804), 164-165, describes the ascent of Cutler and Peck, with further notes on the same in 2, first suppl. (1806), 57-58; cf. *Appalachia*, 14, 159-162.

F.T. PURSH, *Flora Americae Septentrionalis* (1814), tells in his introduction of inspecting Professor Peck’s collection of White Mountain plants, and in his second edition (1816) cities over a dozen species from our area; cf. *Appalachia*, 14, 159-161.

T. NUTTALL, *Genera of North American Plants*, 1 (1818), has several references to White Mountain plants; e.g., 106, 123, 135, 309.


W. OAKES in *Hovey's Mag. of Hort.* 7 (1841), 178-186: *Notices of some rare Plants of New England with Descriptions of some new Species.* 19 Coös items, including the new species *Poa mogeton Robinsii* and *Eleocarhis Robinsii*, as well as some other names now no longer valid.


E. TUCKERMAN in *Hovey's Mag. of Hort.* 9 (1843), 142-145: *Descriptions of several new Plants of New England,* redescribing some of those in the previous item.

W. OAKES in *Hovey's Mag. of Hort.* 13 (1847), 171-174, is chiefly concerned with the mosses and hepatics of the White Mountains.

W. OAKES in *Hovey's Mag. of Hort.* 13 (1847), 217-218: *Notice of some of the Plants of New England.* A number of mountain plants and their first collections, including *Paronichia argyrocoma,* (var. albimontana).


L. AGASSIZ, *Lake Superior* (1850), 185-186, has remarks on the alpine flora of the White Mts.

E. TUCKERMAN in Rev. T.S. King's *White Hills* (1860), 230-241 (reprinted in later editions). A popular list of the more striking species, cited by their English names. Of greater value to the botanist is Tuckerman's account in the same work (34-36) of the history of the exploration of the White Mountains, with much material on the early botanists; cf. *Geol. of N.H.* 1 (1874), 61; J.H. Huntington in *Appalachia,* 1 (1877), 100.


W.G. NOWELL in *Appalachia,* 1 (1877), 128, discusses the upper and lower limits of certain plants of the Great Range.

G.C. MANN in *Appalachia,* 1 (1877), 201, is described as reporting upon botanical excursions upon the same range.

ANON. in *Granite Monthly,* 2 (1878), 76-78, on the forest vegetation of New Hampshire.
W.F. FLINT in the eighth Annual Rep. of the Board of Agr. of N.H. (1879), 281-307; New Hampshire Grasses. On the economic importance of different grasses, of which about a dozen are especially noted as found in the alpine region.

Mrs. L.D. and Miss M.M. PYCHOWSKA in Appalachia, 2 (1880), 125, on the naming of Gentian Pond in Shelburne for Gentiana linearis.

Mrs. L.D. PYCHOWSKA in Appalachia, 3 (1883), 168-169: Botanical Notes made in the Summer of 1882 at Randolph, N.H. Deals especially with the flora of the Ice Gulch in Randolph and with the dates of flowering there (cf. 221-222). On p. 220 of the same volume she notes certain plants found at the outlet of the Pond of Safety in Randolph.

W.G. FARLOW in Appalachia, 3 (1883), 232-251: Notes on the cryptogamic Flora of the White Mountains. A number of phanerogamic species of the Presidential Range and of Shelburne are mentioned, as well as some ferns of the Alpine Cascade in Gorham.

Mrs. L.D. PYCHOWSKA in Appalachia, 3 (1883), 254-255: Botanical Notes made in the Summer of 1883 at Randolph, N.H.

W.F. FLINT in Rep. of the Forestry Comm. of N.H. (1885), 30-73, in an account of The Trees and Shrubs comprising the New Hampshire Forests, gives (69-71) tables, for the state, of Alleghanian species, Canadian species, and species common to both zones. This report was printed, with additions, in the 19th Rep. of the Trustees of the N.H. College of Agr. and mech. Arts (1890), 60-99, and, separately, with an introductory note by H.G. Jesup, at Manchester (1891). The original report is signed by a committee, but seems to be largely the work of Flint. Some statements affecting the trees of our area are repeated from this work by L.L. Dame and H. Brooks in their Handbook of the Trees of New England (1901).

A. GRAY in Proc. Am. Acad. 21 (1886), 529-547, wrote an obituary of E. Tuckerman, describing his work in the White Mountains.


M.S. BEBB in Bull. Torr. Bot. Club, 15 (1888), 121-128 (on Salix pyrifolia); 16 (1889), 39-42 (Salix planifolia); 211-215 (S. argyrocarpa and S. Uva-ursi); 17 (1890), 149-151 (S. argyrocarpa x planifolia and S. herbacea); with the general title: White Mountain Willows.


G.H. TILTON in the *History of Lancaster, N.H.* (1899), 283-288, gives a brief and popular sketch of *The Trees and Shrubs of Lancaster*.


B.L. ROBINSON in *Rhodora*, 3 (1901), 272-273, publishing *Euphrasia Williamsii*.


W. DEANE in *Rhodora*, 4 (1902), 243-244, on *Cephalanthus occidentalis* at Shelburne (cf. id. in *Rhodora*, 10 (1908), 203-204).

M.L. FERNALD in *Rhodora*, 5 (1903), 281-283, on Pursh's *Report of Dryas from N.H.*


News article in *Among the Clouds*, July 25, 1903, on the finding by B.L. Robinson and E.F. Williams of *Lycopodium clavatum*, var. *monostachyon* near Cape Horn.

A.K. CHITTENDEN in *Biennial Rep. of N.H. Forestry Comm. for 1903-1904* (1904): *Forest Conditions in northern New Hampshire*. Pp. 64-77 deal with the *Trees of northern New Hampshire*, with a list of trees and shrubs on 129-131. This report was considerably condensed and republished, under the same title, as *Bull. 55 of the U.S. Bur. of Forestry* (1905), in which pp. 52-61 deal with the trees and 99-100 give the list of trees and shrubs.-- In the present work references unless otherwise specified are to the second version. The former, however, is richer in illustrations of forest conditions in our region.


M.L. FERNALD in *Rhodora*, 9 (1907), 149-193, on the soil preferences of alpine and subalpine plants, with constant reference to the White Mountain area.


M.L. FERNALD in *Rhodora*, 10 (1908), 87-88, publishes *Solidago Cutleri*, named for Manasseh Cutler, though since there seems to be no mention of a type specimen and the first localities cited are in Maine it is not clear that the species should be regarded as first described from within our limits.


A.S. PEASE in *Rhodora*, 11 (1909), 31: *A Juncus new to New England (J. tridicus, var. monanthos at Dixville Notch)*.


M.L. FERNALD in *Rhodora*, 11 (1909), 184-185: *The Status of Arenaria stricta in New Hampshire*, showing that W.H. Manning's specimen from "Mt. Washington" was confused in labelling, and really came from Glens Falls, N.Y.


M.L. FERNALD and C.H. BISSELL in *Rhodora*, 12 (1910), 50-55, discuss *Lycopodium clavatum* and its varieties *megastachyon* and *monostachyon*.

W. DEANE in *Rhodora*, 12 (1910), 57-61: *Euphorbia Cyparissias in Fruit* (at Shelburne; cf. id. in *Rhodora*, 14 (1912), 193).

W. DEANE in *Rhodora*, 12 (1910), 165-166, on a teratological *Trillium erectum* from The Glen.
M.L. FERNALD in *Rhodora*, 13 (1911), 27, reports the collection of *Anaphalis margaritacea*, var. *occidentalis* (now known as *A. margaritacea*) in the White Mountains.

A.S. PEASE in *Rhodora*, 13 (1911), 103, reports *Helianthus subrhombiodeus* (now known as *H. laetiflorus*, var. *subrhombiodeus*) from Berlin and Gorham.


A.S. PEASE in *Rhodora*, 16 (1914), 194-195: *A Form of Potentilla tridentata* (description of the new form *hirsutifolia* from Milan).

A.S. PEASE in *Rhodora*, 17 (1915), 72: *A northern Solidago in the White Mountains* (*S. rugosa*, var. *villosa*).


A.S. PEASE in *Rhodora*, 17 (1915), 232-233: *Arenaria stricta in the White Mountains* (Hart Ledge).


A.S. PEASE in *Rhodora*, 19 (1917), 111-112: *Taraxacum ceratophorum* in *New England* (King Ravine; but see the list of *Species exclusae* in the present edition).


A.S. PEASE in *Appalachia*, 14 (1917), 157-178: *Notes on the botanical Exploration of the White Mountains*.


A.S. PEASE in *Rhodora*, 20 (1918), 39: *Nuttall and Pickering in the White Mountains* (on the dates of their visits).

C.S. SARGENT in *Rhodora*, 20 (1918), 117-122, an obituary of C.E. Faxon.

W. DEANE in *Rhodora*, 21 (1919), 38 notes the occurrence of *Amsinckia barbata* at Shelburne.

L.W. RIDDLE in Rhodora, 22 (1920), 1-8; an obituary of W.G. Farlow.

E.T. Wherry in Rhodora, 22 (1920), 37-39; describes the soil conditions in the White Mountains and the relation of the flora to them.


C.S. and W.F. LEWIS in Am. Fern Journ. 11 (1921), 82-85: A List of Ferns found in N.H. (about Whitefield, Owl’s Head Mt., Castellated Ridge, King Ravine, etc.).


J.R. THOMPSON, Hist. of the Town of Stratford, N.H. (1925), 4-5; a popular sketch of the flora.


E. ANTEVS, Alpine Zone of Mt. Washington Range (1932). An excellent little book on glaciation, climate, frost action, flora (pp. 79-85, of which 82-84 copy my list of boreal plants in the Vascular Flora), vegetation (86-97), and fauna.

R.S. MONAHAN in Appalachia, 26 (1933), 401-426: Timberline.

MARY C. KELLEY in Nature Magazine, 24 (1934), 121, on Calypso near Colebrook, with photographs by T.W. Wallace.


M.W. PROVOST in *Techn. Circular 10 of N.H. Waterfowl Reconnaissance* (N.H. Fish and Game Dept., 1942), with much on aquatic plants in northern Coos Co.

Fr. LOUIS-MARIE in *Rhodora*, 46 (1944), 294-298: *The Ancylatheran Calamagrostis of eastern North America.*


S.K. HARRIS in *The Yankee*, 15 (1951), 21; photographs of several mountain species.


PLAN OF THE PRESENT WORK

The collections of A.S. Pease began in 1895 and those of A.H. Moore in 1901, each chiefly in Randolph, N.H., or upon the Presidential Range. In 1906 they decided to undertake a more detailed study than had as yet been made of the distribution of plants throughout all Coos County, resting upon well-documented evidence, and accordingly the Gray Herbarium, the herbarium of the New England Botanical Club, those of the Boston Society of Natural History, of the South Natick Historical, Natural History, and Library Society (for collections of J.W. Robbins), and the private collections of Messrs. Walter Deane (after his death given to the Gray Herbarium) and E.F. Williams (now in the New England Botanical Club herbarium) were carefully inspected, and the National Herbarium in Washington, that of the New York Botanical Garden, and various private herbaria studied in selected portions, to discover plants collected in Coos County. Care was used in verifying the correctness of identifications, and not a few errors were thus corrected. Full data were entered on cards and from this catalogue a check-list was made for ready consultation in the field.

The summer of 1907 saw the beginning of an exploration of parts of Coos County as yet botanically little known, especially the northern part of the state. In each succeeding summer (except 1911) this work was continued, and collections have been made from all but one (181) of the 43 townships and grants. Thus our knowledge of distribution has been greatly extended, and some areas—especially Shelburne and Whitefield, through the aid of Walter Deane, and Randolph from the work of Moore and Pease—more intensively explored. Plants thus collected are now, in the case of Mr. Moore's specimens, in the Gray Herbarium (to which he gave them in 1927); in that of Mr. Pease's, in the herbarium of the New England Botanical Club, with some duplicates deposited in other herbaria, especially those of Amherst College (now deposited at the University of Massachusetts), and of the Universities of New Hampshire, South Florida, and Oklahoma. Mr. Moore has of later years been prevented by other interests from active participation in this work, and he is, accordingly, not to be held responsible for its final form. Though occasional reference is made to published reports, the greatest care has been employed in admitting into the list, in fewer than a dozen cases, any species unsupported by herbarium material.

The result of these explorations and studies culminated in the publication in 1924 of the Vascular Flora of Coos County, New Hampshire, made possible through the generous support of the Boston Society of Natural History, of whose Proceedings it forms vol. 37. no. 3. This volume contains a total of 1297 species, varieties, and forms. Since it has long been out or print and since in the intervening years many additions have been recorded and the publication in 1950 of the Eighth Edition of Gray's Manual of Botany has brought about a thoroughgoing revision of nomenclature and a more careful identification and segregation of species, the time seems ripe for a new and enlarged work. Accordingly the herbarium of the New England Botanical Club, where the largest bulk of the material is deposited, has been systematically rescrutinized, and many additional points restudied in the Gray Herbarium and in that of the University of New Hampshire.

In the Vascular Flora it appeared that certain species, particularly those often avoided by collectors because of their very commonness (182) or their intractability in pressing, were inadequately represented. Hence a considerable number of carefully made observations, even though unsupported by herbarium specimens, were cited (in parentheses, to distinguish them from documented species). As it was then recognized might happen, subsequent segregations have destroyed the value of not a few of these records, and the well documented data have so increased since the Vascular Flora that it seems no longer necessary to include mere observations. For similar reasons
I have laid little stress upon published lists of the flora; in fact, outside the Presidential Range these hardly exist, and for that range herbarium evidence is nearly always available.

Early collectors, lacking reliable maps and a precise toponomy, are often tantalizingly indefinite in citing localities, the term "White Mountains" or even "Mt. Washington" covering spots as distant and diverse as King Ravine and Mt. Crawford. Thus Oakes commonly labelled his collections "In alpinis Montium Alborum", though in a letter of 28 July, 1841, to Robbins—perhaps in answer to a criticism—he says: "Of the W.Mtn. localities I can speak pretty distinctly but not so much so as I could wish. I mean in future to be careful as to this point." Along with definite and precise stations, then, for the various alpine species I have listed under the head of "indefinite" or "indefinitely located" many older collections, the precise locality of which we can only surmise. (S.H. Scudder (Psyche 1 (1874), 7) complains of similar vagueness on the part of entomological collections in the White Mountains.)
TYPE LOCALITIES IN COÖS COUNTY

Thirty-Four species, varieties, or forms first described from this county are here listed, but only names still valid are included; obsolete ones, like Carex Washingtoniana Dewey, Betula Littelliana Tucker., and Galium Littellii Oakes, are disregarded. Recent authors carefully designate the type specimen and its locality, but early botanists usually did not. Yet we may be pretty certain in various instances, like Potentilla Robbinsiana and Euphrasia Oakesii, that the plant was described from Coös County.


Carex crinita Lam., var. simulans Fern. in 2 Suppl. of Portland Cat. of Maine Plants (1897), 135. Sargent Purchase, Summit of Mt. Washington, W. Booth, 8 July, 1853, is its earliest collection, though in the article Fernald's no. 264 from Greenville, Me., is the first cited.


Carex Bigelowii Torr. in L.D. de Schweinitz, Ann. of the Lyce. of Nat. Hist. of N.Y. (1823), 67, citing it from "White Hills".

Carex lenticularis Michx., var. albi-montana Dewey in Am. Journ. Sci. 2 Ser., 29 (1860), 348, from "White Mountains, N.H., about ponds--Tuckerman."

Carex debilis Michx., var. strictior Bailey in Mem. Torr. Bot. Club, 1 (1889), 34. Thompson & Meserve Purchase, railroad (which Williams (1895, 1896) says is the type station, i.e., that at which Faxon, cited by Bailey, collected it. Bailey says merely "White Mountains, Faxon").
Streptopus roseus Michx., var. perspectus Fassett in Rhodora, 37 (1935), 109-110, from Tuckerman Ravine, Sargent Purchase.

Salix Peasei Fern. in Rhodora, 19 (1917), 223. Low & Burbank Grant, King Ravine, Fernald & Pease 16847 (1917).


Betula minor (Tuckerman) Fern. in Rhodora, 47 (1945), 307 (based on B. papyracea, B minor Tuckerm.) in Am. Journ. Sci. 45 (1843), 31, from alpine regions on the White Mts. in alpinis Montium Alorum, Oakes, n.d. This is also the type of Regel’s B. dahurica, var. americana.

Paronychia argyrocoma (Michx.) Nutt., var. albimontana Fern. in Rhodora, 8 (1906), 104. Bean Grant, slide on Mt. Clinton, Tuckerman, n.d.

Ranunculus abortivus L., var. acrolasius Fern. in Rhodora, 40 (1938), 419. Shelburne, Deane, 17 May, 1910.


Potentilla tridentata Ait., f. hirsutifolia Pease in Rhodora, 16 (1914), 195. Milan, Pease 13871 (1912).

Potentilla Robbiniana Oakes ms. Torrey & Gray, Fl. N. Am. 1 (1840), 441, cite it as a synonym for P. minima. Cutts Grant, Nuttall, Oakes, Tuckerman (n.d.).


Rubus tholiformis Fern. in Rhodora, 42 (1940), 2. Randolph, Fernald & Pease 15733 (1917).


Prunella vulgaris L., var. lanceolata (Bart.) Fern., f. rhodantha Fern. in Rhodora, 15 (1913), 185. Pittsburgh, Pease 10992 = Moore 3760 (1907).

Euphrasia Oakesii Wettstein, Monographie d. Gattung Euphrasia (1896), 142-143, who says that the type is in Herb. Hofmuseum in Wien; specimens also in Herb. Boisier (Geneva). In alpibus (sic) montium Alorum, Oakes, n.d.


Solidago Cutleri Fern. in *Rhodora*, 10 (1908), 87, n. 2, who dedicates it to Manasseh Cutler. The first localities mentioned are in Maine and he cites no definite White Mountain locality, yet Cutler's associations are entirely with the White Mountains.


Prenanthes Boottii (DC.) Gray (*Nabalus Boottii* D.C. in *Prodromus*, 7 (1838), 241), which says it was collected in New Hampshire by Mr. Boot (*sic*). Gray, *Synap. Fl. of N. Am.* 2 (1886), 435, says "first collected by Boott and Bigelow."
SPECIES EXCLUSAE

After the sifting of evidence from available published sources there are still certain species whose presence in the county is improbable or dubious, which are accordingly here listed as species exclusae. The reasons for exclusion are by no means all of uniform weight, and the experience of other such lists leads to the expectation that some of these names will later be reinstated (like two from a corresponding list of the Vascular Flora). Some reports are based upon misidentifications, others have as their basis some confusion of data, and still others may be for authentic members of our flora for which, however, I have been unable as yet to find herbarium evidence. In this list the synonymy has been made to conform to that used in the catalogue.

*Equisetum variegatum* Schlecht. W.G. Farlow (Appalachia, 3 (1883), 247) reports this from Shelburne, but subsequent intensive collecting there has not disclosed it and no specimen appears to be extant.

*Selaginella Selaginoides* (L.) Link. Cited by Pursh (Flor. Am. Sept. 2 ed., 1 (1816), 654) from New Hampshire (White Mountains?) and repeated in later works (e.g., W.F. Flint in Geol. of N.H. 1 (1874), 413; Gray's Manual, 7 ed. (1908), 57), but no specimens are at hand and the report is not certainly from our area. As early as 1843 Oakes, in a letter to Robbins, declares that Pursh's species (i.e., those depending entirely upon his records) "do not deserve the least credit" (Cf. Appalachia, 14 (1917), 160).

*Woodia alpina* (Bolton) S.F. Gray. Reported by W.G. Farlow (Appalachia, 3 (1883), 251) from the Alpine Cascade in Gorham. *W. glabella* occurs there, and in the absence of definite specimens of *W. alpina* it appears safer to consider the citation as due to confusion.


*Juniperus virginiana*, L. (doubtless its var. *crebra* Fern. & Grisc.) reported from Crawford Notch as early as 11 Sep., 1844 (Oakes in letter to Tuckerman) is not attested as yet within Coos County, though probably occurring not far from it.

*Scirpus expansus* Fern. reported (as *S. sylvaticus*) from Lake Umbagog by M.W. Provost, Techn. Circular no. 10 of N.H. Waterfowl Reconnaissance (1942), of the N.H. Fish and Game Department, is out of range and no specimen has been seen.

*Carex bicolor* All. (C. Garberi Fern.). A letter of Oakes to Tuckerman (6 Aug., 1843) says that he found this on the edge of a small pond 1/4 or 1/2 mile from Blue Pond and also in Oakes Gulf, both localities being very limited. Nuttall and Southwick had found it previously. No specimens attest this species.

*Carex aquatilis* Wahlb., var. *altior* (Rydby.) Fern. M.W. Provost (Lc.) says this is dominant in drowned forest between the Magalloway River and Lake Umbagog. No specimen seen.

*Carex rariﬂora* (Wahlenb.) Sm. Said by C. Dewey (Am. Journ. Sci. 2 ser., 39 (1863) 71) to have been found by Barratt at the Lakes of the Clouds. Doubtless confused with *C. paupercula* Michx., var. *irrigua* (Wahlenb.) Fern.

Hypoxis hirsuta (L.) Coville. A specimen of this labelled as collected at Crawford's by Miss S. Minns (no date) has probably suffered some confusion of locality.

Aretusa bulbosa L. A specimen collected in 1862 by H. Mann, Jr., in the "White Mountains" is not certainly from our area, though the plant might well be found here.

Goodyera oblongifolia Raf. The specimens which, under the name *G. decipiens*, passed as this, collected at Crawford's in 1887 by Miss S. Minns, are really of *G. tesselata* Lodd.


Betula nigra L., of which a specimen collected by J.W. Chickering in 1862 purports to come from rocky summits of the White Mountains, is not to be expected in our limits.

Betula pumila L. Reported by W.F. Flint (*Rep. of Forest Comm. of N.H.* (1885), 60)*° in the White Mountain region." If alpine, probably confused with *B. glandulosa* Michx. In lowland bogs, in the calcareous area, where it might be expected, it has not yet appeared.


Geum triflorum Pursh. In the White Mountains, according to W.J. Hooker, *Bot. Mag. 4* (1828), pl. 2858. Perhaps a confusion with *G. Peckii* Pursh.

Alchemilla alpina L. A report probably based on a misunderstanding by F.T. Pursh (*Flor. Am. Sept. 2 ed.*, 1 (1816), 112; cf. T. Nuttall, *Genera of N. Am. Plants*, 1 (1818), 106). E. Tucker (Am. Journ. Sci. 45 (1843), 28), thinks it may have been *Potentilla tridentata* Ait, but that species seems to have been well recognized at an early date; more likely is *Sibbaldia procumbens* L. Against the occurrence of the plant in our area see A. Gray in *Am. Journ. Sci.* 24 (1882), 325, n.; M.L. Fernald and K.M. Wiegand in *Rhodora*, 14 (1912), 229-230; also the note on *Selaginella Selaginoides* (L.) Link, above.

Prunus americana Marsh. Reported by W.F. Flint in 19th *Rep. of the Trustees of the N.H. College of Agr. and Mech. Arts* (1891), 11, as naturalized, especially in Coös County. No specimens are at hand; perhaps a confusion with *P. nigra* Ait.

Rhus Vernix L. Stated by S.B. Krochmal to have been found by John Skerry near the outlet of Millsfield Pond. Since this would be a considerable extension of range it seems desirable to await specimens before including it in the catalogue.
Epilobium anagallidifolium Lam. C. Haussknecht's report from the White Mountains needs confirmation, as does J.W. Harshberger, *Phytogeogr. Surv. of N. America* (1911), 376. Probably a confusion with *E. Hornemannii*.

*Lyonia ligustrina* (L.) DC. incidentally mentioned from Shelburne by W.G. Farlow (*Appalachia*, 3 (1883), 242). The species is found in Maine, not far away, but Coos County specimens I have not yet seen.

*Pyxidanthera barbulata* Michx. Reported by F.T. Pursh (*Flor. Am. Sept. 2* ed. 1 (1816), 147) from the White Mountains (under the name of *Diapensia cuneifolia* Pursh) on the authority of W.D. Peck. Probably a confusion with *Diapensia lapponica* L., which, however, he also knew, under the name of *D. obtusifolia* Salisb.

*Lomatogonium rotatum* (L.) Fries. (cf. *Rhodora*, 21 (1919), 194). Pursh (*op. cit.*, 1, 101) cites this from the White Mountains, as *Swertia pusilla* Pursh. T. Nuttall (*op. cit.*, 1, 102) gives the species but assigns no station, and J. Bigelow (*Florula Boston*. 3 ed. (1840), 62) cites it from the White Mountains on the authority of Pursh. Tuckerman (in *Am. Journ. Sci.* 45 (1843), 27) conjectured that Pursh might have mistaken for it an alpine form of *Campanula rotundifolia* L., and little doubt is now felt that Pursh's report is erroneous; cf. M.L. Fernald in *Rhodora*, 21 (1919), 195, n., who thought the plant did not occur southwest of the Lower St. Lawrence (it has since been found on Schoodic peninsula in Maine).

*Petasites frigidus* Fries. Another species assigned by F.T. Pursh (*op. cit.*, 1, 531) to the White Mountains, under the name of *Tussilago frigida* L., but without other support this report cannot be deemed worthy of credence.

*Taraxacum ceratophorum* (Ledeb.) DC. This report, which was included in the *Vascular Flora* (cf. also A.S. Pease in *Rhodora*, 19 (1917), 111-112), rests upon a single collection from a gully in King Ravine, Low & Burbank Grant (no. 12154 of 1909), and would be the first New England station for the species, the next nearest locality being in Rimouski County, Que. Unfortunately the plant is immature, and until surer evidence is found it seems safer to exclude the species.

Several other species have been reported from adjacent towns in Grafton and Carroll Counties and in Maine and Vermont and may be looked for in Coos County.

**SUGGESTIONS FOR FURTHER EXPLORATION**

To collectors ambitious for further discoveries in this area there may be recommended—though not guaranteed!—the aquatic flora on the Magalloway and the Androscoggin, the Pontook reservoir in Dummer, the strand of the Connecticut from West Stewartstown to Dalton, many small ponds in northern Pittsburg, Clarksville, Dixville, and Whitefield, Judson Pond in Shelburne, Desolation Pond in Oakes Gulf, Cranberry Pond in Columbia; "Cypress" Brook in Bean Purchase; also a search for the elusive *Taraxacum* and *Veronica* in King's Ravine. Serpentine rocks near the northern tip of Pittsburg also furnish food for the imagination, especially for those who are not glutted by what they find on Oak Hill in Milan.

Some of the above suggestions will, of course, come to nothing, but among them as a whole something of interest is likely to appear.
STATISTICAL SUMMARY

The following tables present certain numerical facts about the taxa (species, varieties, hybrids, and forms) constituting the flora of the area. In computation unnamed hybrids are reckoned with formae, and varieties or forms of species the typical form of which is lacking in our flora are counted as species.

Families of ten or more entities, taxa in which all the Coos County representatives are indigenous are:

<table>
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<th>Family</th>
<th>Members</th>
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<tr>
<td>Polypodiaceae</td>
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<tr>
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<td>Pyrolaceae</td>
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<tr>
<td>Ophioglossaceae</td>
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Until the discovery of *Epipactis Helleborine* in 1943 the *Orchidaceae*, with 39 natives, tied for first place on this list, and the *Onagraceae*, with 21 natives, were fifth until *Epilobium hirsutum* was found in 1954. It may be observed that these natives are mostly either cryptogams or species rather low in the phanerogamic scale, and, with the exception of the *Corylaceae*, possessing little economic or horticultural importance which might have contributed to the presence of introduced species, in this respect contrasting with some members of the following list, containing families of ten or more species in which adventives equal or outnumber natives:

<table>
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<th>Adventive</th>
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<td>Leguminosae</td>
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<tr>
<td>Scrophulariaceae</td>
<td>19</td>
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<tr>
<td>Campanulaceae</td>
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</tbody>
</table>

Entirely adventive are *Solanaceae* (10), *Euphorbiaceae* (9), *Amaranthaceae* (6), *Malvaceae* (4), and several smaller families. The total number of families in the catalogue is 110, of genera 446.

The abundance of the larger families in the Coös flora is shown in the following table.

<table>
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<td>Rosaceae</td>
<td>124</td>
</tr>
<tr>
<td>Cruciferae</td>
<td>49</td>
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</tbody>
</table>
Polypodiaceae 39
Scrophulariaceae 41
Orchidaceae 40
Polygonaceae 39
Caryophyllaceae 38
Salicaceae 37
Ericaceae 34
Labiatae 31
Leguminosae 31

Over-represented in our area, as compared with the showing in Gray's *Manual*, are the Gramineae, Cyperaceae, (183) Cruciferae, Polypodiaceae, Orchidaceae, Polygonaceae, Caryophyllaceae, Ericaceae, and Salicaceae, (184) while under-represented are the Rosaceae (largely because of the numerous recently recognized and still highly localized Crataegi and Rubi), the Labiatae, and, most conspicuously, the Leguminosae. The under-representation of the Leguminosae becomes the more striking if we consider only native species, for in Coos County out of 1408 native taxa the Leguminosae can muster but 4 (i.e., 0.28%), while in the *Manual* range they show 276 native taxa out of 7033, or 3.9%. If it be further observed that of the 4 native Leguminosae in the county two are limited to Shelburne, one to Shelburne and Lancaster, and the fourth to Shelburne, Dalton, Lancaster, and Northumberland, it becomes evident that nearly all our area is lacking in native species of this important family (185). The comparative absence of localities suitable for Astragalus, Oxytropis, and Hedysarum (which constitute the bulk of our native northern Leguminosae) probably in part accounts for this situation, but a similar analysis of other, smaller, families of a generally southern distribution would doubtless reveal conditions more or less parallel to that in the Leguminosae.

Detailed figures follow for all taxa appearing in our vascula flora.

| NATIVE | ADVENTIVE |
|--------|-----------|---------|
| Species | Varieties | Forms & Hybrids | Total | Species | Varieties | Forms & Hybrids | Total |
| Equisetaceae | 9 | 1 | 4 | 13 | | | | |
| Lycopodiaceae | 9 | 8 | 17 | | | | | |
| Selaginellaceae | 1 | | 1 | | | | | |
| Isoetaceae | 2 | | 2 | | | | | |
| Ophioglossaceae | 7 | 2 | 3 | 12 | | | | |
| Osmundaceae | 3 | 2 | 5 | | | | | |
| Polypodiaceae | 27 | 5 | 7 | 39 | | | | |
| Taxaceae | 1 | | 1 | | | | | |
| Pinaceae | 12 | 1 | 1 | 14 | | | | |
| Typhaceae | 1 | 1 | 2 | | | | | |
| Sparganiaceae | 6 | 1 | 1 | 7 | | | | |
| Zosteraceae | 18 | 4 | 22 | | | | | |
| Najadaeeae | 1 | | 1 | | | | | |
| Juncaginaceae | 1 | | 1 | | | | | |
| Alismataceae | 6 | 1 | 2 | 9 | | | | |
| TAXA TOTAL | | | | | 13 | | 17 | |
| | | | | | | | | |

60
<table>
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<th>TAXA TOTAL</th>
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<td>Grand Total</td>
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FOOTNOTES

(1) On difficulties in the use in floras of artificial political boundaries see an anonymous article in the *Bot. Gaz*. 21(1896), 303, 304. Despite these disadvantages, however, it has here seemed best to avoid even greater ones arising from any attempt to substitute purely natural bounds.


(4) *Geol. of N.H.* 1, 312.

(5) Maine State Water Storage Commission, *Ann. Rep.* 4(1913), 282; cf. *Geol of N.H.* 1, 222. The *Area of Water-bodies in the State of N.H.* (State Planning Board, 1934), states (Sect. II, sheets 16 and 18) that the part of Umbagog in Coos County totals 4532.57 acres. Other areas noted below, unless otherwise stated, are taken from this work.


(7) Picture in *Geol. of N.H.* 2(1877), opposite p. 183.

(8) *Geol. of N.H.* 1, 219.


(10) *Geol. of N.H.* 1(1874), 119-146.


(12) *Geol. of N.H.* 1(1874), 326, 327.

(13) *Climatological Data*, 36, part 13(1949), 366. These may be compared with figures for Mt. Washington given by C.F. Brooks in *Appalachia*, 23(1940), 197 (based on years 1870-1892; 1932-1939); also with the lists for temperature, precipitation, wind, and sunshine given by J.B. Dodge and C.F. B(rock)s, for 1933-1952, published in *Mt. Washington Observatory, News Bull.* 22(1953), 23.

(15) For the years 1872-1886 the corresponding mean annual temperature averaged 26.1, the extremes being 24.3 and 28.0 (cf. E. Antevs, *op. cit.*, 26); for the years 1933-1937 the mean annual temperatures averaged 27.0 (S. Pagluca in *Mt. Washington Observatory, News Bull.* 2(1938), 5).

(16) *Op. cit.*, 25. Williams et al., *Soil Survey of Coos County, N.H.* (1943), 13, find the average frost-free season at Berlin to be 106 days, at Pittsburg 93 days. C.C. Adams et al. (*Ecology*, 1(1920), 79, 80) make about the same estimate for Mt. Marcy, with an average growing season of 92 days, extremes ranging from 52 to 142. Country humor sometimes says of certain towns that in them there are "nine months of winter and three months of cold." In the Connecticut valley at Stratford the average frostless period over a range of nine years was 120 days; B.E. Livingston & F. Shreve, *Distribution of Vegetation in the U.S.* (1921), 180. In New York City, for comparison, the figure was 210 days (*id.,* 182); in Boston 185 (*id.,* 180). The intervening growing season may itself resemble spring or fall in the lowlands; cf. C.C. Forsyth in *Ecology*, 1(1920), 127. N. Polunin, *Bot. of the Canad. eastern Arctic*, 3(1948), 29, quotes A.E. Porsild for certain species requiring only one month to commence growth, flower, and mature seed; cf. also Polunin, *op. cit.* 1(1940), 276. On Mt. Washington S.A. Nelson on 11 March, 1871 found *Arenaria groenlandica* in blossom; cf. *Geol. of N.H.* 1, 392-394.

(17) In 1871 the lowest temperature on Mt. Washington, according to C.H. Hitchcock et al., *Mt. Washington in Winter* (1871), 340, was -59°F. In 1933-1934 -46°F was twice recorded (cf. S. Pagluca in *Mt. Washington Observatory, News Bull.* 2(1938), 5); in 1872 -49°F (cf. C.F. Brooks in *Appalachia*, 23(1940), 197). But N. Polunin (op. cit. 3, 35) remarks: "a few degrees of difference during the period of dormancy do not mean much to properly acclimatized, hardy biota." For the Rocky Mountains R.F. Daubenmire (*Bot. Rev.* 9(1945), 346) observes that frosts may occur in any week in summer, and that the last killing frost in spring is, from Arizona to Utah, about two weeks for every increase of 1000 feet in altitude, with autumnal frosts correspondingly earlier. The maximum mean monthly temperature for 1933-1937 on Mt. Washington was 71.0°F in June 1933 (Pagluca, *op. cit.*). In 1941 drilling on Mt. Washington "at a depth of 200 feet or less the ground was frozen solid all the year round;" (A. Burt, *The Story of Mt. Washington* (1960), 226; on this *permafrost* cf. n. 26 below; also W.F. Thompson in *Appalachia*, 27(1961), 319, 320.

(18) For temperature ranges on Mt. Washington I may cite the *Meteorological Data for 1961* (copied in *Appalachia* 28(1962), 36)

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<th>Month</th>
<th>Average of Month</th>
<th>Highest</th>
<th>Lowest</th>
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<td>-2.3</td>
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<td>-34</td>
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<td>Feb.</td>
<td>9.5</td>
<td>36</td>
<td>-34</td>
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<td>Mar.</td>
<td>12.3</td>
<td>38</td>
<td>-16</td>
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<td>Apr.</td>
<td>20.4</td>
<td>37</td>
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<td>May</td>
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<td>57</td>
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<td>June</td>
<td>44.1</td>
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<tr>
<td>Dec.</td>
<td>11.4</td>
<td>35</td>
<td>-18</td>
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YEAR | 27.6 | 66 | -34 |
(19) Geol. of N.H. 1(1874), 125, 126.

(20) Antevs, op. cit., 24, calculates 1° for every 328 feet.

(21) Mt. Washington in Winter (1871), 32.

(21a) "Mountains are islands on the land," writes C. Darwin, Origin of Species (1859), ch. 12.

(22) W. Upham in Geol. of N.H. 1, 326, 327.

(23) Op. cit., 29. S. Pagliuca (op. cit., 5) finds the annual precipitation from 1933-1937 to range from 68.7 inches to 105.4 inches, with an average of 80.9 inches; cf. also R.S. Monahan in Appalachia, 26(1933), 412.

(24) Geol. of N.H. 1, 142, 143.

(25) Climatological Data, 31(1919), 101; 33(1921), 50.

(26) Appalachia, 23(1940), 197. The water content of this snow Brooks estimates at about 1/3 of the total annual precipitation. A.E. B(ent), in Mt. Washington Observatory, News Bull. 9(1941), 11, 12, finds the average snowfall on Mt. Washington from 1933-1940 to be 207.9 inches, ranging from a mere trace in July to a monthly average of 33.1 inches in March. For ground frost continuing in the summer at depths of 2-6 feet at elevations of 4100-5000 feet cf. Antevs, op. cit., 36; n. 16 above. The extreme was reached in the winter of 1957-1958, when the measured snowfall on Mt. Washington was 344.1 inches; cf. U.S. Weather Bureau, Local climatological Data, with comparative data, 1959.


(28) This will be discussed further below, under "Floristic conditions."


(30) Climatological Data, 6(1919), in the annual summary cities a few figures upon clear and cloudy days in 1919 at Pittsburg and Berlin.

(31) In Canad. Naturalist and Geologist, 7(1862), 93, 94.

(32) Mt. Washington in Winter, 293-300; 340, Cf. the table for mean monthly wind velocity given by C.F. Brooks in Appalachia, 23(1940), 194, fig. 1.

(33) Geol. of N.H. 1, 134, 135.

(34) Harvey, op. cit., 24.

(35) Monahan, op. cit., 95. The temperature at the time was -45°F.

(36) Which Antevs, op. cit., 33, considers the record. For other high velocity winds cf. also Appalachia, 28(1962), 36.
(37) C.F. Brooks in *Appalachia*, 23(1940), 196: S. Pagliuca in the same volume, 465.

(38) Huntington in *Geol. of N.H.* 1(1874), 134.


(41) Brooks, *op. cit.*, 199-202, finds that though some mountains and high latitudes have greater extremes, no spot known has so severe a combination of elements of weather as Mt. Washington; cf. also Antevs, *op. cit.*, 33.

(42) In this account of the underlying rocks I have drawn upon the section kindly prepared for the *Vascular Flora* by the late Professor W.O. Crosby, adding to it from various more recent works. Noteworthy is W.F. Thompson, *The Shape of New England Mountains*, in *Appalachia*, 26(1960), 145-159.


(44) Underlying most of New Hampshire, according to Hitchcock, *op. cit.*, 1, 550.

(45) For the richer flora of basic rocks, cf., among others, A.G. Tansley, *The British Islands and their Vegetation* (1939), 783.


(47) Hitchcock, *op. cit.*, 1, 548.

(47a) These soils are phases of the Greensboro loam described by Williams et al., *Soil Survey of Coös County, N.H.* (1943), 56-59, and of the Colebrook loams (in the same work, 30; 96).

(48) E.W. Hilgard, *Soils* (1907), 524, considers that to support a calciphile flora a soil should contain from .001 to .005% of lime. On the whole subject cf. M.L. Fernald, on "The Soil Preferences of certain alpine and subalpine Plants" (Rhodora, 9(1907), 149-164, who distinguishes (171-173) three chief floras based upon predominance in the soil of potassium, calcium, or magnesium (cf. in Gaspé Mts. Table-top, Logan, and Albert). The White Mountains, like the Adirondacks, and Mts. Mansfield, Camel's Hump, Baldpate, Saddleback, Abraham, Bigelow, Katahdin, Table-top (Gaspé), and cliffs of eastern Maine, belong to the potassic group (p. 166), and 70 species in Fernald's list are confined to such soils. Cf. also H. St. John in Canad. Dept. of Mines, *Memoir* 126(1922), 23-41.

(49) C.H. Hitchcock in *Geol. of N.H.* 1(1874), 25.

(50) R.P. Goldthwait, *op. cit.*, 7, estimates about two miles in depth.

(52) For a botanist’s account of the Pleistocene glaciation in America cf. H.M. Raup in Bot. Rev. 7(1941), 162-164. Into the question of possible warmer interglacial periods (cf. E. Hultén, Outline of the Hist. of Arctic and Boreal Biota during the Quaternary Period (1937), 26-37) I shall not attempt to enter. We are here chiefly concerned with the farthest advance of the ice and what occurred after its final withdrawal.

(53) Cf. R.P. Goldthwait, op. cit., 26, for a west to east course in the Randolph valley.

(54) Cf. the similar situation in Scotland described by W.G. Smith in A.G. Tansley, Types of British Vegetation (1911), 39, who estimates that below 2000 feet of altitude fully three-quarters of the surface soil is transported.

(55) For examples of these three types cf. E. Antevs, Alpine Zone of Mt. Washington Range (1932), 1-6 (with bibliography at 102, 103); R.P. Goldthwait, op. cit., 21-26 (and figs. 12 and 13). For similar phenomena on Mt. Katahdin cf. Antevs, op. cit., 7-10, and for glacial grooves at 5700 feet on Mt. Washington see J.W., L & R.P. Goldthwait, op. cit., 17.


(59) The explanation of the phenomena here adopted was suggested by E. Forbes (Mem. Geol. Surv. of Great Brit. 1(1846), 336-432, especially 345 ff.), accepted by Charles Darwin (Origin of Species, ch. 12, pp. 330-333 of 1887 ed.; cf. F. Darwin, Life and Letters of Charles Darwin, 1(1887), 72; 492; Darwin writes Asa Gray that he had written out this view four years before Forbes), by J.D. Hooker in his Outlines of the Distribution of Arctic Plants (Trans. Linn. Soc. London, 23(1861), 253, 254), Asa Gray (in a review of Hooker’s article in Am. Journ. of Sci. 2 ser., 34(1862), 144-148), W.F. Flint (Geol. of N.H. 1(1874), 392, 393), and commonly by later writers, e.g., C.C. Adams (Journ. of Geogr. 1(1902), 308-310); P.A. Rydberg (Bull. Torrey Club, 41(1914), 90, 91); E. Antevs, The last Glaciation (1928), 29-31, especially for the White Mountains p. 30; H.J. Scoggan, Flora of Bic and the Gaspé Peninsula (1950), 3-14, and works there cited. As applied to similar conditions upon Mt. Katahdin the theory is conveniently summarized by L.H. Harvey (Univ. of Maine Studies 5(1903), 12-14). It has completely supplanted the earlier theory of Sir Charles Lyell (Second Visit to the United States, 1(1849), 80-84) and J.W. Dawson (Canad. Naturalist and Geologist, 7(1862), 90, 91) that during the subsidence of this part of the continent in an earlier geologic period the White Mountain peaks were left as islands to which the seeds of arctic plants were brought by the agency of birds and other animals, and, still more, by floating icebergs. With the subsequent rising of the land these species were cut off from their arctic relatives by the intrusion of plants from the warmer south. Unlikely also is the view of M.S. Bebb (Bull. Torrey Club, 17(1890), 150, 151) that the seeds of Salix herbacea were brought to our mountains by the wind. On the homogeneity of the preglacial boreal flora cf. H.G. Simmons, Survey of the Phytogeogr. of the Arctic Am. Archipelago (1913), 144.
B.K. Emerson (Geol. of old Hampshire Co., Mass. [1898], 718) reports from one mile south of Hadley, Mass., fossil remains of such characteristic alpine species as Viola palustris, Vaccinium Oxycoccus, V. uliginosum, Rhododendron lapponicum, Arctostaphylos alpina, Oxyria digyna, Salix Uva-ursi, and Lycopodium Selago, which doubtless grew near the edge of the ice; cf. E. Antevs, The Recession of the last Ice Sheet in New England (1922), 88.

(60) For the maximum extension of this glaciation cf. E. Hultén, Outline, etc. (1937), pl. 43. Darwin and Hooker thought some species might have been driven into the south-temperate zone, which might account for Lycopodium Selago and Carex capitata in southern S. America; cf. Darwin, Origin of Species (1859), ch. 12.

(61) Bot. Rev. 7(1941), 183-198; cf. also R.F. Griggs in Bull. Torrey Club, 67(1940), 586-592; H.J. Scoggan, Flora of Bic and the Gaspe Peninsula (1950), 3-14; E.C. Abbe (Rhodora, 55(1953), 69-72, and bibliography (73-75). In Greenland E. Warming (Ueber Grönlands Vegetation (1888), 403-406) defends the theory of ice-free refuges on the mountains, in which relic-species may have persisted. In western Norway such refuges have been assumed from as early as 1904; cf. E. Antevs, The last Glaciation (1928), 26-28; E. Hultén, op. cit., 29; J.H. Harrison (Proc. Belfast Nat. Hist. and Phil. Soc., 2 ser., 3(1938), 87-96.-known to me only from the quotation by "D.E.A." in Watsonia, 2(1951), 130-state: "The opinion of Scandinavian botanists is supported in supposing that some of the species survived [in the Hebrides] one or more glaciations on ice-free 'nunataks'." Others would find such survivals in Teesdale (Raisitbrick in Journ. of Ecol. 21(1933), 219, 220; J.R. Matthews in the same, 25(1937), 82-85. Further, E.C. Abbe (op. cit., 122) cites from Devold and Scholander a list of species from a nunatak in southwest Greenland which includes Lycopodium Selago, Cardamine bellidifolia, Silene acaulis, Salix herbacea, Cassiope hypnoides, Antennaria "alpina," Juncus trifidus, Luzula confusa, L. spicata, Carex concolor[.i.e. C. Bigelowii] and Agrostis borealis—which reads almost like a list of some selected part of the White Mountain flora! H. Godwin (Journ. of Ecol. 37(1949), 143-146), though not denying for Great Britain the possibility of a "periglacial" survival of certain species in refugia (such as Teesdale), suggests that they may rather have persisted in the post-glacial forest period.

(62) Despite the somewhat hesitating suggestion of M.L. Fernald to that effect in his Persistence of Plants in Unglaciated Areas(1925), 321(cf. id. in Rhodora, 33(1931), 58, 59). He probably thought of the steep and moist headwalls of cirques, on which as places of refuge in the arctic see H.G. Simmons, Survey of the Phytogeogr. of the Arctic Archipelago (1913), 161. Abbe (op. cit., 137) suggests survival at the sheltered and moist heads of firs, as in northern Greenland, cf. N. Polunin in Journ. of Ecol., 33(1945), 99. Against such nunataks in the White Mts. see J.W., L., & R.P. Goldthwait, op. cit., 56.

(63) E. Antevs (in Am. Geog. Soc. Research Series, 17(1928)) calculates the rate of retreat by the number of annual varves in clay-deposits in the Connecticut valley, from Connecticut to the vicinity of St. Johnsbury, Vt.

(64) On possible methods by which plants may have spread—drift of seeds in water, dispersal of seeds by wind or by animals, especially birds—cf. C. Darwin, Origin of Species (1859), ch. 12; E. Warming, Ueber Grönlands Vegetation (1888), 406-409; H.G. Simmons, op. cit., 145-151, also n. 59 above.

(65) E. Hultén, op. cit., 88, 141. R.F. Griggs, however, in Bull. Torrey Club, 67(1940), 579, 580, believes that the alpine species do not prefer, yet are able to endure, climatic conditions
too severe for most plants, the competition of which the alpine species would be unable to meet.

(66) Species somewhat more tolerant of heat, like Ledum groenlandicum and certain other Ericaceae, have been able to persist at lower altitudes in cold spring-fed bogs. Cf. M.L. Fernald (Rhodora, 9(1907), 188-191), who notes that bogs, receiving drainage and silt from various types of soil, will support together plants which in less mixed soils would not mingle; see also Scoggan, op. cit., 24. Hultén (op. cit., 140) thinks the disjunct areas in the vascular plants are caused, not by sudden extension of their ranges, but rather by reduction of their areas resulting from drought, etc., during interglacial periods. Cf. R.F. Griggs (Bull. Torrey Club, 67(1940), 586, who views disrupted ranges as an indication of species gradually disappearing before the competition of more aggressive types; id., 592.

(67) M.L. Fernald (Rhodora, 9(1907), 149) contrasts such on our mountains with the continuous distribution in boreal and arctic regions; H.M. Raup in Bot. Rev., 7(1941), 178.

(68) Hultén, op. cit., 141. C.H. Hitchcock’s attempt (Geol. of N.H. 1(1874), 573, 574) to correlate the alpine and subalpine divisions of the flora with those of the insects was not entirely successful, and W.F. Flint (Rep. of the Forestry Comm. of N.H. (1885), 31) sensibly remarks that the boundaries between the Canadian and Alleghenian zones are more marked in the case of animals, which can, to some extent, select their abodes, than in that of plants, which must grow, if at all, where their seeds fall. S.H. Scudder (Geol. of N.H. 1, 339-341) states that the butterfly Brenthis montanus and the grasshopper Oecotettix glacialis are, in our mountains, limited to the subalpine region, and appear in Labrador in the more protected low coniferous woods, while the butterfly Oeneis semidea is endemic on the alpine summit of Mt. Washington, though having congeners on the exposed barren islands of the Labrador coast near Hopedale. For our alpine spiders see J.H. Emerton in Appalachia, 13(1914), 143-159; id. in Canad. Field-Naturalist, 34(1920), 108.

(69) Hultén, op. cit., 122, cities Equisetum arvense and Epilobium angustifolium as examples of aggressive species.

(70) Raup, op. cit., 173.

(71) A case in point might be Calamagrostis nubila, for which see the catalogue below.


(73) In Am. Journ. of Arts and Sci., 2 ser. 22(1856), 230, 231. On 25 April, 1855, Charles Darwin beginning his friendship with Gray, asked him for a list of American alpine plants, and on 22 May Gray sent him a list; F. Darwin, Life and Letters of Charles Darwin, 2(1887), 420, 421. Darwin also suggested to Gray that he put Eu. in his Manual after species also found in Europe, and this Gray did.

(74) In the same journal, 23(1857), 62, 63.

(75) Geol. of N.H. 1(1874), 571.

(75a) With some kindly supplied by Mr. C.V. M(orton).
(75b) See also *Salix Peaset* in catalogue, below. Hudson Bay - White Mountains.

(76) If Greenland, however, be considered as American in its botanical relationships, as Warming (*Ueber Grönlands Vegetation* (1888), 399-409) and others do, rather than as Eurasian (as maintained by Hooker and others), about 4% should be added to the North American list.

(77) *Paronychia* (cf. M.L. Fernald in *Rhodora*, 8(1906), 102) belongs to an essentially southern genus, in which respect it seems unique in our mountain flora.

(78) Also *Salix Peaset*, perhaps a valid species, perhaps a hybrid, which since its publication by Fernald has been found at two stations west of Hudson Bay.


(79a) Cf. H.J. Scoggan, *Flora of Bic and the Gaspé Peninsula, Quebec* (1950), 20, where, of 32 species characteristic of Table-top, all but one are found on the Presidential Range, nearly all in the upper treeless barrens.

(80) E. Antevs, *Alpine Zone of Mt. Washington Range* (1932), 88-97, attempts to meet this difficulty by describing a considerable number of plant-communities for each of which a definite locality is cited; e.g., under the heading "alpine heaths" eight different communities are described, such as *Juncus trifidus-Carex concolor* [i.e. *Bigelowii*] heath, *Juncus trifidus-Carex concolor-Cladonia-moss* heath, *Carex concolor-Cladonia* heath, *Carex concolor-Cladonia-moss* heath, *Diapensia* heath, *Salix* [sc. *Uva-ursi*]-*Carex-Arenaria-Cladonia-moss* heath, *Vaccinium-Carex-Cladonia-moss* heath, and *Cladonia-moss* heath. Obviously the different combinations of even so few elements as these (and a few other species) are pretty numerous. A somewhat similar but simpler classification for Mt. Katahdin is given by L.H. Harvey in *Univ. of Maine Studies*, 5(1903), 29-41. J.W. Harshberger, *Phytogeogr. Surv. of N. America* (1911), 373-377, is very undiscriminating.

(81) H.C. Cowles (Bull. Am. Bur. of Geogr. 2(1901), 165, 166) points out that Unger in 1836 emphasized the distinction between calcareous and siliceous soils on the basis of their chemical composition (and hence their food-value to plants), while Thurman in 1849 called attention to the physical structure of rocks, distinguishing between "eugeogenous", which disintegrate into a "pelogenous" or rich soil, and "dysgeogenous", which form a "psammogenous" or a more dry and sterile soil. Warming in 1895 accepted both views, but thought the physical the more important. Cowles further notes (p. 168) that mechanical erosion produces soils similar in constitution to the parent rock, but chemical modification may produce soils quite different in character. For later discussions cf. H. St. John, *A botanical Exploration of the North Shore of the Gulf of St. Lawrence* (Canad. Dept. of Mines, Memoir 126(1922), 28-41, with bibliography).

(82) Cf. the well-known views of C.H. Merriam (Proc. Biol. Soc. Wash., 7(1892), 1-64; Nat. Geogr. Mag., 5(1894), 229-238; Year Book of U.S. Dept. of Agr., (1894), 203-214 on life zones; but note also the caution in the use of such zones urged by M.L. Fernald in
Rhodora, 22(1920), 92, 93; 23(1921), 169; R.F. Daubenmire in Quart. Rev. Biol. 13(1938), 327-332, pointing out various errors made by Merriam.

(83) Or light-intensity; cf. L.H. Harvey in Univ. of Maine Studies, 5(1903), 19; J.W. Harshberger in Geogr. Rev. 7(1919), 234-244. R.L. Praeger, Tourist's Flora of the West of Ireland (1909), 6, remarks: "the total rainfall conveys no indication of the number of damp, cloudy, drizzly, and showery days that prevail in Western Ireland, which have a much greater effect on plant life than deluges of rain lasting through a comparatively short period."

(84) 1904. A good photograph of typical virgin spruce forest is given by Chittenden, pl. 4, fig. 1.

(85) To be compared with that in Geol. of N.H. 1, 578, of thirty years earlier. On the present extent of virgin forest in the White Mts. cf. F.L. Steele in Appalachia, 27(1961), 381-384.

(86) Journ. Arnold Arb. 18(1937), 82.


(88) 1(1874), 580.

(89) Chittenden, op. cit., 25-29, describes this type of forest, with a statement of its ingredient trees, and much of value will be found there (52-61), though some of his remarks on distribution need modification. (J.W. Harshberger; Phytogeographic Survey of North America (1911), 374, is based upon Chittenden.) N.H. Forest Facts (1953-4), 3, states that the spruce-fir forest in Coös Co. totals 322,700 acres, white pine forest 27,900 acres, and hardwoods 633,600 acres.

(90) On Mt. Katahdin this species reaches 2800 ft., according to Harvey, op. cit., 36.

(91) Life, Journals, and Correspondence of Rev. Manasseh Cutler, 2(1888), 273.


(93) E.g., S.H. Scudder in Geol. of N.H. 1(1874), 337: (1) mountain forest (i.e., Canadian); (2) subalpine scrub (Hudsonian); (3) alpine rocks (Labradorian or subarctic); G.M. Allen in Proc. Manchester Inst. of Arts & Sci. 4(1903), 38-53. The Canadian and Alleghenian faunas, in particular, were early distinguished by L. Agassiz in Nott & Gibbon, Types of Mankind (1854), lxxvii; cf. Geol. of N.H. 1, 332. For statistics of altitudes see below.

(94) A fact familiar to all careful observers but not to Harshberger, op. cit., 375. On Mt. Marcy in the Adirondack Picea rubens disappears at 4250 ft., according to C.C. Adams et al. in Ecology, 1(1920), 204. Picea mariana there extends from 4920 ft. to the summit and is found upon the Skylight above 4800 ft. and on McIntyre above 4700 (id., 219).

(95) R. Zon, Balsam Fir, Bull. 55 of the U.S. Dept. of Agr. (1914), 2. Zon further remarks (p. 7) that "conditions on a mountain top, where the prevailing low temperature retards evaporation and helps the condensation of moisture in the air, are similar to those in the swamp, and balsam fir shows much the same development in both places." See also I. Hustich in Arctic, 6(1953), 149-162, on the boreal limits of conifers.
(96) *Op. cit.*, 31, Antevs (p. 71) agrees, and notes that the pass between Mtts. Pleasant and Franklin at 4500 ft. is filled with scrub, but from there to Mt. Madison (eight miles) the crest of the range is continuously bare.

(97) C.C. Adams et al. in *Ecology*, 1(1920), 274, contrast similar observations on Mt. Marcy with the fact that in the Selkirks and the Pyrenees the timber-line runs higher on ridges than in valleys. On the quite different conditions in our western mountains cf. C.H. Shaw in *Plant World*, 12(1909), 175; 179, 180.


(99) Antevs, *op. cit.*, 72.

(100) L.H. Harvey in *Univ. of Maine Studies*, 5(1903), 33-35; Antevs, *op. cit.*, 72.


(103) *The Timberlines of northern America and their Interpretation* (in *Ecology*, 27(1946), 281). See also his earlier study in the *Mt. Washington Observatory, News Bull.* 4(1938), 3-6; 8(1941), 2; and 10(1942), 2, for his experiments in planting trees at different altitudes on Mt. Washington (with which cf. the studies of Professor G. Bonnier as described by B.L. Robinson in *Am. Journ. Sci.* 3 ser., 41(1891), 255, 256).

(104) S.H. Scudder (in *Geol. of N.H.* 1(1874), 338) cites as a low limit 3900 ft. at the ledge above the Halfway House. His colored map of the alpine and subalpine zones does not exactly correspond to the distinction between the bare area and that of scrub growth; cf. also his map in *Appalachia*, 5(1887), 12.


(106) *The Causes of Timber Line on Mountains: the Role of Snow* (in *Plant World*, 12(1909), 169-181), concluding that wind tree-lines "are recognized by a gradual and ultimately great reduction in height of trees, by their massing together in dense level-topped societies, thus affording each other mutual protection, and by the occurrence of the upper outposts of the forest as clumps of dwarfs in local depressions and sheltered spots. Wind cripples are characterized by the fact that shoots which project beyond a critical line are dead or dying, often by the entire loss of their conical form, by their much branched and condensed habit, and frequently by one-sided growth. The primary condition which the tree must fulfill in order to exist is to develop sufficient foliage within the limitations set by the wind."


(108) Sudden changes within a few feet from breast-high to prostrate scrub can hardly be explained by temperature alone.
(109) Harvey, op. cit., 24; F.E. Clements in Science, 25(1907), 287; Shaw, op. cit., 179, 180; H.G. Simmons, 'Survey of the Phytogeography of the Arctic Archipelago (Lunds Univ. Årskr. 30(1913); E. Warming, Lehrb. d. ökologischen Pflanzengeographie 3 ed. (1918), 66; 265; Antevs, op. cit., 87; M.L. Fernald in Rhodora, 35(1933), 123, 124; 163 (on aridity and bleakness); Daubenmire, op. cit., 362.

(110) Harvey, op. cit., 19. Clements, l.c, does not find this important on Pike's Peak.

(111) Op. cit., 173. Cf. Antevs, op. cit., 87: "the wind, which is the chief cause of the scrub-forest line and of the alpine belt on the range, is also the main controlling factor of the vegetation within the zone."

(112) Chittenden, op. cit., 53; Antevs, op. cit., 86; also fig. 36.

(113) Antevs, 87, and fig. 34. Scrub naturally crouches behind the protecting profiles of ledges or boulders and in deep depressions into which the full force of the wind cannot penetrate, as soldiers crouch behind ramparts or in trenches; cf. W.G. Smith in A.C. Tansley, Types of British Vegetation (1911), 312; R.S. Monahan in Appalachia, 26(1933), 413. For the same phenomenon at 10,800 ft. on the Grant Teton cf. R.F. Griggs in Ecology, 19(1938), 558; elsewhere in the Rockies R.F. Daubenmire, op. cit., 362; 364. Adams et al. (Ecology, 1(1920), 277) observe that the scrub trees form a dense crown canopy (cf. n. 106 above; Daubenmire, op. cit., 362, for the Rocky Mts.), and leaders that protrude above this are mostly dead. The canopy level may perhaps correspond to the depth of the protecting snow in the winter.

(114) Antevs, op. cit., figs. 32, 36, 37. One Picea mariana eight inches high and 24 wide extended horizontally ten feet away from the wind; id., 86. Cf. also R.F. Griggs in Ecology, 27(1946), 282; and, for the Rocky Mountains, R.F. Daubenmire, op. cit., 361.

(115) G.E. Nichols, Veg. of Northern Cape Breton Island in Trans. Conn. Acad. of Arts & Sci. 22(1918), 411, recognizes this on wind-swept barrens in Cape Breton.

(116) G. White, Nat. Hist. of Selborne (1789), no. 105: "snow is the most kindly mantle that infant vegetation can be wrapped in." In the western mountains snow-banks may do harm by reducing the growing season.

(117) Antevs, op. cit., 75; 87-88. On 86 he remarks that wind-swept spots are dry, sheltered ones moist. See also R.S. Monahan, op. cit., 410. C.C. Forsaith in Ecology, 1(1920), 127, emphasizes low barometric pressure as a cause of transpiration; cf. R.F. Daubenmire, op. cit., 344, 345; 363; also E.C. Abbe in Rhodora, 38(1936), 130.

(118) G.E. Nichols (op. cit., 409) describes a fit upon Cape Breton three feet high and seven inches in diameter of the trunk. On anatomical reduction of some alpine plants cf. Forsaith, op. cit., 124-134, especially 128, where he discusses effects upon the woody structure of trees. The shortness of the growing season is also reflected in several ways: (a) in the prevalence of evergreen species, ready to grow as soon as a chance is offered (cf. R.W. Monahan in Appalachia, 26(1933), 409); (b) in the small proportion in the alpine flora of annual species (therophytes; the lowly Rhinanthus borealis and the tiny Euphrasia Oakesii and E. Williamsii, each from 2 to 12 cm. high; cf. Monahan, l.c; M.L. Fernald (Rhodora, 35(1933), 97), who notes the general absence of annuals in the arctic flora; N. Polunin,
Bot. of the Canad. E. Arctic, 1(1940), 175; 327. H.M. Raup, Phytogeogr. Studies in the Peace and Upper Liard River Regions, Constr. Arnold Arb. 6(1934), 44, who observes that most field crops introduced in the far north are annuals but the native species are overwhelmingly perennial; H.J. Scoggan, Flora of Bic and the Gaspé Peninsula (1950), 27; A.E. Porsild in Canad. Geogr. Journ. 42(1951), 121-145; (c) in the tendency of fir scrub to reproduce by layering (J.W. Harshberger in Geogr. Rev. 7(1919), 249; Chittenden, op. cit., 53, who found that on Mt. Washington at 5500 feet firs did not produce cones but reproduced solely by layering; cf. T.L. Hoover in Forestry and Irrigation, 10(1904), 225, 226, on poor germination of cones at the upper levels of scrub; R.S. Monahan, op. cit., 403; also H.G. Simmons, Survey of the Phytogeogr. of the Arctic Am. Archipelago (1913), 160, who points out that A.G. Nathorst in Spitzbergen found a considerable number of species which receive too little warmth during their vegetative season to be able to ripen seed; I. Hustich in Arctic, 6(1953), 160, who thinks that among arctic conifers near the northern forest limits viable seed is produced only in very favorable seasons, vegetative reproduction taking place at other times with both Picea and Abies; and also (d) in some tendency to proliferation, as in Festuca prohlera, the proliferous form of Agrostis borealis, and Polygonum viviparum; cf. Fr. Marie-Victorin, La dynamisme dans la flore de Quebec (1929), 78; A.G. Tansley, The British Is. and their Vegetation (1939), 789; A.E. Porsild, op. cit., 121-145.


(120) Some of these "flagged" trees near Cape Horn on the Mt. Washington Carriage Road are shown by Griggs in Ecology, 27(1946), 280, fig. 2. The same phenomenon in the Rocky Mountains is described by Daubennire, op. cit., 361.


(122) Chittenden, op. cit., 53; Forsaith, op. cit., 127.

(123) Cf. Adams et al. in Ecology, 1(1920), 278-281, for the rate of growth in diameter at different altitudes. Certain of our firs bear underground, solid, knobby, wooden growths, varying from the size of a chestnut to that of a large orange, locally known as "liogoles" or "White Mountain Fruit", and sometimes sold to tourists as souvenirs. These are perhaps storage organs; cf. L.R. Kerr in Proc. Roy. Soc. Vict. 37(1925), 79-97; C.E. Carter in Austral. For. Journ. 12(1929) no. 4, 119-122; N.C.W. Beadle in Journ. of Ecol. 28(1940), 186.

(124) Op. cit., 77. Cf. the figures of Adams et al. (op. cit., 280) for such trees on Mt. Marcy.


(127) Trails and Summits of the White Mountains (1925), 21.

(128) Appalachia, 26(1933), 403.

usually grow on unstable soils (cliffs, talus, bogs, shores, and barrens), from which they have not yet been dispossessed by the competition of more aggressive species, especially trees, whose shade they could not tolerate.

(130) *Le dynamisme dans la flore du Québec* (1929), 78.


(133) Cf. Harvey, *op. cit.*, 37, 38.


(135) This is the habitat of *Rorippa islandica*, var. *Fernaldiana*, f. *repabunda*. For a photograph of such a muddy shore-often lined with the accumulation of driftwood and roots of trees known as "dry-kil"—cf. A.K. Chittenden, *op. cit.*, pl. 2, fig. 2, showing one at First (Connecticut) Lake.

(136) J.W. Harshberger (*Plant World*, 12(1909), 61) thinks the low temperature of such bogs—and hence the presence in them of boreal or arctic species—is caused by the persistence of winter cold and ice which in so large a nonconducting mass lasts through the summer months. On the characteristic plants cf. L.H. Harvey, *op. cit.*, 43-46; also W.L. Bray, *Development of the Veg. of N.Y. State* (1915), 65, 124-128; G.E. Nichols in *Trans. Conn. Acad. of Arts & Sc.* 22(1918), 427, 428. For the extent of such bogs cf. Williams *et al.* *Soil Survey Coöts County New Hampshire* (1943), maps.

(137) In the *Geol. of N.H.* 2(1877), opp. p. 69, is a heliotype of the Devil's Slide; opp. p. 150 one of Beaver Brook Falls.


(139) Cf. Harshberger in *Geogr. Rev.* 7(1919), 234-239, comparing it with the fell-fields of Mt. Marcy and of Iceland, Greenland, and South America; also 245, 248; Antevs, *op. cit.*, 66-68, 88; and figs. 28-30.

(140) Sometimes called "tundra", though Antevs, *op. cit.*, 88, n. 1. remarks that there is on the Presidential Range no proper tundra, in the sense of treeless, wet moorlands with mosses and lichens, in an arctic climate, with moist air, some of which ingredients our areas lack.
His terminology, by which they are called "alpine heaths"- pp. 88-90, where he subdivides them; cf. n. 80, above might be criticized by purists, inasmuch as heather is here lacking. But cf. E. Warming, Über Grölands Vegetation (1888), 363-409.

(140a) Cf. W.F. Thompson in Appalachia, 26(1960), 151, 152.


(142) Das Pflanzenleben der Alpen (1908), 514.

(143) Geogr. Rev. 7(1919), 245.


(145) Cf. nos. 129, 130 above.

(146) The account of our alpine flora in J.W. Harshberger’s Phytogeographic Survey of North America (1911), 375-377, is superficial and inaccurate. His list, for example, of 49 plants found in New Hampshire only on alpine summits still includes Dryas (!) and contains at least seven species known in the state from lowland localities.

(147) For a heliotype of Mt. Washington showing snow-patches on its southwest side see Geol. of N.H., 1(1874), opp. 618; cf. J.H. Huntington in Appalachia, 1(1877), 107. On the protection furnished by the snow against cold and against desiccation cf. E. Warming, Lehrb. d. ökologischen Pflanzengeographie, 3 ed. (1918), 128-132; R.S. Monahan, Mt. Washington Reoccupied (1933), 252. On the flora of snow-patches (or *snow flushes*) cf. W.G. Smith in A.G. Tansley, Types of British Vegetation (1911), 316, who finds in them some of the same species which characterize them with us: Phleum alpinum, Salix herbacea, Loiseleuria procumbens, and Gnaphalium supinum; id., in Scottish Bot. Rev. 1(1912), 81-89 (rev. in Journ. of Ecol. 1(1913), 62); E Rübel in Engler’s Bot. Jahrb. 49(1913), Bethl. 10-18 (rev. in Journ. of Ecol. 1(1913), 141), on such snow-patches in the Bernina region, dominated by Salix herbacea; W. Watson in Journ. of Ecol. 13(1925), 3, 11, 12; E.J. Salisbury in the same, 13(1925), 163; J.W. Harshberger in Ecology, 10(1929), 275-281 (for the White Mountains especially 277, 278); T.W. Böcher in Meddelelser om Grønland, 104, no. 4 (1933), 82-94 (for East Greenland, with such snow-patch species as Oxyria digyna, Sibbaldia procumbens, Gnaphalium supinum, Salix herbacea, Trisetum spicatum, Cardamine bellidifolia, Luzula confusa, L. spicata, Polygonum viviparum, Cassiope hypnoides, Saxifraga rivularis, etc.); C.G. Trapnell in Journ. of Ecol. 21(1933), 322(Greenland); N. Polunin in the same, 22(1934), 383-391 (Askpatok I., Ungava Bay); E.W. Jones in the same, 25(1937), 248, 249 (Iceland); A.G. Tansley, The British Is. and their Vegetation (1939), 797, 798; R.S. Russell and P.S. Wellington in Journ. of Ecol. 28(1940), 169, 170, 177, 279 (Jan Mayen, with Sibbaldia, Oxyria, and Salix herbacea, the optimum being on south-facing banks of Sibbaldia); A.S. Watt and E.W. Jones in Journ. of Ecol. 36(1948), 303 (the Cairngorms in Scotland, with Carex Bigelowii, Deschampsia flexuosa, Salix herbacea, and Gnaphalium supinum). R.F. Griggs in Mt. Washington Observatory News Bull. 4(1938), 5, thinks that Phyllocladus, Cassiope, and Salix herbacea are almost completely confined to such snow-bank areas, and that where drainage is good the position of winter snow-drifts is in summer marked by clumps of scrub fir; on the other hand, where drainage is poor, the trees are drowned by melt-water and their place taken by Calamagrostis canadensis, Veratrum viride, Cornus canadensis, Kalmia polifolia, Vaccinium
Oxyccocus, etc., in little bogs. In the arctic both Cassiope hypnoides and its congener C. tetragona are especially associated with snow-patch areas, the one with the inner, later-melting portions, the other with the outer margins, earlier freed from snow; cf. N. Polunin, *Bot. of the Canad. Eastern Arctic*, 3(1948), 53-55, 73, 109, 312, al.; who also discusses (127, 147) Salix herbacea. and says of it (1(1940), 155, 156): "flowers abundantly within a few days of being left bare of snow, and thereafter ripens fruit very rapidly." In 1(1940), 176, Polunin discusses Oxyria as characteristic of late snow-patches in the Canadian arctic; cf. pp. 155, 285, 312, 358, for Salix herbacea, Sibbaldia, Cassiope hypnoides, and Gnaphalium supinum. See also A.E. Porsild, *Illustr. Flora of the Canad. Arctic Archipelago* (1957), 6: "In the high-arctic landscape, plants with woody aerial stems, such as willows, ground birch, and heath, are found chiefly on snowpatch habitats."


(150) Another (extralimital) lowland station is at Zeeland Falls in Bethlehem.

(150a) On alpine species also growing in river-gravels where they are free from the competition of trees; cf. R.F. Griggs in *Bull. Torrey Club*, 67(1940), 580.

(151) Cf. id. in *Rep. of N.H. Forestry Comm*. 1903-1904, pl. 30, fig. 2; also J.H. Huntington in *Geol. of N.H.* 1(1874), 583-585, on forest succession after burning. On p. 125 he states that large burns are usually on the east side of mountains, showing that the west winds are the moist ones.


(154) *Id.*, 67, 68.

(155) C.H. Hitchcock in *Geol. of N.H.* 1(1874), 75, 76.

(156) Chittenden, *op. cit.*, 46, 47.


(159) Figures are taken from the 16th Census (1940), Agriculture, 1, 1(1942), 57.

(160) The percentage for the state of New Hampshire being 31.3 and only Carroll among the counties having a smaller percentage in farms (15.8%); Rockingham has 48.0% in farms, or nearly three times the percentage in Coös.

(161) Figures from the 15th Census (1930). The county with the greatest area of improved land was Grafton (347,473 acres); for Coös the figure is 189,240.
(162) Which are, incidentally, all townships of especial botanical interest.

(163) This account is condensed from an article by A.S. Pease in Appalachia, 14(1917), 157-178, where more complete details will be found. (It is unfortunate that the author was not permitted to see proofs of that article and correct its many egregious misprints.) W. Upham in C.H. Hitchcock, Geol. of N.H. 1(1874), 59-118 (especially 64-67) is interesting on this subject, but J.W. Harshberger, Phytogeogr. Surv. of N. America (1911), 10, is quite unsatisfactory.


(165) J. Josselyn, who lived eight years at Scarboro, Me., in his New England's Rarities discovered (1672), 2 ed. by E. Tuckerman, 1865, perhaps borrowed from Field when he wrote "in these Gullies grow Saven bushes, which, being taken hold of, are a great help to the climbing discoverer."

(166) Life, Journals, and Correspondence of Rev. Manasseh Cutler, 1(1888), 103.

(167) Introduction to his Flora Americae Septentrionalis (1814)

(168) In his second edition (1816).

(169) In a letter (now at the Gray Herbarium) of 6 August, 1843, to J.W. Robbins.


(171) 1(1804), 164, 165. They include Empetrum nigrum, probably Phylloco caerulea, Loiseleuria procumbens, Rhododendron lapponicum, Diapensia lapponica, Castilleja septentrionalis, and Vaccinium Oxyoccus. The close connections between botany and medical men at this period should be noted.

(172) N.E. Journ. of Med. and Surg. 5(1816), 332.

(173) Forty-two are specifically named in the second edition of his Florula Bostoniensis (1824).

(174) The Classic or College Monthly, 2(1842), 182-185. (Published at Middletown, Ct.)

(174a) On 16 Apr., 1841, Oakes wrote Tuckerman: "One of my first plans was a flora, &c of the White Mts. I may do it now in a thin octave by itself. No other person knows the localities of the rarer plants, except Pickering & Robbins & Robbins found none of ours, although I directed him exactly & we none of his. Robbins, however, searched for our plants on his return from Mt. Madison across the Gulf & could hardly expect to hit right."

(175) A diary with many plant lists, covering Tuckerman's White Mountain collections in 1837-1839 and now in the possession of Mr. E.P. Dickinson, of Amherst, Mass., the courtesy of the owner has permitted me to examine.

(176) H.D. Thoreau, Letters, Riverside ed., 389, 390. Thoreau made a second trip in 1858, with E.S. Hoar, attested by his journal (11(1906 ed.) 38-61, and by various specimens, including
one in the New England Botanical Club herbarium from Hoar's collection, of Arnica mollis, labelled 'In Tuckerman's Ravine when and where Henry Thoreau fell and sprained his ankle (sic)." R.W. Emerson in his essay on Thoreau remarks: "At Mount Washington, in Tuckerman's Ravine, Thoreau had a bad fall, and sprained his foot. As he was in the act of getting up from his fall, he saw for the first time the leaves of the Arnica mollis." But cf. F.W. Kilbourne, Chronicles of the White Mountains (1916), 124, n.; C. McKee in Appalachia, n.s. 20(1954), 175, 176. Thoreau's journal (11, 59-61) mentions various Mt. Washington plants and their European ranges, and distinguishes above the lowland forests five zones: spruce, fir, shrub or berry, cinquefoil or sedge, and lichen or cloud.


(178) At $5.00 a set; cf. Bull. Torrey Club, 6(1877), 127. On pp. 179 and 199 of the same volume C.G. Pringle offers a few sets for sale from the White and Green Mountains.

(179) Cf. Among the Clouds, 26 July, 1903, from which it appears that Williams became, in a sense, the botanical heir of Edwin Faxon, sharing the knowledge of his choicest botanical localities.

(180) The plants which he cites from the White Mountains I have listed in Appalachia, 14(1917), 160, n. 4.

(181) The comparatively inaccessible and probably uniformly forested small grant of Erving Location. The eastern and northwestern portions of Pittsburg are also too little known, and something might be expected from the serpentine deposits said by C.H. Hitchcock (Geol. of N.H. 1(1874), 25) to be situated in the northeast part of that town. The 116 taxa (species, varieties, and forms) in the genus Carex furnish 808 towns cited, or about 7 towns to each taxon. The number of taxa of Carex to a town is, for the most thoroughly collected areas, as follows: Randolph 59, Shelburne 53, Carroll 49, Lancaster and Jefferson each 47, Stewartstown 35, Whitefield 34, Colebrook 29. The Compositae furnish 1166 taxon-towns or 5.2 towns to each taxon. Randolph 104 taxa, Shelburne 102, Jefferson 81, Gorham 76, Berlin 57, Lancaster 54, Pittsburg, Stark, and Whitefield 51 each. The total number of taxa from Randolph is 771.

(182) Cf. A.R. Wallace, Darwinism, (1889), 81: "collectors ... interested in species in proportion to their rarity ... would often have in their collections a larger number of specimens of a rare species than of a species that was very common."

(183) On the high percentage of the grassy families (grasses, sedges, and rushes) cf. H.M. Raup in Bot. Rev. 7(1941), 173. A. Gray (Am. Journ. Sci. 2 ser., 22(1856), 213) says that A. DeCandolle et al. think that in most temperate floras the 8 or 9 largest families comprise one half the species of phanerogams. In the list above 52.3% of the taxa are in the first 8 families.

(184) The Lycopodiaceae are also over-represented.

(185) Cf. the similar condition on Mt. Desert, Me.; E.L. Rand and J.H. Redfield, Flora of Mt. Desert (1894), 26, 27.
ABBREVIATIONS FOR TOWNSHIPS, GRANTS, COLLECTORS, DATES, and ADVENTIVES

*(designated by initial asterisks *).*

**TOWNSHIPS and GRANTS**

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<th>Abbreviation</th>
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<td>A GA Grant</td>
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<td>C Grant</td>
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<td>C Purchase</td>
<td>Drewford Purchase (including Chandler Purchase of U.S. topographic map)</td>
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<td>DC Grant</td>
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<td>Pittsburg</td>
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**COLLECTORS**

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<td>M</td>
<td>Albert H. Moore</td>
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<td>P</td>
<td>Arthur S. Pease; but with collection numbers not preceded by another initial or name P is to be understood. Initials of collectors are given only when necessary to avoid ambiguity; they may be found in the chronological tables, pp. vv. Williams, without other qualification, denotes Emile F. Williams.</td>
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**DATES**

Dates are shown in parentheses, and are given in full for collections made before or through 1865, after which date the first two digits of the date are omitted; e.g. (1865) in full, but (99) for 1899, (02) for 1902, and (60) for 1960.

**n.d.** no date recorded
CATALOGUE
EQUISETACEAE (HORSETAIL FAMILY)
EQUISETUM L. Horsetail.

E. arvense L. (including f. nemerosum (A. Br.) Klinge). Wet or dry, wooded or open places. - Pittsburg, First Lake, 10142 & 11059(07); Clarksville 10980(07); Stewartstown 10403 & 10407 (07), F & P 16797(17); Colebrook 10474 & 10911 & 10914(07); Millsfield 35403(50); Stratford 13610(12); Stark 23812(33); Lancaster 17110 & 17111(18), 20100(27); Jefferson 27307 (39); Randolph 10859(07); Gorham 27040(39); Shelburne Deane (09); G Grant 20054(27).

E. pratense Ehrh. Meadows, etc. - Stewartstown F & P 16798(17), 17696(19); Colebrook, Beaver Brook Falls, F & P 16775(17); Stratford 33421(48); Stark 33380(48); Lancaster 17109 (18); Gorham 33527(48); Carroll 33431(48).

E. sylvaticum L., var. pauciramosum Milde. Woods, frequent. - Pittsburg, First Lake, 10182=M 3571(07); DC Grant 14382(13), 16230(14); Stark 36446(52); Northumberland 37750(55); Jefferson 30035(43); Randolph 93(00); Gorham 29965(43); Shelburne Deane (19).

E. sylvaticum, var. pauciramosum, f. multiramosum Fern. Similar localities. - Columbia 27714 (40), 33352(48); Stratford 13486(12); Stark 26517(37), 33384(48); Lancaster Sanford (16); Jefferson 16889(17); Randolph 10037(07); Carroll 35533(50); Shelburne Deane (10).


E. palustre f. filiforme Lacks. Occasional. - Errol, outlet of Akers Pond, F & P 16987 in part (17); Lancaster, near Grange, 28802(41).

X E. litorale Kuhlewcin. Shores. - Stewartstown, Connecticut River, F & P 17015(17); Shelburne Deane (84).

E. fluviatile L. Wet shores. - Colebrook, Mohawk River, 10935(07); Northumberland 13559 (12); Success, Success Pond, 33973(48); Shelburne Deane (15); Jefferson 36500(52); Whitefield, Hazen Jc., 38290(56).

E. fluviatile, f. minus (A.Br.) Broun. Riverbanks. - Pittsburg, Hall Stream, 36222(51); Berlin, Dead River, 36306(51); Randolph 10151(07).


E. hyemale L., var. affinis (Engelm.) A.A. Eat. Scouring-rush. Moist sandy or clayey soil, occasional. - Clarksville 36058(51); Colebrook 10409=M 3901(07), F & P 17023(17); Stratford 17672(19), 30967(44); Stark 35532(50); Lancaster 12113(09); Gorham Williams(03), Deane (09, 15), 10806(07), 16006(14); Dalton 16088(14).

E. hyemale, var. affinis, f. pumilum (A.A. Eat.) Vict. - Stark 29952(42); Stratford 37563(54).

E. scirpoideus Michx. Shaded alluvial banks, somewhat local. - Stewartstown 10222=M 3395(07), F & P 16784(17), 36451(52); Colebrook, Beaver Falls, 10475=M 3888(07), 34680(49), Hodgdon 5978(49), R.J. Eaton(61); Stratford 13512(12); Dummer, Pontook Falls, 16527(17); Lancaster, Mt. Prospect, 37777(55), 39283(58); Jefferson, Highlands, 1800 feet, Fuller(95), Starr King path, 23842(33); Gorham, riverbank, 12211(09); Shelburne Deane(84), Farlow(94); Dalton 33106(47).
LYCOPODIACEAE (CLUB-MOSS FAMILY)

LYCOPODIUM L. Club-moss.

*L. selago* L. (including var. *appressum* Desv.). Chiefly on mountain-summits; very locally at lower altitudes. -Stewartstown, pasture West Stewartstown, 10148=M3691(07); Colebrook, Lombard Hill, F & P 17033(17); Dixville, cliffs in Noich, 18148(21), Hodgdon & Clapp 5969(49); *LB Grant*, Mt. Madison, Chadbournie(84), Mt. Adams, Farlow(82), Fuller(86), 12190(09), St. John(11); *TM Purchase*, Great Gulf, E. & C.E. Faxon(79), Williams(95), Crystal Cascade, 2000 feet, J. Robinson(74); *S Purchase*, summit of Mt. Washington, Church(95), 98(00), Cape Horn, Williams(96), Alpine Garden, Fuller(83, 88, 94), Huntington Ravine, E. & C.E. Faxon(79), J.F. Collins(19), Crawford Trail, B.L. Robinson(01), Tuckerman Ravine, M4856(10); alpine region, indefinite, Oakes (n.d.), F. Boott (1816), Hoar (1858), and many others; *H Grant*, Mt. Webster, 11740(08); *H Grant*, Mt. Crawford, 11730(08).

*L. lucidulum* Michx. Cool woods, frequent. -Pittsburg, Deer Mt., 31675(45), First Lake, 10123=M3609(07); Stewartstown F & P 16617(17), Hodgdon 5966(49); Colebrook Hodgdon 5974(49); Dixville Hunnewell(12); Strafford 13509(12); Lancaster 28818(41); *Jefferson* W. Boott(74), 11087(07); Randolph Williams(93), 4065(04), M 4258(08), 21081(29); *Gorham* 39005(58); Shelburne Deane(81,16), Farlow(93), 11771=M4328(08); *M Location* 14357(13); *S Purchase*, Mt. Washington, Farlow(84).

*L. lucidulum*, var. *occidentale* (Clute) L.R. Wilson. - *S Purchase*, Tuckerman Ravine trail, Fasset 15595(33), cone of Mt. Washington, Steele(55); *LB Grant* 38679(57).

*L. inundatum* L. Wet sandy or peaty soil, frequent. -Pittsburg, Third Lake, 33179(47), Second Lake, 10248=M3437(07), village, 17673(19); Colebrook 29703(42); Errol 32852(47); *Cambridge* 18180(21); Dummer 36935(52); *Milan* 13873(12); *Success* 10643(07); Columbia 34499(49); Stark 23807(33); Lancaster 12002 1/2(09), 31613(45); Berlin 19065(22), 29891(42); Randolph 4076 & 4077(04), 9899(06), M 4203(08), 21127(29); Jefferson 38135(55); *LB Grant* 16358(15); TM Purchase, Carriage Road 2 1/8 miles up, 10597(07), Mt. Washington, Oakes, Tuckerman (n.d.); Shelburne Deane(14,18, 19); *Carroll* 108(02), 26918(38), 27700(39); *Dalton* 29091(41).

*L. annotinum* L. Woods and clearings, common. -Pittsburg, Deer Mt. 3000 feet, 31675(45), village, Mrs. Stevens(95); Stewartstown Hodgdon 5970(49); Dixville Hunnewell(12); Milan 27671(39); Kilkenny, Terrace Mtn., 25283(35); Jefferson 11098(07); Gorham 29673(42); Shelburne C.E. Faxon(02), Deane(15); B Purchase, Wild River, 17930(20); *LB Grant* 2500 feet, Blanketship(94); TM Purchase, Mt. Jefferson, 5000 feet, Davis(02); S Purchase, Mt. Washington, Rich(80); Whitefield 34798(49); Carroll 30150(43); Dalton 17838(20); White Mts., indefinite, Tuckerman (n.d.); Manning(81).

*L. annotinum*, var. *acriifolium* Fern. Similar situations. - *DC Grant* 37567(54); Clarksville F & P 17051(17); Stewartstown 25210(35); Colebrook 10443=M3880(07); Jefferson Deane(97); Randolph Williams(93); Gorham 30169(43), 37717(54); Shelburne Farlow(93), Miss Brown(15); Carroll 30150(43), 38547(56); White Mts., indefinite, Gray(1842).

*L. annotinum* var. *pungens* (LaPylaie) Desv. Mostly exposed rocky or peaty habitats, common. - Strafford, Percy Peaks 12745(10); Jefferson, Mt. Starr King, Deane(97); Randolph, railroad track 1 1/2 miles west of Appalachia, 17607(19); *LB Grant*, Mt. Madison, Chadbournie(84), 3221(00), 12090(09); TM Purchase, Star Lake, Farlow (n.d.), Mt. Adams, 100(01), Mt. Clay,
W. Boot(1855), Great Gulf, W. Boot(1855), Cape Horn, Williams(03); S Purchase, Mt. Washington, Hoar(1858), Allen(78), Pringle(80), Deane(84), Alpine Garden, Fuller(83), Williams(95), C Grant, Oakes Gulf, Fuller(00), Williams(95), Crawford Trail, Williams(93).

*L. clavatum* L. Dryish woods, common.-Pittsbug, Second Lake, 31634(45), First Lake, 10139=M 3569(07); Stratford 13544(12); Lancaster 29571(42); Jefferson W. Boot(73), 11086(07); Randolph Williams(93), 101(00), M 380(02), Mrs. G.F. Moore(05), Shelburne Deane(83), Farlow(99), Blankinship(94), M 4347(08), Deane(13); B Purchase M 5070(13); TM Purchase, Cape Horn, Williams(01).

*L. clavatum*, var. *megastachyon* Fern. & Bissell. About as common as the typical form.-Colebrook 10485=M 3891(07), 11078=M 3796(07), Hodgdon 5971(49); Northumberland 13496(12); Milan 27410(39) Berlin 35804(50); Jefferson 11085(07); Randolph 105(00), 106(02), M 1435a(03), 19740(26), 21078(29), 21742(30); Gorham 18223(21); Shelburne Deane(02), 11760(08), Deane(13,15), 27496(39), 35821(50), Whitefield 37308(53), 37862(55); Dalton 16409(15); Carroll 33159(47); TM Purchase, Carriage Road, Williams & B.L. Robinson(01), Williams(03), 12838 & 12839(10).


*L. obscurum* L. Ground-Pine. Woods, frequent.-Pittsbug, First Lake, 10101=M 3541(07); Stratford 13543(12); Milan 13721(12); Jefferson Blanchard(11); Randolph 4055(04); Shelburne Deane(83, 02, 13); Whitefield Deane(96).

*L. obscurum*, var. *dendroides* (Mitch.) D.C. Eat. Similar habitats.-Pittsbug, Deer Mtn., 3000 feet, 31673(45); Colebrook Hodgdon 5973(49); DC Grant 16170(14); Randolph Williams(93), M 1547(04), 22804(31), 39336(58); Carroll, Crawford's, Miss Minns(n.d.); Shelburne Deane(02), 35838(50).

*L. sabinaefolium* Willd. Old pastures, occasional.-Colebrook Hodgdon 5972(49); Lancaster 37024(53); Milan 27411(39), 36815(52); Randolph 20110(27), 32294(46), Bowman, 33880(48); Shelburne 36262(51).

*L. sabinaefolium*, var. *sitchense* (Rufr.) Fern. Similar localities.-Colebrook, Lombard Hill, 10382(07), F & P 16947(17); Stark 29544(42); Dummer Harris 7431(48); Milan 13757(12), 26810(38); Randolph 20083(27), 20999(29), 29056(32), 39169(58); Gorham 17925(20), 20295(28); LB Grant, above King Ravine, Steele(53); S Purchase, Alpine Garden, Eggleston 2425(01); Whitefield 37550(54).

*L. complanatum* L. Ground-Pine. Dry woods and clearings, occasional.-Pittsbug 17686(19); Colebrook 10457=M 3835 & 3881(07); Columbia 11081=M 3830(07), 36056(31); Lancaster 37025(53); Milan 29888(42); Randolph 10814, with one strobile, like var. *Wibber* (Haberer) House(07), 17324(18), 18130(21), 20743(30); Gorham 29521(42); Shelburne 11157=M4150(08), Deane(17); TM Purchase, Carriage Road, Williams(03), 12831(10); B Grant, Mt. Webster, Fuller(94); H Grant, Mt. Hope, 16449(15).

*L. complanatum*, var. *flabelliforme* Fern. Similar habitats, much more common.-Pittsbug 10141=M 3637(07); Clarksville 19109(22); Colebrook M 3879(07); Columbia M 3829(07); DC Grant 16183(14); Stratford 13540(12); Lancaster 29572(42); Randolph 4103(04); Shelburne Deane(83), 35840(50); Carroll, Crawford's, Miss Minns(n.d.); Dalton 11595=M 4384(08).
L. tristachyum Pursh. Dry woods and clearings, occasional. - **Colebrook 10381=M 3936(07); Stark 32818(47); Milan 13810(12), 27408(39); Berlin C.E. Faxon (n.d.), 16507(15), 33329(47), 37376(53); Lancaster 36394(51); Jefferson 12806(10); Randolph 11186(08), 29273(41); Gorham 36538(52); Shelburne Deane 02, 11151(08), 11152=M 4167(08), Deane 18, 27493(39), 35839(50), 36168(51); H Grant, Mt. Crawford, 11708(08).**

**SELAGINELLACEAE (SPIKEMOSS FAMILY)**

**SELAGINELLA Beav. Spike Moss**

*S. rupestris (L.) Spring. Dry rocks, local. - **DC Grant, Diamond Peaks, Hodgdon & Steele(54); Stark, Devil’s Slide, 20061(27); Northumberland, Cape Horn, Hodgdon(59); Berlin, near Jasper Cave, 14508(13); H Grant, Hart Ledge, 16625(15).**

**ISOETACEAE (QUILLWORT FAMILY)**

**ISOETES L. Quillwort.**

*I. muricata Dur. Shallow water, sometimes exposed at low water, frequent. - **Pittsburg, Third Lake, 31703(45), Second Lake, 31684(45); Columbia, Fish Pond, 13970(12); Stark, Christine Lake, 19839(26); Cambridge, Umbagog, 18176(21); Berlin, Dead River, 22741(31); Kilkenny, Unknown Pond, 20102(27); Randolph, Pond of Safety, 23226(35); Lancaster, Martin Meadow Pond, 26241(37); B Purchase, Carter Lake, 23014(32); P Grant, Lost Pond, E & C.E. Faxon(82); Whitefield, Burns Pond, 24184(34), 26025(37); Carroll, Saco Lake, E. & C.E. Faxon(93), 36949(52), Ammonoosuc Lake, 34070(48); S Purchase, larger Lake of the Clouds, Miller & Williams(93).**

*I. Tuckermanii A.Br. Scarce?- **Stark, outlet of Christine Lake, 21028(29).**

**OPHIOGLOSSACEAE (ADDER’S-TONGUE FAMILY)**

**BOTRYCHIUM Sw. Grape-Fern.**

*B. multifidum (Gmel.) Rupr. Old pastures and thickets, occasional. - **Pittsburg, First Lake, 10937(09); Colebrook 10434=M 3788(07); Randolph 18088(20); Gorham 12823(10); Shelburne Deane 84, 25; Carroll 19(02); Whitefield 37268(53).**

*B. multifidum, var. intermedium (D.C. Eat.) Farw. More frequent. - **Clarksville 19110(22); Columbia F&P 16588(17); DC Grant 16151(14); Northumberland 17291(18); Milan 14066(12); Lancaster 14437(13), Sanford(14); Jefferson 16831(16); Randolph E. Faxon(86), Williams (95, 96), 17(00), 18(02), M 1410(03), 5417(04), 9900(06), Miss Locke(10), 17234(18); Gorham 16906(16), 29672(42); Shelburne E. Faxon(14, 20); Deane 84, 85, 02, 14, 16; Dalton M 4444(08), 16427(15).**

*B. dissectum Spreng. Similar localities, infrequent. - **Shelburne Deane(14, 16); M Location 14330(13).**

*B. dissectum, f. obliquum (Muhl.) Fern. Much more common. - **Colebrook F & P 16955(17), 29504(42); Stratford 13539(12); Northumberland F & P 17062(17); Millsfield 18164(21); Lancaster 17541(19); Randolph 10815(07), 39788(60); Gorham 16905(16); Shelburne Deane(15); M Location 14332(13); Dalton 11494(08).**
B. simplex E.Hitchc. Dry pastures, with Danthonia and Polytrichum, commonly overlooked. - Colebrook 12586(10), F & P 16595(17); Milan 14126 & 14127(13); Jefferson 19319(24), 29505(42); Randolph 10062(07), 11184(08), 14207(13), 17092 and Plant. Exsicc. Gray. n. 301(18), 30120(43); Gorham 29506(42); G Grant 19408(24); Carroll 32721(47); Dalton 29458(42).

B. simplex, f. compositum Milde. Rare.-Milan 14122(13).

B. matricariaefolium A.Br. Mostly in damp woods, occasional. - Colebrook 10491(07); Columbia 14070(12); Strafford 12859(10); Northumberland 13627(12); Lancaster Sanford(14), 19057(22), 30203(43), 39282(58); Milan 28744(41); Jefferson Williams(97), Purdie(05), "Miss Z"(05), 14419(13), 18073(21), 19314(24); Randolph E. & C.E. Faxon(86), Williams(94, 95, 96), 14(00), 12(01), Purdie(05), M 4093(07), 10496 & 10189(07), 17103(18), 25882(37); Gorham 29260(41), 34457(49); Shelburne E. & C.E. Faxon(n.d.), Deane(84, 10, 15); B Purchase, No. Baldface Mt., 16024(14); LB Grant Williams(95); Whitefield Deane(95), 38261(56); Dalton 17408(19); Carroll C.E. Faxon(78), 30152(43).

B. matricariaefolium, f. palmatum Milde. - Randolph 17103-in part(18).

B. lanceolatum (Gmel.) Angstr., var. angustisegmentum Pease & Moore. Damp woods, less common. - Randolph Miss Richards(97), Williams(97), 6(00), 10495(07), M 4040(07), 14158(13), 31520(45); Shelburne Deane(84); P Grant Fuller(98).

B. virginianum (L.)Sw. Rich woods, frequent. - Pittsburg 38340(56); Clarksville M 3714(07); Colebrook Hodgdon 5961(49); Columbia 10868=M 3869(07); Lancaster 14321(13), Sanford(14); Jefferson 16720(16); Randolph Williams(94), 15(00), M 951(03), 14444(13); Shelburne Deane(95, 96); Dalton 16056(14).

B. virginianum, var. europaeum Angstr. Similar habitats. - Pittsburg, Third Lake, 10158(07); Stewartsown F & P 16840(17); Colebrook F & P 16839(17), F & P 16665(17); DC Grant 16206(14); Strafford 13520(12); Dummer 24130(34); Northumberland 28830(41); Randolph, Bowman, Williams(94).

Ophioglossum L. Adder's-tongue.

O. vulgatum L., var. pseudopodium (Blake)Farw. Boggy pastures, often overlooked. - Stewartsown 19111(22); Colebrook 10435=M 3787(07), 26843(38); Dixville Williams and Evans(06); Millsfield 18163(21); Dummer 20619(30), 24130(34); Milan 13954(12); Lancaster 14200(13), 17639(19), 28827(41), 33482(48); Randolph E. & C.E. Faxon(86), Williams(94, 96), 21(02), 12061(09); Whitefield Deane(95), 17300(18); Dalton 16426(18), 29774(42), 32282(46).

Osmundaceae (Flowering Fern Family)

Osmunda L. Flowering Fern.

O. regalis L., var. spectabilis (Willd.)Gray. Royal Fern. West woods and shores, frequent.-Pittsburg, Second Lake, 10252=M 3517(07); Stewartsown 38931(57); Colebrook M 3799(07); Columbia F & P 16793(13); Cambridge 17513(19), 18184(21); Stark 38329(56); Dummer 33106(47); Milan 13858(12); Berlin Deane(83); Northumberland 16458(17), F & P 16644(17), 17248(18); Lancaster 12335(09); Randolph 4114(04); Shelburne Deane(16); M Location 14257(13); B Purchase 36037(51); Whitefield M 4396(08); Dalton 25916(37), 35624(50).
O. Claytoniana. L. Interrupted Fern. Woods and thickets, common.—Pittsburg, First Lake, 10966=M 3634(07); Stratford 13500(12); Berlin Dean(83); Randolph M 1021(09), 12087(09); Shelburne Dean(84, 15); B Purchase 35567(50); LB Grant, 4300 feet, 12098(09); Carroll 17420(19).

O. cinnamonoea. L. Cinnamon Fern. Low woods and thickets, common.—Stratford 13523(12); Northumberland 16446(17); Randolph 70(02), M 1019(03); Shelburne Dean(15); B Purchase 36038(51).

O. cinnamonoea, f. incisa (J.W. Huntington) Gilbert is reported from Whitefield by C.S. and W.F. Lewis (Am. Fern. Journ. 11 (1921), 84).


POLYPODIACEAE (FERN FAMILY)

WOODSIA R.Br. Woodsia.

W. ilvensis (L.) R.Br. Dryish cliffs, in sun or shade, occasional.—DC Grant, Diamond Gorge, 10514(07), 12606(10), 20613(30); Stark, Devil's Slide, 17440(19), 20069 & 20070(27), 35412(50), 36516(52); Milan, Bald Mtn. 36557(52); Northumberland, Cape Horn, 16452(17), 25199(35); Lancaster, Mt. Prospect, 14217(13), Sanford(14), 25287(35); Berlin, Berlin Falls, Willey (n.d., probably 1867), 2529(03), M 4479(08); Whitefield, Bray Hill, 14420(13); Dalton, Dalton Mtn., 24158(34); Randolph, Ice Gulch, Churchill(89), Miss Cook(94), Fuller(95), 10820(07), Black Crescent Mtn., 14489(13); Gorham, Alpine Cascade, Dean(85), 2599(03); Shelburne Farlow(94), Dean(10, 14); P Grant, Crystal Cascade, 10716(07), 20053(27); S Purchase, Tuckerman Ravine, Spaulding (date uncertain), Huntington Ravine, M 174(01), 13895(12); B Grant, Mt. Webster, 11726(08); H Grant, Hart Ledge, 16621(15); Carroll, Gate of Notch, Fuller(84), Miss Minns (n.d.).

W. glabella R.Br. Damp cliffs, very rare.—Berlin, Berlin Falls, A.M. Knapp(70), Williams (99) —but these, like reports of Dryopteris fragrans, may really refer to the Alpine Cascade in Gorham; Gorham, Alpine Cascade, E.H. Whorl(72), Dean(84), Williams(99), 11308(08); cf. W.G. Farlow in Appalachia, 3(1883), 251.

CYSTOPTERIS Bernh. Bladder-fern.

C. fragilis (L.) Bernh. Shaded cliffs, occasional.—DC Grant, Diamond Gorge, 12623 & 12624 (10); Dixville, Notch, Williams & Evans(06) Colebrook Pease & Harris 33457(48); Stratford 31943(46); Stark, Crystal, 17446(19), Devil's Slide, 17452(19), 35341(50), 36525(52); Northumberland 25200(35), 33441(48); Milan, Bald Mtn., 36557(52); Berlin, Berlin Falls, Farlow (n.d.); Randolph Fuller(86, 95), 12876(10), 14488(13); Gorham, Alpine Cascade, Dean(84); Shelburne Miss Stone, in part(15); P Grant, Crystal Cascade, 10717(07); Carroll Miss Minns (n.d.), 17421(19).

C. fragilis, var. Mackayii Lawson. Similar localities.—Colebrook Beaver Falls, 10395= M 3941(07), 10488=M 3893(07); Columbia, outlet of Lime Pond, 10479=M 3920(07); Stark, Phillips Brook, Eaton(61); Lancaster, Mt. Tug, 16736(16), Mt. Prospect, 14272(13), Randolph, Peboamauk Fall, Miss Cook(94), Williams(96), 10821(07); Shelburne Miss Stone, in part(15), Mt. Cabot, Dean(15).
C. bulbifera (L.) Bernh. Frequent in shaded calcareous soil. *Clarksville* 10981=M 3717(07); *Stewartstown* 10397=M 3904(07), Hodgdon 5950(49); *Colebrook* W. Boot(1855), 10486=M 3904(07); *Columbia* 10451=M 3841(07), 23874(33); *Lancaster*, Mt. Prospect, 17228(18), 25286(35), 31651(45).

MATTEUCCIA Todaro, Ostrich-Fern

*M. pensylvanica* (Willd.) Raymond. Alluvial soil, locally abundant. *Pittsburg*, Third Lake, 10329=M 3502(07); *Colebrook* M 4033(07); *Stratford* 13577(12); *Millsfield* 18167(21); *Cambridge* Williams(95), 16874(16), 36137(51); *Randolph* 10525(07), M 4985(07); *Gorham* 11481(08); *Shelburne* Farlow(91), Deane(07), Miss Davenport(07); *B Purchase* 35536(50); *LB Grant*, Jefferson Notch Road, 17929(20); *Carroll* 14362(13).

ONOCLEA L. Sensitive Fern.

*O. sensibilis* L. Low ground, open or shaded, very common. *Pittsburg*, First Lake, 10136=M 3548(07); *Stratford* 17653(19); *Lancaster* 33479(48); *Randolph* 68(02), M1020(03), 14211(13), Shelburne Deane(83), M 4169(08), Deane(15).


DRYOPTERIS Adans. Shield-Fern.

*D. Thelypteris* (L.) Gray, var. *pubescens* (Lawson) Nakai. Marsh Fern. Low ground, common. *Pittsburg*, First Lake, M 3563(07); *Columbia* M 3855(07); *Errol* 34918(49); *Jefferson* 10687(07); *Randolph* 26(00), 14210(13); *M Location* 14344(13); *Shelburne* Deane(85, 15), 39997(58); Whitefield Deane(96).

*D. noveboracensis* (L.) Gray. New York Fern. Low ground, common. *Pittsburg*, Second Lake, 10217=M 3420(07), 31635(45), First Lake, Mrs. Stevens (95); *Randolph* 4021(04); *Gorham* 18217(21); *Shelburne Deane* (15), Mt. Shelburne Moriah, 3750 feet, Misses Christensen & Gauthier (17); *B Purchase* 36141(51); *Whitefield* Deane(96); *Carroll* Williams (94).

*D. disjuncta* (Ledebo.) C.V. Mort. Oak Fern. Cool woods, common. *Colebrook* 11070=M 3977(07); *Stratford* 13450(12); *Lancaster* 39127(58); *Jefferson* Miss Prince (74); *Randolph* Churchill (89), Williams (94), M 1924(04), 9924(06); *G Grant* Manning (81); *Shelburne* Deane (83, 14, 15); *Whitefield* Deane(95); *LB Grant*, Mt. Adams, 3000 feet, Blankenship (94), Deane (17).

*D. Phlegopteris* (L.) Christens. Long Beech-Fern. Cool woods, common. *Pittsburg*, First Lake, 10152=M 3605(07); *DC Grant* 16270(14); *Colebrook* 10473(07); *Stratford* 13538(12); *Jefferson* 38310(56); *Randolph* Williams (94), M 379(02), 9922(06), 21120(29); *Gorham* 29674(42); *Shelburne* Deane (83, 15); *LB Grant* Blankenship(94); *TM Purchase*, Cape Horn, Williams (03); *S Purchase*, Tuckerman Ravine trail, Williams (95), Mt. Washington, Flint & Huntington (76), Hodgdon 5951(49); *G Grant* Manning (81); *Carroll* Jenks (83), Miss Minns (n.d.), Hunnewell (12).

D. spinulosa var. fructuosa (Gilbert) Trudell. - Randolph 4206(04).

D. spinulosa var. intermedia (Muhl.) Underw. Woods, common. - Pittsburg, First Lake, 10128=M 3616(07); DC Grant 16251(14); Colebrook M 3820(07); Dunmore 16544(17); Randolph 11657(08), 19903(26), 21088(39), 22382(31); Gorham True(31), Shelburne Deane(83), Blankenship(94), Deane(16); LB Grant 19796(20); P Grant Fuller(83); S Purchase, Tuckerman Ravine, Hoar(1858), Fuller(83); Whitefield Deane(96); Carroll, Crawford's, Miss Minn(n.d.).

D. spinulosa var. americana (Fisch.) Fern. Especially in mountain woods, common. - Dixville E. & C. E. Faxon(87), 16531(15); Randolph 43(00), M 1143(03); LB Grant 42(01), 12066(09); P Grant Deane(16); S Purchase Fuller(83); B Grant E & C. E. Faxon(79).

X D. Bottii (Tuckerm.) Underw. Moist woods, occasional. - Clarksville, Cream poke Rd., (61); Northumberland 38099(55); Lancaster, near Baker Pond, 17265(18), Mt. Prospect, 24135(34); Jefferson 38311(36); Randolph 29293(41); Carroll 26709(38); Dalton 36031(51).

D. cristata (L.) Gray. Crested Wood-Fern. Wet soil, open or shaded, frequent. - Pittsburg, First Lake, 10173(07), M 3641(07); Clarksville 34699(49), 38211(55); Colebrook 29745(42); Columbia 26834(38), 36760(52); Straford 13464(12); Northumberland F & P 16602(17); Lancaster 17265(18), 34796(49); Milan 23831(33); Success 16552(17); Jefferson 16838(16), 50275(43), 32519(46); Randolph 4053(04), 21160(29), 39320(58); Gorham 27381(39); Shelburne Deane(16); Whitefield 14187(13); Dalton 33020(47); Carroll Hunnewell(12), 26909(38).

X D. cristata x marginalis. - Lancaster, n. of Martin Meadow Pond, 17837(20).

D. cristata, var. Clintoniana (D. C. Eat.) Underw. Less common than the typical form. - Lancaster, Mt. Prospect, 24135(34); Jefferson, Stag Hollow Brook, 12705(10); Randolph 22820(31). C. S. and W. F. Lewis (Am. Fern Journ. 11(1921), 83) report as frequent at Whitefield.

D. Goldiana (Hook.) Gray. Goldie's Fern. Rich woods especially in Lyman, Lisbon, and Cambrian formations, local. - Dixville 10627(07); Colebrook W. Booth(1855); Millsfield 18160(21); Lancaster, Mt. Prospect, 14513(13), 16918(17), Connors woods, 32815(47).

D. marginalis (L.) Gray. Marginal Shield-Fern. Rocky woods, frequent. - Colebrook 10430=M 3819(07); Straford 13469 & 13770(12); Lancaster 14227 & 14552(13); Dalton M 4415(08), 16408(15), 17398(19); Randolph 4152(04), 12338(09); Gorham Deane(84), Shelburne Deane(84, 15), Miss Stone(15).

D. fragrans (L.) Schott, var. remotiuscula Komarov. Fragrant Fern. Dryish shaded cliffs, local. - DC Grant, Diamond Gorge, 16153(14), Diamond Peaks, 20612(30), 24164(34); Stark, Devil's Slide, 20071(27); Berlin, Berlin Falls, Willey(67), Farlow(84) - cf. W. G. Farlow in Appalachia, 3(1883), 231-; Randolph, Ice Gulch, Fuller & Purdie(95), 25(01), M 1450(03), - reported from there by D. C. Eaton, Ferns of N. Am. 1(1879), 176; L. D. Pychowska in Appalachia, 3(1883), 221, 254-; Gorham, Alpine Cascade, C. E. Faxon(73), Deane(84, 85), Williams(99), 2530(03), 11309(08) - reported there by H. Willey in Am. Naturalist 1(1867), 437 -; Shelburne, Mine Brook, Deane(85), 11664(08); P Grant, Crystal Cascade, J. Robinson(1865) - the first collection in New England, according to A. P. Morse in Rhodora, 31(1929), 247; cf. Bull. Torr. Bot. Club, 4(1873), 42-; 74), E. Faxon(79), Ward(n.d.), 10715(07), 20052(27) - station revisited in 1961.
Several additional _Dryopteris_ hybrids are reported from _Whitefield_ by C.S. & W.F. Lewis in _Am. Fern Journ_ 11(1921), 84.

POLYSTICHUM Roth. Holly Fern.

_P. Braunii_ (Sprenner) Fée, var. _Parshii_ Fern. Braunii's Holly Fern. Cool rocky woods, occasional.- _Pittsburg_, Second Lake, 1033M 3498(07), 19127(22); _Stewartstown_ F & P 16672(17); _DC Grant_ 10510(07); _Dixville_ E. & C.E. Faxon (87), 10563(07), 15527(15), 37833(55); _Colebrook_ 10387(07); _Stratford_ 13481(12); _Stark_ Devil's Slide, 17486(19); _Millsfield_ 18157(21); _Kilkenny_, Mt. Cabot, 23189(32), Priscilla Brook, 33212(47); _Jefferson_ W. Boott (74), 11088(07), 36428(51); _Randolph_ Williams (94), Ice Gulch, Willey, probably 1867 - cf. _Am. Naturalist_, 1(1867), 432.; _Fuller_ (86), Churchill (n.d.), Williams (96), M 1442(03), 4710(04), Purdie (05), M 3209(06); _B Purchase_, Carter Notch, Fuller (83); _P Grant_ Fuller (98); _Carroll_, Crawford's, E. & C.E. Faxon (81), Miss Minns (n.d.); _S Purchase_, brook on Mt. Monroe, Steele (53), Ammonoosuc Ravine, 3200 feet, Miss J.F. Smith (35); _B Grant_, west of Mt. Clinton, Tuckerman (1845).

_P. acrostichoides_ (Michx.) Schott. Christmas Fern. Cool, especially rocky, woods, frequent.- _Pittsburg_, Second Lake, 10314M 3521(07); _Clarksville_ 38231(55); _Stewartstown_ F & P 16744(17); _DC Grant_ 16227(14); _Stratford_ 13597(12); _Milan_ 13776(12); _Stark_ 17488(19);-towards f. _crispum_ Clute., _Northumberland_ 16729(16); _Lancaster_ 14229(13), 16730(16); _Jefferson_ 16703(16), 31006(44), 32516(46); _Ralph_ 37(02), M 1101(03), 17578(19); _Gorham_ 11478(08); _Shelburne_ Deane (16); _B Purchase_ 16023(14); _Carroll_, Miss Minns (n.d.), 11447(08), 14388(13), 17430(19).

_P. acrostichoides_, f. _incisum_ (Gray) Gilbert.- _Lancaster_, Mt. Prospect, 17230(18).

DENNSTAEDTIA Bernh.

_D. punctilobula_ (Michx.) Moore. Hay-scented Fern. Open woods and pastures, very abundant.- _Pittsburg_, First Lake, 10092(07); _DC Grant_ 16225(14); _Colebrook_ M 3811(07); _Randolph_ Williams (94), 64(02), M 4451(08), 14208(13), 19898(26); _Shelburne_ Deane (83); _S Purchase_, Huntington Ravine, 4000 feet, F & P 16867(17).

ATHYRIUM Roth.

_A. thelypteroides_ (Michx.) Desv. Silvery Spleenwort. Rich woods, frequent.- _Pittsburg_, First Lake, Mrs. Stevens (95); _Stewartstown_ F & P 16671(17); _Colebrook_ 11050(07); _Columbia_ 37954(54); _Stratford_ 13603(12); _Millsfield_ 18170(21); _Stark_ 17447(19); _Northumberland_ 34557(49); _Lancaster_ 14225(13), 17819(20), 39120(58); _Dalton_ 17382(19); _Randolph_ Williams (94, 95), 4022 & 4023(04); _Gorham_ 18225(21); _Shelburne_ Deane (84).

_A. Filix-femina_ (L.) Roth, var. _Michauxii_ (Spreng.) Farw. Lady-Fern. Frequent in open and shaded soil.- _Stark_ 34601(49); _Shelburne_ Deane (84, 26); _B Purchase_ 36140(51).

_A. Filix-femina_, var. _Michauxii_, f. _elatus_ (Link) Clute. Apparently our commonest form of the species.- _Pittsburg_, First Lake, M 36227(07); _Colebrook_ M 3824(07); _Jefferson_ Purdie (05); _Randolph_ Williams (96), 10650(07), M 4084(07); _Shelburne_ Deane (15).

A. *Felix-femina*, var. *Michauxii*, f. *rubellum* (Gilbert)Farw. Frequent. - *Jefferson* 16891(17); *Randolph* Williams (94), 17936(20); *LB Grant*, 4000 feet, F & P 16861 & 16868(17); *Shelburne Deane* (15); *TM Purchase*, Cape Horn, Williams (03); *Whitefield* 36530(52).


**ASPLENIUM** L. Spleenwort.

A. *Trichomanes* L. Maidenhair-Spleenwort. Shaded ledges, rare. - *Shelburne*, Mine Brook, 11665(08); *Carroll*, Crawford's, Miss Minns (n.d.).


**WOODWARDIA** Sm. Chain-Fern.

*W. virginica* (L.)Sm. Swampy woods, rare. - *Shelburne*, bog south of Wheeler Bog, 25618(36), 39398(58); perhaps first found here by Prof. J.M. MacFarlane.

**CRYPTOGRAMMA** R.Br. Rock-brake.

C. *Stelleri* (Gmel.)Prand. Cliffs, very rare. - *Colebrook* Beaver Falls, 10487=M 3887(07), Hodgdon 5953(49), Eaton (61).

**ADIANTUM** L. Maidenhair.

A. *pedatum* L. Rich woods, commoner in the Connecticut watershed. - *Pittsburg*, Second Lake, 19104(22); *Stewartstown* F & P 16670(17); *Colebrook* 10393=M 3948(07); *Columbia* 37614(54); *Stratford* 13503 & 13621(12); *Millsfield* 18169(21); *Stark* 20332(28), 28560(41), 35411(50); *Northumberland* 16375(15), 34549(49); *Lancaster* 12801(10), 14226(13), *Sanford* (14), 19060(22); *Dalton* 16057(14), 16390(15), 17386(19), 26719(38); *Randolph Williams* (93, 94), 4024(00), M 1136(03); *Carroll* 30147(43); *Shelburne Deane* (84, 16).

**PTERIDIDIUM** Gleditsch. Brake.

*P. aquilinum* (L.)Kuhn, var. *latusculum* (Desv.)Underw. Dry woods and pastures, very common. - *Pittsburg*, First Lake, 10138=M 3617(07); *Stark* 20064(27); *Randolph Williams* (94, 95, 96), M 1454 & 1455(03), 11220(08); *Shelburne Deane* (83, 10, 21); *B Purchase* M 5074(13), 16041(14).

**POLYPODIUM** L. Polypody.

*P. virginianum* L. (including forms). Shaded ledges, frequent. - *Pittsburg*, Deer Mtn., 31672(45), First Lake, 10181=M 3555(07); *DC Grant* 36818(52); *Stewartstown* 13563(12); *Stark* 17442(19), 28628(41), 31535(45), 35446(50), 36520(52); *Milan* 13862(12); *Northumberland*, Cape Horn, 37218(53); *Randolph Williams* (95), 81(02), M 378(02), M 1944(05), 4016 & 4017(04); *Gorham* 38967(58); *Shelburne Deane* (83, 16); *P Grant*, Glen Ellis, Fuller (83); *Dalton* 29124(41).
TAXACEAE YEW FAMILY

TAXUS L. Yew.

*T. canadensis* Marsh. Cold, especially alluvial, woods, common. *Pittsburg*, Second Lake, 10299=M 3490(07); *Dixville* 32679(47); *Colebrook* 25247(35); *Columbia* 17715(19); *Stratford* 13484(12); *Stark* 2987(42), 33427(48); *Milan* 13713(12); *Lancaster* 12368(09); *Jefferson Williams* (95), 10634(07); *Randolph Williams* (97), M 1051 & 1435(03), 11579(08); *Gorham Williams* (97), 11438(08); *Shelburne Deane* (83, 16); *MLocation Deane* (82); *Dalton* 33034(47).

PINACEAE PINE FAMILY

ABIES Mill. Fir-Balsam.

*A. balsamea* (L.)Mill. Common throughout our area. *Pittsburg*, Third Lake, 10303=M 3500(07); *Columbia* 27855(40); *Millsfield Billings* (20); *Lancaster* 36439(52); *Success M* 4113(08); *Randolph Williams* (97), M 1011 & 1106(03), 11326(08); *Shelburne C.E. Faxon* (n.d.), *Deane* (20); *LB Grant* M 3362(07); *TM Purchase*, Mt. Madison and Adams, M 1431(03), 10358=M 3344(07), 16501(17), Carriage Road, Churchill (95), *Williams* (98), *S Purchase*, Mt. Washington, Williams (95, 98), M 4048(07); *Whitefield Deane* (95).

*A. balsamia*, var. *panerolepis* Fern. Chiefly at high elevations. *Jefferson*, Mt. Starr King, 25298(35); *Randolph*, near Gordon Fall, 24133(34); *LB Grant*, 4500 feet, 16733(17), Madison Huts, 26725(38); *Shelburne*, summit of Mt. Cabot, Miss Howe (17), Mt. Shelburne Moriah, 3750 feet, Misses Christensen & Gauthier (17); *S Purchase*, Lion Head, Lincoln & Steele (52).

TSUGA (Endl.)Carr. Hemlock.

*T. canadensis* (L.) Carr. Chiefly on banks of brooks and rivers, frequent. *Colebrook* 10432=M 3816(07); *Dummer F & P* 16546(17); *Northumberland* 16469(17); *Jefferson* 17505(19), 30280(43); *Randolph M* 1012(03), 11234(08); *Gorham* Deane (82, 20), 16105(14), 29527(42); *Shelburne* M 4323 & 4324(08), *Deane* (15), 17822(20); *M Location* 35297(50); *Dalton* M 4365(08). Often very old. The Geol. of N.H. 1(1874), 580, cites one from Moultonboro showing 290 rings; I counted over 390 on a large fallen one in Randolph.

PICEA Dietr. Spruce.

*P. glauca* (Moench) Voss. White Spruce. Pastures, etc., mostly from Whitefield and Berlin northward; especially common around the Connecticut Lakes. *Pittsburg*, First Lake, 10150=M 3537(07); *Colebrook* 10413=M 3889(07); *DC Grant* 16141(14); *Errol Williams* (95); *Cambridge* 20793(36); *Milan* 10536(07), 13882(12), 37611(54); *Success 10637(07); Stratford* 13473(12); *Jefferson* 10684(07), 32520(46), 38583(56); *Randolph E. Faxon* (86), 10942(07), M 4017(07); *Shelburne Deane* (82, 13), Miss Christensen (17), Sprague (20), Whitefield Deane (94, 96), 14276(13). Reported by L.S. Gill (*Trans. Conn. Acad. Arts & Sci.* 32(1935) from *B Purchase*, Blue Brook Ranger station, G.G. Hedgecock (13).

*P. rubens* Sarg. Red Spruce. Common throughout. *Pittsburg*, Second Lake, 10350=M 3468(07); *W Location* 27773(40); *Cambridge* 20805(30); *Northumberland* 37843(55); *Whitefield Deane* (96); *Randolph Williams* (97), M 1010 & 1029(03), M 3141(05), Mrs. Moore (05), 11327(08), 39339(58); *Shelburne Deane* (82, 20); *B Purchase* 16859(17); *TM Purchase*, Mt. Madison, M 1432(03), Carriage Road, Williams (96, 98).
P. mariana (Mill.) BSP. Black Spruce. Chiefly in bogs and on ledges and mountain summits (f. semiprostrata (Peck) Blake).-Errol 33326(47); Success, Mt. Success, 11209-M 4113(08), 33861(48); Northumberland 39281(58); Lancaster Deane (96), 33511(48); Whitefield Deane (95); Randolph, Ice Gulch, 10944(07), 11496(08), 16646(17); Shelburne, Mt. Shelburne Moriah, Misses Christensen & Gauthier (17); YM Purchase, Parapat, 10227-M 3343(07), Carriage Road, Williams (98); S. Purchase, Tuckerman Ravine, Williams (95, 97), 10645(07), Alpine Garden, Williams (96, 98), 10542(07); B Purchase, West Royce Mtn., 18143(21), Carter Notch, 32738(47).

LARIX Mill. Larch, Tamarack, or Hackmatack.

L. laricina (DuRot) K. Koch. Swamps, common.-Pittsburgh 11003(07), M 3494(07); Stewartstown Philbrook (20), 32596(47); Colebrook 10841-M 4028(07), Errol Williams (95); Columbia M 3838(07); Stratford 13472(12), 36000(51); Milan Williams (95); Success 11619(08); Jefferson 16494(17); Randolph Williams (97), M 1145(03), M 3289(07), 11136(08); Gorham Dean (84); Shelburne Deane (83, 17); Whitefield Deane (95); Carroll 32719(47); Dalton M 4362(08).

L. laricina, f. depressa Rousseau. A small bush in scrub at high elevations, seldom more than one or two at a station.-LB Grant, Nowell Ridge, 12315(09), 12735(10), Watson Path, 4800 feet, 3020(03), M 1430(03); TM Purchase, Mt. Adams at 5000 feet, Miss Endicott(07), Cape Horn, Williams (03); S Purchase, Alpine Garden, 12533(09), Steele (55); B Grant, Mt. Webster, 11777(08); H Grant, Mt. Crawford, 11751(08).

PINUS L. Pine.

P. strobus L. White Pine. Generally distributed, especially at lower altitudes, with some large trees, but seldom in extensive stands.-Pittsburg, River Road, 10946-M 3737(07), M 3675(07); Colebrook M 3903(07); Errol 10503(07); Milan 17321(18); Success M 4313(08), 33790(48); Randolph Williams (97), M 1436(03), 12178(09); Shelburne Deane (82, 83), M 4145(08), Deane (14, 20), Morse (20); Northumberland 37811(55); Whitefield Deane (95), M 4434(08); Dalton M 4391(08); H Grant, summit of Mt. Crawford, ca. 3100 feet, scarce 11734(08).

P. resinosa Ait. Red Pine. Dry woods and cliffs, especially in Shelburne.-Starford, Percy Peaks, 12739(10); Stark, Devil's Slide, 35418(50); Northumberland, Cape Horn, 12216(09), 16447(17), 33405(48); Jefferson 12911(10); Berlin, Mt. Forist, 16098(14); Gorham 11452(08); Shelburne Deane (82), 10777(07), M 4126(08), Deane (16); Whitefield 14277(13); Dalton, Forest Lake, 11453-M 4434(08), 14578(13), 14277-M 5070(13); Carroll, Stanley Slide, 17938(20), Miss Minns (n.d.); B Purchase 16053(14); H Grant, Mt. Hope, 16455(15).


P. Banksiana Lamb. Jack-Pine. Headlands in Lake Umbagog (the Pine Point station cited in the first edition turns out to be in Maine).-Errol, Tyler Point, Lincoln (38), Metallak Is.,
Brewster (96); Cambridge Brewster (96), 16529(15). The name of Cypress Brook in Bean Purchase might suggest the Jack-Pine (French Cypres), but both specimens and reports are lacking from that area. One tree found on cliffs on Mt. Webster, Harlow Location, Carroll Co., by Steele and Lincoln (1953), is just outside our limits.

THUJA L. Arbor Vitae.

*T. occidentalis* L. White Cedar. Calcareous bogs and riverbanks. -*Pittsburg*, Third Lake, 10332=M 3479(07), First Lake, M 3556(07); *Clarksville* M 3702(07); *Stewartstown* 10210=M 3404(07); *Coblebrook Williams* (95), M 3203(06), 10435=M 3800(07), *Hodgdon* 5985(49); *Columbia* M 3844(06), Knochmal 1592(48); *Millsfield* 18156(21), 35423(50); *Cambridge Williams* (95), 16550(15), Deane (17); *Stratford* 13524(12); *Northumberland* 12119(09); *Success* 10672(07); *Stark* 12760(10), 38316(56); *Dummer* 16545(17), 31331(45); *Milan* 10568(07), 13725(12), Deane (16); *Berlin* 5422(04), M 4309(08), 22786(31), 35871(50); *Lancaster Deane* (96), 12193(09); *Jefferson* 17342(18); *Gorham* M 4053(07), 11690(08); *Shelburne Deane* (62, 85, 08), 11158=M 4149(08), 38257(55); *Whitefield* 11569=M 4381(08), 38258(56); *Dalton* 11612=M 4361(08); *Carroll* 16644(16).

JUNIPERUS L. Juniper.


*J. communis*, var. *depressa* Pursh. Pastures, infrequent. -*Stratford* 23889(33); *Dummer Harris* 7432(48); *Milan* 26827(38), 27044(39); *Randolph* 12375(09); *Gorham* 16609(15), 18086(20), 29517(42), 36560(52); *Shelburne Deane* (08, 21, 22), 35865(51); *MLocation* 19140(22); *H Grant*, one plant on cliffs of Hart Ledge, 16626(15).

TYPHACEAE (CAT-TAIL FAMILY)

TYPHA L. Cat-tail.

*T. latifolia* L. Swamps, frequent. -*Pittsburg*, Indian Stream, 10419=M 3739(07), Hall Stream, 33771(48); *Columbia* 26848(38); *Milan* 34138(48); *Lancaster* 32791(47), 34629(49); *Jefferson* 17578(19); *Randolph Williams* (97), M 1127(03), 9910(06); *Gorham* M 374(02), 16902(16); *Shelburne Deane* (22); *Whitefield* M 5044(13).


SPARGANIACEAE (BUR-REED FAMILY)

SPARGANIUM L. Bur-reed.


*S. americanum* Nutt. Ponds. - *W Location*, Little Greenough Pond, 35612(50); *Errol*, Akers Pond, 23385(33), 26370(37); *Milan* 33269(47); *Lancaster*, Blood Pond 28200(40), Martin
Meadow Pond, 17599(19); Whitefield 36894(52), Weed Pond, 14450(13); Jefferson, Cherry Pond, 11424(08), 34925(49); Dalton, Connecticut River, 11607(08), M 5011(13).

*S. chlorocarpum* Rydb. Brooks and ponds.-*DC Grant* 33712(48); *W Location* Lincoln, Pease & Steele 38620(56); *Errol*, Akers Pond, 26370(37); *Stratford* 17711(19); *Stark* 34559(49); *Milan* 13852(12); *Randolph*, Mt. Sawdust, 5376(04); *Shelburne*, creek, Deane (83); *Dalton* M 4371(08); *Carroll*, Crawford's, Miss Minns (88).

*S. chlorocarpum*, var. *acaula* (Beeby) Ferm. Commoner than the typical form.-*Pittsburg* 17691(19); *Colebrook* F & P 16627(17); *Millsfield* 35392(50); *Odell* 34841(49); *Success* 10673(07), 33820(48); *Milan* 13853(12), 33262(47); *Dummer* 34827(49); *Stark* 29875(42); *Northumberland* 17281(18); *Lancaster* 12374(09); *Whitefield* 11561=M 4422(08); *Dalton* M 4439(08); *Jefferson* 30273(43), 35683(50); *Randolph*, Churchill (89), Williams (93), 10610 & 10747(07); *Shelburne*, Deane (18); *P Grant*, Lost Pond, 13889(12); *Carroll*, Crawford's, Williams (95).

*S. angustifolium* Michx. Shallow ponds and streams.-*Pittsburg*, Round Pond, Kendall, Goldsborough, & Doolittle (04); *Stewartstown*, Ladd Pond, F & P 17002(17); *Columbia*, Lime Pond, 13884(12); *Success*, Success Pond, 33839 & 33972 & 33976(48); *Lancaster*, Martin Meadow Pond, 35486(50); *Jefferson*, Cherry Pond, 11443(08); *S Purchase*, Hermit Lake, Pringle(77, 78), 10735(07), York (18); *P Grant*, Fuller (88); *Whitefield*, Burns Pond, M 5027 & 5043(13), 26194(37); *Dalton*, Forest Lake, 11582(08); *Carroll*, Gate of Notch, C.E. Faxon (78). M.W. Provost, *op. cit.*, cites this species from Lake Umbagog (perhaps *Errol*?).

*S. fluctans* (Morong) Robinson. Ponds and streams.-*Pittsburg*, First Lake, Kendall, Goldsborough, & Doolittle (04); *Jefferson*, Cherry Pond, 10628(07), 20060(27); *Whitefield*, Burns Pond, 14579(13); *B Purchase*, Carter Lake, 12905(10), M 5079(13). M.W. Provost, *op. cit.*, cites this species from Bear Brook logan and Young's Pond, on the lower Magalloway River (*Errol*?).

*S. minimum* (Hartm.) Fries. Rather rare.-*Stark*, pool east of Percy, 23810(38).

**ZOSTERACEAE (PONDWEED FAMILY)**

**POTAMOGETON L. Pondweed.**

*P. Robbinsii* Oakes. Shallow water.-*Pittsburg*, First Lake, Kendall, Goldsborough, & Doolittle (04); *Stewartstown* logan by river, F & P 16942(17); *Lancaster*, Baker Pond, 26901(38), Ice House Pond, Pease, Krouch, & Richards 33963(48), Martin Meadow Pond, 35489(50), 36914(52); *Dalton*, Forest Lake, 11580=M 4445(08). Also found in Cherry Pond, *Jefferson*, by Robbins (1829), according to W. Oakes, *Hovey's Mag.* 7(1841), 180; cf. H. St. John in *Rhodora* 18(1916), 123; and Tuckerman got it there, according to his nephew, Dr. F. Tuckerman. Oakes wrote Robbins (23 July 1846), that he had visited Cherry Pond but "didn't get any of the Potamog." 

*P. confervoides* Reichenb. Shallow ponds, local.-*Stark*, Pike Pond, Pease & Harris 34806(49); *Jefferson*, Little Cherry Pond, 12929(10); *Shelburne*, Dream Lake, 19220(23), Wheeler's Bog, 38628(56); *Carroll*, Saco Lake, E. Faxon (82); found there in 1829 by Robbins (note on a sheet in the Gray Herbarium from Uxbridge, Mass. cf. also E. Tuckerman in *Am. Journ. Sci.* 2 ser. 7(1849), 358 (under *P. trichoides*). I can hardly accept the suggestion of Fernald *Rhodora* 33(1931), 59 that this may be a preglacial relic; cf. A.R. Hodgdon et al in *Rhodora* 54(1952), 241.
P. zosteriformis Fern. Ponds and streams.-Lancaster, Ice House Pond, Pease, Krochmal, & Richards 33966(48).

P. strictifolius Ar. Benn. Krochmal reports (48) this from the Connecticut River (in Dalton?).


P. Berchtoldi Feiber. Ponds.-Berlin, outlet of York Pond, 17186(18); Dalton, Forest Lake, 11578 & 11792√(08).

P. Berchtoldi, var. polyphyllos (Morong) Fern.-Stewartstown, Ladd Pond, F & P 17034(17); Columbia, Fish Pond, Pease & Steele 37617(54).

P. Berchtoldi, var. acuminatus Feiber.-Milan, Cedar Pond, 22800(31); Jefferson, Cherry Pond, 16823(16), 23076(32); Whitefield, Burns Pond, 26027(37); Dalton, Scott Jc, 12293(09).

P. Berchtoldi, var. tenuissimus (Mert. & Koch) Fern.-Pittsburg, Second Lake, 34074(48), First Lake, Kendall, Goldsborough, & Doolittle (04); Lancaster, Ice House Pond, Pease, Krochmal, & Richards 33965(48); Berlin, Dead River, 14478(13); Randolph, Pond of Safety, 4011(04), 9980(06); Whitefield, Burns Pond, 26023(37).

P. Vaseyi Robbins. Scarce.-Stewartstown, logan by river, F & P 17038(17); Lancaster Krochmal 1422.

P. Spirillus Tuckerm. Quiet waters, frequent.-Pittsburg, Second Lake, 34075(48), First Lake, Kendall, Goldsborough, & Doolittle (04); Location 38573(56); Stewartstown 12169(09), F & P 17046(17), 36802(52); Stark 29855(42); Dummer 27485(39); Milan 22802(31), 33094(47), 36385(51); Success, Success Pond, 27413(39); Berlin, river, 30865(44), Stratford, Connecticut River, W. Boott(1855); Northumberland, Horseshoe Pond, 17275(18); Lancaster, Ice House Pond, Pease, Krochmal & Richards 33964(48), Martin Meadow Pond, 35487(50), 36957(52); Dalton, Forest Lake, 11792(08). M.W. Provost, op. cit., says this species is scarce in Umbagog (Errol?).

P. ephymus Raf., var. Nutallii (C. & S.) Fern. Our commonest species in ponds and quiet streams.-Pittsburg, Third Lake, 33220(47), Second Lake, 34088(48), Mud Pond, Kendall, Goldsborough, & Doolittle (04); W Location 38552(56); Cambridge, river, 26369(37); Dummer 37942(55); Stark Pease & Harris 34793(49), 35038(49); Success, Success Pond, 33814(48); Milan, Cedar Pond, 22799(31), Nay Pond, 29161(41), river, 36386(51); Berlin, Dead River, 22751 & 22755(31), outlet of Head Pond, 17828(20), 19066(22); Randolph, Pond of Safety, M 1139(03), 4099 & 4698(04), 9981(06); Jefferson, Cherry Pond, 10666(07), 14455(13), 20072(27), Little Cherry Pond, 12928(10); Gorham, Mascot Pond, Deane (84); Shelburne Deane (14, 18), Whitefield, Tosney Pond, 14418(13), Burns Pond, 26028(37); Dalton M 4446(08), 25671(36).

P. alpinus Balbis, var. tenuifolius (Raf.) Ogden.-Colesbrook, boggy pond by Dixville Road, F & P 17024(17); Northumberland, Horseshoe Pond, 17270(18); Jefferson, Cherry Pond, Robbins (1829); cf. Fernald in Rhodora 32(1930), 81.
P. amplifolius Tucker. Deep water.-Pittsburg, Third Lake, 33221(47), Mud Pond, Kendall, Goldsborough, & Doolittle (04); Stewartstown F & F P 16958(17); Columbia, Fish Pond, 37620 & 37623(54), Lime Pond, 13883(12); Lancaster, Ice House Pond, Pease, Krochmal, & Richards 33985(48); Berlin, York Pond, 17185(18); Whitefield, Burns Pond, 14585-M 5036(13).

P. nodosus Poir. Local.-Pittsburg, Moss Falls, 31671(45).

P. gramineus L. Occasional.-Pittsburg, Second Lake, 34077(48); Stewartstown F & F P 16957(17), Ladd Pond, F & F P 17056(17); Errol F & F P 17057(17); Stratford, river, 32256(46); Milan 13821(12); Whitefield 14583=M 5052(13), 14582=M 5022(13), Burns Pond, 26030(37).

P. gramineus, var. maximus Morong.-Stark, river, 33135(47); Shelburne, river, Deane (85).

P. natans L. Quiet waters.-Stewartstown F & F P 17047(17); Jefferson, Cherry Pond, 20073(27); Carroll, Fabyens, E. & C.E. Faxon (79).

P. Oakesianus Robbins.-Northumberland, Connecticut River, 12171(09); Shelburne, Wheeler Bog, Deane (84, 18); Carroll, Ammonoosuc Lake, 34054(48).

P. praehongus Wulff. Calcareous waters.-Pittsburg, Round Pond, Kendall, Gadsborough, & Doolittle (04); Stewartstown, Ladd Pond, 14012(12); Colebrook, in a calcareous pond. Warren (49).

P. Richardsonii (Ar. Benn.) Rydb.-Colebrook, Connecticut River, Krochmal 1389; Lancaster, Baker Pond, 26902(38); Dalton, Johns River, 36837(52).

P. perfoliatus L., var. butleiroides (Fern.) Farw.-Pittsburg, Second Lake, Kendall, Gadsborough, & Doolittle (04); Stewartstown F & F P 16943(17); Stratford, Connecticut River, 32257(46); Northumberland, river, 12143(09); Dalton, river, 16591(17).

NAJADACEAE (NAID FAMILY)

NAJAS L. Naiad.

N. flexilis (Willd.) Rostk. & Schmidt. Shallow waters.-Stewartstown, river, F & F P 17039(17), Ladd Pond, F & P 17035(17); Columbia, Lime Pond, 13885(12), Fish Pond, 13965(12), 37622(54); Dummer, river, 27486(39), 33101 & 33132(47); Milan, river, 33095(47); Northumberland, Horseshoe Pond, 17274(18); Lancaster, Martin Meadow Pond, 35488(50), 36925(52); Whitefield, Burns Pond, 14584=M 4447 & 4449(08).

JUNCAGINACEAE (ARROW-GRASS FAMILY)

SCHEUCHZERIA L.

S. palustris L., var. americana Fern. Quaking bogs, rather local.-Stewartstown, Back Pond, F & P 16606(17), 26031(37); Berlin, Head Pond, 14503(13), 35478(50); Jefferson, Cherry Pond, 11433(08), 23136(32); Pease, Krochmal, & Richards 33989(48), Little Cherry Pond, 12927(10), Mud Pond, 35754(50); Shelburne, Moose Pond 23136(32), Wheeler Bog, Deane (84). Reported by Krochmal (48) from Pittsburg, Fourth Lake.
ALISMATACEAE (WATER-PLANTAIN FAMILY)

ALISMA L. Water-Plantain.

A. triviale Pursh. Sloughs, occasional. - Stratford 17661 (19), 32307 (46); Gorham 10812 (07), M 4064 (07), M 4277 (08), F & P 16860 (17); Dalton M 4382 (08).


SAGITTARIA L. Arrowhead.

S. rigida Pursh. Wet shores. - Stratford, Connecticut River below high water mark on the west side, 34048 (48). Krogvalma reports (48) this species from the river from Colebrook to Dalton, in water up to three feet.

S. graminea Michx. Wet shores, frequent. - Pittsburg, Second Lake, Kendall, Goldsborough, & Doolittle (04), First Lake, Kendall, Goldsborough, & Doolittle (04), Stewartstown, logan, F & P 16956 (17), 36762 (52); Errol, Akers Pond, 23869 (33), Errol Dam, Pease & Bean 28860 (41); W Location Lincoln, Pease & Steele 38556 (56); Stratford 35012 (49); Dummer, Phillips Brook, Pease & Harris 34845 (49), Pontook Reservoir, 36795 (52), 38148 (55); Success, Success Pond, 20306 (28), roseate form 33829 (48); Berlin, Head Pond, 19083 (22), 35728 (50); Gorham, Mascot Pond, Williams (95), 11701 (08); Shelburne Deane (84, 14); Whitefield, Burns Pond, 17795 (19).

S. latifolia Willd. Shores, common. - Pittsburg, Hall Stream, 33796 (48); Stewartstown, logan, F & P 17066 (17), 36833 (52); Colebrook Warren (49); Errol 37983 (55); Whitefield, Weed Pond, 14446 (13); Shelburne Blankinship (94).

S. latifolia, f. hastata (Pursh) Robins. Shores, common. - Stewartstown, logan, F & P 17010 (17), Ladd Pond, 10889 (07); Stratford 32885 (46); Milan, Nay Pond, 13830 (12); Gorham, river, 10706 & 10796 (07); Shelburne Deane (15); Dalton, Cushman Brook, 11500=M 4379 (08).

S. latifolia, f. gracilis (Pursh) Robins. Shores, common. - Pittsburg, First Lake, 33258 (47); Stewartstown 36833A (52), Ladd Pond, 34114 (48); Columbia, Fish Pond, 36816 (52); Cambridge, Umbagog, 18208 (21); Errol 37983 (55); Odell 34848 (49); Dummer 33128 (47); Milan, Long Pond, 22771 (31); Stark 35528 (50), 39251 (58); Lancaster, Blood Pond, 28223 (40), ditch, 12373 (09), 34764 (49), Pease, Krogvalma, & Richards 34000 (48), Martin Meadow Pond, 35481 (50); Jefferson, Cherry Pond, 10744 (07), 29056 (32), Little Cherry Pond, M 137 (02), 12924 (10); Whitefield, Weed Pond, 14463 (13); Gorham M 4279 (08); Shelburne Deane (83, 84, 14, 24).

S. latifolia, f. obtusa (Muhl.) Wieg. - Lancaster 12125 (09); Whitefield, Burns Pond, 17793 (19).

S. cuneata Sheldon. Muddy shores, frequent. - Stewartstown, Ladd Pond, M 3959 (07); Colebrook 33772 (48); Errol, Errol Dam, Pease & Bean 28856 (41), 37959 (55); Cambridge, Umbagog, Williams (66); Columbia, Lime Pond, W. Boot (1855), M 3858 (07); Lancaster, creek, 34744 (49); Jefferson, Cherry Pond, 10629 & 10655 (07); Randolph, Pond of Safety, 5703 & 5704 (04); Dalton, Johns River, 12322 (09).
HYDROCHARITACEAE (FROG'S-BIT FAMILY)

ELODEA Michx. Waterweed.


E. Nuttallii (Planch.) St. John.-Lancaster, Connecticut River, 34983(49); Dummer 36781 (52).

VALLISNERIA L. Eelgrass.

V. americana Michx.-Lancaster, Martin Meadow Pond, 36915(52); Dummer, first logan at Pontook Reservoir, Harris et al. 7684(51). Reported by Krochmal (48) from Milan, Androscoggin River and from the general course of Connecticut River.

GRAMINEAE (GRASS FAMILY)

BROMUS L. Brome-Grass.

B. latiglumis (Shear) Hitchc. Riverbanks and alluvial thickets.-Stewartstown F & P 17042 (17); Stratford F & P 17030(17); Northumberland 35599(50); Lancaster 29231(41), 29576 (42), 34982(49); Jefferson 35604(50); Dalton 35846(50).

B. latiglumis, f. incana (Shear) Fern.-Columbia 38840(57).

B. ciliatus L. Similar localities, common.-Clarksville 34633(49), Stewartstown 10405=M 3968(07); Colebrook 10932=M 3983(07); Columbia 34092(48); Lancaster 29576(42), 31652 (45); Jefferson W. Boott (73), 30989(44), 32510(46); Randolph E. Faxon (78), E. & C.E. Faxon (n.d.), Williams (94, 97), 10858(07), 17177(18), 19761(26); Gorham M 1448(03); Shelburne Deane (83, 14), 38889(57); Location 14288(13); G Grant W. Boott (1855); S Purchase, Fan in Huntington Ravine, F & P 16878(17); C Grant, Oakes Gulf, Steele (47); C Purchase Schmid (49); Carroll, Crawford's, Lowell's, (n.d.); B Purchase Bean (34).

B. ciliatus, var. intonso Fern. Similar habitats.-Pittsburg, First Lake, 10098(07); Colebrook 10478=M 3911(07); DC Grant 16195(14); Milan 13809(12); Lancaster, Mt. Prospect, 16972 (17), Mt. Tug, 17620(19); Jefferson 31361(45); Whitefield Deane (97), 11562(08); Randolph Williams (97); Shelburne Blankship (94); TM Purchase, Carriage Road, Fuller (83).

B. Dudleyi Fern.-Clarksville F & P 17050(17); P Grant, Glen Ellis, Knowlton (21).

*B. INERMIS Leyss. Recently and rapidly introduced.-Pittsburg, Hall Stream, 31984(46), 33731(48), 36225(51); Stewartstown 38705(57); Colebrook 34392(49), Schmid (49); Stark 29889(42); Northumberland 38476(56); Whitefield Schmid (49); Dummer 25610(36), 31317 (45), 35345(50); B Purchase, Wild River, 35542(50).

*B. INERMIS, F. ARISTATUS (Schur) Fern.-Gorham, Glen road, 33587(48), 37040(53).

*B. SECALINUS L. Waste ground.-Whitefield 19084(22); Randolph 10743(07); Berlin 37560 (54).
* B. ARVENSIS L. Rare waif - Berlin, railroad, 37554(54).

* B. TECTORUM L. Waste ground - Columbia, railroad, Pease & Bean 33566(48); Berlin 32022(46); Gorham, railroad, 29522(42).

SCHIZACHNE Hack.

S. purpurascens (Torr.) Swallen. Sandy or peaty banks, frequent - Pittsbg, Cold Spring, 10221=M 3429(07); Colebrook M 3827(07), 35962(51); Columbia 38638(57); Stratford 13606(12); Stark 33387(48), 36517(52); Northumberland 16466(17), 33416(48); Success 10642(07); Milan 17120(18); Berlin 16117(14); Lancaster 14175(13), Mt. Tug, 16067(14); Jefferson 16371(15), 32637(47), 35975(51); Randolph 11224(08), 25434(36); Gorham 16004(14); Shelburne 11173=M 4114(08); B Purchase 16025(14); C Grant, Oakes Gulf, E. & C.E. Faxon (82), C.E. Faxon (86), Churchill (95), Williams (95), Fuller (00), 11227(08), 12017=M 4561(09); H Grant, Mt. Hope, 16448(15); Carroll 11266(08); Dalton 31862(46).

S. purpurascens, f. albicans Fern. Occasional - Columbia, near Lime Pond, 11083(07), 10442=M 3876(07); Dalton 16394(15).

FESTUCA L. Fescue.

* F. OVINA L. Frequently introduced - Jefferson 31260(45), 35361(50), 37459(54); Randolph 29492(42), 30022 & 30177(43); Gorham 16000(14), 30161 & 30162 & 30188(43); Shelburne Deane(09), 35305(50).

* F. OVINA, f. HISPIDULA (Hack.) Holmb. Local - Carroll, near The Mt. Washington, 11270(08).

* F. OVINA, var. DURIUSCULA (L.) W.D.J. Koch. Often introduced - Stark, Percy, 14134(13); Randolph 16355(15), 17090(18), 29492(42); Gorham 12524(09), 16129(14); Shelburne 11154=M 4144(08), 11155=M 4157(08), Deane (11, 12, 15); Location 12847(10); G Grant 12016(09); Carroll, Fabyans, 16660(16), Cherry Mt. Road, 14381(13), 31953(46); Whitefield 16669(16).

* F. CAPILLATA Lam. Increasingly introduced and in some places a pest - Randolph 16499(17), 26189(37); Berlin 36114(51); Jefferson 29479(42); Carroll, Fabyans, 16661(16), 37064(53), 37408(54), 38694(57).

F. rubra L. Frequent in meadows and roadsides - Stark 36158(51); Lancaster Schmid (49); Randolph 17090(18), 24121(34), 30021 & 30170 & 30176(43); Shelburne Deane(09); Carroll 31934(46).

F. rubra, f. glaucescens (Hartm.) Holmb. - Randolph 39987(62).

F. rubra, f. megastachys (Gaudin) Holmb. - Randolph, near station, 29483(42).

F. rubra, f. squarrosa (Fr.) Holmb. - Jefferson 33434(48).

F. rubra, var. commutata Gaudin. - Jefferson 31346(45).
F. rubra, var. multiforma (Hoffm.) Aschers & Graebn. - Colebrook 34409(49).

F. rubra, var. trichophylla Gaudin. - Whitefield, ditch at station, Deane(16).

F. prolifer (Piper) Fern. Alpine region. - TM Purchase, Great Gulf, W. Booth(1855), E. & C.E. Faxon (87), Churchill (95), Williams (95, 96), E. Faxon (96), 12878(10); S Purchase, Alpine Garden, E. & C.E. Faxon (97), Williams (97); Mt. Washington, indefinitely located, Oakes(n.d.), Tuckerman(n.d.), Pringle(77), E. Faxon (77), C.E. Faxon (78).

* F. ELATIOR L. Meadows and roadsides. - Stewartstown 10086=M 3668(07), 32759(47); Colebrook M 3994(07); Milan 13702(12); Lancaster Schmid (50); Randolph M 4201(08), 12054(09); Gorham Deane (11), 29259(42); Dalton 17389(19).

F. obtusa Bieler. Rich woods, local. - Stratford 32259(46); Lancaster, Mt. Tug, 16068(14), Lancaster Gore, 19059(22), 37577(54), 39128(58), Connor's woods, 32788(47); Jefferson 35608(50).

GLYCERIA R.Br. Manna-Grass

G. borealis (Nash) Batchelder. Shallow water and brook-banks, frequent. - Pittsburg, Deer Mt., 31630(45), Second Lake, 31645(45); DC Grant 36794(52); Errol 32457(46); Clarksville 10953=M 3708(07); Colebrook 10477(07); Columbia F & P 16792(17); Millsfield 35404(50); Northumberland 34525(49); Stark 21037(29); Dummer 21438(39); Milan 13846(12); Jefferson 36568(52); Randolph Williams (95), 1613(02), 22604(31); Gorham 17384(19); Shelburne Deane (15), 38675(57); Whitefield Deane(96).

G. melicaria (Michx.) F.T. Hubbard. Wet woods, frequent. - Pittsburg 33538(48); DC Grant 36789(52); Stewartstown 10983=M 3700(07), F & P 16767(17); Colebrook 10388=M 3951(07); Odell, Pond Stream, 16304(14); Milan 13736(12), 38118(55); Success 16537(17); Jefferson 16890(17); Randolph, Pond of Safety, 1622(02); Gorham W. Booth(1855), Deane (16), 37841(55); Shelburne Deane (84, 15); MLocation 14284(13); G Grant W. Booth(1855); P Grant 17645(19), 19853(26); TM Purchase. Carriage Road, Fuller(83), Madison Gulf, 16492(15), Great Gulf, 1611(02); B Purchase 34438(49), 35550(50); Dalton 17843(20); Carroll 32349(46), Fabyans, Kennedy(95), Saco Lake, Fuller (94); B Grant, Mt. Clinton, Williams(95), M O(01); C Purchase 38440(56).

G. canadensis (Michx.) Trin. Wet shores and meadows, common. - Pittsburg, Third Lake, 33219(47), First Lake, 35031(49); Indian Stream, 10949=M 3752(07); DC Grant 16181(14); W Location 23070(32); Errol 23876(33), 30472(46); Stewartstown F & P 16781(17); Colebrook M 3910(07); Odell 34821(49); Northumberland 17175(18); Success 33802 & 33978(48), 34555(49); Jefferson 23089(32), 30592(44); Randolph Williams (97), 9973(06), 11648(08), M 4593(09), 19849(26), 23820(33); Shelburne Deane (83, 15), 39158(58); Whitefield 14236(13); M Location 14256(13); Carroll 32348(46).

G. striata (Lam.) Hitch. Damp ground, common. - Stewartstown M 3667(07), F & P 16800- in part-(17); Colebrook 11041=M 3823(07), 11046(07); Stark 33388(48); Northumberland 34551(49); Dummer 12655(10); Lancaster 33485(48); Jefferson 31360 & 31369(45); Randolph 179(01), M 1024(03), M 3270(07), M 4196(08), 10774(07); Gorham 29609(42); M Location 14299(13); Shelburne Deane (03, 13); B Purchase 35551(50); Whitefield Deane (96); Dalton 35454(50); Carroll E. & C.E. Faxon (82), 14379(13); B Grant, Mt. Clinton, Williams (95).
G. striata, var. stricta (Scribn.) Fern.-Pittsburg, First Lake, 10279=M 3553(07); Colebrook 36081(51); S Purchase, Tuckerman Ravine, 11543(08), 23769(33).

G. grandis S. Wats. Wet open places, frequent.-Pittsburg, Third Lake, 33218(47); Stewarts town 10087(07); Colebrook 10906=M 4025(07), 33730(48); DC Grant 16144(14); Northumberland 22991(32), 38477(56); W Location 38550(56); Milan 33097(47); Lancaster 31997(46); Knochmal 1417(48); Jefferson 30987(44), 31347(45); Randolph Williams (95, 97), 10832(07), M 4036(07); Shelburne Deane (83, 84, 13); Whitefield 14466(13); Dalton 32324(46), 35435 & 35620(50).

G. grandis, f. pallescens Fern.-Northumberland 34553(49); Jefferson 16401(15).

G. Fernaldii (Hitch.) St. John. Shallow water and muddy shores, frequent.-Pittsburg 1769S (19), Hodgdon & Steele (55); DC Grant 33892(48); W Location 35587(50); D Grant 16134 (14); Errl 32456(46); Cambridge 33890(48), 38471(56); Stewarts town 16802(17), 25985(37), 36773(52); Colebrook 10927=M 4021(07); Columbia 16834(17); Odell Pease & Harris 34812 (49); Stratford 32290(46); Millsfield 35402(50); Stark 29844(42); Dummer 27484(39), 29847 (42), 36799(52); Success 33812(48), Lancaster 12786(10), 34540 & 34785(49); Berlin 14485 (13); Jefferson 30983(44), 31344(45), 34903(49); Randolph 10768(07), M 4586(09), 23061 (32); Shelburne Blankship (94), Deane (18); M Location 14260(13), Whitefield 14409(13), 36904(52); Dalton 11791=M 4364(08), 35456(50).

POA L. Meadow-Grass.

*P. ANNUA L. Low Speargrass. Cultivated and waste ground, common.-Pittsburg, Third Lake, 10335=M 3499(07); Stewarts town 29736(42); Errl 34379(49); Stratford 1526(12); Randolph Williams (97), M 3245(07), 11237(08); Gorham Deane (27); Shelburne Deane (16); B Purchase 38301(56); Whitefield Deane (19); Dalton 29780(42).

*P. COMPRESSA L. Wiregrass. Dry soil, roadsides, etc., common.-Colebrook M 3890(07); Stark 32878(47); Dummer 31308(45); Randolph Williams (97), 3140(03), M 4181 & 4248 (08), 19817(26), 21152(29); Shelburne Deane (09, 13, 14, 15), 37418(54); S Purchase, Summit House, Williams (01); Carroll, Crawford's, Miss Minns (n.d.); Dalton 29772(42)-identity somewhat uncertain.

P. pratensis L. Bluegrass. A very variable and abundant species, apparently both native and introduced.-Pittsburg, First Lake, 10144=M 3661(07), 10277=M 3546(07), 10186=M 3557(07), 33537(48); Colebrook M 3902(07), 33532(48); Columbia 10441=M 3848(07); Stratford 13440 & 13623(07); Stark 29532(42); Lancaster 35083(50); Randolph M 996(03), 10234=M 3373 (07), 29854(42); M Location 14252(13); Gorham 29494 & 29459(42); Shelburne Deane (09, 13, 18); Jefferson 29473(42); Whitefield Deane (96); Dalton 29449 & 29456(42); TM Purchase W. Booth (n.d.).

P. angustifolia L. Either scarce or overlooked.-Stark 35383(50); Randolph 11238(08); Gorham, ballast, 29549(42).

P. alpigena (Fries)Lindm. f. Alpine meadows, local.-TM Purchase, Great Gulf, E. & C.E. Faxon (95), M 4350(09), 12885(10); S Purchase, Alpine Garden, E. Faxon (77, 81), E. & C.E. Faxon (79, 81), C.E. Faxon (82), E. & C.E. Faxon (95), Williams (95, 96), Kennedy (97), B.L. Robinson 977(01), Huntington Ravine, 10554(07), F & P 16876(17); C Grant, Oakes

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Gulf, 12038=M 4546(09), Rachel B. Kennedy (27); B Grant, Mt. Clinton, Williams (95); alpine region of Mt. Washington, indefinite, Oakes (n.d.), W. Boot (1865), Pringle (77).

*P. saluenis* Fern. & Wieg. Woods, especially rocky or alluvial, frequent. - *Pittsburgh*, Second Lake, 10219(07), Hall Stream, 31967(46); *Stewartstown* 31964(46), 32653(47); *Colebrook* 35960(51), Eaton (61); AGA Grant, Hellgate, 12590(10); *Northumberland* 33444(48); Stark, Devi's Slide, 14761(19), 33738(48), 36524(52); *Dummer* 12661(10); Lancaster, Mt. Prospect, 14173(13), 30195(43), 32734 & 32735 & 32784(47), 33376(48); Berlin, York Pond, 25273(35); Jefferson, Riverton, 16564(17), 32641(47), 37426 (54); *Randolph* 11283(08); *Gorham* 16362(15); *Shelburne* Deane (17); B Purchase 32703(47); *Whitefield* 30129(43); *Carroll* 11265(08), 16692(16); C Grant, Oakes Gulf, Williams (95), Churchill (98), 12057(09), 33935(48).

*P. saluenis*, var. *microlepis* Fern. & Wieg. - *Pittsburgh*, River Road, 10082(07); *DC Grant* 12602 & 12625(10); Stark, Devil's Slide, 28565(41), Lancaster, Mt. Prospect, 30200(43), Mt. Pleasant, 31935(46).

*P. alsodes* Grat. Rich woods. - *Pittsburgh*, Third Lake, 10328=M 3507(07), Second Lake, 10271(07); *Stewartstown* 37801(55), Little Diamond Pond, 12614(10); *Dixville* 34349(49); Errol 12660(10); *Colebrook*, Beaver Falls, 10462=M 3900(07); *Columbia* 34209(49); Stark 36511(52); *Lancaster* 17104(18); Jefferson 35103(50), 39332(56), *Randolph* 11284(08); Gorham 16011(14); B Purchase, Wild River, 36153(51); Carroll, Twin Ttn., 16655(16), Fabyans, C.E. Faxon (99); *C Purchase* 37790(55).

*P. nemoralis* L. A variable species, needing further study. - *Stratford* 33265(47); Stark, Devil's Slide, 36515(52); *Northumberland* 16756(16); Milan 17123(18); Berlin, dump, 14499(13); Jefferson 16532(17), 33127(47), 37667(54), 37848(55); *Randolph*, ballast, 17180(18), Cold Brook, 19079(22), meadow, 29854(42); Gorham, railroad, 11489(08); P Grant 33512(48); S Purchase, Summit House, Williams (01); Carroll, Owl's Head, Fuller (95), Fabyans, 33290(47), Whitefield 37708(54).

*P. palustris* L. Fowl-meadow Grass. Low ground, shores, etc. - *Pittsburgh*, First Lake, 10283=M 3567(07), Hall Stream, 37204(53); *DC Grant* 36793(52); *Stewarttown* F & P 16727(17), 32957(47); Colebrook 10908=M 4008(07); Stratford 33545(48), 35979(51); Stark 35347(50), 36159(51); Milan 36122(51); Berlin 16128(14), 16430 & 16523(15); Lancaster 32732(47); Jefferson 16886(16), 19075(22), 29953(42), 30607(44), 31357(45), 3663(52); *Randolph* Williams (97), 12052(09), 16816(17), 23140(32); Gorham Deane (09), 14165(13), Deane (15); LB Grant Deane (17), 17939(20); C Grant W. Boot (1855); B Purchase 35548(50); S Purchase, dump near summit House, B.L. Robinson 961(01); Dalton 18145(21), 35421(50), Carroll 38925(57).

*P. glauca* Vahl. Cliffs and gravelly talus, local. - *DC Grant*, Diamond Peaks, 22974(31), Hodgdon & Steele (54); LB Grant, near King Ravine, Steele (53); TM Purchase, Great Gulf, E. & C.E. Faxon (79); S Purchase, Fan in Huntington Ravine, 13893(12), F & P 16863(17), Alpine Garden, Williams (97), B.L. Robinson (01), sand near summit, Williams (01), B.L. Robinson 963(01); C Grant, Oakes Gulf, M 4545(09); B Grant, talus of Mt. Webster, 11725(08).

*P. Fernaldiana* Nannf. Alpine heaths, rarely descending. - *Randolph*, Snyder Brook at 2200 feet, 14491(13); LB Grant, Knife Edge, 12187(09); TM Purchase, Mt. JQ. Adams, 10879 & 10881(07), Mt. Adams, Fuller (86), M 4531(09), Carriage Road, 10594(07), 12818(10), Great Gulf, E. & C.E. Faxon (79, 89), Eggleston (98), 12879(10); S Purchase, Summit House,
Pringle (77), C.E. Faxon (77, 78), Allen (78), Young (80), C.E. Faxon (87), Churchill (89, 95), Williams (93, 95, 96, 01), Deane (97), Williams & Robinson (03, Plant Exsicc. Gray. no. 123-TYPE), Alpine Garden E. & C.E. Faxon (78, 85), Fuller (94), 19830(26), Huntington Ravine, Allen (76), Tuckerman Ravine, 10733(07); alpine region, indefinite, Oakes (1825), Mann (1862), Chute(n.d.), Miss Minns(n.d.), Miss Brown (24).

BRIZA L. Quaking Grass.

* B. MEDIA L. Rarely adventive.-Randolph, weed in lawn, 36051(51), 37861(53).

DACTYLIS L. Orchard-Grass.

* D. GLOMERATA L. Occasional introduction.-Clarksville Pease & Bean 33570(48); Lancaster Schmid (47); Randolph 37782(55), 39879(61); Shelburne Deane (09).

* D. GLOMERATA, var. CILIATA Peterm. Commoner than the type.-Columbia 10482=M 3922(07); Errol 12648(10); Jefferson 16708(16); Randolph M 3339(07), 37781(55); Gorham 16677(16); P Grant 13918(12); Whitefield 16670(16).

* D. GLOMERATA, var. DETONSA Fries.-Lancaster 37837(55); Randolph, woodroad, 12737 (10), 37783(55); Carroll 16647(16); B Purchase, Wild River, 16021(14).

ERAGROSTIS Beauv. Love-Grass

* E. MEGASTACHY A (Koel.) Link. Occasionally adventive.-Lancaster, dump, 34998(49); Berlin, railroad, 30304(43), 30864(44).

* E. POAEODES Beauv. Rare.-Randolph, railroad, 28224(40).

* E. PECTINACEA (Michx.) Steud. Common on railroad ballast and dumps.-Colebrook 29690(42); Stark 35035(49); Milan 29851(42); Lancaster 33010(47), 36839(52); Jefferson 22759(31); Berlin 29862 & 29879(42), 30305(43); Randolph 22770(31), 28224(40), 29818 (42); Gorham 29598(42), 30425(43), 31013(44), 33039(47).

* E. MULTICAULUS Steud. Railroad tracks.-Stratford 30936(44); Lancaster 22654(31); Randolph 17615(19).

CYNOSURUS L. Dog's-tail.

* C. CRISTATUS L. Rare weed.-Randolph, lawn of W.O. Pray, 17133(18), lawn of E.S. Cross, 17374(19), lawn of A.H. Moore, 37086(53).

AGROPYRON Gaertn.

A. trachycaulums (Link) Malte.-Stewartstown 36242(51); Berlin 36301(51); B Purchase, Wild River, 36736(52).

A. trachycaulums, var. majus (Vasey) Fern. Gravelly soil.-Northumberland B.L. Robinson (01), railroad, 10600(07), F & P 16715(17), 28805(41); P Grant, roadside, 10719(07); S Purchase, Alpine Garden, C.E. Faxon (85), E. & C.E. Faxon (96), Fan, Huntington Ravine,
13898(12); C Grant, Oakes Gulf, E. C.E. Faxon (77), C.E. Faxon (79), Kennedy (91), Churchill (95), Williams (96), Mt. Monroe, Pringle (77); alpine, indefinite, Tuckerman (n.d.).

A. trachycaulum, var. novae-angliae (Scribn.) Fern. Frequent by roadsides and in rocky woods.- DC Grant, Diamond Peaks, 10501(07); Northumberland, Cape Horn, 25251(35); Stark, Devil's Slide, 17448(19), 35520(50); Dunmore 13864(12); Milan 13791(12); Lancaster 31654(45); Jefferson W. BOOTT (74), 30990(44), 39130(58); Berlin 14480(13), 35476(50); Randolph Williams (97), 1730(02), 10614 & 10769(07); Gorham 12208(09), 12892(10); M Location 12488(10); Shelburne Deane (14, 17); Dalton 11590(08), Carroll 16590(15); C Grant, head of Oakes Gulf, Steele (53); B Grant, talus of Mt. Webster, 11722(08).

A. trachycaulum, var. glaucum (Pease & Moore) Malte.- Milan 13798(12), 35426(50); Randolph 16887(17), 17195(18), 19847(26).

* A. SMITHII Rybd. Rare adventive.- Milan, railroad ballast north of Copperville station, 17826(20).

A. repens (L.) Beauv. Witch-Grass.- Lancaster Schmid(47); Jefferson 35561 & 35563(50), 39731(60); Randolph, railroad, 17198(18).

A. repens, f. aristatum (Schum.) Holmb.- Jefferson 35562(50); Randolph 16888(17), 17196 & 17197 & 17199 & 17336(18); B Purchase 36148(51).

A. repens, f. trichorrhachis Rohlana.- Milan 36182(51).

A. repens, f. pilosum (Scribn.) Fern.- Randolph, railroad, 17200(18).

A. repens, var. subulatum (Schreb.) Reichenb.- Colebrook, waste-heap, 10390(07).

A. repens, var. subulatum, f. Vaillantianum (Wulf. & Schreb.) Fern.- Milan 37952(55).

A. repens, var. subulatum, f. setiferum Fern.- Randolph, roadside, 1708(02).

LOLIUM L. Darnel.

* L. PERENNE L. Introduced in grass-seed.- Randolph, lawn of A.S. Pease, 16559(17), lawn of E.S. Cross, 17091(18).

* L. MULTIFLORUM Lam. Similarly introduced.- Colebrook 33981(48), Lancaster 38502(56); Randolph 17086(17); Shelburne 38256(55).

HORDEUM L.

* H. JUBATUM L. Squirrel-tail Grass. Occasionally adventive.- Lancaster, dump, 34521(49); Jefferson, dooryard, 16824(16), 35849(50), 36566(52); Randolph, wheat field, 12022(09); Gorham, mill-yard, 16475(15).

* H. VULGARE L. Barley. Occasionally adventive.- Randolph, railroad, Williams (94), 17194 (18); Shelburne Deane (83, 17).

**TRITICUM** L. Wheat.


* T. VULGARE L. Railroads. - *Milan*, Copperville, 13766(12); *Randolph* 10581(07).

**ELYMUS** L. Wild Rye.

_E. virginicus_ L. Alluvial thickets, frequent along the larger rivers. - *Pittsburg*, Back Lake, F & P 17001(17); *Stewartstown* 34697(49); *Colebrook* 25928(37); *DC Grant* 10511(07); *Stratford* 17650(19); *Errol* 16281(14), F & P 16970(17), 26365(37); *Dummer* 29846(42), 38865(57); *Stark* 17457(19); *Northumberland* 12118(09), 35598(50); *Lancaster* 29227(41); *Milan* 11868(12); *Jefferson* 10801(07); *Randolph* 4009(04); *Gorham* 10748(07), 17617(19); *Shelburne* Deane (15), 35893(50), 38630(56); *MLocation* 10721(07); *Dalton* 36720(52).

_E. virginicus_, f. _hirsutiglumis_ (Scribn.) Fern. - *Stark* 35522(50), *Lancaster* 33014(47); *Dalton* 22600(31), 29044(41).


_E. Wiegandii_ Fern. Alluvial soil. - *Pittsburg*, Back Lake, F & P 17054(17); *DC Grant*, Diamond Gorge, 16282(14); *Northumberland* 12127(09); *Lancaster* 25670(36), 29229(41); *Jefferson* 100101/2(07), 30254(43), 35605(50).

_E. Wiegandii_, f. _calvescens_ Fern. - *Colebrook*, by Mohawk River, F & P 16964(17); *Stratford* F & P 17031(17), 17665(19); *Northumberland*, Horseshoe Pond, 17255(18); *Lancaster*, by Israel River, 12289(09).

**HYSTRIX** Moench. Bottle-brush Grass.

_H. patula_ Moench, var. _Bigelowiana_ (Fern.) Deam. Rich or rocky woods, occasional. - *Colebrook* F & P 16967(17); *Stark*, Devil's Slide, 17454(19); *Lancaster*, rich woods, 12785(10).

**ARRHENATHERUM** Beauv. Oat-Grass.

* A. ELATIUS (L.) Mert. & Koch. Sparsingly adventive by roadsides. - *Clarksville* Pease & Harris 33541(48); *Jefferson* 33695(48), Schmid (51).

**HOLCUS** L. Velvet-Grass.

* H. LANATUS L. Infrequent. - *Columbia* 32275(46); *Lancaster*, meadow, 16378(15); *Randolph* 16291(14).

* H. MOLLIS L. - *Columbia*, low ground by railroad, 34594(49); cf. *Rhodora*, 52(1950), 75.
S. intermedia Rybd. Damp banks and shores, occasional. -Pittsburg, Hall Stream, 37199 (53); DC Grant, Diamond Gorge, 10512 (07), Diamond Peaks, 24162 (34); Colebrook 10912-M 4005 (07), 13993 & 13994 (12), F & P 16829 (17); Columbia, Lime Pond, 10446-M 3864 (07), Fish Pond, F & P 16794 (17); Stark 12725 (10), Devil's Slide, 17453 (19), 35384 & 35387 (50); Northumberland F & P 16832 (17); Milan 13793 (12); Lancaster, Mt. Prospect, 14224 (13), 28803 (41), 32778 (47); Jefferson, railroad, 14423 (13), 31353 (45); Randolph 14457 (13); Gorham, Mascot Pond, F & P 16845 (17); Shelburne, Crow's Nest, 36715 (52).

TRISETUM L.

T. spicatum (L.) Richter, var. molle (Michx.) Beal. Chiefly on river-ledges. -Stewartstown F & P 17012 (17), 32745 (47); AGA Grant, Hellgate, 12596 (10); DC Grant, Diamond Gorge, 10499 (07); Stark 14146 (13), 21003 (29), sand-blow, 16751 (16); Berlin, ledges, 10834 (07), M 4506 (08); Gorham Deane (84), 16707 (16), 36546 (52), Alpine Cascade, 11307 (08); Shelburne 11156-M 4151 (08), Deane (13, 14); M Location, by Peabody River, 17207 (18); G Grant, dry hillside, 13309 (12).

T. spicatum, var. pilosilhume Fern. Alpine regions. -TM Purchase, Great Gulf, W. Boett (1855), E. & C.E. Faxon (77, 87), 12884 (10); S Purchase, Alpine Garden, E. & C.E. Faxon (77), Churchill (95), Williams (95, 96), 10601 (07), Fan, Huntington Ravine, 13897 (12), Mt. Washington, E. & C.E. Faxon (78), indefinite, Tuckerman (n.d.).

AVENA L. Oats.

* A. SATIVA L. Railroads and roadsides, frequently adventive. -Success 10776 (07); Berlin, Bog Dam, M 3211 (06); Randolph M 4518 (08), 12849 (10); Gorham M 4263 (08); Shelburne Deane (02), 11652 (08); Whitefield Deane (97), 11555-M 4410 & 4432 (08), M 5048 (13).

DESCHAMPSIA Beauv. Hairgrass.

D. flexuosa (L.) Trin. Dry soil, often on ledges, frequent. -Berlin, Mt. Forist, 16123 (14); Gorham, Pine Mtn., 16290 (14); Shelburne Deane (17), 36542 (52); M Location 14263 (13); G Grant 17107 (18); B Purchase, Imp Camp, 16762 (17), Wildcat Mtn., 4400 feet, 6393 (04), Wild River, 34442 (49); P Grant 33525 (48); LB Grant 3021 (03), 4069 (04); TM Purchase, Mt. Adams, E. & C.E. Faxon (78), Fuller (86), Mt. Madison, Fuller (86), Williams (94), 3021 (03); S Purchase D.C. Eaton (1858), Flint & Huntington (76), Churchill (95), 33938 (48), Tuckerman Ravine, Mann (1862); C Grant, Oakes Gulf, Churchill (95), Williams (95); B Grant, Mt. Webster, 11745 (08).


* D. caespitosa (L.) Beauv., var. PARVIFLORA (Thuill.) Richter. Recently adventive in meadows. -Colebrook, near Connecticut River, 36071 (51); Milan 25609 (36), 26749 (38), Spruceville Road, 35430 (50); Stark, Paris Road, 29147 (41), 34598 (49); Northumberland, Page Hill Road, 28806 (41); Lancaster 36838 (52); Jefferson, meadow on Turnpike, 28813 (41).

D. caespitosa, var. glauca (Hartm.) Lindl. f. Stony lake and river banks, common. -Stewartstown F & P 16800 -in part. (17); DC Grant, Diamond Gorge, 10512 1/2 (07), Cambridge, Lake
Umbagog, Pease & Harris 33904(48); Dummer 12663(10); Northumberland 12174(09); Gorham 12257(09); Shelburne Deane (84, 13, 14); Dalton 17387(19); Lancaster 39323(58).

*D. atropurpurea* (Wahlenb.) Scheele. Alpine meadows, local. - *LB Grant*, Duck Fall, 3300 feet, 28800(41), King Ravine, 14402(13), 20317(28); *TM Purchase*, Great Gulf, E. Faxon (82), E. & C.E. Faxon (85, 95, 96), Williams (95), 12883(10), Cape Horn, E. & C.E. Faxon (95); *S Purchase*, Summit House, Deane (97), Eggleston (99), Raymond *Catarract* 13914(12), Huntington Ravine, F & P 16750(17), Tuckerman Ravine, E. & C.E. Faxon (86), Fuller (94), Williams (95), 1154(08), 1961(25), Gulf of Slides, 23757(33), Bigelow Lawn, Eggleston (98); *C Grant*, Oakes Gulf, Scribner (82), Churchill (95), Williams (95), E. & C.E. Faxon (96), 12040=M 4543(09), 20114(27).

**DANTHONIA DC.** Wild Oat-Grass.

*D. spicata* (L.) Beauv. Dryish soil, very common. - *Pittsburg* 11021=M 3756(07); *Stewarts-town* 10145=M 3689(07), M 3966(07); *Cobrook* 29733(42); *Cobrook* 10440=M 3850(07), M 3871(07); *DC Grant* 16166(14); *Dummer* 31380(45); *Success* 33809(48); *Milan* 13765 & 13816(12); *Stark* 28568(41), 3386(50); *Lancaster* 32736(47), 37244(53); *Jefferson* 16700(17), 29481(42), 31635 & 31855(45), 35362(50); *Berlin* 4005(04), 16122(14); *Randolph* 4100(04), M 4219(08), 19696(26), 39260(58); *Gorham* M 4287(08), 27380(39); *Shelburne* M 4115(08), Deane (09, 13, 14), 36541(52); *S Purchase*, carriage road, 1½ miles up, 13899(12), Jacob's Ladder, E. & C.E. Faxon (95); *M Location* 14314(13); *Whitefield* Dean (96); *Dalton* M 4385(08); *Carroll* 31421(45).

*D. spicata*, var. *pinetorum* Piper.- *Stark* 32874(47); *Randolph* 38634(56), 39703(60); *TM Purchase*, near Halfway House, 12817(10); *C Purchase* 38442(56).

*D. allenii* Aust. Gravely soil. - *Stark* 32866(47), 34599(49), 35516(50); *Berlin* York Pond, 38955(57); *Randolph* 3144(03), 39166(58); *Gorham*, near Pine Mtn., 17337(18); *Shelburne* 39695(60); *Carroll* 32718(47).

*D. compressa* Aust. Sandy alluvial woods, especially in notches. - *Jefferson* 31364(45); *Shelburne* 27406(39); *M Location* 11551(08); *C Grant* 13915(12); *P Grant* 10720(07), 20050(27); *B Purchase*, Wild River, 16596(15), 36150(51); *C Purchase* 36248(51); *Carroll* 14324(13), 16814(16), 26742(38).

**SPOROBOLUS R.Br.** Drop-seed.

*S. vaginiflorus* (Torr.) Wood, var. *inaequalis* Fern. Road-shoulders, frequent. - *Cobrook* 35032(49); *Columbia* 29686(42), 37365(53), 38208(55); *Stratford*, riverbank, 23923(33); *Northumberland* 38187(55); *Stark*, railroad, 29895(42), 35036(49); *Milan* 35823(50); *Lancaster* 37635(54); *Jefferson* 34165(48), 34949(49), 39651(59); *Randolph* 36876(52), 39943(61); *Gorham* 37332(53); *Shelburne* Deane (13), 38254(55); *Dalton* 25303(35), 28271(40); *Whitefield* 38196(55).

*S. neglectus* Nash. Local. - *Stark*, railroad, 38167(55).

**CALAMAGROSTIS** Adans. Reed-Bentgrass.

*C. Pukeringii* Gray. Alpine barrens, local. - *S Purchase*, Gulf of Slides, 23761(33), Steele (50), Tuckerman *Ravine*, 22816(31), Lakes of the Clouds, E. & C.E. Faxon (85), Kennedy (91),
Egleston (98, 01), B.L. Robinson 936(01); C Grant, Oakes Gulf, E. & C.E. Faxon (77, 82), Horsford (n.d.), Stony Plain, E. & C.E. Faxon (90), Mt. Monroe, E. & C.E. Faxon (77, 85), 5200 feet, E. Faxon (90), alpine region, indefinite, Oakes (n.d.), Gray (1842). The TYPE was collected from this county, where it was "first collected by Dr. Pickering and Mr. Oakes" (Gray, Man. ed. 2(1856), 547).

C. Pickeringii, var. debils (Kearney) Fern. & Wieg. At lower altitudes. - Lancaster, railroad 1 mile south of village, 12272(09); Shelburne, Dream Lake, 19216(23), Giant Falls, 25978(37), Page Pond, 19614(25); C Grant, Oakes Gulf, Steele (51); White Mt. indefinite, Pringle (77).

C. nubila Louis-Marie. - S Purchase, Lakes of the Clouds, W. Boott (1862). TYPE. Known from no other station and but once collected here; cf. Fr. Louis-Marie in Rhodora, 46(1944), 296, 297.

C. canadensis (Michx.) Nutt. Blue-joint. Moist soil, very common. - Pittsburg, Second Lake, 31643(45); Columbia 14000(12); Strafford 12732(10); Milan Deane (16); Success 33788 & 33801 (48); Randolph 1726(02), 10853 & 10857(07), 19824(26); Shelburne Deane (13), 39187 (58); P Grant 10718(07); B Purchase 35552 & 35553(50); TM Purchase, Madison Huts, Hitchcock (17), Star Lake trail, Steele (51); S Purchase, Alpine Garden, Steele (52); Carroll, Fabyens, Williams (97), Crawford's E. & C.E. Faxon (95).

C. canadensis, var. robusta Vasey. Mostly on mountain-tops. - Dummer 16278(14); Randolph 14430(13); Gorham, Mt. Hayes, 12813(10); LB Grant, Ravine of the Castles, Williams (96), Madison Huts, Chadbourne (84), Fuller (86), 166(00); TM Purchase, Star Lake, Steele (50), Carriage Road, E. & C.E. Faxon (96), Williams (96), B.L. Robinson (01); S Purchase, Alpine Garden, Williams (95), Tuckerman Ravine, Steele (47); B Grant, Mt. Clinton, Kennedy (91), E. & C.E. Faxon (95), Mt. Webster, 11713(08); Carroll, Crawford's Hitchcock (82), Churchill (95), B Purchase, Carter Notch, E. & C.E. Faxon (90, 95), North Baldface Mt., 16037(14); in alpinis, indefinite, Tuckerman (n.d.).

C. canadensis, var. scabra (Presl) Hitchc. Alpine regions. - LB Grant Churchill (89), Madison Huts, Chadbourne (84); TM Purchase, Mt. Adams, Blankinship (94), Carriage Road, E. & C.E. Faxon (95), 2531(01), 12835(10), 32808(47); S Purchase, Bigelow Lawn, Egleston (98), Lakes of the Clouds, W. Boott (1855), (1865), Tuckerman Ravine, Kennedy (95), Summit House, Kennedy (91); C Grant, Oakes Gulf, Steele (50); indefinitely located, Mann (1862), Flint & Huntington (76), Pringle (77, 78), E. & C.E. Faxon (77), Allen (78).

C. neglecta (Ehrh.) Gaertn., Mey., & Scherb. Needs further study. - S Purchase, Huntington Ravine, E. Faxon (77), Pringle (77); H Grant, Mt. Crawford, 11695 & 11696(08); the last two Fr. Louis-Marie (Rhodora, 46(1944), 297) thinks nearest to C. inexpressa Gray; G.L. Stebbins (in herb.) thinks it C. Pickeringii, var. debils.

AGROSTIS L. Bentgrass.

A alba L. Red Top. Ubiquitous and variable. - Clarksville F & P 17048(17); Errol Williams (95); Stark 32885(47); Milan 13818(12); Jefferson 32358(45); Randolph 32302(46); Gorham M 4059(07); Shelburne Deane (17); C Grant W. Boott (1855); Whitefield Deane (97); Dalton 35619(50); Carroll 33778(48). Teratological seem to be: Columbia 26833(38); Stark 34603 (49); Lancaster Barratt (1824) - perhaps our earliest extant Coös County specimen from outside the immediate White Mountain area; Randolph Williams (97); Gorham Suksdorf (87), 33748(48); TM Purchase, Base Station, C.E. Faxon (78); C Purchase, roadside, 12202(09).
\[ A. \textit{alba}, \textit{var. palustris} \text{(Huds.) Pers.} \] Creeping Bent. Damp ditches. \textit{-Pittsburg, Third Lake, 31700(45), Hall Stream 37203(53), 38506(56); Clarksville 33628(48), Pease & Bean 34589(49); DC Grant 32463(46); Colebrook 33734(48); Dummer 31319(45), 34809(49); Lancaster 36146(51); Jefferson 30255(43), 30602(44), 39150(58); Berlin 29869(42); Randolph 17188(18), 19856(26), 32806(47); Gorham 12207(09); Dalton 29782(42).}

\[ A. \textit{tenuis} \text{Sibth.} \] Rhode Island Bent. Fields, etc., common. \textit{-Pittsburg 10977=M3755(07); DC Grant 16179(14); Dixville Deane (17); Lancaster 31996(46); Jefferson 30593(44); Randolph Churchill (89), Williams (96), M 3370(07), 12012(09), 19858(26), 39487(59); Success 33806(48); Gorham 30163(43); Shelburne Deane (83, 09); M Location 14261(13); G Grant W. Boott (1855); TM Purchase, Carriage Road, Kennedy (91), Jacob's Ladder, E. Faxon (85); B Grant, Mt. Clinton, M 02(01); Carroll, Upper Falls of the Ammonoosuc, W. Boott (1865). \textit{Jefferson} 37230(53) is the form described as \textit{A. sylvatica} L.}

\[ A. \textit{tenuis}, \text{f. aristata} \text{(Sincl.) Wieg.} \text{- S Purchase(?),} \] lower part of Carriage Road, W. Boott (1865).

\[ A. \textit{scabra} \text{Wild.} \] Hairgrass. Open soil, common. \textit{-Dixville, Notch, Deane (17); Columbia 33631(48); DC Grant, Diamond Peaks, 16167(14), 24163(34); Cambridge, Umbagog, 16551(15); Stark 31530(46), 32875(47); Northumberland Schmid(47); Milan 13788(12), 17310(18), 37955(55); Berlin, Dead River, 17863(20), Mt. Forist, 16121(14); Jefferson 29566(42), 32304(46), 34568(49); Randolph Williams (96), 11519(08), M 4528(09), 19763(26), 27382(39); Ice Gulch, 16913(17); Gorham 29610(42), 30165(43); Shelburne Deane (14, 15), 29909(42); M Location 14264(13), 24194(34); B Purchase M 5063(13); LB Grant 24190 & 24191 & 24192(34); B Grant, Crawford Path, Kennedy (91); C Purchase 38445(56); Carroll, Crawford's Hitchcock (02); H Grant, Mt. Crawford, 11694(08), Mt. Hope, 16446(15).}

\[ A. \textit{perennans} \text{(Walt.) Tuckerm.} \] Upland Bent. Rocky woods, etc. \textit{-Colebrook 29685(42); Stark 29146(41), 34607(49), 35385(50); Gorham 29580(42); Shelburne Deane (17); Carroll 28811(41), 33288(47).}

\[ A. \textit{perennans}, \text{var. aestivalis} \text{Vasey.} \] Somewhat commoner. \textit{-Colebrook 10362-M 3989(07); Cambridge 18203(21); Milan 13822(12); Lancaster 37630(54); Randolph Churchill(89), 2504(03), 5745(04), 19863(26), 39768(60); Shelburne 11653(08), 11758=M 4322(08), Deane(17); M Location 14262(13); LB Grant 24190(34); B Grant, Mt. Clinton, 12358(09); C Purchase 38441(56).}

\[ A. \textit{borealis} \text{Hartm.} \] Open soil on mountain-tops, common. \textit{-DC Grant, Diamond Gorge, 16283(14), 36792(52)-needs further study; Dixville, Notch, Deane (17); LB Grant, Brum Rock, 3300 feet, 12089(09), Salmacis Fall, 1643(15), King Ravine, Chadbourne (84), Fuller (86), Knife Edge, 12099(09), Mt. Adams, Fuller (86), Mt. Madison, Chadbourne (84), 1576 & 1663(01); TM Purchase, Great Gulf, E. & C.E. Faxon (82, 95, 96, 97), Williams (95), Cape Horn, Churchill (95), Williams (96), Mike's House, Williams (95); S Purchase, Summit, Carpenter (28), Alpine Garden, E. & C.E. Faxon (81, 82, 85), Williams (96), 10604(07), Carriage Road, Deane (84), Fuller (94), Tuckerman Ravine, E. Faxon (85), E. & C.E. Faxon (95), Eggleston (98, 01), Miss Minnis(n.d.), 19797(26), Huntington Ravine, Allen (78), Camel Trail, 33942(48), Boot Spur, Williams (93), Lakes of the Clouds, Churchill (90), E. & C.E. Faxon (96), Williams (96); C Grant, Mt. Monroe, W. Boott(n.d.), Crawford Path, E. & C.E. Faxon (82, 85, 87); B Grant, Mt. Clinton, Fuller (94), Williams (95).}
A. borealis, viviparous form. - S Purchase, Alpine Garden, 1742(02).

A. borealis var. americana (Scribn.) Fern. - TM Purchase, Great Gulf, Williams(95); S Purchase, outlet of Lakes of the Clouds, Fuller (96), Williams (96), Boot Spur, Williams (93); C Grant, Mt. Monroe, W. Boot(1862); indefinitely located, Pringle(77), Mt. Washington, E. & C.E. Faxon (95).

CINNA L. Wood Reedgrass.

C. arundinacea L. Alluvial woods, local. - Lancaster, near mouth of Israel River, 37628(54).

C. latifolia (Trev.) Griseb. Woods, common. - DC Grant 16272(14); Cambridge 18199(21); Dixville Deane (17); Stark 31528(45); Lancaster 37836(55); Jefferson 16900(16), 29708(42); Randolph Fuller (86), 2871=M 1444(03), M 1447(03), 4181(04), 11776(08); Gorham Deane (84); Shelburne Deane (14, 15); C Grant W. Boot(1855); LB Grant, Mt. Madison, Lunt (13), Mt. Adams, 4700 feet, 2870(03), Jefferson Notch, Deane (17); S Purchase, Lakes of the Clouds, B.L. Robinson (01); C Grant, Oakes Gulf, Williams (96); Carroll, Crawford's, E. & C.E. Faxon (82), Williams (94).

PHLEUM L. Timothy.

* P. pratense L. A very common field grass. - Pittsburg, First Lake, M 3658(07); Colebrook 10909=M 4014(07); Lancaster Schmid (49); Randolph, Williams (97), M 233(02), 11221(08), 19859(26); Gorham 30164(43); Shelburne Deane (83, 09, 16); TM Purchase, sixth mile on Carriage Road, Williams (97); S Purchase, Summit House, Williams (01).

* P. pratense, f. VIVIPARUM (S.F. Gray) Louis-Marie. Occasional. - Errol F&P 17072(17); Randolph 12243(09); Shelburne Deane (16).

P. alpinum L. Mountain Timothy. Alpine region, somewhat local. - TM Purchase, Great Gulf, 5500 feet, Williams (95), 12882(10); S Purchase, Alpine Garden, 10548(07), Huntington Ravine, C.E. Faxon (87), F & P 16877(17), Tuckerman Ravine, Fuller(87), Churchill (89, 90, 95), E. & C.E. Faxon (90), Williams (95), M 01(01). 1534(02), M 1085(03), 19798(26); C Grant, Oakes Gulf, Williams (93), 12036=M 4541(09); Mt. Washington, indefinite, Flint & Huntington (76), E. & C.E. Faxon (77), Allen(78); White Mountains, indefinite, Pickering (1825), Tuckerman (n.d.), Mann (1862), Pringle (77).

ALOPECURUS L. Foxtail.

* A. pratensis L. Occasionally in cultivated fields. - Lancaster Schmid (49); Shelburne Deane (16)-there introduced since 1915.

A. aequalis Sobol. Wet ditches and shores. - Pittsburg, Second Lake, 31650(45), First Lake, M 3582(07); DC Grant 16259(14); Erro/37349(53); Colebrook 10913=M3992(07), 13942(12); Lancaster 12270(09); Jefferson 14188(13), 31368(45), 32726(47); Shelburne Deane (15); Dalton, John's River, 12366(09); Carroll 16651(16).

MUHLENBERGIA Schreb.

M. sylvatica Torr.- Shelburne, Hogan Road, 29241(41), Philbrook Farm, 38255(55).
M. sylvatica, f. attenuata (Scribn.) Palmer & Steyerl. More frequent.- Colebrook F & P 16966 (17); Cambridge F & P 16971 (17); Jefferson 17239 (18); Randolph 2505 (03); Shelburne Deane (14).

M. mexicana (L.) Trin. Roadsides and woods, common.- DC Grant, Hodgson & Steele (55); Stewartstown F & P 17041 (17); Stratford 17669 (19), 23921 (33), 34030 (48), 34996 (49); Errol 16280 (14); Lancaster 14537 (13), 17629 (19); Jefferson 1724 (02), 30992 (44), 35594 (50); Randolph 1755 (02), 4033 (04), 17226 (18), 17649 (19), 19866 (26), 26917 (38); Gorham 11476 (08), 16501 & 16541 (15), 16943 (16), 30423 (43); Shelburne Deane (14); Carroll 27697 (39); Dalton 11591=-M 4387 (08).

M. mexicana, f. ambigua (Torr.) Fern.- Milan 17311 (18); Shelburne Deane (17); Dalton 11790 (08).

M. frondosa (Poir.) Fern. Alluvial woods and waste ground.- Stewartstown F & P 17040 (17); Columbia 17717 (19); Stratford 23922 (33); Lancaster 29226 (41), 38197 (55), 38873 (57).

M. frondosa, f. commutata (Scribn.) Fern.- Lancaster 25672 (36).

M. racemosa (Michx.) BSP. Dry bank, very rare.- Randolph, east of post-office, 18165 (21).

M. glomerata (Willd.) Trin., var. cinnoides (Link) F.J. Herm. Peaty meadows and banks and wet shores.- DC Grant, Diamond Gorge, 10502 (17); Cambridge, Umbagog, 16552 (15); Milan 13789 (12); Stark 33251 (47); Berlin, railroad, 16108 (14); Randolph 39537 (59), 39755 (61); Gorham 12518 (09); Shelburne, Wheeler Bog, Deane (17); Whitefield 30291 (43); B Grant, Mt. Webster, 11724 (08); H Grant, Mt. Crawford 11711 (08).

M. uniflora (Muhl.) Fern. Peaty or sandy meadows, frequent.- Cambridge 16555 (15); Milan 19201 (23), 33160 (47), 35431 (50); Stark 12727 (10), 23777 (33), 29181 (41); Berlin 17474 (19), 19888 (26); Randolph 1762 (02), 12684 (10); Gorham 33129 (47); Shelburne 17740 (19), 37225 (53); Dalton 19401 (24), 29095 (41); Carroll Williams (95), 11714 (08), 33286 (47), 37675 (54).

BRACHYELYTRUM Beauv.

B. erectum (Schreb.) Beauv., var. septentrionale Babel. Woods, common.- DC Grant 16269 (14); Colebrook 10394=M 3949 (07), Northumberland 12117 (09); Milan 13742 (12); Lancaster 17622 (19), 19410 (24); Jefferson 34532 (49); Randolph Williams (94), 160 (01), 10856 (07), M 4197 (08); Gorham Deane (84); Shelburne Deane (14, 23); B Purchase 36136 (51); P Grant 19864 (26).

ORYZOPSIS Michx. Mountain-Rice.

O. asperifolia Michx. Peaty thickets and banks, frequent.- DC Grant 12626 (10); Columbia 10450=M 3846 (07), 27716 (40), 31854 (46); Northumberland 13560 (12), 38335 (56); Berlin 16113 (14), 16483 (17); Lancaster 36431 (52); Jefferson 35094 (50), 38409 (56); Randolph 12060 (09), Gorham 10941 (08); Shelburne Deane (04), 11171=M 4108 (08), Deane (09); M Location 13664 (12), 35272 (50); B Purchase, Wild River, 16018 (14), Deane (24), 38000 (56); Whitefield 16668 (16), 28547 (41), 34331 (48); Dalton 31861 (46).
O. racemosa (Sm.) Ricker. Rich rocky woods, very local. - Shelburne Deane (84).

ARISTIDA L. Triple-awned Grass.

* A. BASIRAMEA Engelm. Poverty Grass. Locally adventive on shoulders of roads. - Pittsburg, west of P.O., 37722 (54); Columbia near Columbia Bridge, 37712 (54), 38209 (55); Stratford 37691 (54); 38207 (55); Northumberland 39605 (59); Dalton 37664 (54).

MILIUM L.

M. effusum L. A calciphile of cool rich woods, especially northward and on soils of the Lyman, Lisbon, and Cambrian groups.- Pittsburg, near Camel's Rump Mtn., 19108 (22), Third Lake, 10298 = M 3497 (07), Second Lake, 31633 (45), First Lake, 10188 = M 3522 (07); Clarksville 34692 (49), 35260 (50); Dixville 10625 (07), 37824 (55); Stewartstown 12630 (10); F & F 16680 (17); Colebrook 10384 = M 3950 (07); DC Grant, common in alluvial woods, 12603 (10); D Grant 16133 (14); Errol 12644 (10); Stratford 23015 (32); Stark 17445 (19), 32779 (47); Lancaster 19282 (24), 30211 (43); Kilkenney 11096 (07), 32700 (47); Jefferson 23877 (33), 25278 (35), 29564 (42); LB Grant 16694 (16), 32295 (46); S Purchase, brook on Mt. Monroe, Steele (53); Carroll 30155 (43), 33777 (48); Dalton 16054 (14); C Purchase 38435 (56).

CYNODON Richard

* C. DACTYLON (L.) Pers. Rare waif.- Lancaster, dump, 34031 (48).

PHALARIS L.

* P. CANARIENSIS L. Canary Grass. Rare waif.- Gorham, ballast, 19272 (23), Whitefield, dump, 37866 (55).

P. arundinacea L. Wet meadows and banks.- Pittsburg 33539 (48), Second Lake, Pease & Bean 33622 (48); DC Grant 16198 (14); Stewartstown 14018 (12); Colebrook F & P 16692 (17), 33729 (48), 34593 (49), 36069 (51); Columbia 10447 = M 3854 (07); Stratford 23016 (32); Dummer 33098 (47), 39109 (58); Milan 33246 (47), 35390 (50); Stark 35518 (50); Northumberland 16309 (14), 38554 (56); Lancaster 12294, 12381 (09), 16066 (14), Schmid (49); Jefferson 23909 (32), 34086 (48), 35328 (50); Berlin 16265 (14); Randolph, very local, 30180 (43); Dalton 29770 (42).

* P. arundinacea, f. VARIEGATA (Parnell) Druce. Ribbon Grass. Persistent near sites of old houses.- Stratford 13507 (12); Stark 17489 (19); Jefferson 10784 (07), 36567 (52); Gorham 17372 (19); Shelburne Mrs. J.L. Moore (19).

ANTHOXANTHUM L. Sweet Vernal Grass.

* A. ODORATUM L. Pastures and roadsides, common.- Pittsburg, Third Lake, 10357 = M 3513 (07); Clarksville 36102 (51); Stewartstown 35957 (51); Northumberland 37784 (55); Lancaster 16379 (15), 32744 (47); Berlin 17116 (18); Randolph 12339 (08), 12243 (09), 25836 (37); Gorham 16486 & 16648 (17); P Grant 33523 (48), Whitefield 14234 (13), 34332 (49), 39104 (58); Dalton 35629 (50).
*A. PUELII* Lecoq & L amotte. Locally introduced with grass seed. - *Berlin*, ballast near Russian Church, 16485(17); *Randolph*, lawn of A.S. Pease, 16560(17), 17375(19).

**HIEROCHLOÉ** R.Br. Holy Grass.

*H. odorata* (L.)Beauv. Moist or dry meadows, frequent. - *Pittsburg* Cooley, Eaton, & Pease (61); *Stewartstown* Pease & Harris 33533(48), 35959(51); *Colebrook* Schmid (48), 37031(53); *Columbia* 27802(40); *D Grant* 16158(14); *Errol* 34534(49); *Millsfield* 37827(55); *Stratford* 13502(12), 35965(51); *Stark* 14124(15), 35928(51), 36432(52); *Success* 14128(13); *Berlin* 31298(45); *Randolph* 11260(08), 19696(26); *Shelburne* Deane (03); *TM Purchase*, Edmund's Col, 184(01); *S Purchase*, Alpine Garden, Fuller (00), Tuckerman Ravine, Mann (1862), E. & C.E. Faxon (87), Churchill (95), Williams (95), M 303(02), Lakes of the Clouds, Farlow (82); *Lancaster* 16365 (15), 28124(40); *Jefferson* 19287(24), 30007(43), 33435(48), 35108(50); *Whitefield* 28555(41), 30128(43), 36529(52), 37740(55); *Carroll* 37742(55); *Dalton* 28121(40), 29448(42); indefinite, Oakes (n.d.), Flint & Huntington (76).

*H. alpina* (Sw.)R. & S. Alpine meadows and ravines. - *LB Grant*, Spur Trail, 16481(15); *TM Purchase*, Mt. Adams, M 3355(07), Madison Huts, 183(01), Peabody Spring, 10883(07), Mt. Clay, Fuller (94), 11232(08), Hitchcock (17); *S Purchase*, Alpine Garden, E. & C.E. Faxon (87), Fuller (94), Churchill (95), 10590(07), Huntington Ravine, Allen (78), F & P 16866(17), Tuckerman Ravine, Williams (98), Bigelow Law, Williams(95), Camel Trail, 33936(48); *C Grant*, Oakes Gulf, E. & C.E. Faxon (95), Fuller (00), 11228(08).

**LEERSIA** Sw. Cutgrass.

*L. virginica* Willd. Alluvial woods, local. - *Lancaster*, mouth of Israel River, 37637(54), 38874(57), 39310(58).

*L. oryzoides* (L.)Sw. Wet shores and ditches. - *Stewartstown* F & P 16936(17), 36761(52); *Stratford* 17657(19), 34992(49); *Stark* 35034(49); *Milan* 33096(47); *Berlin* 17643(19); *Lancaster* 17586(19); *Jefferson* 10786(07), 30999(44); *Shelburne* Deane (84), 39368(58); *Dalton* 11605=M 4378(08).

*L. oryzoides*, f. inclusa (Wiesb.)Dörfler. - *Randolph* 4055(04); *Gorham* 10723(07), *Dalton* 29769(42), 32323(46), 35621(50).

**ZIZANIA** L. Wild Rice.

*£. aquatica* L., var. angustifolia Hitchc. Wet shores and shallow waters, local. - *Errol*, above Errol Dam, 23074(32), 32473(46); *Dummer*, Pontook Reservoir, 36779(52); *Stark*, near South Pond, 20623(30). M.W. Provost, *Techn. Circular 10 of N.H. Waterfowl Reconnaissance* (1942), states that this species was planted in Lake Umbagog twenty years before as food for ducks, yet W.F. Flint (Geol. N.H. 1(1874), 410; id. 8th Ann. Rep. N.H. Board of Agr. (1879), 283) records it for the Androscoggin River near the outlet of Umbagog.

**DIGITARIA** Heist. Crab-Grass.

*£ D. ISCHAEMUM* (Schreb.)Muhl. Roadsides and riverbanks, common. - *Stark* 38166(55); *Milan* 33242(47); *Berlin* 29865(42); *Lancaster* 25657(36), 33011(47); *Jefferson*, railroad, 16820(16); *Randolph* 1600(02), 5741=M 1936(04), *Shelburne* Deane (16, 17), 36693(52); *Dalton* 27651(39), 29768(42), 35828(50).
**D. SANGUINALIS** (L.) Scop. Weed - *Shelburne Deane (15); Lancaster 37636 (54).**

**PANICUM L. Panic-Grass.**

**P. DICHTOTOMIFLORUM** Michx., var. **GENICULATUM** (Wood) Fern. Rare weed. - *Lancaster, railroad, 37652 (54); Randolph 39929 (61).*

*P. capillare* L. Fields and roadside, a common weed. - *Errol 32476 (46); Stark 33248 (47); Northumberland 30937 (44); Berlin 29866 (42); Jefferson 30256 (33), 34800 (49); Gorham 17394 (19); Whitefield 30293 (43).*

*P. capillare, var. occidentale* Rydb. Waste places. - *Stark 16308 (14); Berlin 18219 (21); Randolph Churchill (89), 5742 = M 1935 (04), 19862 (26); Jefferson 16873 (16), 38869 (57).

*P. Tuckermanii* Fern. Sandy or muddy shores, frequent. - *Errol F & P 16968 (17), 32458 & 32474 (46); Stark 29830 (42); Milan 33245 (47); Lancaster 25669 (36); Jefferson 16873 (16), 23127 (32), 30263 (43), 30986 (44), 33169 (47); Randolph 4127 (04), 17608 (19); Gorham 17328 (18); Shelburne Deane (15), Moose Pond, 23131 (32), 29911 (42).

**P. MILIACEUM** L. Infrequent weed. - *Berlin, railroad, 11522 = M 4492 (08), 14498 (13), 30246 (43), 38153 (55); Randolph, grain field, 16311 (14), 30889 (44); Lancaster, dump, 38226 (55).*

**P. VIRGATUM** L. Rare persistent adventive. - *Randolph, dry soil by railroad, 25782 (36), 27133 (41), feebly persistent in 1960.*

*P. depauperatum* Muhl., var. **psilophyllum** Fern. Gravelly soil, somewhat local. - *Gorham, railroad, 17849 (20), 31383 (45); Shelburne Deane (15), 35304 (50), 36032 (51); Whitefield, railroad, 16065 (14); Carroll, railroad, 12691 (10), 38695 (57); H Grant, Mt. Hope, 16460 (15).

*P. linearifolium* Scribn., var. **Werneri** (Scribn.) Fern. Gravelly soil, not very common. - *Berlin 35472 (50); Randolph 16484 (15); Shelburne Deane (16), 37211 (53), 37535 (54); Dalton 24156 (34).*

*P. boreale* Nash. Shores, meadows, and roadsides, common. - *Pittsburg, Indian Stream, 10690 & 10951 (07), 10978 = M 3757 (07); Stewartstown 10146 & 10970 (07); DC Grant 12640 (10); Errol F & P 17053 (17); Columbia 13976 (12); Stark 32887 (47); Stratford F & P 16896 (17); Dunmer 31372 (45); Milan 13718 & 13768 (12); Jefferson W. Boott (74), 16487 (17), 38266 (56); Randolph Williams (97), 195 (01), 1566 (02), 3160 (03), M 1053 (03), 4183 (04), 10690 & 10764 (07), 16073 (14), 19759 (26), 26186 (37); Gorham 29490 (42), 30184 (43); Shelburne Deane (84, 11, 13, 14, 15); M Location 14334 (13), S Purchase, Carriage Road, F & P 16896 (17), 2300 feet, 17479 (19); TM Purchase, Carriage Road, 32816 (47); Whitefield Deane (96), St. John (12); Carroll 14370 & 14387 (13), Dalton 17388 (19).

*P. lanuginosum* Ell., var. **fasciculatum** (Torr.) Fern. In all sorts of ground, common. - *Pittsburg, Hall Stream, 36225 (51); Stewartstown F & P 16838 (17), 32758 (47); Columbia 16835 (17); Stark 28567 (41), 35343 (50); Lancaster 26284 (35); Jefferson 35331 & 35360 (50); Berlin 17143 (18), 17475 (19); Randolph 30182 (43); Gorham 12669 (10), 29496 (42), 30168 (43); Shelburne Deane (09, 11, 15); M Location 14270 (13); Carroll 12690 (10)."
P. lanuginosum, var. implicatum (Scribn.) Fern. Common. - DC Grant 16143 (14); Milan 13719 (12), 17397-in part (19), 28136 (40), 36123 (51); Jefferson F & P 16898 (17), 31371 (45), 35332 (50); Randolph Williams (94), 190 (01), 1567 & 1760 (02), 4173 (04), 10763 (07); Shelburne Deane (11, 13, 14, 15, 17, 21), 37531 (54); Dalton 35641 (50).

P. lanuginosum, var. Lindheimeri (Nash) Fern. - Shelburne Deane (14); Lancaster 37839 (55).

P. lanuginosum, var. septentrionale Fern. Common. - Stewartstown F & P 16826 (17); DC Grant 16143a (14); Stratford F & P 16810 & 16899 (17); Northumberland F & P 16811 (17); Milan 17397-in part (19); Gorham 17395 (19); Shelburne Deane (09, 11, 13, 14, 15, 16, 17); S Purchase, Carriage Road, 2500 feet, 17478 (19).

P. subvillosus Ashe. - Shelburne, railroad, Deane (17, 21, 22).

P. oligosanthes Schultes, var. Scribnerianum (Nash) Fern. Railroads and dry fields. - Lancaster 12274 (09); Jefferson 14392 (13), 17355 (18), 29480 (42); Shelburne, field near Wheeler Bog, 25614 (36).

P. xanthophyllum Gray. Sandy soil in the southern part of our area. - Northumberland, Cape Horn, Hodgdon (59); Gorham 37168 (53); Shelburne Deane (83, 84, 14, 15), 11169=M 4107 (08), 36156 (51); Lancaster, near Coos Junc., 36749 (52); Jefferson 12920 (10); Whitefield 14215 (13), 16673 (16), 27701 (39); Dalton 19046 (22).

P. clandestinum L. Alluvial soil, local. - Stratford F & P 16644 (17), 17666 (19); Stark 35340 (50); Northumberland 36356 (51); Gorham 14244 (13), 17616 (19); Shelburne Deane (84), 17739 (19).

ECHINOCHLOA Beav.

* E. FRUMENTACEA (Roxb.) Link. Waste ground, frequent. - Pittsburg 34083 (48); Clarksville 34084 (48); Stratford 17681 (19); Berlin 30893 (44); Shelburne Deane (16); Dalton 34146 (48).

* E. CRUSGALLI (L.) Beav. A common weed in waste places. - Clarksville 34082 (48); Stratford 34994 (49); Northumberland 36346 (51); Jefferson 35580 (50); Milan 38186 (55); Berlin 33145 (47); Randolph 4125 (04), 19094 (22); Shelburne Deane (16), 29903 (42); M Location 12846 (10); Carroll 26240 (37); Dalton 34641 (49).

E. pungens (Poir.) Rydb., var. Wiegandi Fassett. - Northumberland 39797 (60); Milan 36180 (51); Jefferson, roadside, 16870 (16), 38868 (57); Randolph, ditch, 11684 (08); Shelburne Deane (19).

E. pungens, var. microstachya (Wieg.) Fern. & Griscom. - Berlin 35799 (50), 36312 (51), 37642 (54); Shelburne slough, 29903 (42).

SETARIA Beav. Brissy Foxtail.

* S. GLAUCA (L.) Beav. Waste ground. - Pittsburg 34095 (48); Gorham 16917 (16); Shelburne Deane (83, 85, 17), 36727 (52).

* S. VIRIDIS (L.) Beav. Common weed in waste ground. - Lancaster, dump, 12353 (09); Jefferson 35603 (50), 36404 & 36405 (51); Berlin 30308 (43), 35800 (50); Randolph Williams (97), 6417=M 1933 (04), 11469 (08); Gorham 16603 (15); Shelburne Deane (15); Whitefield Deane (96), 11556=M 4414 (08).
*S. ITALICA (L.) Beauv. Waste ground.-Pittsburg 34094(48); Lancaster, dump, 34051(48); Gorham 10813(07); Shelburne Deane (85, 27).

ANDROPOGON L. Beardgrass.

*A scoparius Michx., var. septentrionalis Fern. & Grisc. In most of our area adventive near roads and railroads, perhaps indigenous in Shelburne.-Pittsburg, First Lake, 34097(48); Stewartstown 29693(42); Columbia 34595(49); Errol 32475(46); Dummer 34106(48); Stark 29894(42), 33247(47); Northumberland, frequent, 19093(22), 29341(41); Lancaster 12275(09), 22653(31); Jefferson 22668(31); Randolph 17605(19); Gorham 16794(16), 29635(42); Shelburne Deane (14, 17); Whitefield 27696(39), 36897(52); Dalton 12292(09), 16315(14), 25304(35), 29766(42); Carroll 33297(47).

*A Gerardi Vitman. Alluvial ground, etc.-Stark 34169(48); Northumberland 19090(22); Lancaster, riverbank, 29234(41), old railroad, 34761(49); Shelburne Deane (22); Dalton, old railroad, 34788(49).

ZEA L. Maize.

* Z. MAYS L. Waif on waste ground.-Jefferson 10779(07); Whitefield M 4341(08); Shelburne Deane (20).

CYPERACEAE (SEDGE FAMILY)

CYPERUS L. Galingale.

*C. rivularis Kunth. Wet shores.-Lancaster, Baker Pond, 36900(38); Dalton, Cushman Brook, 11597=M 4442(08).

*C. esculentus L. Shores.-Stratford, west bank of Connecticut River below high-water mark, 23925(33).

*C. dentatus Torr. Shores.-Shelburne Deane (13, 18), 29904(42), 38876(57).

*C. strigosus L. Riverbanks and railroad tracks.-Stratford 32260(46); Dalton 35459(50).

*D. arundinaceum (L.) Britt. Swamps and shores, common.-Pittsburg, Fourth Lake, 35507(50); Cambridge, Umbagog, 18183(21); Colebrook 11072=M 3807(07); Dummer 34817(49); Milan 13782(12); Stratford 17667 & 17668(19); Stark 29842(42); Northumberland 17247(18); Success 33834(48); Lancaster 17585(19), 35491(50); Randolph 10609(07); Shelburne Deane (83), Dream Lake, 19211(23); Whitefield 14408(13), M 5038(13), 36901(52); Carroll 14375(13); Dalton 11606=M 4369(08).

DULICHIDIUM Pers.

ELEOCHARIS R. Br. Spike-Rush.

* E. Robbinsii Oakes. Wet shores, local.-Stark, Pike Pond, Pease & Harris 34835(49), 35726(50); Berlin, outlet of Head Pond, 34023(48), 35722(50). The station at Cherry Pond, Jefferson,
needs rediscovery. Specimens possibly from the type collection labelled "White Mts. of N. Hampshire, cl. Oakes' legit", are at the Brooklyn Botanic Garden, coming from the herbarium of C.F. Austin; cf. H.K. Svenson in *Rhodora*, 41 (1939), 11.

*E. pauciflora* (Lightf.) Link, var. *Fernaldii* Svenson. Local in the calcareous area. - *Stewartstown*, Ladd Pond, 10404-M 3962 (07); *Coblebrook*, slough on Dixville road, 16973 (17); *Columbia*, Lime Pond, F & P 16823 (17).

*E. acicularis* (L.) R. & S. Wet and muddy shores, common. - *Pittsburg* Pease & Harris 33540 (48); W Location 38613 (56); *Errol* 23888 (33); *Stratford* 17654 (19), 34993 (49); *Northumberland* 12141 (09); *Stark* 29832 (42); *Lancaster* 16657 (17); *Dummer* 36811 (52); *Berlin* 19887 (26), 35723 (50); *Gorham* 10811 (07), 11649 (08), M 4298 (19); *Shelburne* Blankinship (94), Deane (04, 13), *Whitefield* 14411 (13), 22762 (31); *Dalton* 29771 (42).

*E. acicularis*, f. *longicaulis* (Desmaz.) Hegi. - *Shelburne* Deane (14).

*E. olibacea* Torr. Muddy shores, local. - *Stewartstown*, Back Lake, 17678 (19); *Jefferson*, Mud Pond, 17338 (18); *Berlin*, Head Pond, Pease & Harris 35708 (50); *Shelburne*, Moose Pond, 35826 (50).

*E. obtusa* (Willd.) Schultes. Muddy ground, very common. - *Pittsburg*, Hall Stream, 36220 (51); *Stewartstown* 29740 (42), 36241 (51), 36801 (52); *Coblebrook* F & P 16635 (17); *Northumberland* 38553 (56); *Stark* 35519 (50); *Jefferson* W. Boot (74), 31000 (44), 33215 (47), 35592 (50); *Randolph* Williams (94), 2543 (03), 4057 (04), M 4465 (08); *Gorham* M 4228 & 4278 (08); *Shelburne* Deane (84); *Whitefield* Deane (97); *Carroll* 31419 (45); *Dalton* 35457 (50).


*E. ovata* (Roth) R. & S. Wet shores. - *Pittsburg*, First Lake, 31663 (45); *Columbia* 39369 (58); *Errol*, Akers Pond, outlet, F & P 16989 (17); *Milan* 13698 (12), 38117 (55); *Stark* 29841 (42), 35037 (49); *Jefferson*, Turnpike, ditch, 10789 (07), Little Cherry Pond, 12925 (10); *Gorham*, small pond, 16864 (16).

*E. ovata*, var. *Heuseni* Uechtritz. - *Milan* 36379 (51); *Berlin*, Head Pond, Pease & Harris 35721 (50), York Pond, 38956 (57); *Randolph*, Watson Pond, 39966 (61).

*E. intermedia* (Muhl.) Schultes. Mucky, especially calcareous, shores. - *Coblebrook*, slough on Dixville road, F & P 16948 (17); *Stark* 34171 (48); *Jefferson*, Mud Pond, 30266 (43), 35753 (50); *Berlin*, Head Pond, 35062 (49); *Randolph*, Watson Pond, 39960 (61); *Shelburne*, Moose Pond, 35822 (50).

*E. palustris* (L.) R. & S. Shallow water. - *Pittsburg*, Fourth Lake, 35503 (50), Second Lake, 31640 (45); *Columbia*, Lime Pond, F & P 16716 & 16719 (17), Fish Pond, F & P 16739 (17); *Cambridge* 38473 (56); *Dummer* 36374 (51); *Lancaster*, Martin Meadow Pond, 35490 (50); *Jefferson*, Cherry Pond, 23060 (32).

*E. palustris*, var. *major* Sonder. Similar habitats. - *Pittsburg*, Second Lake, 34079 (48); *Stewartstown*, Little Diamond Pond, 12631 (10); *Columbia*, Lime Pond, 13978 (12); *Cambridge*, Umbagog, 16548 (15), Pease & Harris 39907 (48); *Success*, Success Pond, 20297 (28), 33784 (48); *Lancaster*, swale, 12284 (09); *Jefferson*, Cherry Pond, 20099 (27).
E. Smallii Britt. Shores.-Stewartstown, logan, F & P 16941(17); Berlin, Head Pond, 14482 (13); Jefferson, Cherry Pond, 10578(07), 14453(13), Little Cherry Pond, 12921(10); Shelburne, Wheeler Bog, Deane (84); Whitefield, pond, Deane (96).


E. nitida Fern. Boggy pastures, very local.- Colebrook, slough by Dixville road, F & P 16972 (17); Columbia, near Colebrook line, F & P 16796=Plant. Essicc. Gray. no. 328(17), 20741 (30). The Columbia station is the first (and the Colebrook station the second) in the United States.

E. tenuis (Willd.)Schultes. Wet open soil.- Colebrook Warren (49); Stark 34604(49); Jefferson, Mud Pond, 35751(50); Randolph 19680(26); Carroll 32420(45).

E. elliptica Kunth. Shores.-Stewartstown 25221(35), Ladd Pond, 13947(12), F & P 16962 (17); Colebrook F & P 16952(17); Randolph 4002(04), 12751(10); Shelburne Deane (13); Whitefield Deane (96); Carroll, Crawford's Greenman (98).

BULBOSTYLIS (Kunth)C.B. Clark

*B. CAPILLARIS (L.)C.B. Clarke. Sandy soil, especially along railroads.- Stewartstown 14016 (12), F & P 16945(17); Colebrook 29678(42); Columbia 17719(19); Berlin 29863(42); Randolph 11712(08), 17614(19); Jefferson 11431(08); Lancaster 12290(09), 33013(47); Whitefield 14574=M 5079(13); Dalton 12295(09), 25306(35), 35422(50); Carroll 26239(37), 36932 (52).

*B. CAPILLARIS, var. CREBRA Fern. Similarly.- Jefferson 31012(44); Gorham 12197(09); Carroll 14470(13); Whitefield 36900(52).

SCIRPUS L. Bulrush.

S. cespitosus L., var. callosus Bigel. Alpine lawns and barrens, common.- Success, Mt. Success, 11125=M 4126(08); TM Purchase, Star Lake, 10238(07), 23708(33), Carriage Road, Deane (84); S Purchase, Alpine Garden, E. & C.E. Faxon (78, 89), Churchill (95), Williams (95, 98), Kennedy (98), 10602 (07), Tuckerman Ravine, Fuller (94), Floyd & Forbes (07), 19796 (26), Gulf of Slides, 23780 (33), Bigelow Lawn, Williams (95), Lakes of the Clouds, Allen (80), Eggleston (01), Mt. Pleasant, Miss Minn (85); C Grant, Oakes Gulf, M 4549(09).

S. hudsonianus (Michx.)Fern. Springy soil, especially in calcareous regions.- Clarksville 11037=M 3704(07); Stewartstown 10081=M 3688(07), 10938=M 3971(07); Colebrook 10476=M 3896(07); Columbia 10438=M 3868(07); Stark 19175(23), 29536(42); Dummer 33100(47), Schmidt (51); Milan 35427(50); Randolph, Ice Gulch, 250(02), Bowman 10830(07), M 4208 (08); Shelburne Deane (83, 04), 11153=M 4155(08), Deane (15); Carroll, Crawford's, Williams (95), Greenman (98).

S. subterminalis Torr. Submersed in ponds and slow streams.- Stark, South Pond, 20622(30); Success, Success Pond, 33995(48); Milan, Long Pond, 22790(31), 29162(41); Berlin, Head Pond, 35474(50); Jefferson, Cherry Pond, 14452(13).

S. Torreyi Olney. Borders of ponds.- Columbia, Lime Pond, 31855(46); Success, Success Pond, 20305 (28), 27491(39), 33786 & 33975(48); Shelburne, Dream Lake, 19207(23); Lancaster, Ice
House Pond, Pease, Krochmal, & Richards 33986(48); Jefferson, Cherry Pond, 10577(07), 11434 (08), 14454(13).

*S. validus* Vahl, var. creber* Fern. Shallow water, frequent. - Dixville, Notch, Williams (95); Colebrook 39370(58); Columbia, Fish Pond, 13972(12), 16735(17), Lime Pond, 10490=M 3862(07), 13977(12), 29682(42); Lancaster, Martin Meadow Pond, 35498(50); Jefferson, Cherry Pond, 10663(07), Mud Pond, 35756(50); Whitefield, Hazen Pond, 22760(31), 36905(52); Shelburne, Dream Lake, 19204(23).


*S. rubroinicus* Fern. Wet meadows and swamps, common. - Pittsburg, Third Lake, 33177 (47), First Lake, 10962=M 3552(07); DC Grant 36782(52); Stark 36661(52), Success 33791 (48); Jefferson 16488(17); Randolph, Williams (97), M 974(03), 10027=M 3295(07), 19710 (26); Gorham M 4225(08), 30489(44); Shelburne Deane (83); M Location 14316(13); B Grant, Mt. Clinton, Williams (95); Carroll, Crawford's, E. & C.E. Faxon (79), Fabyans, E. & C.E. Faxon (79); Dalton 26714(38).

*S. rubroinicus*, f. confertus (Fern.) Weath. - Randolph, bog near Pond of Safety, 12703(10), 38382(56).

*S. atrovirens* Willd., var. georgianus (Harper) Fern. Moist soil, common. - Pittsburg, Third Lake, 31698(45); Colebrook 10385=M 3939(07), 29743(42); DC Grant 16241(14); Columbia 13980(12), 37602(54); Dixville W. Boott (1855); Stark 27267(39), 36660(52); Milan 30605 (44), 31370(45); Randolph M 4194(08), 12071(09); Gorham M 4060(07); Shelburne Deane (16, 17); Whitefield 14189(13); Carroll, Fabyans, E. & C.E. Faxon (79); Dalton 38848(57); Jefferson 39148(58).

*S. atrovirens*, var. georgianus, f. viviparvs Vict. - Milan 33239(47); Jefferson, Turnpike, 30261(43); Dalton 34127(48).

*S. atrovirens*, var. georgianus, f. cephalanthus* Fern. - Pittsburg, Back Lake, F & P 16982 (17); Milan 13755(12); Berlin 13694(12).

*S. Peckii* Britt. Low ground, scarce. - Dalton, near Scott Junct., 35618(46); Jefferson, Old Turnpike, 39761(60).

*S. cyperinus* (L.) Kunth. Swamps and wet meadows. - Stewartstown, Back Lake, F & P 17078 (17), 17689(19); Stark 29151(41); Lancaster 31612(45), Jefferson 17733(19), 30993(44), 35653(50); Dalton 34125(48); Shelburne Blankinship (94).

*S. cyperinus*, var. pelius* Fern. Similar situations. - Pittsburg, Second Lake, 31649(45), First Lake, Mrs. Stevens (95); DC Grant 32485(46); Stewartstown F & P 17079(17); Odell 35762 (50); Dummer 31769(45); Milan 13699(12); Berlin 14493(13); Lancaster, Martin Meadow Pond, 14518(13), 16197 & 17595(19); Whitefield 39509(59); Jefferson 12804(10), 17716 & 17735(19); Randolph 17604(19), 37377(53); Gorham 17276(18); B Purchase, Carter Notch, 4061(04); Dalton M 5002(13), 32325(46).

*S. cyperinus*, var. pelius, f. condensatus (Fern.) S.F. Blake. - Jefferson 17734(19); Dalton 29089(41), 34148(48).
S. pedicellatus Fern. Low ground, common. - Clarksville 34686(49); DC Grant 32484 & 32486 (46); Errol 32482(46), 37348(53); Starford 17656 & 17659(19), 32291(46); Stark 29151 (41); Dummer F & P 16976 & 17080(17), 23834(33), 31768(45); Berlin 19878(26); Lancaster 17231(18), 17595(19), 33987(48); Jefferson 20703(30), 30955(44), 31626(45), 32512(46), 33166(47), 33826(51), 38104(55); Randolph 11679(08), 17603(19); Shelburne Deane (18); Dalton 22602(31), 34786(49).

S. pedicellatus, var. pullus Fern. - Milan 36184(51), Randolph, Bowman, 17603(19).

S. atricinctus Fern. Meadows and swamps, common. - Pittsburg, Second Lake, 31644(45), Indian Stream, 10993=M 3747(07), Hall Stream, 36224(51); Odell 35763(50); Success 33800 (48); Randolph Williams(97), M 4200(08), 12055(09), 19815(26); Shelburne Deane (83, 02, 13); M Location 14258(13); S Purchase, Gulf of Slides, 13916(12), Tuckerman Ravine, M 5082 (13), Mt. Washington, 5000 feet, Eggleston 2446(01); Whitefield 17797(19); Carroll W. Boott (1853); Dalton 34424(49), 38849(57).

S. atricinctus, f. brachyphodus (Fern.) S.F. Blake. Frequent. - Pittsburg, Deer Mtn., 31629(45); D Grant 16136(14); Success 33799(48); Lancaster 34570(49); Jefferson 33165(47); Randolph Williams(94), M 4204(08), 12013(09), 19814(26), 25250(35); Shelburne Deane (15); B Purchase, Carter Notch, 6410(04); S Purchase, Tuckerman Ravine, 254(00); Carroll 1728(02), 39255(58); Dalton 16395(15), 37876(55), 38850(57).

ERIOPHORUM L. Cotton-Grass.

E. spissum Fern. Peat bogs, lowland or alpine, locally abundant. - Colebrook 10929=M 4026 (07); Northumberland 13551 & 13561(12), 38661(57); Success, Mt. Success, 11314=M 4116 (08); Jefferson 16353(15); LB Grant, Jefferson Notch, 11275(08); TM Purchase, Mt. Adams, 256(00), Star Lake, Williams (93), M 232(02), 10239 & 10880(07); S Purchase, Lakes of the Clouds, W. Boott (1865), Churchill (95), Williams (95), Fuller (00), Mt. Pleasant, Miss Minns (85); C Grant, foot of Mt. Monroe, Fuller (94), Crawford Path, Kennedy (91); B Grant, Mt. Clinton, C.E. Faxon (85); Dalton 26718(38), Whitefield 36819(52).

E. gracile W.D.J. Koch. Peaty soil, infrequent. - Stratford 13468(12); Randolph, railroad ditch east of station, 12062(09).

E. tenellum Nutt. Similar localities but more frequent. - Colebrook 27684(42); Columbia 37690(54); Errol, Long Pond, F & P 16969(17); Stark 37980(55), Paris Road, 29145(41); Milan, Mud Pond, 13779 & 13890(12), 28764(41); Lombard 12163(09); Berlin, near Dead River, 19069(22); Jefferson, Little Cherry Pond, 12919(10); Randolph, Watson meadow, 12266 & 12063(09), M 4211(08), 19822(26); P Grant, Lost Pond, 13890(12), 19851(26); Shelburne Deane (83, 13); Whitefield, Weed Pond, 14412(13); Carroll 14378(13), Crawford's, Williams (95).

E. viride-carinatum (Engelm.) Fern. Meadows and swamps, common. - Pittsburg, Indian Stream, 11014=M 3738(07); Clarksville M 3708(07), 34694(49), 36104(51); Stewartstown 34395(49), 37029(53); Colebrook M 3804(07), 32654(47); Columbia 27845(40); Lime Pond, M 3867(07); Stratford 13467(12), 33438(48); Stark 29547(42), 33391(48), 37979(55); Dummer 24108 (34); Lancaster 35504(48), 38702(57); Jefferson 30590(44); Randolph Williams (94), 10015=M 3274(07), 21128(29); Shelburne M 4154(08), Deane (09); Whitefield 28554(41); Dalton 29455 (42); Carroll, Crawford's, Williams (98), Greenman (98); alpine region, indefinite, Mann (1862).
E. virginicum L. Boggy pastures, frequent. - DC Grant 16218(14); Clarksville 38213(55); Stewartstown 25993(37); Colebrook 10928-M 4023(07); Errol 34921(49); Odell, Devil's Washbowl, Pease & Harris 34810(48); Northumberland 29132(41); Stark 16745(16), 23774(33), 29149(41); Dummer 33099(47); Lancaster 12164(09); Milan 23834(33), 25608(36); Jefferson 23138(32), 35738(50); Berlin 14483(13); Randolph 1705 & 1637(02); Gorham 14074(12); Shelburne Deane (83), Dream Lake 19218(23), Moose Pond, 23138(32); G Grant 13911(12); B Grant, Mt. Clinton, 12356(09).

E. virginicum, f. album (Gray) Wieig. - Jefferson, Mud Pond, 17329(18); Shelburne, Wheeler Bog, Deane (16).


R. capillata (Michx.) Vahl. Rare. - Berlin, Head Pond, 14486(13); Dalton 29094(41).

R. alba (L.) Vahl. Boggy borders of ponds, occasional. - Pittsburg, Fourth Lake, 35505(50); Stewartstown, Back Lake, 17677(19); DC Grant 16199(14); Errol Pease & Harris 34820(49); Northumberland 29127(41); Milan, Mud Pond, 13778(12), Goose Pond, 19199(23); Berlin, Head Pond, 13761(12), York Pond, 17167(18); Jefferson, Mud Pond, 23139(32), 35758(50); Randolph, Pond of Safety, 1602 & 1607(02); Gorham, Mascot Pond, Deane (84), 14060(12); Shelburne, Goose Pond, 23139(32), Dream Lake, 19214(23); Whitefield, Weed Pond, 14407(13).

R. fusca (L.) Ait. Similar localities. - Milan, Goose Pond, 19200(23); Berlin, Head Pond, 14476(13); Shelburne, Dream Lake, 19217(23); Whitefield, Weed Pond, 14415(13).

CLADIIUM P. Br.

C. mariscoides (Muhl.) Torr. Shores of ponds. - Success, Success Pond, 33811(48); Milan, Mud Pond, 13764(12); Lancaster, Martin Meadow Pond, 35497(50); Berlin, Head Pond, 35433(50).

CAREX L. Sedge.

C. capitata L. Peaty alpine lawns, local. - S Purchase, Bigelow Lawn, E. & C.E. Faxon (77, 78, 80), Alpine Garden, W. Boott (1865), Pringle (77, 78), E. & C.E. Faxon (87), Fuller (94), E. & C.E. Faxon (95), Churchill (95), Williams (95), Eggleston (99), Williams (01), 10603(07), 12528(09), 19799 & 19800(26); indefinitely located, Oakes (n.d.), Robbins (1829) - the first collection of it in New England, according to C. Dewey in Am. J. Sci. 39(1840), 51-, Flint & Huntington (76), Standley & Killip (21).

C. convoluta Mackenz. - Lancaster, Mt. Prospect, 14542(13); Shelburne Deane (16).

C. rosea Mackenz. - Lancaster, Connor's Woods, 32786 & 32787(47), 36001(51), 38265(56), 39163(58); Shelburne, Crow's Nest, 36730(52).

C. radiata (Wahlenb.) Dew. Open woods, frequent. - Pittsburg, First Lake, 10296-M 3340(07), Hall Stream, 31968(46); Clarksville 10979(07), Pease & Bean 33623(48); DC Grant 16273(14); Strafford 39616(59); Dummer 31334(45); Stark 29552(42); Lancaster Sanford (14), 16737(16), 25285(35), 30197(43), 33488(48), 37261(53), 38704(57); Jefferson 4006(04), 14590(13), 16513(17), 32642(47), 35230(50), 36049(51); Randolph 10692-M 3372(07); Gorham 30572(44); Shelburne Deane (15); M Location 14267(13); LB Grant 15366(15);
Whitefield 14232(13), 37852(55); Dalton 29453(42), 36522(52); Carroll 17414(19), 30154(43), 31423(45), 36094(51), 38924(57).

C. cephaloidea Dew. Rich woods, local.- Colebrook F & P 16965(17); Stratford 35966(51); Lancaster, Connor's Woods, 32785(47); Randolph, opposite Town Hall, 12758(10), 17093(18); Carroll, near Crawford House golf links, 16722(16).

C. vulpinoeidea Michx. Low ground, occasional.-Pittsburg, Hall Stream, 37482(54), 39883(61); Stewartstown 37030(53); Colebrook 14073(12), F & P 16688 & 17022(17); Northumberland 30131(43); Lancaster Deane (96), 12783(10), 14180(13), 34537(49), 39507(58); Berlin 16109(14), 16505(15); Gorham 17214(18); Shelburne M 4873(11); Whitefield 14405(13); Dalton 16388(15), 33015(47); Carroll 16583(15).

C. annectens Bickn., var. xanthocarpa (Bickn.) Wieg.-Lancaster 28804(41), 38872(57); Jefferson 12689(10); Randolph, meadows, 19071(22).

C. diandra Schrank. Swales and pond-shores, local.- Stewarstone, Ladd Pond, 10402=M 3959(07), F & P 16837(17), Back Lake, F & P 16801(17); Colebrook, Lombard Pond, 25212(35), 34400(49), 37008(53); Columbia, Lime Pond, 10459(07); Northumberland, swale, F & P 16643(17).

C. stipata Muhl. Ditches and swamps, common.-Pittsburg, First Lake, 10172=M 3570(07), 10195=M 3543(07); Stratford 13492(12); Dummer 31332(45); Jefferson 16520(17), 35226(50); Randolph M 963(03), 10008=M 3275(07), 19716(26); Shelburne Deane (13, 17); M Location 14336(13); B Purchase 34448(49); Whitefield 38287(56).

C. disperma Dew. Damp mossy woods, frequent.-Pittsburg, Third Lake 10334=M 3488(07); Clarksville 35166 & 35318(50); DC Grant 16244(14); Stewartstown 10223=M 3394(07), 34389(49); Dixville 32632(47); Columbia 27803(40); Stratford 13611(12); Stark 32773(47); Millsfield 18200(21); Northumberland 37198(53); Success 16538(17); Milan 13784 & 13790(12); Jefferson 16703(17); Randolph 4095 & 4096(04), 10701(07); Gorham 12196(09), 30573(44), 37041(53); Shelburne Deane (09, 11, 15, 16); Whitefield Deane (96); Carroll, Bretton Woods, Tuckerman (n.d.), 35379(50).

C. trisperma Dew. Mossy woods and boggy pastures, common.-Pittsburg, Second Lake, 10266=M 3449(07); DC Grant 16207(14); Stark 36574(52); Milan 19782(26); Lancaster Deane (96), 12159(09); Success, Mt. Success, Fuller (86), M 4122(08), 16535(17), 33803(48); Berlin 16110(14); Randolph Williams (97), 4071(04), 10700(07); Shelburne, Wheeler Bog, Deane (14); G Grant W. Booth (1855); Carroll 14377(13); Crawford's, Williams (95); Dalton 34431(49); White Mts., indefinite, W. Booth (1855), Mt. Washington, Thoreau (n.d.), Hoar (1858).

C. trisperma, var. Billingsii Knight.-Stewartstown, Back Lake, F & P 16691(17); Milan, Mud Pond, 13783(12), 19783(26); Whitefield 36810(52), 39138(58).

C. canescens L. Swamps and wet woods, common.-Pittsburg, Second Lake, 10270=M 3451(07), 10269(07); Columbia, Lime Pond, M 3847(07); Jefferson 16517(17); Randolph M 1015(03), 12742(10); TM Purchase, Peabody Spring, 10882(07), Northern Peaks, M 1058(03), Great Gulf, E. & C.E. Faxon (87); S Purchase, Tuckerman Ravine, Churchill (90), Gulf of Slides, M 1418(03), Alpine Garden, E. & C.E. Faxon (87), Huntington Ravine, Allen (78), Lakes.
of the Clouds, Churchill (95), Crawford Path, E. & C.E. Faxon (87); Mt. Washington, indefinite, Chickering (77), E. & C.E. Faxon (78).

*C. canescens*, var. *disjuncta* Fern. Similar localities, common. -Pittsburg, First Lake, 10183-M 3581(07); Clarksville 36063 & 36078 (51); Millsfield 35396(50); Stark 37778(55); Stratford 13491(12); Milan 36197(51); Northumberland 16456(17); Lancaster 17803(20); Jefferson 16517(17), 35104(50), 37422(54); Randolph 19699(26); Shelburne Deane (13, 21); Whitefield 14427(13).

*C. canescens*, var. *subloliacea* Laestad. Frequent. -Stewartstown M 3398(07); Lancaster 12160(09), 33486(48); Jefferson, Cherry Pond, 10529(07), ditch, 16352(15), 32366(45), 36569(52); Shelburne Deane (15, 16); S Purchase, 5500 feet, B.L. Robinson 812(03); Carroll 14376(13).

*C. brunnescens* (Pers.) Poir. Turfy banks and bogs, common and variable. -Colebrook 36080(51); LB Grant, Nowell Ridge, 12307(09), S Purchase, Alpine Garden, 10606(07). Tuckerman Ravine, Hoar(1858), Williams (95), Eggsleston (99), Lakes of the Clouds, Allen (76), Crawford Path, E. & C.E. Faxon (87, 95); C Grant, Oaks Gulf, Williams (93); Mt. Washington, indefinite, W. Booth (1861); P Grant 33514(48); B Purchase 34439(49).

*C. brunnescens*, var. *sphaerostachya* (Tuckerm.) Kükenth. More abundant, especially at lower elevations. -Pittsburg, Second Lake, 10220=M 3425(07), First Lake, 10169=M 3562(07), 10202(07), 10168=M 3588(07); DC Grant 16239(14); Stewartstown M 3397(07); Dixville, Notch, Deane (22); Stratford 13614(12); Stark 37779(55); Northumberland 36999(53); Milan 17122(18); Dummer 12664(10); Whitefield Deane (96); Kilkenny, Mt. Waumbeck, 11097(07); Jefferson 4006(04); Randolph 10142(07), M 3371(07), 12756(10), 19706(26); Gorham 29607(42), 33772(47); Shelburne Deane (09, 13, 14, 17); B Purchase 38302(56); M Location 14278(13); LB Grant, King Ravine, Fuller (86), Mt. Madison, 229(01), 3439(03); TM Purchase, Cape Horn, Williams (03); S Purchase, Summit House, Churchill (95), Lakes of the Clouds, Allen (76); B Grant, Mt. Clinton, E. & C.E. Faxon (95); B Purchase 37012(53), Carter Notch, Churchill (90), E. & C.E. Faxon (90), M 5071(13); Whitefield 36531(52), 37055(53).

*C. arcta* Boott. Alluvial woods. -Pittsburg, Scott Bog, 38899(57); Stewartstown F & P 16998(17); DC Grant 16266(14); W Location 12653(10), 34922(49); Errol 14130(13), 16279(14), F & P 16978(17); Odell, Nash Stream Bog, 35760(50); Dummer 12657(10); Stratford 17662(19), 35164(50); Milan 17121(18), 19902(26); Northumberland 12167 & 12173(09); Stark 29843(42); Lancaster 19400(24), 36009(51); Gorham 14241(13), 16360(15); Shelburne Deane (13, 15, 16); Whitefield 30201(43).

*C. bromoides* Schkuhr. Alluvial woods. -Pittsburg Cooley (61); Errol 34346(49); Colebrook 36068(51); Stratford 13608(12); Stark Cooley, Eaton, & Pease (61); Milan 34407(49); Lancaster 37743(55), 38648(57), Mt. Prospect, 36011(51); Jefferson 36050(51); Randolph 16364(15), 24103(34); Gorham 37039(53), 37404(54); C Purchase, Twin Rivers, 11274(08); Carroll 14398(13).

*C. Deweyana* Schwein. Woods, common. -Pittsburg, Third Lake, 10326=M 3512(07); Stewartstown 10354-M 3382(07); Clarksville Cooley (61); Stratford 13613(12); Milan 13823(12); Success 10647(07); Lancaster 14539(13); Randolph 6397 & 6398(04), 10056=M 3323(07), M 3302 & 3320(07), 19738(26); Shelburne Deane (16), 36476(52), 37407(54); Carroll 16701(16), 30137(43), 31952(46); Whitefield 38267(56).
C. interior Bailey. Damp soil, especially in the calcareous area. - Clarksville 36076 (51); Stewartstown 34390 (49); 37010 & 37028 (55), 37803 (55), Ladd Pond, F & P 16733 (17); Colebrook F & P 16772 (17); Columbia 27846 & 27847 (40), 31843 (46), Lime Pond, 10439=M 3831 (07), 10444 (07); Jefferson 39852 (61); M Location 14254 & 14302 (13).

C. Howei Mackenz. Swampy soil. - Errol, Long Pond, 37936 (55); Randolph 39467 (59).


C. cephalantha (Bailey) Bickn. Wet soil. - Pittsburg, First Lake, 10184=M 3575 (07); Columbia, Fish Pond, 16738 (17); Millsfield 35399 & 35405 (50); Shelburne Deane (13); Whitefield Deane (96).

C. angustior Mackenz. Damp soil. - Errol 12647 (10); Dummer 12656 (10); Stratford 13462 (12); Stark 29533 (42); Jefferson 16502 (17), 37433 (54); Randolph 10053=M 3273 (07), 10691 (07), 12683 (10), 25865 (37); Shelburne Deane (13), Dream Lake, 19205 (23); TM Purchase, Marshfield, E. & C. E. Faxon (79); S Purchase, Tuckerman Ravine, 23762 (33), Steele (52); Whitefield Deane (96), 28551 (41); Carroll, Fabyans, Bissell (02).

C. angustior x interior. - Colebrook F & P 16734 (17).

C. scoparia Schkuhr. Moist to dry ground, common. - Colebrook 11047=M 3802 (07); Stratford 35184 (50); Success 33805 (48); Stark 27269 (39); Jefferson 10686 (07), 16523 & 16830 (17), 34531 (49); Randolph (97), 4054 (04), 12755 (10), 16725 (17), 19715 & 19737 (26); Gorham M 4226 (08), 30619 (44); M Location 14337 (13); Shelburne Deane (13), 38884 (56); Carroll 39249 (58), Breton Woods, Churchill (95), Kennedy (17), 35225 (50), Owl's Head, Fuller (95); Whitefield Deane (95), 37311 (53); Dalton 26716 (38).

C. scoparia, f. condensa (Fern.) Külkenth. - Stewartstown 36684 (52); Northumberland 29534 (42); Randolph 12757 (10); Shelburne Deane (13).

C. scoparia, var. moniliformis (Tuckerm.) Külkenth. - Gorham 30174 (43); Carroll 33795 (48); Lancaster, East Whitefield Rd., 37231 (53) - deserving more study.

C. tribuloides Wahlenb. Low woods, etc. - Pittsburg, First Lake, 10167 (07); Randolph, railroad, 26183 (37); Carroll, Breton Woods, Kennedy (97).

C. projecta Mackenz. Damp woods, common. - Pittsburg, First Lake, 10280 (07), Indian Stream, 11020 (07); DC Grant 16268 (14); Colebrook 10910 (07); Dummer 31376 (45); Lancaster 16385 (15), 39129 (58); Milan Deane (24), Jefferson 16525 (17), 35359 (50), 36048 (51); Randolph Williams (97), 5750 (04), 10045 (07), 12753 & 12754 (10), 21119 (29); Gorham 29628 (42); Shelburne Deane (13), M Location 14266 (13); P Grant 33522 (48); B Purchase, Carter Notch, Churchill (90), Wild River, Deane (24), 36149 (51); LB Grant, Mt. Madison, 4800 feet, 3440 (03); TM Purchase, Madison Gulf, 4000 feet, 16494 (15), Base Station, E. & C. E. Faxon (78); Williams (97), Railroad at 4500 feet, E. & C. E. Faxon (87); C Purchase 38457 (56); S Purchase Huntington Ravine, F & P 16754 (17); Whitefield Deane (96), 30143 (43), 36554 (52); Carroll, Crawford's, Kennedy (91).

C. Crawfordii Fern. Gravelly soil, frequent. - Pittsburg, Second Lake, 31685 (45); Clarksville 34631 (49), 36059 & 36074 (51); DC Grant 16169 (14); Dixville, Notch, Deane (17); Millsfield
C. Bebbii Olney. Meadows in the calcareous area. - Stewartstown F & P 16779 (17); Colebrook F & P 16685 & 16950 (17); Columbia, Fish Pond, 13966 (12).

C. tincta Fern. Dryish meadows, frequent. - Clarksville 36075 (51); Stewartstown F & P 16782 (17); Colebrook 36072 (51), 36686 (52); Stratford 35963 (51); Stark 29545 (42), 36161 (51), 36528 (52), 37785 (55); Dummer 36546 (50); Jefferson F & P 16805 (17), 16522 (17), Fernald (17), 35329 (50), 37428 (54); Randolph M 994 (03), 10694=M 3366 (07), 10695=M 3369 (07), 12053 (09), 17411 (19); Shelburne Deane (11, 17); C Purchase E. & C.E. Faxon (78); Whitefield Deane (96), 39105 (58).

C. normalis Mackenz. - Randolph Williams (97); Carroll, Fabyans, Churchill (95).

C. tenera Dew. Dryish woods. - Colebrook 36687 (52); Jefferson 16769 (17), Fernald (17), Randolph 14119 (13), 16367 (15), 19708 (26); Gorham 30190 (43); Carroll 30138 (43), 35224 (50).

C. cumulata (Bailey) Mackenz. Dry fields. - Dalton 36719 (52).

C. brevier (Dew.) Mackenz. Gravelly soil. - Berlin, ledges near Jasper Cave, 14479 (13); Randolph 17181 (18); Gorham, near Cascades 16321 (14), 17861 (20); Shelburne Deane (13, 14); Miss Wetherbee (15), 36163 (51); Whitefield 38289 (56).

C. Merritt-Fernaldii Mackenz. Dry gravelly soil. - Stark 33494 (48); Randolph, esker, 19776 & 19818 (26); Gorham 17861 (20); Shelburne Deane (14), 36028 (51).

C. Bicknellii Britton. Dry open soil. - Carroll 39256 (58).

* C. LEPORINA L. Adventive in old pastures, etc. - Randolph 17411 (19); Dalton 29452 (42).

C. aenea Fern. Dry banks. - DC Grant 20617 (30), 33891 (48), 36791 (52), 37569 (54); Hodgdon & Steele (55); Stratford, Percy Peaks, 12734 (10); Stark 36509 (52); Northumberland, Cape Horn, 16460 (17); Milan 28113 (40), 37953 (55); Berlin, Mt. Forist, 16126 (14); Randolph, The Ledge, 4007 (04), 10032=M 3319 (07); Ice Gulch, 16714 (17); Gorham 10861 (07); H Grant, Mt. Hope, 16447 (15); Carroll 31947 (46), 36507 (52); Whitefield 28549 (41).

C. argyrantha Tuckerm. Shaded ledges, local. - Milan, Bald Mtn., 36556 (52); Whitefield 37054 (53); Lancaster 39133 (58).

C. leptalea Wahlenb. Boggy soil, common. - Pittsburg, First Lake, 10291=M 3586 (07); Clarksville F & P 17049 (17), 36052 (51); Stewartstown 34388 & 34396 (49), 37802 (55); Columbia Cooley (61); Stratford 13589 (12); Stark 38336 (56); Dummer 31313 (45); Northumberland 16459 (17); Lancaster 33487 (48); Success 16536 (17); Randolph 10055 (07), M 3286 & 3292 (07),
19713(26); M Location 14343(13); G Grant 17106(10); Shelburne Deane (15); B Purchase 34440(49); LB Grant, Madison Path, 3000 feet, 14162(13); S Purchase, Gulf of Slides, White (30), Lakes of the Clouds, White (30); Whitefield Deane (96), 37050(53); Dalton 16393(15); Carroll 31422(45).

C. Backii Boott. Rich rocky woods, very local.-Lancaster, Mt. Prospect, 30205(43); Shelburne, Crag, 36474(52).

C. scirpoidea Michx. Rocky or turfy soil, usually subalpine, rather local.-S Purchase, Alpine Garden, Fuller (94), Churchill (95), Kennedy (95), Williams (95), B.L. Robinson (01), 10588 (07), 19799 & 19800(26), Huntington Ravine, F & P 16757(17); Mt. Washington, indefinite, Oakes (n.d.;), Tuckerman (n.d.;), W. Boott (1865), Flint & Huntington (76); B Grant, Mt. Webster, 11723(08), Carroll, railroad north of Crawford's, 16664(16).

C. pensylvanica Lam. With us chiefly along railroad ballast, sporadic.-Jefferson 16370(15), 29485(42); Randolph, meadow, 16357(15); Carroll 31948(46); Dalton 29450(42).

C. pensylvanica, var. distans Peck. Similarly.-Stratford, dry field, 13493(12); Jefferson 18072 (21), 35125(50); Shelburne Deane (19), 36713(52), 36992(53); Whitefield 16680(16), 37053 (53); Carroll 32730(47); Dalton 16092(14), 31860(46).

C. pensylvanica, var. digyna Boeckl.-Carroll, railroad gravel, 39665(60).

C. communis Bailey. Dry banks and clearings, common.-Pittsburg, First Lake, 10133-M 3664(07); DC Grant 16253(14), 36486(52); Stewartstown 10205=M 3385(07), F & P 16785 (17); Columbia 31842(46); Dixville 31970(46), Eaton (61); Stratford 13494 & 13596 & 13617 & 13622(12); Northumberland 33385(48); Lancaster 37749(55); Dummer 31396(45); Milan 17118(18); Jefferson 16503(17); Randolph Churchill (89), 10044(07), 10007=M 3303(07), 12750(10); P Grant 20051(27); Shelburne Deane (04, 22); Dalton 12291(09); Carroll 16688 (16); Breton Woods, 11264(08), Crawford's, C.E. Faxon (78), Williams (98); LB Grant 38933 (57).

C. artitecta Mackenz.-Columbia Cooley (61); Gorham 32597(47); Carroll, railway, 39666 (60).

C. Peckii Howe. Rich rocky woods.-Colebrook F & P 16623(17), 34401(49), 36450(52); Columbia 31844(46), 34387(49); Stark 36435 & 36510(52); Northumberland, Cape Horn, 33420(48); Lancaster, Mt. Prospect, common, 30191(43), 32562(47), 35081(50), 36436(52); Jefferson 16717(16); Randolph 10699(07), 16009(14); Gorham, Mascot Pond, 27054(39); Shelburne Deane (19), 36465(52); P Grant, Crystal Cascade, 20051(27); Carroll, Fabyans, 16690(16); Whitefield 36553(52).

C. novae-angliae Schwein. Dry shaded banks, common.-Pittsburg, Third Lake, 10336=M 3517(07), Indian Stream, 10950=M 3706(07), 10990=M 3753(07), Hall Stream, 31969(46); Stewartstown 10147(07), 10149=M 3691(07), 10208=M 3386(07), 25224(35), 32584(47); DC Grant 16243(14); Colebrook F & P 16565(17), 36688(52); Columbia F & P 16791(17), 38946(57); Stratford 13616 & 13619(12); Dixville 31974(46); Millsfield 32651(47); Stark 27285(39), 29530(42), 33413(48); Northumberland 34571(49); Dummer 12659(10), 31315 (45); Success 10646(07); Milan 34203(49); Berlin 16124(14); Jefferson 16372(15), 16506(17), 30008(43), 31367(45), 35107(50); Randolph Williams (97), 10011=M 3282(07), 10006=M
3268(07), 10041 & 10693(07); Dalton 29454(42), 34418(49); Carroll, Fabyans, 37391(54), Crawford's, E. & C.E. Faxon (78, 93), 31949(46); B Grant, Mt. Clinton, Williams (95); LB Grant 38932(57).

*C. deflexa* Hornem. Turfy places, occasional.-Stewartstown 38377(56); W Location 27780(40); Colebrook 35961(51); Columbia 27717(40), 31840(46), 38948(57); Stratford 13620(12); Northumberland 35727(51); Lancaster 36012(51), 36437 & 36441(52); Jefferson 37425(54); Randolph 6399 (04), 10009=M 3269(07), 10014=M 3281(07), 10033=M 3315(07), 19700 & 19735(26), 29975(43), 38939(57); LB Grant 37760(55); Carroll 38938(57), 39667(60), Crawford's, C.E. Faxon (78); S Purchase, Alpine Garden, E. Faxon (96), Huntington Ravine, F & P 16851(17), Mt. Washington, Hodgdon & Wade 6081(49); B Purchase, North Baldface Mtn., 16038(14).

*C. umbellata* Schkuhr. (including forma ricina (Dew.) Wieg.). Open sandy places, common.-Colebrook 11076=M 3795(07); Northumberland 13497(12); Lancaster 35124(50); Jefferson 39830(61); Randolph 10039 & 10046(07), 24063(34), 37414(54); Gorham 39677(60); Shelburne 36993(53), 37411(54); Whitefield 16681(16), 28548(41); Dalton 29457(42); Carroll, Crawford's, 16667(16).

*C. abdita* Bickn. Similar localities.-Northumberland 33386(48); Randolph 10702=M 3379(07), 17802(20), 34180(49), 39660(60).

*C. pedunculata* Muhl. Rich woods, frequent.-Stewartstown 38378(56); Colebrook Eaton (61); Columbia 33574(48); Stratford 13615(12); Northumberland 36981(53); Stark 33410(48), 36434(52); Lancaster 16095(14), 32563(47), 33365(48); Berlin 16114(14); Jefferson 35126(50); Randolph 16008(14), 16432(17), 35941(51), 37737(55); M Location 35267(50); Shelburne 36472(52), 37409(54); Whitefield 16672(16); Dalton 16091(14), 16391(15), 31878(46).

*C. hirtifolia* Mackenz. Rich woods, local.-Columbia, Trask Road, 34317(49); Lancaster, Connor's Woods, 19279(24), 33362(48).

*C. aurea* Nutt. Springy banks, very local.-Clarksville Pease & Bean 33567(48).

*C. crinita* Lam. Low ground, frequent.-Pittsburg, First Lake, 10121=M 3615(07); Stewartstown 10257=M 3391(07); Colebrook Hodgdon 6463(49); Columbia Cooley (61); Jefferson 35354(50); Randolph 10017(07); Gorham 17403(19).


*C. crinita*, var. gynandra (Schwein.) Schwein. & Torr. Low ground, common.-Errol 38708(57); Jefferson 16508 & 16699(17); Randolph Williams (94), 4070(04), M 3340(07), 19707(26), 27724(40), 39774(60); Gorham 30484(44); M Location 14342(13); S Purchase, Carriage Road, 2500 feet, 17480(19); B Purchase Deane (24); Shelburne Deane (15); Whitefield Deane (83, 96, 97, 16); Dalton 29464(42); Carroll, Crawford's, E. & C.E. Faxon (95), 38546(56).

*C. crinita*, var. simulans Fern. Occasionally ascending to higher elevations.-Stewartstown 34408(49); Cambridge, Umbagog, Williams (95), Milan 35443(50); Northumberland 34550(49); Jefferson 37220(53); Randolph 1732(01), 19693(26); Gorham 29578(42); TM Purchase, cliffs in Madison Gulf, 16493(15); Shelburne Deane (15); P Grant, Glen Ellis, Knowlton (21);
B Purchase 34450(49); B Grant, Mt. Clinton, E. & C.E. Faxon (95); Carroll, Crawford's, W. Booth (1853), E. & C.E. Faxon (95), Williams (95); C Purchase 37033(53), 38482(56).


C. crinita x torta. Occasional.—Stewartstown 25209(35); Millsfield 35381 & 35397(50); Jefferson, Riverton, 34569(49); Randolph, Ravine House meadow, 21008(29), 25230(35), junction of Bumpus Brook and Moose River, 17866(20); G Grant, Glen House, 17099(18).

C. Bigelowii Torr. Commonest sedge on alpine "lawns".—LB Grant, King Ravine, 5000 feet, 4068(04); TM Purchase, Star Lake, Fuller (86), Mt. Madison, 220(01), Great Gulf, E. & C.E. Faxon (87), Mt. Jefferson, M 266(02), Carriage Road, Deane(84), John Robinson(01), Williams (02, 03); S Purchase, Alpine Garden, E. & C.E. Faxon (87), Williams (93, 96), Churchill (95), 10605(07), 19811(26), near corral, B.L. Robinson 945(01), Huntington Ravine, E. & C.E. Faxon (88), F & P 16900(17), Hitchcock (17), Tuckerman Ravine, Forbes (07), Gulf of Slides, 23760(33), Summit House, Thoreau(n.d.), W. Booth (1853), E. & C.E. Faxon (78), Deane (82), Williams (95, 01), Lakes of the Clouds, Barratt (1824), Churchill (95), Crawford Path, E. & C.E. Faxon (87); C Grant, Oakes Gulf, 33934(48), alpine region indefinite Oakes(n.d.), Tuckerman (1839, 1842), W. Booth (1842), Hoar (1858), Blake (1858, 1862), Mann (1862), Dewey(n.d.), C.E. Smith (66), Chickering (74, 75), Miss Minns(n.d.), Morong (74), Pringle (77). According to G.S. Miller, Jr. (Proc. Bost. Soc. Nat. Hist. 26(1894), 179) this is the chief source of food and shelter for the small mammals of the alpine area.

C. lenticularis Michx. Gravelly shores and meadows, frequent.—Pittsburg, Second Lake, 31966(46); Stewartstown 37027(53); Colebrook F & P 16687(17); Columbia 27844(40); Stark 33409(48); Dummer 33519(48); Jefferson 27043(39), 30042(43); Randolph Williams (97); Shelburne Deane (15); Carroll, Crawford's, E. & C.E. Faxon (78, 79), Churchill (95), and cf. F. Bath Ill. of the Genus Carex, 1(1858), 30 for Saco Lake, Whitefield 28553(41); TM Purchase, Madison Gulf, 16496(15); S Purchase, Tuckerman Ravine, E. & C.E. Faxon (88), 10736(07), Mt. Washington, Allen (78); indefinite, Oakes(n.d.).

C. lenticularis, var. Blakei Dew.—Pittsburg, First Lake, 10282=M 3577(07); Stewartstown 10208=M 3402(07), 35994(51); Millsfield 35398(50); Cambridge, lakeshore, 38466(56); Errol 38945(57); Randolph 4055(04); S Purchase, Tuckerman Ravine, E. Faxon (77).

C. lenticularis, var. albi-montana Dew. Chiefly subalpine.—S Purchase, Huntington Ravine, 4000-4500 feet, F & P 15515(17), Tuckerman Ravine, 4500 feet, W. Booth (1855), E. & C.E. Faxon (88, 90, 95), Churchill (95), 11501(08), Forbes (14).

C. stricta Lam. Swamps, common.—Pittsburg, Third Lake, 33175(47), Second Lake, 10273(07), Indian Stream, 10976(07); DC Grant 16200(14), 36790(52); Stewartstown, Little Diamond Pond, 33733(48); Columbia 27856(40); Odell 34823(49); Stark 33495(48), 34511(49), 35334(50); Lancaster 16338(15), 17805(20), 36066(51); Jefferson 36662(52); Randolph 16423(17), 19739(26), 25872(37), 29498(42); Shelburne Deane (15); M Location 16423(17); Carroll 37065(53), Fabyans, E. & C.E. Faxon (79), 16691(16), Crawford's, Williams (95), Twin Mt., 38690(57).

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C. stricta, var. strictior (Dew.) Carey, f. curtissima (Peck) Kükenh. - Northumberland F & P 16694(17); Shelburne Deane (83).

C. Haydenii Dew. Swales, etc.-Pittsburg, Third Lake, 31693(45), Post Office, 10083=M 3683 (07); Errol 32843(47); Stewartstown Cooley, Eaton & Pease 807(61); Columbia 27805(40); Stratford 13457 & 13495(12), 34322(49); Dummer 33499(48); Jefferson 29471(42); Randolph 16349(15), 17410(19); Shelburne Deane (16); Carroll, Bretton Woods, E. & C.E. Faxon (79), Kennedy (95), 16657 & 16691(16), 31956(46); TM Purchase, Madison Gulf, 16482(15).

C. torta Boott. Pebble stream-banks, common.-Pittsburg, Second Lake, 31987(46), First Lake, 10129=M 3597(07); DC Grant 12609(10); Stewartstown 10259=M 3399(07), 35981(51); Dixville 34348(49); Stratford 13513(12); Northumberland 12175(04); Lancaster 16383(15), 3592(50); Kilkenny 32682(47); Jefferson 14240(13), 16509(17), 29472(42), 35973(51), 37992(54); Randolph 10021=M 3288(07), 10020(07), 26191(37); Gorham 12206(09); LB Grant 37760(55); TM Purchase, Madison Gulf, 16496(15); S Purchase, Hermit Lake, W. Boott (1855); M Location 35269(50); B Purchase, Wild River, 16028(14), Deane (24), 35537(50); Carroll, Fabyans, E. & C.E. Faxon (78); C Purchase W. Boott (1855).

C. atratiformis Britt. Alpine brooks and damp slopes, local.-S Purchase, Lakes of the Clouds, Fuller (94); C Grant, Oakes Gulf, W. Boott (1857, 1861), E. & C.E. Faxon (77, 78, 86, 88, 95), Williams (93, 95), Churchill (95), Eggleston (99), Fuller (00), 12026(09).


C. limosa L. Boggy shores, infrequent.-Stewartstown, Back Lake, F & P 16777(17), 25933 (37); Northumberland 29128 & 29131(41); Lancaster, Baker Pond, 17804(20), bog north of fairground, 17172 & 17278(18); Jefferson, Cherry Pond, 10574(07), 20074(27); Shelburne, bog near Wheeler Bog, south of the road, 25161(36).

C. paucapula Michx. Peaty soil.-Northumberland 29128 & 29131(41); S Purchase, Tuckerman Ravine, Fuller (94), Gulf of Slides, 25620(36).

C. paucapula, var. irrigua (Wahlenb.) Fern. The commonest form of this species.-Pittsburg, Fourth Lake, 35502(50), Second Lake, 10265=M 3447(07), 31976(46); Stewartstown, Back Lake, F & P 16770(17); Errol 34919(49); Stratford 33423(48); Northumberland 17152(18); Stark 14143(13); Jefferson 12782(10); Berlin 35434(50); Randolph 17333(18); LB Grant, Jefferson Notch, 11276(08); S Purchase, Tuckerman Ravine, W. Boott (1855), E. & C.E. Faxon (79), Kennedy (91), Churchill (95), 1545(02), Fuller (08), Steele (47, 52), Lakes of the Clouds, W. Boott (1861), E. & C.E. Faxon (89), B.L. Robinson (01), Ammonoosuc Ravine, 16762(16), B Grant, Mt. Clinton, E. & C.E. Faxon (80, 95), Fuller (94), Williams (95); B Purchase, Mt. Lehe, 10939(07); Mt. Washington, indefinite, Flint & Huntington (76); White Mountains Tuckerman (n.d.): "statio Amer. primaria".

C. paucapula, var. pallens Fern.-Lancaster, bog near Coös Junct., 12165(09); Dalton 26717 (38); B Grant, Crawford Path, 4000 feet, E. & C.E. Faxon (95), Williams (95).

C. scabrata Schwein. Wet woods, common.-Clarksville 10952=M 3710(07); Stewarsttown 34393(49); DC Grant 36783(52); Dixville Williams (99), Eggleston (99); Stratford 13609(12); Jefferson 39093(58); Randolph Williams (93, 94), 1541(01), M 1931(04), 9906(10), 19711 (26); M Location 14285(13); P Grant Deane (09), 33515(48); Gorham 30493(44); Shelburne 131
Deane (83, 11, 14); B Purchase 34449(49), 36029(51); Carroll, Fabyan, E. & C.E. Faxon (78), Crawford's, E. & C.E. Faxon (78); B Grant, Mt. Clinton, Williams (95).

* C. Houghtonii * Torr. Gravelly or sandy soil, rare.- * Randolph* 19718(26); * Carroll*, railroad near Quebec Junc., 12702(10); * Dalton* 39820(60).

* C. lasiocarpa * Ehrh., var. * americana * Fern. Wet peaty shores, frequent.- * Pittsburg*, Fourth Lake, 35506(50), 37512(54), Second Lake, 31963(46), Indian Stream, 10991(07); * Clarksville*, Clarks ville Pond, 10955=M 3707(07); * Stewarts town*, Ladd Pond. 10399=M 3956(07), 31965(46); * Columbia*, Lime Pond, 10445=M 3852(07); * Milan*, Mud Pond, 19784(26), 36192(51); * Success*, Success Pond, 33810(48); * Lancaster*, Martin Meadow Pond, 17587(19); * Jefferson*, Cherry Pond, 10579(07), Mud Pond, 35739(50); * Whitefield*, Weed Pond, 14465(13).

* C. pallescens * L., var. * neogaea * Fern. Meadows, common.- * Pittsburg*, Third Lake, 10399=M 3516(07); * Clarks ville*, 36077(51); * Strafford*, 13618(12); * Dunmer*, 31305(45); * Milan*, 13819(12); * Jefferson*, 16511(17), 35220(50); * Randolph*, 19422(24); * Jefferson*, 18078(21), 35127 & 35129 & 35231(50); * Randolph*, 12672(10), 16350(15); * Shelburne* Deane (16, 17); * TM Purchase*, Base Station, E. & C.E. Faxon (78); * Carroll* E. & C.E. Faxon (79).

* C. prasina* Wahlenb. Damp woods, rare.- * B Purchase*, Wild River, 35559(50), 38295(56).

* C. gracillima* Schwein. Woods, common.- * Pittsburg*, First Lake, 10278(07); * Stewarts town F & P* 16778(17); * ACA Grant* 12588(10); * Colebrook F & P* 16684(17); * Lancaster* 19422(24); * Jefferson*, 18078(21), 35127 & 35129 & 35231(50); * Randolph*, 12672(10), 16350(15); * Shelburne* Deane (16, 17); * TM Purchase*, Base Station, E. & C.E. Faxon (78); * Carroll* E. & C.E. Faxon (79).


* C. arctica* Boott. Woods, common.- * Pittsburg* M 3476(07); * Stewarts town* M 3392(07); * Columbia* Cooley (61); * Strafford* 13537(12); * Dummer* 24106(34), 31338(45); * Milan* 39030 (58); * Stark* Eaton (61); * Lancaster* 33484(48); * Jefferson* Fuller (95); * Randolph* Williams (97), 10057=M 3318(07), 26182(37); * LB Grant*, Mt. Adams, 3500 feet, Blankinship (94), Williams (97), 1745(01); * M Location* 14279(13); * Shelburne* Deane (09, 17); * B Purchase*, Wild River, 37061(53); * S Purchase*, Raymond Path, E. & C.E. Faxon (88); * TM Purchase*, Base Station, E. & C.E. Faxon (88); * B Grant*, Mt. Clinton, 3000 feet, Williams (95); * Carroll* 16663(16), Crawford's, W. Boott (1865), C.E. Faxon (78, 87); * Whitefield* Deane (96).

* C. debilis* Michx., var. * Rudgei* Bailey. Meadows and woods, common.- * Pittsburg*, First Lake, 10140=M 3644(07); * DC Grant* 16163(14); * Dixville* Deane (17); * Dummer* 31311(45); * Milan* 13820(12); * Jefferson* 16521(17); * Randolph* Williams (97), 1772(01), 6405(04), 10038(07), M 3284a(07), 19709(26); * Shelburne* Deane (13); * S Purchase*, Huntington Ravine, F & P 16753 (17); * B Grant*, Mt. Jackson, St. John (12); * Carroll*, Fabyan, E. & C.E. Faxon (87), Churchill (95); * Whitefield* Deane (96); * C Purchase* 38443(56); Mt. Washington, indefinite, Tuckerman (n.d.), W. Boott (n.d.), E. & C.E. Faxon (87).

* C. debilis*, var. * strictior* Bailey.- * LB Grant*, Mt. Adams, 12097(09); * TM Purchase*, railroad, Williams (95, 96) - from TYPE station-, 3700 feet, E. & C.E. Faxon (87, 88); * B Purchase*, Carter Notch, E. & C.E. Faxon (90).
C. capillaris L. Alpine region, very local. - S Purchase, Great Pasture, W. Boott (1865), Alpine Garden, Pringle (77), C.E. Faxon (77, 78, 79, 87, 95), Williams (93), Fuller (94), Churchill (95), Williams (95, 01), Eggleston (99), Pease no. A (01), 10599 (07), 19803 (26); Mt. Washington, indefinite, Oakes (n.d.), Robbins (1829), Flint & Huntington (76).

C. Sprengeli Dew. Rich rocky woods, local. - Lancaster, Mt. Prospect, 14174 (13), 30194 (43), Connor's Woods, 19280 (24), 32795 (47); Shelburne Deane (15, 16).

C. conoidea Schkuhr. Boggy pastures, local. - Columbia F & P 16708 (17), 27804 (40); Lancaster, Mt. Prospect, 14178 (13), 30199 (43), Mt. Pleasant, 31936 (46); Jefferson, station, 30591 (44).

C. plantaginea Lam. Rich hardwoods, well distributed. - CA Grant 14156 (13); Stewartstown 14059 (12); Cobblebrook 10436 = M 3826 (07); Dixville 10562 (07), 37810 (55); Columbia 14069 (12), 34336 (49); Stratford 13558 & 13612 (12); Stark 17436 (19); Northumberland 34608 (49); Lancaster 16397 (15), 19315 (24), 33357 (48); Milan 36573 (52); Randolph 219 (01), M 1102 (03), 11193 (08); Carroll 17431 (19); Dalton 17407 (19); White Mts., Mann (1862).

C. platyphylla Carey. Rich woods, local. - Lancaster, Mt. Tug, 16734 (16), Mt. Prospect, 16915 (17), 17229 (18), 30209 (43).


C. laxiflora Lam. Rich woods. - Columbia 38369 (56); Stark, Devil's Slide, 35410 (50); Lancaster, Mt. Tug 16757 (16), Mt. Prospect, 30213 (43), 37362 (53); Milan 28114 (40); Shelburne Deane (16, 17, 19), 36492 (52), 37015 (53).

C. gracilesens Steud. Rich woods. - Clarksville 36103 (51); DC Grant 36497 (52); Milan 28114 (40); Lancaster, Mt. Prospect 39135 (58).

C. ormostachya Wieg. Rocky woods and gravel. - Stewartstown 31983 (46); Stratford 13602 (12), 31940 (46); Stark, talus of Devil's Slide, 28571 (41); Lancaster, Mt. Pleasant, 31934 (46); Jefferson 37019 (53); Milan 38081 (55); Berlin, Mt. Forist, 16125 (14); Gorham 12210 (09); Shelburne Deane (14, 15, 17).

C. leptosperma Fern. Moist woods, common. - Pittsburg, Third Lake, M 3475 (07), First Lake, 10093 = M 3648 (07); Stewartstown M 3393 (07), F & P 16813 (17); Cobblebrook 11079 = M 3825 (07); Dixville 37825 (55); DC Grant 16252 (14); Columbia 38686 (57); Stratford 13528 (12); Stark 33383 (48); Jefferson 16351 (15), 35128 & 35229 (50); Randolph 10022 = M 3284 & 3287 (07), 19714 (26); Shelburne Deane (15, 16, 17, 19); B Purchase, Wild River, 37060 (53); M Location 14268 (13); P Grant 33524 (48); LB Grant 10229 (07); TM Purchase, Base Station, E. & C.E. Faxon (88); Mt. Washington, 3500 feet, E. & C.E. Faxon (88); S Purchase, Tuckerman Ravine, E. & C.E. Faxon (88); Gulf of Slides 23818 (33); C Grant, Oakes Gulf, E. & C.E. Faxon (89), Williams (07), M 4547 (09); Carroll 16702 (16), 30148 (43).

C. flavia L. Boggy pastures, especially in calcareous areas. - Pittsburg, Third Lake, 26708 (38); Clarksville 10954 = M 3710 (07); Stewartstown 37068 (53), Ladd Pond, 10401 = M 3965 (07); Cobblebrook 10934 = M 3993 (07), 10425 = M 3806 (07); Millsfield 35401 (50); Columbia 10469 = M 3866 (07), F & P 16696 (17), 27848 (40); Cooley, Eaton, & Pease (61); Stratford, local, 39495 (59); Stark 12728 (10); Northumberland 16093 (14); Lancaster, Mt. Prospect, 14177 (13), Clark.
C. flavus, var. fertilis Peck. Similar localities.- *Pittsburg*, Fourth Lake, 35501 (50); *Cambridge*, Umbagog, 18178 (21), 33889 (48); *Stewartstown*, Ladd Pond, 10080 = M 969 (07), F & P 17052 (17); *Milan* 13801 (12), 19202 (23), 36194 (51); *Berlin*, Dead River, 14481 (13), Head Pond, 14487 (13), 17845 (20); *Whitefield* 14577 (13); *Dalton* 19396 (24), 29093 (41).

*C. viridula* Michx. Calcareous boggy soil.- *Colebrook* F&P 16686 (17), 36100 (51); *Columbia*, Lime Pond, 10470 = M 3856 (07).

*C. pauciflora* Lightf. Peat bogs, frequent, though easily overlooked.- *DC Grant* 16286 (14); *Northumberland* 39293 (58), Lower Jonathan Pond, 13452 (12), 29126 (41); *Lancaster*, bog north of Coos Junc., 12158 (09), 17174 (18); *Jefferson*, Cherry Pond, 10800 (07); *Shelburne*, Dream Lake, 19213 (23); *Whitefield* 14413 (13), Bray Hill Road, Lennox & Pease 36820 (52).

*C. Pseudo-Cyperus* L. Swamps.- *Columbia*, Fish Pond, 13973 (12), 37597 (54); *Dalton*, Forest Lake, 14563 = M 5012 (13).

*C. hystricina* Muhl. Swampy shores, common.- *Stewartstown* 34398 (49), 36215 (51), 37067 (53); *Colebrook* 10426 = M 3805 (07), F & P 16681 (17), 34402 (49); *Columbia* 34487 (49); *Jefferson* 30608 (44), 39934 (61); *Randolph* 1737 (01); *Dalton* 16416 (15), 34421 (49); *Whitefield* 37051 (53).

*C. lurida* Wahlenb. Swamps, common.- *Pittsburg*, Indian Stream, 10947 (07); *Colebrook* 10933 = M 3997 (07); *Northumberland* 38467 (56); *Milan* 13743 (12); *Lancaster* 20078 (27), 24131 (34), 39338 (58); *Jefferson* 16518 & 16704 (17), 30272 (43); *Randolph* Williams (94, 95, 96, 97), 1737 (01), 1766 (02), M 1018 & 1092 & 1445 (03), 4072 (04), 16912 (17), 19736 (26); *Gorham* 17335 (18), 17392 (19); *Shelburne* Deane (85), 39887 (61); *M Location* 14305 (13); *Whitefield* Deane (83, 85, 95, 97, 14), 39111 (58); *Dalton* 17390 (19); *Carroll* 14305 (13).

*C. Baileyi* Britt.- *Dummer*, Phillips Brook, Pease & Harris 34814 (49).

*C. Michauxiana* Boeckl. Peaty and sandy shores.- *Pittsburg*, Fourth Lake, 35504 (50), 37485 (54); *Success*, Success Pond, 33785 (46); *Milan*, Goose Pond, 19173 & 19198 (23), 36200 (51); *Berlin*, Dead River, 16513 (15), 26784 (38); *Randolph*, near Pond of Safety, 12687 (10); *Shelburne*, Dream Lake, 19209 (23), Page Pond, 19615 (25), Moose Pond, Deane (17); *P Grant*, Lost Pond, W. Booth (1855), Allen (78, 80), 13892 (12); *Carroll*, Crawford's, Oakes (n.d.), W. Booth (1865), C.E. Faxon (78, 79, 89), Churchill (95), Williams (95, 98).

*C. intumescens* Rudge. Alluvial woods.- *Pittsburg*, Second Lake, 10263 = M 3424 (07), First Lake, 10197 = M 3599 (07); *Colebrook* F & P 16683 & 16690 (17); *Columbia* M 3383 (07); *Erril* F & P 16980 (17); *Jefferson* 16514 (17), 35227 (50); *Randolph* Williams (95), 6400 (04), 10040 (07), 26187 (37); *Shelburne* Deane (14, 15); *M Location* 14283 (13); *Whitefield* Deane (96); *S Purchase*, Fan in Huntington Ravine, F & P 16879 (17); *B Grant*, Mt. Jackson, St. John (12); *C Purchase* 11251 (08).

*C. intumescens*, var. *Fernaldii* Bailey. Similar localities.- *Stewartstown* 34397 (49); *DC Grant* 16250 (14), 32468 (46); *Erril* 34357 (49); *Cambridge* Deane (16); *Dummer* 31330 (45); *Stratford* 134.
C. lupulina Mühl. Alluvial woods. - Stratford 17706(19), 32297(46); Lancaster 38450(56), 38878(57), 39308(58); Shelburne Deane (83, 85), 11320=M 4143(08); Dalton 11603=M 4372(08).

C. retrorsa Schwein. Swamps. - Pittsburg, First Lake, 10127=M 3547 & 3596(07), 10165(07); Colebrook 14072(12); Millsfield Weatherby (36); Cambridge Williams (06); Stark 35333(50); Milan 13695(12), 36194(51); Lancaster 14538(13), 16382(15), 36157(51); Carroll, Bretton Woods, Tuckerman (n.d.).

C. rostrata Stokes. Wet shores. - Pittsburg, First Lake, 3551(50), Second Lake, 10254=M 3415(07), 10267=M 3448(07), First Lake, 10196=M 3544(07); Clarksville Hodgdon & Clapp 6084(49); Stewartstown F & P 16827(17), 25930(37); Columbia, Fish Pond, 13967(12); Stark, Percy, 14138(13); Jefferson, Cherry Pond, 10530(07); Randolph, near Pond of Safety, 12225(09); Gorham 17402(19); P Grant, Lost Pond, 13904(12); Whitefield Deane (96), Weed Pond, 14464(13); Carroll, Crawford's, C.E. Faxon (78), Williams (95).

C. rostrata, var. utriculata (Boott) Bailey. Similar places. - Pittsburg, Second Lake, 31988(46); Success, Success Pond, 33812(48); Dummer, Pontook Reservoir, 36798(52); Milan 23838(33), Mud Pond, 19786(26); Lancaster 16382(15); Jefferson, Cherry Pond, 19179(23); P Grant, Lost Pond, 19852(26).

C. Tuckermanii Boott. Alluvial woods. - Pittsburg, Indian Stream, 10984=M 3729(07); W Location Lincoln, Pease, & Steele 38551(56); Errl F & P 16979(17) Colebrook 25926(37); Stratford 17658(19); Lancaster 19399(24), 36134(51); Shelburne Blankinship (94).

C. oligosperma Michx. Peat bogs. - DC Grant 16285(14); Stark 29150(41), Pike Pond, 14142(13); Lancaster 12283(09); Jefferson, Cherry Pond, 10575(07), 11465(08), 29258(41), 34001(48); Berlin, Head Pond, 14484(15); Dalton 12376(09), 24175(34); Carroll, Crawford's, Williams (95).

C. vesicaria L. Swales and swamps. - AGA Grant, Hellgate, 12597(10); Stratford 32310(46); Cambridge, Umbagog, 33888(48); Milan, Cedar Pond, 17444(19); P Grant, Lost Pond, Allen (80); Shelburne Deane (13, 15).

C. vesicaria, var. monile (Tuckerm.) Fern. - Stewartstown 25207(35); Randolph Williams (94); Shelburne Deane (83).

C. vesicaria, var. distorta Fries. - Dummer, riverbank, 12665(10).

C. vesicaria, var. jejuna Fern. The commonest form. - Pittsburg, Second Lake, 10268=M 3450(07), First Lake, Mrs. Stevens (95), 10281=M 3578(07); Stewartstown 38706(57); Colebrook 34399(49); Errol 34555(49); Millsfield 35393(50), Stark 21031(29); Lancaster 36007(51); Jefferson 16324(17), 32636(47); Randolph 1735 & 1741(01), M 1004(03), 10023=M 3290(07), M 4216(08), 12019(09), 19734(26), 26190(37); Shelburne Deane (15); B Purchase, Carter Notch, 6408(04); Carroll, Fabyans, E. & C.E. Faxon (79); Dalton 34426(49); Whitefield 38288(56).
C. vesicaria, var. Raeana (Boott) Fern. Local: Carroll, near Gate of Notch, E. & C.E. Faxon (78).

ARACEAE (ARUM FAMILY)


A. atrorubens (Ait.) Blume. Moist woods, common.- Pittsburgh, First Lake, Mrs. Stevens (95), Indian Stream, M 3748(07); Clarksville 35248(50); Colebrook 10823=M 3809(07), 36110(51); Stratford 13675(12); Stark 33455(48); Randolph Williams (95), M 981(03), M 3264(07), 11348(08), 28135(40). -quinquefoliate-; Shelburne Deane (15, 17), Miss Brown (17), Deane (24).

CALLA L.

C. palustris L. Wet bogs, frequent.- Pittsburgh, Mud Pond, Kendall, Goldsborough & Doolittle (04); Errol, Long Pond, 34376(49); Odell, Devil’s Washbowl, Pease & Harris 34897(49); Stratford 13644(12); Stark 34621(49); Northumberland 17201(18); Lancaster 12325(09); Jefferson, Cherry Pond, 11007(07); Randolph, Pond of Safety, Williams (93), M 1131(03), 10454=M 3308(07); Gorham, Mascot Pond, Williams (95); Shelburne Deane (82, 83, 84), C.E. Faxon (86, 89), Deane (14); Whitefield, Weed Pond, 14445(13); Dalton 12347(09), 26770(38).

SYMPLOCARPUS Salisb. Skunk-Cabbage.

S. foetidus (L.) Nutt. Very rare in swampy woods, and the only station now destroyed.- Pittsburgh, River Road, 2 miles east of village, 14155(13).

ACORUS L. Sweetflag.

* A. CALAMUS L. Early introduced in boggy pastures.- Pittsburgh, First Lake, 10862=M 3551 (07); Stratford 17704(19); Lancaster 12334(09); Randolph Williams (96), 12797(10); M Location 14333(13); Shelburne Deane (83, 16); Whitefield 14319(13).

LEMNACEAE (Duckweed Family)

SPIRODELA Schleid.

S. polyrhiza (L.) Schleid. Locally abundant.- Lancaster, Clark Pond, 37699(54), pool in bog north of fairground, 17155(18); Dalton, Scott Junc., 12378(09), pool near Connecticut River, 32322(46), 35829(50).

LEMNA L. Duckweed.

L. minor L. Local.- Jefferson, Little Cherry Pond, Steele (53); Lancaster, pool near hospital, 39648(59), 39686 & 39751(60), wet meadow, 39655(61); Shelburne 39979(62).

XYRIDACEAE (Yellow-Eyed Grass Family)

XYRIS L. Yellow-eyed Grass.

X. montana Ries. Very local on pond-borders.- Stark, Pike Pond, Pease & Harris 34837(49), 35734(50); Milan, Goose Pond, 19176 & 19203(23), 36193(51).
ERIOCAULACEAE (PIPEWORT FAMILY)

ERIOCAULON L. Pipewort.

_E. septangulare_ With. In shallow water in ponds, common. - _Pittsburg_, Third Lake, 31707 (45); Round Pond, Kendall, Goldsborough, & Doolittle (04); _W Location_ 35586(50); _Cambridge_, Umbagog, 17514(19), 18182(21); _Stark_, Christine Lake, Deane (23); _Success_, Success Pond, 33830(48); _Lancaster_, Martin Meadow Pond, 16656(17); _Milan_, Nay Pond, 13875(12), 36207 (51); _Berlin_, York Pond, 17166(18), 29892(42); _Randolph_, Pond of Safety, M 1138(03), 5412 (04); _Jefferson_, Cherry Pond, 10661(07); _Whitefield_, Burns Pond, 17790(19); _Dalton_, Forest Lake, 16872(19); _Carroll_ Miss Minns (87), Williams (95), Ammonosuc Lake, 34063(48).

PONTEDERIACEAE (PICKERELWEED FAMILY)

PONTEDERIA L. Pickerelweed.

_P. cordata_ L. Shallow water, local. - _Errol_ 37985(55); _Lancaster_, Baker Pond, 17264(18); _Jefferson_, Cherry Pond, 11093(07), 23092(32); _Dummer_, Pontook Reservoir, 36817(52).

_P. cordata_, f. _latifolia_ (Raf.) House. - _Northumberland_, Horseshoe Pond, 17309(18).

JUNCACEAE (RUSH FAMILY)

JUNCUS L. Rush.

_J. bufonius_ L. Damp open ground, common. - _Pittsburg_ 33171(47); _Stewartstown_ 29691 (42); _Colebrook_ 10392-M 39398(07); _Stark_ 29828(42); _Success_ 33808(48); _Milan_ 13706(12); _Berlin_ 36304(51); _Jefferson_ 30594(44); _Randolph_ Williams (94), M 1095(03), 4174(04), M 3200(06), 10891(07), 19861(26), 21106(29); _Gorham_ M 4224(08), 17391(19); _M Location_ 14351(13); _Shelburne_ Deane (17, 19); _Whitefield_ Deane (97); _Carroll_, Breton Woods, E. & C.E. Faxon (89).

_J. bufonius_, f. _congestus_ (Schousboe)Wahlb. - _Randolph_, roadside, 282½(02).

_J. trifidos_ L. Barren mountain-tops, abundant, and occasional at lower altitudes. - _Dixville_, Notch, 1990 feet, Deane (17), Eaton(61); _Stratford_, Percy Peaks, 12733(10); _Success_, Mt. Success, 11164-M 4127(08); _Randolph_, railroad-cutting at 1300 feet, 17606(19), 21002(29)-toward var. _monanthos_; _Gorham_, railroad-cut west of Mineral Spring, 21001(29); _LB Grant_, King Ravine, 4081(04), Madison Hills, 1998(03), M 3206(06); _TM Purchase_, Mt. Madison, Ware (02), Star Lake, Williams (93), Parapet, 22306 & 22599(31), Mt. J.Q. Adams, 10878(07); _S Purchase_, cone of Mt. Washington, B.L. Robinson & Williams=Plant. Exsiccat. Gray. no. 179 (03), Alpine Garden, Fuller (94), 19834(26), Huntington Ravine, E. & C.E. Faxon (78), Tucker- man Ravine, M 250(02), Crawford Path, Williams (93); _B Grant_, Mt. Clinton, Rich (80), Mt. Webster, 11721(08); _H Grant_, Mt. Crawford, 11705(08); alpine region, indefinite, Oakes (n.d.), F. Boott (1816), Carey (n.d.), W. Boott (1853), Hoar (1858), Thoreau (1858), Mann (1862), Flint & Huntington (76), Miss Minns (84), Williams (93), Merrill (96), J. Robinson (01); _B Pur- chase_, Imp Mtn., 23765(33).

_J. trifidos_, var. _monanthos_ (Jacq.) Bluff & Fingerhuth. Infrequent. - _Dixville_, talus of Table Rock, 10626(07); _Success_, Lary Flume, 20343(28); _LB Grant_, mossy woods at 4300 feet,
12777(10); *TM Purchase*, Six Husbands Trail, 12250(09); *S Purchase*, Mt. Pleasant, in scrub on Edmans Trail, 16774(16).

*J. tenuis* Willd. A ubiquitous plant. - *Pittsburg* 33172(47); *DC Grant* 16168(14); *Stewartstown* 17676(19); *Colebrook* Warren (49); *Stark* 27268(34), 32877(47); *Milan* 13700 & 13715(12); *Randolph* 2507(03), M 1096(03), 4018 & 4126(04), 9870 & 9871(06), M 3202(06), 11775(08), 12749(10), 17726(19), 19857(26); *Gorham* Deane (22); *Shelburne* Deane (13, 16); *MLocation* 14341(13); *B Purchase*, Carter Notch, 4060(04), 6413(04); *LB Grant* 10659(07); *Dalton* 29088(41).


*J. tenuis*, var. *Williamsii* Fern. Occasional. - *Stewartstown F & P* 16675(17); *Lancaster F & P* 16640(17); *Jefferson* 31010(44); *Randolph* 4018 & 4126(04), 17726(19), 19891(26); *B Purchase*, slide in Carter Notch, 6412(04).

*J. Dudleyi* Wieg. Frequent, especially in moist soil, in the calcareous area. - *Pittsburg*, Hall Stream, 37506(54), 38511(56); *Clarksville* Pease & Bean 33620(48); *Stewartstown* 13932(12), 25222(35), 28859(41), Ladd Pond, 10400-M 3967(07); *Colebrook* 12587(10); *Columbia* 27834(40), Fish Pond, F & P 16736(17), Lime Pond, 10461=M 3849(07).

*J. Greenei* Oakes & Tuckerm. In dry soil, mostly in the Androscoggin watershed. - *Location* 12652(10); *Stark* 29900(42); *Milan* 10537(07); *Success* 11763=M 4315(08); *Jefferson* 10651(07), 29478(42); *Randolph* 5754(04), M 1934(04), M 3199(06), 19816(26), 39167(58); *Gorham* 10860(07); *Shelburne* Deane (83), 288(01), Deane (13); *B Purchase*, Carter Notch, 2500 feet, 6394 & 6395(04); *MLocation* 14250(13); *G Grant* 5751(04), 13917(12); *TM Purchase*, Carriage Road, 3800 feet, 4050(04), F & P 16872(17); *Carroll* 33291(47); *Whitefield* 37549(54).

*J. filiformis* L. Bogs and wet shores, common. - *Pittsburg*, Third Lake, 31692(45), First Lake, 10824=M 3576 & 3665(07), 10135(07); *Stewartstown* Cooley, Eaton, & Pease (61); *Colebrook* M 3988(07); *Dixville* Deane (17); *Jefferson* 16516(17); *Randolph* Williams (94), 5740(04), M 4218(08), 21105(29); *Shelburne* Deane (15); *B Purchase*, Carter Lake, Fuller (88); *TM Purchase*, Mt. J.Q. Adams, ca. 5000 feet, 9895(06), Carriage Road, Williams (96), 10596(07), Base Station, C.E. Faxon (78); *S Purchase*, Alpine Garden, Williams (93, 96), E. & C.E. Faxon (96), Bigelow Lawn, Williams (93), Tuckerman Ravine, Hoar (1858), Floyd & Forbes (07), Gulf of Slides, M 1419(03), *B Grant*, Crawford Path, Kennedy (91), Mount Washington, indefinite, W. Boott (1853), Thoreau (1858), Allen (78).

*J. effusus* L., var. *decipiens* Buchenau. Swales and boggy pastures. - *Pittsburg*, Hall Stream, 36239(51); *Stewartstown* F & P 16783(17); *Colebrook* F & P 16682(17), *Northumberland* F & P 16814(17); *Randolph* F & P 16874(17); *Gorham* F & P 16873(17); *S Purchase*, Carriage Road, F & P 16864(17).

*J. effusus*, var. *Pylaei* (LaHarpe) Fern. & Wieg. Similar habitats. - *Colebrook* M 3909(07), F & P 16821(17); *Dummer* 16542(17); *Stark* 12770(10), *Milan* 13717(12), *Jefferson* 16515 & 16702(17), 38105(55); *Randolph* 11654(08); *Shelburne* Deane (83, 13); *MLocation* 14286(13).
J. effusus, var. solutus Fern. & Wieg. Similarly.- Cambridge F & P 16977(17); Northumberland F & P 16695(17); Jefferson 16728(17), F & P 16693(17), 39922(61); Randolph M 3198(06); Gorham F & P 16844(17); Dalton 34126(48).

J. nodosus L. Frequent in the calcareous areas.- Clarksville 34684(49); Stewartstown F & P 16673(17), 25223(35); Colebrook 10361=M 4001(07), 10360=M 3991(07), F & P 16842(17); Columbia, Lime Pond, 10448=M 3833(07), Fish Pond; 13968(12); Lancaster, Grange, 28801(41).

J. canadensis J. Gay. Margins of ponds, southward.- Berlin 14495(13), 16514(15); Jefferson, Cherry Pond, 10665(07); Shelburne, Moose Pond, 23132(32); Whitefield 14406(13), 14576=M 5045(13), 17799(19).

J. brevicaudatus (Engelm.) Fern. Wet places, common.- Pittsburg, Third Lake, 33193(47); Stewartstown 37195(53); DC Grant 16258(14); W Location 38555(56); Colebrook 14053(12), F & P 16843(17); Cambridge 18204(21); Milan 10538(07), 13709(12); Lancaster 12377(09); Berlin 9875-M 3210(06); Randolph Fuller (86), 1563(02), M 3201(06), 19201(23), 19855(26); Gorham M 4229(08), 16860(16); Shelburne Deane (83, 84), M 4876(11), Deane (13); TM Purchase, Cape Horn, Williams (01), S Purchase, Huntington Ravine, 4000 feet, F & P 16751(17), Tuckerman Ravine, Steele (52); Whitefield Deane (97), M 5049(13); Carroll, Crawford's, Kennedy (91), 20698(30).

J. brevicaudatus x nodosus.- Colebrook, boggy pasture by Dixville road, F & P 17061(17).


J. pelocarpus Mey. Muddy and sandy shores, frequent.- Cambridge, Umbagog, 18181(21); Pease & Harris 33908(48); Milan, Mud Pond, 13727(12); Berlin 19884(26), 36307(51), Head Pond, 13762(12); Jefferson, Cherry Pond, 10576(07); Shelburne Deane (18), Moose Pond, 23133(32); Whitefield, Burns Pond, 14575(13).

LUZULA DC. Woodrush.

L. acuminata Raf. Alluvial banks, frequent.- Pittsburg 31985(46), Indian Stream, 14154(13); Clarksville 11036=M 3711(07); AGA Grant, Hellgate, 12627(10); DC Grant 36495(52); Stewartstown 10207=M 3408(07), F & P 16780(17), 32746(47), 35982(51); Colebrook 10916-M 3822 & 3998(07), F & P 16639(17), 32573(47); Columbia 31841(46), 32796(47), 34315(49), 36460(52); DC Grant 10509(07); Success 14129(13); Berlin 16484(17); Lancaster Forbes (01), 19278(24), 36930(52); Jefferson 16505(17), 19277(24), 32720(47), 35106(50), 35947(51), 37427(54); Randolph 16744(16); C Purchase 11272(08); Carroll, Fabreys, 16658 & 16689(16); Whitefield 16584(15); Dalton 16055(14), 29446(42), 31863(46).

L. parviflora (Ehrh.) Desv., var. melanocarpa (Michx.) Buchenau. Cool rich woods and along alpine brooks.- Pittsburg, Third Lake, 10306(07); Stewartstown 10206=M 3387(07), 31991(46); Colebrook 10931=M 3984(07), 36685(52); AGA Grant, Hellgate, 12589(10); Dixville 32650(47); Milan 19931(26); Jefferson 25279(35); Randolph 12752(10), 21122(29); Gorham 29611(42); P Grant 33531(48); LB Grant 289(01), M 1100(03), M 3195(06), M 3357(07), Deane (17); TM Purchase, Great Gulf, E. & C.E. Faxon (87), Williams (95); S Purchase, Alpine Garden, Fuller (95), Tuckerman Ravine, Hoar (1858), Fuller (88), Hodgdon & Wade 6087(49), Cape
Horn, Greenman (98), Gulf of Slides, 23756(33), Lakes of the Clouds, Miss Minns (88), Williams (93); C Grant, Mt. Monroe, M 4537(09); C Purchase 37805(55); B Purchase, Carter Dome 12901(10); Carroll Bissell (99), 11267 & 11449(08), 14380(15), 16649(16), 26781(38); indefinite, F. Boot (1816), W. Boot (1853), Flint & Huntington (76), Churchill (90), C.E. Faxon (n.d.).

*L. spicata* (L.) DC. Alpine lawns, common; rarely descending. - *Randolph*, Ice Gulch, 10819 (07); *LB Grant*, Bruin Rock, 3300 feet, 12088(09), Valleyway, M 3194(06), Knife Edge, 10849 (07), Mt. Madison 293(00), Madison Huts, 4900 feet, Fuller (86), 1546(02); *TM Purchase*, Mt. Adams, Chadbourne (84), Carriage Road, 10598(07); *SPurchase*, Alpine Garden, Eggleton (98), B.L. Robinson (01), cone of Mt. Washington, Young (77), Williams (93), B.L. Robinson (03), Mrs. Flynn (07), Huntington Ravine, E. & C.E. Faxon (78, 79, 85), Tuckerman Ravine, Thoreau (1858), Hoar (1858), Merrill (96), M 5080(13), 19833(26), 33950(48); *C Grant*, Oakes Gulf, Fuller (94), Williams (98), Greenman (98), Fuller (00); *B Grant*, Mt. Clinton, M 1079(03); Mt. Washington indefinite, F. Boot (1816), Oakes (n.d.), Mann (1862), Flint & Huntington (76), Pringle (77), Allen (78), Harriet E. Freeman (86), Churchill (90), Fellows (02).

*L. confusa* Lindberg. More restricted than the preceding. - *TM Purchase*, Great Gulf, E. & C.E. Faxon (78, 79, 86, 97), Williams (93, 95), E. & C.E. Faxon (95), 12056-M 4538(07), Mt. Clay, Fuller (00); *SPurchase*, Alpine Garden, E. & C.E. Faxon (88), Huntington Ravine, E. & C.C. Faxon (79), Williams (95); Mt. Washington indefinite, Oakes (n.d.), Tuckerman (1843), W. Boot (1865), Flint & Huntington (76), Pringle (77).

*L. multiflora* (Retz.) LeJeune. Fields and meadows, common. - *Pittsburg*, First Lake, 10143 (07), Indian Stream, M 3754(07); *AGA Grant* 12594(10); *DC Grant* 16146(14); *Colebrook* Hodgdon 6085(49); *Stratford* 13542(12); *Dummer* 31312(45); *Milan* 13926(12); *Lancaster* 32737(47), 37393(54); *Randolph* 1544(01), M 967(03), 4148(04), 19701(26); *Shelburne Deane* (09, 14); *MLocation* 14259(13); *B Purchase*, Carter Notch, 32704(47); *SPurchase*, Summit House, Williams (01); *C Purchase* 14384(13), 37417(54); *Dalton* 34419(49).

LILIACEAE (LILY FAMILY)

VERATRUM L. False Hellebore.

*V. viride* Ait. Damp meadows and frequent in springy places above tree-line. - *Pittsburg*, Third Lake, M 3508(07); *Colebrook* 10869-M 3995(07); *Randolph* M 987(03), 10703(07); *Shelburne Deane* (82, 84, 16); *LB Grant*, Valleyway, 12341(09), *TM Purchase*, Mt. Jefferson, M 1922(04), Great Gulf (95, 97); *SPurchase*, Alpine Garden, 10679(07), Tuckerman Ravine, M 302(02); *B Purchase*, Wild River, (a racemose form), 38271(56).

UVULARIA L. Bellwort.

*U. sessilifolia* L. Moist thickets, etc., common. - DC Grant 16240(14); Colebrook 10464(07); Stratford 13448(12); Dummer 31327(45); Northumberland 35931(51); Lancaster 37772(55); Berlin 16116(14); Jefferson 35353(50); Randolph Williams (96), 4029(04), Mrs. Moore (05), M 4182(08), 21132(29); Gorham 29718(42), 30520(44); Shelburne Deane (82, 15), Miss Stowell (16).

ALLIUM L. Onion.

A. tricoccum Ait. Wild Leek. Rich woods, local. - Colebrook, East Colebrook, 34375(49)-cf. Flint in Geol. of N.H. 1(1874), 409; Columbia, Trask Road, 34334(49); Lancaster, Connor's Woods, 12829(10), 19316(24).

HEMEROCALLIS L. Day-Lily.

* H. FULVA L. Common roadside escape. - Dummer 16277(14); Randolph 11008(07).

LILITIM L. Lily.

L. philadelphicum L. Wood Lily. Dry woods, local. - Shelburne Deane (81, 82, 83), Williams (03), 11339=M 4130(08), Deane (15), 37464(54).

L. canadense L. Wild Yellow Lily. Moist meadows, frequent. - Pittsburg, Hall Stream, 38496 (56), Indian Stream, 10369=M 3761(07); Colebrook 10938=M 3940(07); Cambridge Williams (06); Stratford 32459(46); Northumberland 35905(50); Lancaster 12253(09), Sanford (14), 19441(24); Jefferson Williams (95), 23872(33); Randolph 10517(07); Gorham 14245(13); Shelburne Deane (82), Williams (06); M Location Deane (27); Carroll 31498(45).

* L. TIGRINUM L. Tiger Lily. An occasional garden escape. - Dummer 20809(30); Randolph Williams (97), 4035(04), 12900(10); Gorham 10794(07).

ERYTHRIONIUM L. Dog's-Tooth Violet.

E. americanum Ker. Meadows and woods at lower elevations, common. - Pittsburg, Second Lake, 10342=M 3423(07); Stewartstown 32592(47); Columbia 27785(40), 31886(46); Stratford 13591(12); Dixville 38673(57); Northumberland 35974(51), 36973(53); Stark 26421 (37), 27025(39); Lancaster 33358(48); Randolph Mrs. Moore (05), 10863=M 3266 & 3324 (07), 11384(08), 16443(17); Shelburne Deane (09); Carroll, Fabyan's, Williams (98).

ASPARAGUS L.

* A. OFFICINALIS L. An occasional garden escape. - Gorham 10810(07), M 4264(08); Shelburne Deane (16, 18).

CLINTONIA Raf. Corn-Lily.

C. borealis (Ait.) Raf. Woods and subalpine meadows, common. - Pittsburg, First Lake, 11055 (07), M 3603(07); W Location 36505(52); Stratford 13656(12); Success M 412(08); Berlind Deane (83); Jefferson 30082(43); Randolph Williams (96), M 1043(03), Mrs. Moore (05), 10153=M 3327(07); Gorham Williams (95); Shelburne Deane (82, 04, 15, 16); LB Grant, King Ravine, 298(98), Mt. Adams, Blankinship (94); TM Purchase, Carriage Road, Deane (82), Forbes (14); S Purchase, Alpine Garden, Williams (95); C Grant, Oakes Gulf, Williams (95), M 4552(09), Mt. Monroe, Williams (95); Whitefield Deane (95).

SMILACINA Desf. False Solomon's-seal.

S. racemosa (L.) Desf. Moist woods, frequent. - Pittsburg, Third Lake, M 3511(07); Columbia 10886(07); Stratford 13629(12); Northumberland 33436(46); Randolph M 1388(03), Mrs. Moore (05), 12223(09); Shelburne Deane (82, 83, 16), Miss Stowell (16).
S. stellata (L.) Desf. Sandy alluvial banks, especially in the Connecticut watershed. - Columbia, roadside, 32607(47); Stratford 13654(12), 32318(46), 34383(49); Northumberland 12254(09); Lancaster 12816(10), 19411(24), 38644(57); Milan, Spruceville, 36214(51); Dalton 36751(52).

S. trifolia (L.) Desf. Cold bogs, open or wooded, frequent. - Pittsburg, Second Lake, 10286-M 3434 & 3462(07); DC Grant 16155(14); Colebrook 10364-M 3786(07), 13938(12), F & P 16626(17); Stratford 34549(48); Stark 14140(13), 17437(19); Northumberland 29138(41), 38654(57); Lancaster 12239(09), 17173(18); Milan 13746(12); Dummer 12621(10); Berlin 14152 & 14501(13); Success, Mt. Success, 11302-M 4120(08); Randolph, Carlton Notch, 11541(08); TM Purchase, Star Lake, 12340(09); Shelburne Deane (82, 14, 15), Shelburne Moriah, Misses Christensen & Gauthier (17); B Purchase, Imp Mtn., 3600 feet, 10522(07), 16759(17); B Grant, Mt. Jackson, 12319(09); Dalton 12286(09); Whitefield 3903(58).


M. canadense Desf. Moist woods, very common. - Pittsburg, Second Lake, 10310(07); DC Grant 16246(14); Stratford 13527(12), Stark 33456(48); Jefferson 30038(43); Randolph M 3248(07), 11146(08), Shelburne G.L. Briggs (83), Deane (15); LB Grant, Miss Prince (92); TM Purchase, 12738(10); S Purchase, Alpine Garden, 10589(07), Tuckerman Ravine, Williams (95); C Grant, Oakes Gulf, Williams (93, 95), 33969(48).

STREPTOPUS Michx. Twisted-Stalk.

S. amplifolius (L.) DC., var. americanus Schultes. Cool woods, also in springy places above tree-line. - Clarksville 34706(49); Stewartstown 10190-M 3410(07); Dixville, Notch, Deane (17), Hodgdon & Clapp 6088(49); Stratford 13569(12); Stark 34659(49), 35382(50); Randolph 318(01), 10341(07); Shelburne Deane (83), Munter (19), C.E. Faxon (n.d.); LB Grant, Mt. Madison, M 229(03); TM Purchase, Cape Horn, Deane (82), Williams (01); S Purchase, Tuckerman Ravine, Churchill (89, 90), M 4564(09), Lakes of the Clouds, W. Booth (1853); C Grant, Oakes Gulf, Fuller (94), Williams (95); Carroll, Crawford's, Williams (95), 14439(13), 35413(50).

S. amplifolius, var. oreopolus (Fern.) Fassett. Springy places above tree-line. - S Purchase, Tuckerman Ravine, Miss Brown (85), Mrs. Kennedy (27), Camel Trail, 33954(48); C Grant, Oakes Gulf, 11138(08), Bishop & Harris 230(30), 33982(48), Base of Mt. Monroe, Williams (95); Mt. Washington, indefinite, Suksdorf (87).cf. Rhodora 29(1927), 76., Williams (93).

S. roseus Michx., var. perspectus Fassett. Cool woods, and springy places above tree-line. - Stewartstown 10114-M 3409(07); Colebrook Hodgdon 6091(49); Stratford, 13568(12); Northumberland 33430(48), 35930(51); Lancaster 37763(55); Stark 29557(42), 3647(52); Jefferson 30065(43), 35109(50); Randolph Williams (97), 1593(01), Mrs. Moore (05), 35952(51); Gorham 16439(17), 30519(44); Shelburne Deane (82); P Grant Hodgdon 6109(49); LB Grant, Mt. Madison, Williams (95), M 3354(07); S Purchase, Tuckerman Ravine, M 1071 & 1086(03), 4563(09), Fassett 16422(34), Hodgdon & Fassett 6090(49); C Grant, Crawford Path, Williams (95); Carroll, Crawford's, Miss Minns (n.d.); Whitefield Deane (96).

POLYGONATUM Mill. Solomon's-seal.

P. pubescens (Willd.) Pusch. Woods. - Columbia F & P 16619(17); Stratford 13632(12); Millsfield 18215(21); Randolph M 1465(03), 3257(07), 10816(07); Shelburne Deane (18).
MEDEOLA L. Indian Cucumber-root.

M. virginiana L. Moist or dry woods, common.-Pittsburg, First Lake, 11058=M 3613(07); Stark 29562(42); Berlin 16103(14); Randolph Williams (95), 307(02), M 952(03), M 1920 (04), M 3252(07), 19892(26), 21333(29); Gorham 30495(44); Shelburne Deane (82, 83); B Purchase 38280(56); Carroll 30160(43), 32371(46).

TRILLIUM L. Wakeobin.


T. erectum L. Purple Trillium. Woods, common.-Pittsburg, First Lake, 11005=M 3636(07); Dixville 38664(57); Stewartstown 27789(40), 32670(47); Columbia 27776(40); Stratford 13653(12); Stark 27023(39), 36480(52); Northumberland 35929(51); Lancaster 37762(55); Jefferson 35993(50), 37756(55); Randolph Williams (95), M 1391(05), M 3263 & 3325(07), 11324(08); Gorham Deane (04, 09); Shelburne Deane (83, 20); Whitefield Deane (95). LB Grant 37786(55) is f. polymérum Vct.

T. erectum, f. viridiflorum (Hook.)Peattie. Rare.-Colebrook, Baxter Allen farm, in woods, 33445(48).

T. undulatum Willd. Painted Trillium. Cool woods, common.-Pittsburg, Third Lake, 10998(07), M 3484(07); Second Lake, 10112(07); DC Grant 16274(14); W Location 27772(40); Stratford 13652(12); Northumberland 37457(54); Lancaster Sanford (14); Randolph M 359(02), 2541(03), Mrs. Moore (05), M 3326(07), 19893(26), 21092(29); Shelburne Deane (82, 83, 84), C.E. Faxon (86), Deane (93), Miss Stowell (16); Carroll, Crawford's, Williams (95).

SMILAX L. Currion-flower.

S. herbacea L. Alluvial soil in the larger valleys.-Pittsburg, Indian Stream, 11052=M 3730(07); Stewartstown F & P 16608(17); Colebrook Pease & Harris 33551(48), Errol 32501(46); Cambridge 12620(10), 16549(15); Stratford F & P 17019(17); Stark 14147(13), 36841(52); Dummer 13943(12), 16541(17); Northumberland F & P 16573(17); Gorham 12260(09); Shelburne 11202=M 4173(08), Deane (14, 16); Dalton 34434(49).

IRIDACEAE (IRIS FAMILY)

SISYRINCHIUM L. Blue-eyed Grass.

S. montanum Greene, var. crebrum Fern. Open soil, frequent.-Pittsburg, First Lake, 10290(07), Indian Stream, M 3750(07); Clarksville 36060(51); DC Grant 16177(14); Stewartstown M 3692(07), 37197(53); Stratford 13516(12); Stark 31951(46), 33401(48), 37808(55); Dummer 33516(48); Milan 13817(12); Jefferson Mrs. Terry (02); Randolph M 1005(03), 4150(04), 10063(07); Gorham Cusick (87); Shelburne Deane (83, 09, 13, 14); B Purchase, Carter Notch, 4062(04); M Location 14251 & 14371(13); TM Purchase, Cape Horn, Williams (03); Whitefield Deane (96); Carroll Greenman (98), Bissell (02), 14371(13); Dalton 39021(58).
IRIS L.

I. versicolor L. Wet places, common.-Pittsburg Mrs. Stevens (95), First Lake, 10359=M 3550 (07); Clarksville 36112 (51); Dixville Williams (95); Columbia M 3860 (07); Jefferson 16804 (17); Randolph M 1141 (03), 12242 (09); Shelburne Deane (82, 83, 14).

ORTHIDACEAE (ORCHIS FAMILY)

CYPREDIUM L. Lady's-slipper.


C. Calceolus L., var. parviflorum (Salisb.)Fern. Small Yellow Lady's-slipper. Bogs, local.-Shelburne Deane (25); Dalton, cedar bog near Forst Lake, 17858 (20).

C. Calceolus, var. pubescens (Willd.)Correll. Large Yellow Lady's-slipper. Rich woods, local.-Lancaster, Mt. Prospect, Sanford (14), 25290 (35); woods north of Martin Meadow Pond, 14317 (13), 17835 (20); Dummer Harris 7262 (48).

C. acaule Ait. Pink Lady's-slipper. Damp woods, frequent southward.-Randolph Williams (95), M 3249 (07); LB Grant M 3357 (07); Shelburne Deane (82, 83, 14, 15); M Location 16473 (17); Carroll, Fabyans, 11333 (08).

C. acaule, f. albiflorum Rand & Redfield. Rather commoner than the typical form.-Pittsburg, Third Lake, 11040 (07), First Lake, M 3654 (07); Stratford 13657 (12); Randolph 345 & 1595 (01), 10113=M 3328 & 3329 & 3325 & 3298 (07); G Grant 13645 (12); P Grant Deane (16); Shelburne Deane (82, 14, 15); B Purchase 36172 (51); LB Grant 11361 (08), 37780 (55); Carroll, Crawford's, C.E. Faxon (99).

HABENARIA Willd. Rein-Orchis.

H. viridis (L.) R.Br., var. bracteata (Muhl.) Gray. Damp woods, frequent.-Pittsburg, Third Lake, 10415 (07); Columbia F & P 16587 (17); Stratford 13674 (12); Millsfield 18211 (21); Stark 35495 (50); Northumberland 16498 (17), 33584 (48); Success 16807 (12); Lancaster 14327 (13), Sanford (14); Jefferson 16890 (16); Randolph Williams (94, 95), Purdie (05), 10455=M 3321 (07); Gorham 16481 (17); G Grant Steele (54); LB Grant 1367 (01), Miss Prince (n.d.); Shelburne Deane (83); Carroll, Crawford's, St. John (09), 35513 (50); B Grant, Mt. Webster, Fuller (94).

H. clavellata (Michx.) Spreng. Bogs and wet ditches.-Errol 32850 (47); Milan 35459 (50); Berlin, York Pond, 17163 (18); Carroll 20744 (30), 31489 (45).

H. clavellata, var. ophioglossoides Fern. More frequent.-Pittsburg, Third Lake, 26741 (38), 32534 (46); Stewarts town 26122 (37); Columbia 34505 (49); Millsfield 35414 (50); Northumberland 36187 (51); Stark 23791 (33), Pease & Harris 34615 & 34836 (49); Milan 13878 (12); Jefferson 16730 (17); Randolph E. & C.E. Faxon (78), Williams (93, 96), 372 (00), 373 (95), 10770 (07); Shelburne Deane (82, 83), 11621 (08), Miss Lowell (14), Deane (16), 19208 (23); M Location 14331 (13); P Grant Forbes (00); TM Purchase, Base Station, E. & C.E. Faxon (91); Carroll, Crawford's, Miss Minns (88); Dalton 12314 (09).
**H. flava** (L.) R.Br., var. *herbiola* (R.Br.) Ames & Correll. Moist ground, rocky woods, local.-Lancaster, Mt. Prospect, 39185 (58); Dalton Cushman, 17406 (19).

**H. hyperborea** (L.) R.Br., var. *huronensis* (Nutt.) Farw. Bogs and wet woods, rather variable.-Pittsburg, Third Lake, 33232 (47), First Lake, 10936-M 3542 (07); Clarksville 33726 (48), 34710 (49), 36111 (51); Stewartstown 14058 (12), 16632 (17), 27937 (40), 36735 (52); Colebrook F & P 16589 (17), 25259 (35), Hodgdon 6078 (49), 36832 (52); Milan 12721 (10); Lancaster 20055 (27), 30212 (43); Randolph Williams (93); Shelburne Deane (17); P Grant Miss Prince (90); Dalton 15436 (15).

**H. dilatata** (Pursh) Hook. Bogs and wet woods, frequent.-Pittsburg, Third Lake, 10518-M 3491 (07), 26822 (38); Dixville Williams (06); Milan 12635 (10); Success 16806 (17); Stark Schmid (52); Randolph, Ice Gulch, Fuller (86), Williams (93), M 1129 (03), 10839 (07); Shelburne Deane (94, 25), Mt. Shelburne Moriah, Sprague (14); B Purchase, Wild River, Deane (24); P Grant Miss Brown (85), Deane (16), 33582 (48); TM Purchase, Great Gulf, Fuller (94), Cartidge Road, Deane (84); S Purchase, Tuckerman Ravine, Hoar (1858), Mann (1862), Miss Minns (88), Fuller (88), Merrill (96), 375 (00), M 264 (02); C Grant, Oakes Gulf, Williams (93), 12104 (09); C Purchase 11334 (08); B Grant, Mt. Clinton, 12516 (09); Carroll, Crawford’s, Fuller (94), St. John (09).

**H. Hookeri** Torr. Woods, local.-Lancaster, Mt. Prospect, 32781 (47); Shelburne Deane (82, 13, 14, 15).

**H. orbiculata** (Pursh) Torr. Woods, occasional.-Stewartstown 33848 (48); Dixville Williams (95); Millsfield 18209 (21); Northumberland 32912 (47); Jefferson 16891 (16); Randolph Williams (93), M 1146 (03), 12324 (09); Gorham C.E. Faxon (72); Shelburne Deane (82, 83, 16), Miss Dike (15); B Purchase, Carter Notch, Fuller (84); LB Grant 10631 (07); TM Purchase 12994 (10); B Grant, Mt. Clinton, St. John (09); Carroll 28845 (41), 35514 (50).

**H. macrophylla** Goldie. Similar localities.-Northumberland, Lost Nation, 32912 (47); Lancaster, Mt. Prospect, Sanford (14); Randolph Mrs. Moore (02, 06), 10497 (07), 12241 (09); LB Grant 10630 (07); Shelburne Deane (84). Rather too near the preceding species; cf. D.S. Correll, *Native Orchids of North America* (1950), 93.

**H. obtusata** (Pursh) Richards. Mossy, chiefly coniferous woods, frequent.-Pittsburg, Third Lake, 10416 (07); Stewartstown F & P 16594 (17), 34443 (49); Colebrook 10752-M 3785 (07), F & P 16659 (17); Milan 14054 (12); Lancaster Deane (96); Randolph Williams (93), 359 (00), M 3192 & 3198 (06); Gorham 11422 (08); Shelburne Deane (83), Fuller (86); LB Grant, Mt. Adams, E. Faxon (78), Fuller (86), Carret (90), 12330 (09), Mt. Madison, Churchill (89); TM Purchase, Great Gulf, Fuller (94); S Purchase, Tuckerman Ravine, Hoar (1858), Williams (95), 357 (02), M 281 (02), 1081 (03); B Purchase, Wild River, 34512 (49); B Grant, Mt. Clinton, Tuckerman (n.d.), St. John (09); Mt. Washington, indefinite, Flint & Huntington (76).

**H. blephariglottis** (Willd.) Hook. White Fringed Orchid. Peat-bogs, rather rare.-Pittsburg, East Inlet, H.I. Baldwin (60); DC Grant, near Magalloway River, 16152 (14); Northumberland 29139 (41), 39280 (58).

**H. lacera** (Michx.) Lodd. Ragged Fringed Orchis. Old meadows, occasional.-Pittsburg, Hall Stream, 39875 (61); Clarksville 34707 (49), 39999 (62); Stark 35581 (50), 36369 (51); Lancaster
38078(55), Mt. Prospect, 25311(35); *Jefferson* 32955(47), 34586(49), 39898(61); *Randolph* 32319(46); *Shelburne* 37215(53), 39262(58); *M Location* 22603(31); *Carroll* 28846(41); *Dalton* 29135(41), 35778(50), 36228 & 36230(51), 38843(57).


*H. psycodes* (L.) Spreng. Smaller Purple Fringed Orchis. Wet meadows, nearly limited to the Connecticut watershed. - *Pittsburg*, Hall Stream, 36237(51), 37193(53); *Clarksville* 34647(49); *Stewartstown* Hodgdon & Clapp (49); *Colebrook* Williams (06), 13990(12); *Milan*, West Milan, 10795(07); *Stark* 12768(10), 29042(32), 39246(58); *Northumberland* 12238(09), F & P 16603(17); *Lancaster* 12262(09), Sanford (14); *Jefferson* 37320(53); *Dalton* 32353(46), 36226 (51), 38842(57); *Shelburne* Deane (81, 82, 84); *Carroll* 39215(58).


*H. fimбриata* (Ait.) R.Br. Larger Purple Fringed Orchis. Damp woods and meadows, frequent. - *Pittsburg* 33847(48); *DC Grant* 16149(14); *Stewartstown*, Piper Hill, Hodgdon & Clapp 6095 (49); *Errol* Williams (06); *Cambridge* Williams (06); *Northumberland* F & P 16610(17); *Stark* 35479(50); *Success* 33917(48); *Jefferson* 16768(17), 20808(30), 32390(45); *Randolph* Williams (93), 365(02), M 269(02); *Gorham* Deane (25); *Shelburne* Deane (15); *B Purchase*, Wild River, 36186(51); *Whitefield* 14326(13); *Carroll* Miss Minns (88), E. Faxon (91), Fuller (94), E. & C. E. Faxon (94), Williams (94), 14428(13).

*H. fimбриata*, f. *albiflora* Rand & Redfield. - *Colebrook* Mrs. B. Allen & Pease 36699(52); *Jefferson* 20309(28); *Randolph* Williams (93), 10520(07); *Shelburne* Deane (15). Reported by William Brewster as frequent at Lakeside in Cambridge.

POGONIA Juss.

*P. ophioglossoides* (L.) Ker. Boggy pond-shores, infrequent. - *Stewartstown*, Back Lake, F & P 16577(17), 25931(37), Ladd Pond, 10905=M 3964(07), F & P 16633(17); *Milan*, Mud Pond, 19770(26), 27284(39); *Jefferson* 23137(32); *Shelburne* Deane (83), Blankinship (94).

CAIROPOLON R.Br.


EPIPACTIS Sw.

* E. HELLEBORINE (L.) Crantz. Newly introduced and spreading in rich woods. - *Lancaster*, Mt. Prospect, 30206(43), 31694(45), 37252(53), 39278(58).

SPIRANTHES Richard. Ladies'-Tresses.

S. *lacerata* Raf. Dry pastures, occasional. - *Milan* 26830(38), 38563(56); *Northumberland* 12344(09); *Randolph* Williams (96), 11788(08), 21134(29), 22742(31); *Gorham* 11628(08), 13060(09), 39302(58); *Shelburne* Deane (83, 14, 16), 36311(51); *Carroll* 16581(15), 37608(54), 38569(56).
S. vernalis Engelm. & Gray. Moist soil, local. - Colebrook 29802(42), 37704 & 37718 & 37719(54).

S. cernua (L.) Richard. Moist soil, occasional. - Pittsburg, Second Lake, 37371(53); Stewarts-
town 25289(35); Colebrook 29802(42), 37710(54); Errol 33347(47); Dummer 36395(51); 
Stark 36271(51); Milan 37702(54); Lancaster 36926(52); Whitefield 30324(43), 37609(54); 
Dalton 25312(35).

S. Romanzoffiana Cham. Similar localities, commoner. - DC Grant 16289(14); Stewarts-
town 25289 & 25300(35); Colebrook 14023(12), 29803(42), Wells & Pease 39429(58); Dixville 
E. & C.E. Faxon (87); Stark 16780(16); Northumberland Williams (06); Lancaster 12343(09); 
Kilkenny, Green Ledge, 14034(12); Milan 14055(12); Success 10775(07); Jefferson 10807(07); 
Randolph Williams (93, 96), 10797(07), 19838(26); Gorham 11527(08), 16565(15); Shel-
burne Deane (83), Blankinship (94), Miss Sheppard (14), Deane (18); Carroll, Fabyans, E. & 
C.E. Faxon (87), J. Robinson (02), Hunnewell (12).

Whether S. lucida (H.H. Eat.) Ames, of which a specimen from the "White Mts.," collected by 
F.H. Horsford and verified by D.S. Correll, now deposited in the herbarium of the New England 
Botanical Club, is from within our area is uncertain.

GOODYERA R.Br. Rattlesnake Plantain.

G. repens (L.) R.Br., var. ophioides Fern. Cool mossy woods, especially in primeval forest. 
Errol 32521 & 32522(46); Dixville 37313(53); Colebrook 14025(12), F & P 16666(17); Co-
lumbia 23879(33); Success, Mt. Success, Sprague (20); Lancaster 12345(09); Randolph Williams 
(95, 96), H.J. Williams (96), M 140(01), 349 & 1056(02), 19870(26); Gorham, Mt. Hayes, 
Morong (74); P Grant Rushmore (27); LB Grant Williams (95, 96, 97), H.J. Williams (97); 
TM Purchase, Mt. Jefferson, St. John (11); S Purchase, Tuckerman Ravine, Eggleton (01); 
B Grant, Mt. Jackson, 12515(09); Carroll, Crawford's, Miss Minns (88), E. & C.E. Faxon (93), 
Kennedy (95), E. & C.E. Faxon (97); Mt. Washington, indefinite, Bigelow (1841); B Purchase, 
West Royce Mtn., 18141(21), North Carter Mtn., H.J. Williams (96), 11109(07).

G. tesselata Lodd. Woods, chiefly coniferous, frequent. - Pittsburg, Third Lake, 10380(07), 
32555(46), Second Lake, 11108(07), First Lake, M 3593(07); Columbia Cooley, Eaton & Pease 
(61); Errol Williams (95); Odell Pease & Harris 34905(49), 35814(50); Millsfield 18216(21); 
Milan 14035(12); Lancaster, Mt. Prospect, 16922(17), 31655(45); Jefferson 16827(16); Randolph 
Williams (93, 95), H.J. Williams (95), Williams (96), 347(02), 4144(04), 9916(06), 39343(58); 
Gorham Williams (95); Shelburne Deane (83, 14), Miss Bull (14), Deane (16); B Purchase, Carter 
Range, H.J. Williams (95); LB Grant Williams (95, 97), H.J. Williams (97); S Purchase, Tuckerman 
Ravine, H.J. Williams (96); Carroll, Crawford's, Miss Minns (87), E. & C.E. Faxon (93, 95, 
97).

LISTERA R.Br. Twayblade.

L. cordata (L.) R.Br. Mossy woods, especially common in scrub. - Pittsburg, Second Lake, 
10313-M 3435(07); Colebrook F & P 16660(17); Randolph M 3254(07); Gorham 11244(08); 
B Purchase, Carter Range, Churchill (90), E.F. & H.J. Williams (96), 34514(49); LB Grant 
E. & C.E. Faxon (78), Miss Cook (93), 385(01), 1896(01), 10851(07); TM Purchase, Mt. 
Adams, E. & C.E. Faxon (78), Great Gulf, Fuller (94), 12844(10); S Purchase, Tuckerman Ravine, 
Hoar (1858), Manning (81), Williams (95); B Grant E. & C.E. Faxon (78), Kennedy (91),
Williams (95), St. John (09), Mt. Clinton, King (11); Mt. Washington, indefinite, F. Boott (1816), Mann (1862), Allen (78); Carroll, Crawford's, Miss Minns (88).

_**L. auriculata** Wieg._ Alluvial woods and cedar-bogs._**Colebrook,** cedar bog, 17857(20), Beaver Falls, F & P 16596(17); **Gorham,** bank of Moose River, 11243(08); **B Purchase,** Wild River, 16016(14).

_**L. convallarioides** (Sw.)Nutt._ Mossy woods._**Pittsburg** Hodgdon & Steele (55), Third Lake, 10300(07); **Colebrook,** Beaver Falls, 25211(35), F & P 16625(17), cedar bog, 10753(07); **Dixville,** Notch, Williams (06); **Randolph,** Ice Gulch, 382(00), M 1439(03); **Carroll,** Crawford's St. John (09).

**CORALLORHIZA** Chatelain. Coral-root.

_**C. trifida** Chatelain, var. _verna_ (Nutt.)Fern._ Damp woods, frequent._**Pittsburg,** Third Lake, 10157=M 3483(07); **DC Grant** 36504(52), **Stewartstown** F & P 16663(17), 34444(49); **Colebrook** F & P 16658(17), 17854(20); **Columbia** 10376(07), F & P 16186(17); **Stratford** 13658(12), 33467(48); **Dummer** Harris 7263(48); **Jefferson** 18074(21); **Randolph** 338(01), M 983(03), Mrs. Moore(05), M 3244(07); **Gorham** 16001(14); **Shelburne Deane** (94, 03, 04), Farlow (05); **M Location** 16472(17); **Whitefield Deane** (95); **Dalton** 19053(22); **Carroll** 30183(43).

_**C. maculata** Raf._ Woods, frequend._**AGA Grant,** Crystal Mts., 12719(10); **Dixville,** Notch, Williams (99); **Milan** 14056(12); **Stratford** 12858(10); **Lancaster** 14438(13); **Randolph** Williams (93, 95), 340 & 341(01), M 3348(07); **Gorham** 11368(08), 30596(44); **Shelburne Deane** (83, 84, 14), C.E. Faxon(n.d.), 19283(23); **M Location** 14397(13); **G Grant** Forbes (02); **LB Grant,** Gordon Ridge, Williams (95); **S Purchase,** Carriage Road, 14031(12); **Carroll,** Crawford's, Williams (95).

**MALAXIS** Sw. Adder's-mouth.

_**M. brachypoda** (Gray)Fern._ Cedar bogs, very rare._**Colebrook,** bog south of Lombard Hill, 10940=M 3782(07).

_**M. unifolia** Michx._ Bogs, pastures, and dry woods, frequent._**DC Grant** 16158(14), **Colebrook** 10755=M 3894(07), F & P 16598(17); **Stratford** F & P 16906(17); **Stark** 17463(19); **Dummer** Harris 7418(48); **Milan** 12720(10), 13963(12); **Lancaster** 12252(09); **Jefferson** 12856(10); **Randolph** Williams (93), 387(00), M 1411(03); **Gorham** 13059(09); **Shelburne Deane** (83, 15, 16); **Whitefield Deane** (96, 97); **Dalton** 16435(15).

**LIPIARIS** Richard. Twayblade.

_**L. Loeselii** (L.)Richard._ Boggy pastures, especially in the calcareous area._**Stewartstown** 10498=M 3963(07), 14062(12), 37237(53); **Colebrook** 10754=M 3895(07), F & P 16597(17), 25260(35); **Columbia** 30756=M 3832(07); **Dummer** Harris 7402(48); **Milan** 13955(12); **Jefferson** 32838(47); **Whitefield Deane** (97).

**CALYPSO** Salisb.

_**C. bulbosa** (L.)Oakes._ Cedar bogs, very rare and local._**Columbia** 31887(46). This locality was discovered in 1934 by Mr. T.W. Wallace; cf. _Nature Magazine_, 24(1934), 121. No specimens seen there in 1952 or 1961.
SALICACEAE (WILLOW FAMILY)

SALIX L. Willow.

*S. nigra* Marsh. Black Willow. Riverbanks. - *DC Grant*, Diamond River, 16203(14); *Colebrook* 33751(48), 36070(51); *Stratford* 32274(46); *Northumberland* 12131(09); *Milan* 17824(20); *Lancaster* 12285(09).

*S. lucida* Muhl. Shining Willow. Swamps, common. - *Pittsburg*, Third Lake, 31701(45); *Clarksville* 34617(49), 38212(55); *DC Grant* 32492(46); *Stewartstown* 10322=M 3382(07); *Colebrook* 38374(56); *Northumberland* 13552(12), 35816(50); *Millsfield* 18175(21), 35406(50); *Dummer* 33107(47); *Milan* 13879(12); *Berlin Deane* (83), York Pond, 17190(18); *Lancaster* Krotchall 1544(48); *Jefferson* 14401(13), 16491(17); *Randolph* 432(02), M 1017(03), 16434(17); *Gorham* 30492(44); *Shelburne* Deane (82, 83, 03, 24); *B Purchase*, Wild River, 16050(14); *LB Grant* 11247(08); *Whitefield* Deane(96); *Carroll*, Twin Mtn., 17561(19), Fabyans, 16646(16).

*S. lucida*, var. *angustifolia* Anderss. Riverbanks, occasional. - *Pittsburg*, Second Lake, 10247=M 3458(07), Hall Stream, 36621(51); *Stewartstown* 35993(51); *Colebrook* F & P 16630(17); *Dummer* 37462(54).

*S. lucida*, var. *intensa* Fern. - *Pittsburg*, Third Lake, 32529(46), First Lake, 10160=M 3573(07); *Clarksville* 36099(51); *Stewartstown*, Ladd Pond, F & P 16631(17); *Columbia*, Lime Pond, F & P 16815(17); *Randolph* 10828(07); *Gorham* 13660(12).

* S. FRAGILIS L. Crack-Willow. Spreading from cultivation. - *Colebrook* 33769(48); *Berlin* 35805(50), 36302(51), 36805(52); *Carroll* 36131(51).

* S. ALBA L., var. VITELLINA (L.)Stokes. White Willow. Spreading from cultivation. - *Pittsburg*, post-office, 11026=M 3727(07); *Northumberland*, riverbank, 12133(09); *Randolph* Williams (96), 4161(04); *Gorham* M 4230(08), 16363(15); *Shelburne* 11132=M 4137(08), Deane (09, 17).

*S. herbacea* L. Moist heads of alpine ravines, especially under late-melting snow-banks, frequent. - *LB Grant*, Salmacis Fall, 3000 feet, 20082(27), King Ravine, 12101(09), 20330(28); *TM Purchase*, Great Gulf, W. Boot (1855), E. & C.E. Faxon (87), Williams (93), Fuller (94), Williams (95). *Churchill* (95), Williams (97), Eggleston (98), M 265(02), 11212(08); *S Purchase*, Tuckerman Ravine, Hoar (1858), Allen (n.d.), Fuller (88), Eggleston (99), 428(02); Huntington Ravine, E. & C.E. Faxon (87), Lakes of the Clouds, Flint & Huntington (76), indefinitely located, Oakes (n.d.), Gray (1842), Lowell (1847), W. Boot (1853), Pringle (77), E. Faxon (77, 78), E. & C.E. Faxon (80), Greenman (98).

X. S. Peasei Fern. - *LB Grant*, moist gulley in King Ravine, ca. 4500 feet, 12091(09), 14433(13), F & P 16847(17-TYPE; all these collections from the same limited area). Known elsewhere from two stations W. of Hudson Bay; cf. N. Polunin, *Bot. of the Canad. Eastern Arctic*, 1(1940), 153; H. M. Raup in *Sargenta*, 4(1943), 123. See also C. Schneider in *Bot. Gaz.* 67(1919), 51, 52; despite his doubts, this may perhaps be a valid species, as M.L. Fernald and, later N. Polunin have thought.

*S. Uva-ursi* Pursh. Very common on alpine barrens. - *LB Grant*, Mt. Adams, Fuller (86), M 3365(07), 14433(13), 25234(35), 25236(36), Mt. Madison, 10226=M 3347(07);
S. argyrocarpa Anderss. Moist heads of ravines in the alpine region, locally abundant. - S. Purchase, Tuckerman Ravine, Hoar (1858), Pringle (79), Farlow (84), Lamb (84), E. Faxon (84), E. & C.E. Faxon (85, 86, 87), Fuller (88), E. & C.E. Faxon (89, 90), Churchill (90), Williams (93, 95), Eggleston (98,99), 427(02), M 263(02), M 1062(03), 11181 & 11182(08), 12075=M 4566 & 4571(09), 19807(26), 23768(33), Lakes of the Clouds, W. Boot (1853), E. & C.E. Faxon (78), Allen (80), E. & C.E. Faxon (86, 88), Williams (93), Fuller (00), Ammonoosuc Ravine, 16745(16); C Grant, Oakes Gulf, E. & C.E. Faxon (89), Williams (98), Greenean (98), 12041=M 4551(09), indefinitely located, Oakes (1823), W. Boot (1853), Mann (1862), Chickering (1862), W. Boot (1865), Chickering (75), Flirt & Huntington (76), Pringle (77), E. Faxon (77, 78), Miss Minns (n.d.). Staminate plants and perfect pistillate aments rare, according to M. S. Bebb in Bull. Torrey Club, 16 (1889), 212.

X S. Grayi Schniedt. A hybrid of S. argyrocarpa and planifolia; local. - S. Purchase, Tuckerman Ravine, E. & C.E. Faxon (85, 86, 87, 90), Churchill (90), Kennedy (95), Williams (95), Eggleston (99), Ammonoosuc Ravine, 16766(16). According to Gray's Manual, 6 ed. (1889), 483, this was collected in Tuckerman Ravine by Gray as early as 1842, though he was in doubt as to its identity; cf. M.S. Bebb in Bull. Torrey Club, 17 (1890), 149, 150. TYPE locality; cf. C. Schneider in Journ. Arnold Arb. 3 (1921), 79, 80.

S. pyrifolia Anderss. Balsam-Willow. Low ground, frequent, ascending to subalpine locations. - Pittsburg, Third Lake, 26758(38), 32526(46), Second Lake, 10345 & 10346=M 3435 & 3454 (07), 31638(45), First Lake, 10119=M 3602(07); Clarksville, 33170(47), 36090(51); Stewarts-town 29702(42), 32771(47); Colebrook 13937(12), 16669(17); Columbia 36759(52); WLocation 23072(32), 35584(50); Erol 10516(07); Millsfield 35396(50); Odell 35765(50); Dummer 12654(10), 24128(34); Stark 23000(32), 27055(39), 32900(47), 35465(50); Milan 13830(12), 22792(31), 23840(33), 38149(55); Northumberland 12115(09), 26903(38), Lancaster 12109 (09), 33481(31), 34813(49); Berlin 13763(12); Success 10638(07), 16533(17); Jefferson 16587 (15), 31957(46), 35095 & 35223 (50); Randolph M 4206(08), 12224(09), 17320(18), 20075 (27), 26510(37), 35922(51), 38411(56); Shelburne Munter (19); TM Purchase, Great Gulf, 14358(13), Carriage Road, 10533(07), Base Station, E. & C.E. Faxon (82, 83, 86), Clay Ravine, 14358(13); S. Purchase, Lakes of the Clouds, W. Boot (1855), 16761(16), 33933(48); C. Purchase E. Faxon (79, 83), Williams (95), Carroll 12715(10), 21952(09), 35749(50), Crawford's, Pringle(79), E. & C.E. Faxon (79, 82), Williams (95); Dalton 32327(46). M.S. Bebb in Bull. Torrey Club, 15 (1888), 122, thinks the oldest extant specimen of this species is that in the Phila. Acad. of Nat. Sci. collected in Carroll on the bank of the Ammonoosuc by H. Little (1823).

S. cordata Michx. Wet places. - Stark 38165(55); Milan 38115(55). Too seldom collected.

S. rigida Muhl., (including var. augusattata (Pursh) Fern.). Moist places common. - Pittsburg, First Lake, 10120=M 3608(07), 10285=M 3572 & 3574(07); Clarksville 38287(55); Columbia 13982(12); Stratford 13514 & 13532(12), 33403(48); Stark 36448(52); Northumberland
X S. myricoides (Muhl.) Carey. A hybrid of S. rigida and sericea. - Stewartstown F & P 16576 (17); Randolph 433(02), 10825(07), 11719(08), 12030(09), 16292(14), 16424(17), 37314(53).

S. Bubbiana Sarg. Moist and dry soil, very common. - Pittsburg, First Lake, 10118=M 3352(07); Clarksville 35186(50), 38236(55), Stewartstown 10233=M 3381(07), 32588(47); Colebrook 34351(49); DC Grant 16178(14); W Location 27824 & 27825(40); Strafford 13487(12); Stark 29551(42), 33411(48), 37399(54); Lancaster 32568(47); Jefferson Krochmal 1561(48), 35091(50); Randolph Williams (96), 6415(04), M 3312(07), Mrs. Moore(07), 16435(17); Gorham 30491(44), 39675(60); Shelburne Deane (83, 04, 10, 16); M Location 16422(17); B Purchase M 5073(13), 16050(14), N. Baldface Mtn., 16045(14); TM Purchase, Carriage Road, E. & C.E. Faxon (85), Williams (03), F & P 16885(17); S Purchase, Tuckerman Ravine, E. & C. E. Faxon (85); Carroll 16648(16), 37429(54); Whitefield Deane (96); Dalton M 5004(13).


S. pedicellaris, var. temescens Fern. Local in wet meadows. - Randolph 11218(08), 12360(09).

S. discolor Muhl. Moist places, common. - Pittsburg, First Lake, 10117=M 3600(07); Clarksville 35185(50); Dixville 32665(47); Columbia 13981(12); Stark 36455(52); Northumberland 38333(56), 39664(60); Lancaster 33496(48); Jefferson 35590(50); Randolph Williams (96), Mrs. Moore (05), M 4178 & 4195(08), 11781(08), 16429(17), 26515(37); Gorham 10611 & 10612=M 4051 & 4052(07); Shelburne Deane (04, 10, 20); TM Purchase, Carriage Road, 4000 feet, F & P 16893(17); Carroll 33432(48); Whitefield Deane (96), 14562(13).

S. discolor, var. latifolia Anderss. - Pittsburg. Hall Stream, 36219(51).

S. humilis Marsh. Dry roadsides, occasional. - Milan 13829(12); Success 10671(07); Randolph 12180 & 12346(09), 16428(17); Shelburne Deane (82, 04); TM Purchase, Carriage Road, 4000 feet, F & P 16892(17); Whitefield Deane (96), 14562(13).

S. humilis, var. keweenawensis Farwell. Occasional. - Randolph Mrs. Moore (05).

S. gracilis Anderss. Swamps, occasional. - Stewartstown 27837(40); Colebrook F & P 16951(17); Dummer 37461(54); Jefferson 39841(61); Randolph 21156(29), 39831(61).

S. gracilis, var. textoris Fern. More frequent. - Stewartstown 31977(46), Northumberland 35078(50); Stark 38663(57); Lancaster 28542(41); Berlin 36299(51); Jefferson 10782(07), 36151(51); Randolph 35934(51), 39833 & 39838(61); Shelburne 23123(32).

S. gracilis, var. textoris x sericea. - Stark 38006(55).
**S. sericea** Marsh. Wet places, common. - *Pittsburg*, Second Lake, 10347(07), Indian Stream, 11015=M 3746(07), Hall Stream, 363285(51); *Stewartstown* F & P 16676(17), 32770(47), 35989(51); *Colebrook* F & P 16954(17), 33750(48); *Errl* 32841(47); *Dummer* 33507(48); *Milan* 13730(12), 17322(18), 36201(51); *Stark* 29550(42), 36449 & 36513(52); *Lancaster* 28542(41), 34795(49); *Jefferson* 36470(52), 37440(54); *Berlin* 13826(12); *Randolph* 431(02), 10048=M 3271(07), 10827(07), 16440(17); *Shelburne* M 4166(08), *Deane* (19, 32); *LB Grant* 10657(07), 37761(55); *Whitefield* Deane (96).

**S. planifolia** Pursh. Moist alpine ravines, frequent. - *LB Grant*, Snyder Brook, 12310(09), 14159(13); *TM Purchase*, Great Gulf, E. & C.E. Faxon (85, 86, 87, 90), *S Purchase*, Alpine Garden, E. Faxon (85), Williams (98), Greeman (98), 434(02), 10552(07), Huntington Ravine, F & P 16850(17), Tuckerman Ravine, Hoar (n.d.), E. & C.E. Faxon (84, 87), Churchill (90), Williams (93, 95, 97), Eggleston (98), M 301(02), M 1063(03), 12076=M 4567 & 4570(09), 19808(26), Camel Trail, 33968(48), Lakes of the Clouds, E. & C.E. Faxon (86, 87, 88); *C Grant*, Oaks Gulf, 11142(08); indefinite, Oakes (1825), Gray (1842), Flint & Huntington (76), E. & C.E. Faxon (78, 88).

**S. pellita** Anderss. Swampy shores on the upper course of the Connecticut and Androscoggin Rivers, frequent. - *Pittsburg*, Second Lake, 10344=M 3416(07); *Clarksville* 11029=M 3722(07); *Stewartstown* F & P 16674(17), Ladd Pond, F & P 17004(17); *Columbia* 17280(19); *Stratford* 17707(19), 23900(33), 32306(46), 33588(48), 34997(49); *Northumberland* 12135(09), 13628(12), 17262(18), 34032(48); *Lancaster* 12215(09), 31762(45), Krochmal 1543(48); *Dalton* 11538=M 4377(08), 32332(46); *W Location* 16023(07), 38621(56); *Errl* 12622(10), 16219(14), 20087(27), 31990(46); *Cambridge*, Umbagog, 16537(15), 18177(21).

* S. VIMINALIS L. Wet shores. - *Lancaster*, South Lancaster, 38451(56).


**POPULUS L. Poplar. Aspen.**

**P. tremuloides** Michx. Dryish woods, common. - *Pittsburg*, First Lake, 10100=M 3568(07); *Columbia*, Lime Pond, W. Boott (1855), 11082=M 3631(07); *Stratford* 13458(12); *Stark* 38991(58); *Randolph* Williams (96), 11233(08), M 4455(08); *Gorham* 16077(14); *Shelburne* Deane (82, 09, 10); *C Grant* M 4303(08); *B Purchase* M 5076(13); *LB Grant*, 3200 feet, 16480(17); *Carroll*, Crawford's, Spaulding (16); *Dalton* M 5025(13); *P Grant* 36548(52).

**P. tremuloides**, var. *magnifica* Vict. Occasional, perhaps pathological. - *Columbia* Harris 7677(51); *Berlin* Harris 7672(51); *Jefferson* 36129 & 36398(51); *Randolph* 36027(51); *Shelburne* 36043(51); *P Grant* 36549(52).

**P. grandidentata** Michx. Dry soil and burns, frequent. - *Pittsburg* 38903(57); *Colebrook* 36096(51); *Northumberland* 36357(51); *Randolph* Williams (96), 11782(08), M 4456(08); *Gorham* M 4885(11), 16082(14), 36536(52); *Shelburne* Deane (82), M 4153(08), M 4868(11), Deane (25); *Dalton* 14564(13), 37442(54); *Whitefield* 38284(56).

* P. ALBA L. Silver Poplar. Spreading from cultivation. - *Dummer* 33510(48); *Whitefield* 34382(49), 36401(51).

\textit{P. balsamifera} L. (including var. subcaudata) Hylander. Low ground, frequent, especially in Colebrook and Millsfield. \textit{Clarksville} 11069=M 3696(07); \textit{Colebrook} F & P 17063(17), 34374(49); \textit{Columbia} M 3836(07), 13893(12), 38699(57), \textit{Northumberland} 13583(12); \textit{Milan} 13881(12); \textit{Berlin}, York Pond, 17191(18); \textit{Lancaster} 20080(27), 35016(49), 36017(51); \textit{M Location} 12852(10); \textit{Randolph} Williams (97), 9915(06), M 4241(08), 12224(09); \textit{Gorham} M 4056(07), 12898(10); \textit{Shelburne} Deane (09, 14), 35556(50); \textit{Jefferson} 37456(54); \textit{Whitefield} Deane (96, 19), \textit{Dalton} 36130 & 36174(51).

\textbf{X \textit{P. gileadensis} Rouleau. Balm-of-Gilead. \textit{Shelburne}, near Leadmine Bridge, 11150=M 4100(08); \textit{Whitefield} M 4350(08).}

\textbf{MYRICACEAE (WAX-MYRTLE FAMILY)}

\textbf{MYRICA L.}

\textit{M. Gale} L. Sweet Gale. Shallow water and swamps, common. \textit{Pittsburg}, Third Lake, 32532(46), Second Lake, 10253=M 3419(07); \textit{Stewartstown} F & P 16812(17); \textit{Ogel} 34839(49); \textit{Success} 16556(17); \textit{Berlin} 4200(04), York Pond, 17171(18); \textit{Randolph} 12704(10), 29825(42); \textit{Gorham} 16903(16); \textit{Shelburne} Deane (83, 14, 27); \textit{Whitefield} Deane (96), M 5033(13), 39381(58); \textit{Dalton} 11583=M 4401(08), 17564(19).

\textit{M. Gale}, var. subglabra (Chev.) Fern. Similar localities. - \textit{Errol} 16276(14); \textit{Millsfield} 35391(50); \textit{Cambridge}, Umbagog, 18152(21); \textit{Dummer} 36375(51); \textit{Milan} 13722(12); \textit{Northumberland} 13549(12), 38659(57); \textit{Berlin} 3628851; \textit{Lancaster} 35463(50); \textit{Shelburne} 39382(58).

\textbf{COMPTONIA L'Hér. Sweet-fern.}

\textit{C. peregrina} (L.) Coul. Dry and sterile soil, infrequent save in Shelburne. - \textit{Milan}, Fogg Hill, 13714(12); \textit{Berlin}, Head Pond, 19082(22), Jasper Cave, 16511(15); \textit{Lancaster} 34745(49); \textit{Randolph}, railroad, 26750(38); \textit{Gorham} 16076(14), 33037(47); \textit{Shelburne} Philbrook (86); \textit{Deane} (82, 83, 04), 10778(07), 11131=M 4135(08); \textit{Whitefield} 11567=M 4488(08), 14212(13), \textit{Fernald} (17), 37865(55); \textit{Carroll}, railroad, 27695(39).

\textbf{JUGLANDACEAE (WALNUT FAMILY)}

\textbf{JUGLANDS L. Walnut.}

\textit{J. cinerea} L. Butternut. Alluvial soil; at Stark on rocky talus, often planted but in many places clearly indigenous; in some places earlier much more abundant than at present; cf. Farmer & Moore, \textit{Gazetteer of N.H.} (1823), 202, for Northumberland. - \textit{Pittsburg}, Third Lake, 10297(07), Second Lake, M 3428(07); \textit{Colebrook} M 3897(07); \textit{Stratford} 13557(12); \textit{Stark}, Devil's Slide, 17469(19), 32728(47); \textit{Northumberland} 12222(09); \textit{Lancaster} 36016(51), 38700(57); \textit{Randolph} Mrs. Moore (05), M 4221(08), 11145(08); \textit{Shelburne} Deane (83, 18); \textit{Whitefield} 11560=M 4392(08).

\* \textit{J. NIGRA} L. Black Walnut. Introduced and persistent. - \textit{Lancaster}, near Grange, 16097(14).
CORYLACEAE (HAZEL FAMILY)

CORYLUS L. Hazel.

C. cornuta Marsh. Thickets, common. - Pittsburg, First Lake, 10102=M 3625 (07); Clarksville 11023=M 3698 (07); DC Grant 16185 (14); Milan 33240 (47); Jefferson 16493 (17), 39092 (58); Randolph 451 (02), 4099 (04), M 4180 (08); Shelburne Philbrook (86, 91); Whitefield Deane (96); Carroll, Fabyans, Williams (95).

OSTRYA Scop. Hop-Hornbeam.

O. virginiana (Mill.) K. Koch. Rich woods, occasional. - Colebrook 11045=M 3815 (07); 1 foot in diameter; Columbia 10408=M 3915 (07), 27835 (40); Northumberland, Cape Horn, 33530 (48); Lancaster, Mt. Prospect, 32570 (47), Mt. Pleasant, 14541 (13), Mt. Tug, 16732 (16); Dalton 14570 (13), Carroll 17434 (19); Randolph Williams (97), 4099 (04), 12018 (09); Gorham 31382 (45), 37071 (53); Shelburne Deane (82, 83), 12205 (09), 36733 (52), 36991 (53).

BETULA L. Birch.

B. lutea Michx.f. Yellow Birch. Woods, common. - Pittsburg, Third Lake, 10307=M 3504 & 3518 (07); Stratford 13459 (12); Northumberland 36912 (52); Jefferson 31008 (44); Randolph M 1429 (03); Mrs. Moore (05), M 4191 (08); P Grant Deane (20); Shelburne Deane (83); Whitefield Deane (95).

B. lutea, var. macrolepis Fern. - Randolph 440 (02).

B. populifolia Marsh. Gray Birch. Poor soil, frequent. - Colebrook 10412=M 3913 (07); Stark 29148 (41), 32891 (47); Milan 13806 (12); Berlin 17164 (18), 36120 (51); Lancaster 32569 (47); Jefferson 14361 (13); Randolph 4118 (04), M 4043 (07); Gorham 32776 (47); M Location 12853 (10); Shelburne Deane (82); Whitefield M 4393 (08); Carroll 36444 (52).

B. caerulea-grandis Blanch. Occasional. - Randolph, roadside, 16298 (14); Shelburne Deane (14); G Grant Edmondson 5321 (14).

B. minor (Tuckerm.) Fern. Dwarf White Birch. Common in the alpine region, rare at lower altitudes. - Randolph, Ice Gulch, 10750 (07), 16707 (17); LB Grant, Duck Fall, 14160 (13), Nowell Ridge, 12316 (09); TM Purchase, Star Lake trail, Steele (51), Carriage Road, Deane (82), E & C.E. Faxon (86), Williams (98), Greenman (98), B.L. Robinson (01), 10532 (07), Forbes (14); S Purchase, Alpine Garden, E. & C.E. Faxon (93), Williams (95), B.L. Robinson (01), 445 (02), 19828 (26), Lakes of the Clouds, 446 (02); C Grant, Oakes Gulf, Williams (93, 95), Churchill (95), Eggleston (01), 33931 (48); alpine, indefinitely located, Tuckerman (n.d.) - the ISOTYPE of this species and the TYPE of Regel's B. dahurica, var. americana; cf. M.L. Fernald in Rhodora, 47 (1945), 307. What H.H. Bartlett (in litt. 13 Oct., 1952) believes is Tuckerman's type specimen of this species (collected in 1840) is in the National Herbarium under the (unpublished?) name Betula papyracea, var. alpina.

B. papyrifera Marsh. White Birch, Paper Birch. Woods, very common. - Pittsburg, Third Lake, 10193=M 3489 (07); DC Grant 16157 (14); W Location 33328 (47); Columbia 10489=M 3874 (07); Stratford 13530 (12); Milan 13841 (12); Stark 35370 (50); Lancaster 17816 (20); Randolph 4045 (04), 17470 (19), 39321 & 39340 (58); Gorham M 4055 (07), 16080 (14); Shelburne Deane...
B. papyrifera, var. cordifolia (Regel) Fern. Woods, very common. - Pittsburg, First Lake, 10104=M 3627(07), 10118=M 3601(07); Success, Mt. Success, 11129=M 4123(08); Randolph Williams (95), M 1456(03), M 4210(08), 12220(09); Shelburne Deane (83); B Purchase, Carter Notch, M 5075(13); LB Grant, Mt. Madison, M 228(02); TM Purchase, Carriage Road, Green-
man (98), Williams (01), 10532(07); S Purchase, Alpine Garden, E. Faxon (77), E. & C.E. Faxon (93), Greenman (98), Tuckerman Ravine, Williams (95), Eggleston (01), M 5088(13), Spaulding (19); Mt. Washington, indefinite, W. Boott (1853), Pringle (77), E. Faxon (86); H Grant, Mt. Crawford, 11731(08); Carroll, Fabyans, Bissell (02).

B. glandulosa Michx. Alpine regions, common. - TM Purchase, Peabody Spring, 10844 & 10845(07), Mt. Clay, Greenman (98), Carriage Road, Williams (98), Collins (19); S Purchase, Alpine Garden, Fuller (94), Lakes of the Clouds, C.E. Faxon (78), Allen (80), Churchill (95), Eggleston (98), 444(02), Eggleston (03), Summit, Flint (71), Bicknell (84), E. & C.E. Faxon (86,87), Williams (96), Fuller (00), Williams (01); C Grant, Crawford Path, Williams (98), M 267(02), 11180(08), M 4540(09), Mt. Franklin, 16759(16), Oakes Gulf, Williams (95,96), 33962(48); Mt. Washington, indefinite, Oakes (n.d.), Tuckerman (n.d.), Gray (1842), W. Boott (1853), Morong (74), Flint & Huntington (76), Pringle (77,78), E. & C.E. Faxon (78), Fuller (00). - Varies much in the size of its leaves; some specimens rather suggest hybridization with B. minor, and A. Rehder 1002(22), so identifies a collection from B Grant, west slope of Mt. Pleasant. H.H. Bartlett would so interpret Standley and Killip7775 from "Mt. Washington above timber line" (21), labelled B. glandulosa.

ALNUS B.Ehrh. Alder

A. crispa (Ait.) Pursh. Green Alder. Gravely soil, especially in mountain ravines under snow patches and on slides. - DC Grant, Diamond Gorge, 12638(10); Cambridge, Umbagog, 16528(15); Milan 36121(51); Randolph Williams (96), 16425(17), 17600(19), 26512(37); Shelburne 25886(37); LB Grant, Knife Edge, 10772(07), King Ravine, 4025(04), 10656(07); TM Purchase, Cape Horn, B.L. Robinson (01); S Purchase, Tuckerman Ravine, W. Boott (1855), Hoar (1858), Flint (71), E. & C.E. Faxon (87), Fuller (00), 438=M 300(02), C Grant, Oakes Gulf, Williams (95); C Purchase, Base Station, 11192(08); Carroll, Stanley Slide, 17924(20).

A. crispa, var. mollis Fern. More widely distributed, and often at lower altitudes. - Randolph 12086=M 4525(09), 12278(09); Gorham 12195(09), 16434(15),36552(52); Shelburne Deane (82, 83, 84, 18); LB Grant 436(01), 10215=M 3346(07); C Grant, Oakes Gulf, Williams (93,98), Greenman (98); H Grant, Mt. Crawford, 11779(08).

A. rugosa (DuRoi) Spreng., var. americana (Regel) Fern. Speckled Alder. Swamps and low ground, very common. - Pittsburg, Third Lake, 10297=M 3428(07); DC Grant 16162(14); Colebrook M 3897(07), Hodgdon & Clapp 6763(50); Columbia 36753(52); Cambridge 18150(21); Northumberland 16451(17); Jefferson 17560(19); C Purchase 11257(08); Whitefield Deane (96,97); P Grant 39253(58); White Mts., indefinite, Tuckerman (n.d.).

A. rugosa, var. americana, f. hypomalaca Fern. - Colebrook, Beaver Falls, 13986(12); Randolph 11179(08); Shelburne 11133(08); Mt. Washington, indefinite, Kennedy (91).
FAGACEAE (BEECH FAMILY)

FAGUS L. Beech.

*F. grandifolia* Ehrh. Woods, common, especially southward. - *Pittsburg*, First Lake, Mrs. Stevens (95), 10137=M 3621(07); *Lancaster* Deane (96); *Whitefield* Deane (95); *Jefferson* 16497 (15); *Randolph* M 1426(03), Mrs. Moore (05), M 4046(07), 10850(07), 19788(26); *Shelburne* Deane (83, 09).

QUERCUS L. Oak

*Q. rubra* L. (including var. *borealis* (Michx. f.) Farw.). Gray Oak. Frequent in the warmer and lower towns, ascending to 2500 feet on Mt. Hayes, but largely absent from the northern and colder areas. - *Stark*, Devil's Slide, 17451(19), 35417(50); *Northumberland*, Cape Horn, 33446(48); *Lancaster*, Mt. Prospect, common, 14231(13); *Berlin*, Mt. Forist, 16112(14); *M Location* 14289 (13), 32536(46); *Gorham* Watson (95), 10521(07), M 4175(08), 36534(52); *Shelburne* Deane (82, 83, 84), 11163=M 4134(08), Carter & Wilson (13), 36540(52); *B Purchase* 16014(14), 35546(50); *Dalton* 11587(08), 16396(15), 35644(50), 36724(52); *H Grant*, Mt. Hope, 2300 feet, common, 16453(15).

ULMACEAE (ELM FAMILY)

ULMUS L. Elm.

*U. americana* L., f. laevior Fern. - *DC Grant* 36778(52); *Randolph* Williams (96), 4101(04). F.C. Seymour (*Rhodora*, 54(1952), 139) finds this to be the typical form of this species.

*U. americana*, f. *alba* (Ait.) Fern. Our commonest form. - *Pittsburg*, Indian Stream, 10985(07); *DC Grant* 16204(14), 26420(37); *Colebrook* 25927(37); *Columbia* 25214(35); *Stark* 25252 (35); *Lancaster* 32782(47); *Jefferson* 36042(51); *Randolph* Williams (96, 97), M 4213(08), 35924(51); *Gorham* 16007(14); *Shelburne* Deane (82); *Carroll* 26908(38); *Dalton* 25302(35).

CANNABINACEAE (HEMP FAMILY)

HUMULUS L. Hop.

*H. LUPULUS* L. Spreading from cultivation. - *Pittsburg* 10986=M 3728(07); *Stewartstown* F & P 17007(17); *Errol* M 3204(06); *Lancaster* 12809(10), 36205(51), 37625(54); *Jefferson* 10787(07); *Randolph* 12840(10); *Berlin* Schmid (48); *Gorham* Deane (83, 14); *M Location* 12855(10); *Shelburne* Mrs. Drown (16), Deane (17); *Dalton* 11586=M 4417(08), 35750(50); *Whitefield* 14191(13).

URTICACEAE (NETTLE FAMILY)

URTICA L. Nettle.

*U. GRACILIS* Ait. - *Jefferson* 34543(49).

*U. procera* Muhl. Thickets and roadides. - *Stewartstown* F & P 16599(17); *Colebrook* 10904 =M 3952(07); *Millsfield* 18168(21); *Jefferson* 16704(16), 18218 & 18220(21); *Randolph* 18133 (21).

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LAPORTEA Gaud. Wood-Nettle.

*L. canadensis* (L.) Wedd. Rich woods, occasional. - *Clarksville* 11060=M 3705(07), 34691 (49); *Cambridge*, Umbagog, Deane (16); *Colebrook* 10424=M 3813(07); *Columbia* 36756(52); *Millsfield* 18158(21); *Milan* 13869(12); *Lancaster* 12114(09), 38559(56); Mt. Prospect, 14547 (13); *Jefferson* 16835(16); *Randolph* 9920(16); *Shelburne* Deane (16, 17), 38886(57); *Dalton* 35757(50); *Carroll*, Crawford's, Pickering (1825).

PILEA Lindl. Richweed.

*P. pumila* (L.) Gray. Moist woods, occasional. - *Stratford* 32280(46); *Stark*, Devil's Slide, 20067(27), 35356(50); *Lancaster* 14512(13), 16738(16); *Jefferson* 10749(07); *Randolph* 16811 (16), 17376(18); *Gorham* 12872(10); *Shelburne* Deane (17); *Dalton* 17415(19).

BOEMHERIA Jacq. False Nettle.

*B. cylindrica* (L.) Sw. Rich woods, local. - *Dalton* 35861(50).

SANTALACEAE (SANDALWOOD FAMILY)

GEOCAULON Fern.

*G. lividum* (Richards.) Fern. Mossy bogs on the upper parts of the secondary mountains, local (somewhat similar in distribution to *Rubus Chamaemorus*). - *Success*, Mt. Success, 11210=M 4096(08); *B Purchase*, Imp Mtn., 3600 feet, 16766(17), Basin Rim, 25215(35); *B Grant*, Mt. Clinton, Eggleston & Sargent (01), 12303(09).

LORANTHACEAE (MISTLETOE FAMILY)

ARCEUTHOBIUM Bibb. Dwarf Mistletoe.

*A. pusillum* Peck. Parasitc on red, white, and black spruces; to be expected on larch; probably not rare, but often overlooked. - *Pittsburg*, Second Lake, 37382(53); *Errol*, Long Pond, F & P 16991 (17), 32509(46); *Jefferson* 36409(51); *Randolph* M 143(01), 3141 & 3258a(03), 18098(21), 19318(24), 19894(26), 20745(30); *LB Grant* 6618 & 6619(04), 37758(55), *Jefferson* Notch, 16368(15); *Shelburne*, Minard's swamp, Farlow (85, 94); *B Purchase*, Carter Notch, 32722(47), Moriah Brook Gorge, 16601(15), Mt. Meader to Eagle Crag, 20127 & 20128(27), *Whitefield* 37405(54). Reported by L.S. Gill (*Trans. Conn. Acad. Arts & Sci*. 32 (1935), 157) from *B Purchase*, Blue Brook Ranger station, on white spruce (G.G. Hedgecock (13)), and by W.H. Harrison from *M Location* (36).

ARISTOLOCHIACEAE (BIRTHWORT FAMILY)

ASARUM L. Wild Ginger.

*A. canadense* L. Rich woods, chiefly in the Connecticut watershed, occasional. - *Colebrook* 10919(07), 12303(09), 12667(10); *Columbia* F & P 16614(17); *Stratford* 13489(12); *Dummer* 20618(30); *Lancaster* 16424(15); *Dalton* 11539=M 4380(08), 16419(15).
POLYGONACEAE (BUCKWHEAT FAMILY)

OXYRIA Hill. Mountain-Sorrel.

* O. digyna (L.) Hill. Alpine brooks and late snow-patches, local. - *TM Purchase*, Great Gulf, W. Boott (1855), E. & C.E. Faxon (78, 87, 93), Williams (93, 95), Churchill (95), E. & C.E. Faxon (96), Fuller (0) 12103=M 4259(09); *S Purchase*, Tuckerman Ravine, W. Boott (1855), Hoar (1858), E. Faxon (77), Worcester (n.d.), Manning (81), Fuller (88), Williams (93), Merrill (96), Eggleston (99), 469=M 299(02). Spaulding (19), Huntington Ravine, C.E. Faxon (78); Mt. Washington, indefinite, Oakes (n.d.), Mann (1862), Flint & Huntington (76), Pringle (77, 78), Allen (78), Farlow (84), Chadbourne (84). E. Tuckerman (in *Am. Journ. Sci.* 45(1843), 29) says it was first found here in 1825 by Oakes and Pickering.

**RUMEX L. Dock.**

* R. MEXICANUS Meisn. Waste places, occasional. - *Stewartstown* F & P 16592(17); *Success* 33971(48); *Milan* 13872(12); *Berlin* 13832(12), 16517(15), 17187(18), 23880(33), 29868(42), 36291(51); *Randolph* 12263(09); *Gorham* 12682(10); *Lancaster* 36743(52).

* R. ALTISSIMUS Wood. Rare. - *Shelburne Deane* (15).

* R. DOMESTICUS Hartm. Fields, occasional. - *Colebrook* 10422=M 3875(07); *Jefferson* 16400(15), 35349(50); *Randolph* 16089(14); *Gorham* 14431(13); *G Grant*, Glen House, 17112(18); *Shelburne Deane* (19); *B Purchase*, Wild River, 34460(49).

* R. orbiculatus Gray. Swamps, rather local. - *Stewartstown*, alluvial meadow, West Stewartstown, F & P 17013(17); *Milan*, Upper Ammonoosuc River, 13962(12); *Whitefield*, South Whitefield Road, 36399(51).

* R. CRISPUS L. Yellow Dock. Weed in waste places, common. - *Pittsburg*, Indian Stream, 11064=M 3741(07); *Clarksville* 36086(51); *Stewartstown* 14022(12); *Columbia* 14071(12); *Lancaster* 12364(09), 14531(13), 39443(58); *Jefferson* 12686(10), 14359(13), 16881(16), 31375(45), 38259(56); *Randolph* M 1134(03), 12068(09); *Gorham* 12682(10), 16437(15); *Shelburne Deane* (08); *Carroll* 31458(45).

* R. OBTUSIFOLIUS L. Frequent weed in waste places. - *Pittsburg*, First Lake, 11004=M 3623(07); *Milan* 13842(12); *Jefferson* 14391(13), 31295(45); *Randolph* 493(02), 5425(04); *Shelburne Deane* (15).


* R. ACETOSELLA L. Sheep Sorrel. Ubiquitous weed of sour soils. - *Pittsburg*, First Lake, 10162=M 3660(07); *Stratford*, North Percy Peak, 12729(10), 13554(12); *Lancaster* 36008(51); *Jefferson* 30606(44), 32752(47); *Randolph* M 213(02), M 3376(07), 11241(08); M Location 14348(13); *Shelburne Deane* (83, 09, 16); *B Purchase*, North Baldface Mtn., 16047(14); *LB Grant*, Mt. Adams, 4200 feet, Blankinship (90); *TM Purchase*, Carriage Road, 10544(07), 5000 feet, Williams (97); *S Purchase*, Summit House, Williams (95); *C Grant*, Mt. Franklin, 4800 feet, 16779(16).
*R. ACETOSA L. Rather local in fields and meadows. - Stewartstown, near Little Diamond Pond, 31981(46), South Hill, 37062(53), 38930(57); Columbia, Marshall Hill, roadside, 36101(51).

RHEUM L. Rhubarb.

*R. RHAPONTICUM L. Persistent at old house-sites. - Randolph 5686(04), 10864(07), M 3309(07); Shelburne Deane (19).

POLYGONUM L. Knotweed.

*P. RAMOSISSIMUM Michx. Infrequent weed. - Berlin, waste lot, 16521 & 16641(15).

*P. AVICULARE L., including var. ANGUSTISSIMUM Meisn. Very common weed in disturbed soil. - Pittsburg, Second Lake, 31647 (45), 33210(47), Hall Stream, 36218(51); DC Grant 32489 (46); Colebrook 36675(52); Stratford 33923(48); Cambridge 26356(37); Stark 29154(41), 29897(42); Success 10639(07); Milan 13772(12); Berlin 37556(54); Lancaster 38871(57); Jefferson 16843(16), 33168(47), 35579(50); Randolph M 1140 & 1459(03), 11683(08), 17182(18); Gorham 29619(42); Shelburne Deane (15, 18); Carroll 26238(37), 39935(61).

*P. AVICULARE, var. VEGETUM Ledeb. Infrequent weed. - Gorham, railroad, 16084(14).

P. Douglasii Greene. Rocky ledges, very local. - H Grant, Hart Ledge, 16622 & 16624(15).

P. viviparum L. Bistort. Gravelly or turfy alpine slopes, locally common. - TM Purchase, Great Gulf, C.E. Faxon (85), E. & C.E. Faxon (95), Williams (95), Eggleston (98, 99); S Purchase, Alpine Garden, Worcester (77), C.E. Faxon (78), E. & C.E. Faxon (87), Williams (93), Fuller (94), E. & C.E. Faxon (95), Eggleston (99), 489-M 280(02), Tuckerman Ravine, Hoar (1858), Kennedy (91), 19801(26), Camel Trail, 33941(48); C Grant, Crawford Path, E. & C.E. Faxon (95), Churchill (95); indefinitely located, Oakes (n.d.), W. Boot (1855), Mann (1862), Flint & Huntington (76), Allen (78).

P. viviparum, f. bulbigerum G. Beck. S Purchase, Alpine Garden, Williams (97), 12529(09); C Grant, Oakes Gulf, 12029(09).

P. amphibia L., var. stipulaceum (Coleman) Fern., f. fluitans (Ea.t.) Fern. Water Smartweed. Shallow water, occasional. - Columbia, Lime Pond, 10465-M 3837(07), Fish Pond, 37619(54); Errol, outlet of Umbagog, 20088(27); Cambridge, Umbagog, 16530(15), 18187(21); Dummer Flint (73); Lancaster, Martin Meadow Pond, 16645(17), 17598(19), 17850(20), 26256(37), 33027(47), 35462(50),

P. amphibia, var. stipulaceum, f. simile Fern. - Errol 37941(55).

P. pennsylvanicum L., var. laevigatum Fern. Pinkweed. Fields and shores, common. - Pittsburg, Back Lake, F & P 17070(17); Stewartstown F & P 17016(17); Colebrook 33773(48); Stratford, railroad, 33266(47); Stark 37368(53); Northumberland 38205(55); Berlin, Dead River, 17492(19), 17847(20); Lancaster 12361(09), 37643(54), 38202(55); Jefferson 36155 & 36427(51); Randolph M 4070(07); Gorham 17630(19); Shelburne 11693(08), Deane (15), 29908(42), 37611(45).
P. pensylvanicum, var. laevigatum, f. albineum Farw. - Dalton 35866(50).

P. lapathifolium L. Fields and shores, common. - Pittsburg 33209(47); DC Grant 16288(14); Stewartstown F & P 17064(17); Lancaster 37626(54); Jefferson 31004(44), 35673(50), 38184(55); Randolph M 44580(08), M 4591(09); Gorham 18228(21); Shelburne Deane (85); Whitefield Deane (95, 14), 17796(19), Dalton 35647(50).

P. lapathifolium, var. salicifolium Sibth. Gravelly shores, etc. - Pittsburg, Second Lake, 31646(45); Milan 17443(19); Dummer 29850(42); Berlin, Dead River, 14494(13), Upper Ammonoosuc River, 14448(13); Jefferson 16598(15), 16898(16); Randolph 16260(14), 17183 & 17184(18); Gorham 16542(15); Shelburne Deane (14, 15, 17, 18).

*P. SCABRUM Moench. Cultivated ground, common. - Stark 37367(53); Dummer 29850(42); Milan 13827(12), 33111(47), 35429(50), 36181(51); Berlin 30245(43); Randolph 16560(15); Shelburne 29902(42); Whitefield Deane (95); Carroll 33152(47).

P. Careyi Olney. Fields and roadsides, scarce. - Pittsburg, Back Lake, F & P 17069(17); M Location 12854(10).

P. Hydropiper L. Smartweed. Wet places, common. - Pittsburg, Thrd Lake, 33196(47); Stratford 17730(17), 17682(19); Stark 38142(55); Northumberland 38193(55), 39795(60); Milan 33108(47); Jefferson 16846(16), 30277(43), 31002(44), 32314(46), 38102(55); Randolph M 1458(03), 11682(08), 17612 & 17613(19); Gorham 11423(08), 16543(15), 16935(16); Shelburne Deane (13).

*P. PERSICARIA L. Lady's Thumb. Fields, very common. - Stark 38143(55); Milan 13828(12); Jefferson 16847(16); Randolph Williams (96), M 356(02), M 4075(07), 11698(08), M 4592(09), 17602(19); Gorham Williams (95), Mrs. Moore (03), 14424(13), 16915(16); Shelburne Deane (15), 39396(58).

P. punctatum Ell., var. leptostachyum (Meisn.) Small. Water-Smartweed. Wet shores. - Errol F & P 16986(17); Odell, Nash Stream Bog, 35752(50); Stark 39949(61); Jefferson 30267(43); Randolph 17612(19); Shelburne Deane (13).


P. sagittatum L. Teartthumb. Low ground, very common. - Pittsburg, Third Lake, 33178(47); Milan 13747(12); Lancaster 39303(58); Jefferson 16852(16), 30265(43); Randolph Williams (96), M 249 & 410(02), 11647(08), 12230(09); Gorham 30615(44); Shelburne Deane (82); Whitefield Deane (97), M 4426(08).

P. ciliode Michx. Climbing Buckwheat. Gravelly and rocky soil, common. - Colebrook 10391=M 3925(07); Lancaster 36722(52); Jefferson M 1370(03); Berlin 16115(14); Randolph Williams (96), 12072(09); Gorham M 4284(08), 38951(57); Shelburne Deane (82, 15); Carroll, Crawford's, Miss Minns (n.d.); Whitefield Deane (96).

P. ciliode, f. erectum (Peck) Fern. Occasional by roadsides and railroad. - Stark 35242(50), 36518(52); Jefferson 29482(42), 30202(43); Gorham 13657(12), 29493(42).
*P. CONVOLVULUS L. Black Bindweed. Weed of waste places and fields, common. - Pittsburg M 3680(07); Colebrook 10365=M 3934(07); Randolph Williams (96), M 357(02), M 4069(07), 11680(08); Shelburne Deane (82), M 4865(11), 39362(58); S Purchase, Summit House, Williams (01); Whitefield Deane (96).

*P. CONVOLVULUS, var. SUBALATUM Lej. & Court. - Gorham, field, 16919(16).

*P. scandens L. Climbing False Buckwheat. Damp thickets, infrequent. - Shelburne Deane (15, 18); H Grant, Hart Ledge, 16623(15).

*P. CUSPIDATUM Stebb. & Zucc. Waste places, spreading from cultivation, and abundant in Northumberland. - Northumberland 38190(55); Lancaster, dump, 34033(48), 35017(49), 37647(54); Berlin 30298(43), 36806(52); Shelburne 37610(45).

FACOPYRUM Mill. Buckwheat.

*F. SAGITTATUM Gilib. Persistent after cultivation. - Pittsburg 10418=M 3735(07); Gorham, railroad, 11472(08), M 4270(08); Shelburne Deane(83, 16); TM Purchase, Great Gulf, 12103(09); Whitefield, railroad, Deane (95).

*F. TATARICUM (L.) Gaertn. Similarly persistent. - Success 10644(07); Jefferson 10740(07); Shelburne Deane (83, 14); Whitefield Deane (95, 97).

POLYGONELLA Michx. Jointweed.

*P. ARTICULATA (L.) Meisn. Sandy soil along railroad tracks, frequent. - Columbia 37679(54), 38210(55); Stratford 30935(44); Stark 27693(39), 29838(42), 33233(47), 35044(49), 37358(53); Northumberland F & P 17032(17), 19092(22), 29344(41), 35601(50); Berlin 30422(43); Lancaster 33026(47); Jefferson 16597(15); 22766(31), 28814(41), 29815(42); Randolph 9921(06), M 3213(06), 19889(26); Gorham 12815(10); Shelburne 29907(42), 38629(56); Whitefield 27707(39), 30246(43), 36898(52); Dalton 16316(14), 25293(35); Carroll 33283(47), 39630(52), Twin Mountain, 14467(13), Crawford's, 11750(08).

CHENOPODIACEAE (GOOSEFOOT FAMILY)

CHENOPODIUM L. Pigweed.

*C. URBICUM L. barnyards. - Milan 13689(12); Jefferson 16936(16).

C. hybrium L., var. gigantospermum (Aellen) Rouleau. Sometimes indigenous in rocky woods; elsewhere adventive. - Stark, Crystal, 20718(30); Northumberland, base of Cape Horn, 25197(35); Lancaster, Mt. Prospect, 14581(13), 17227(18); Berlin, talus near Dead River, 19875(26), railroad, 11632(08); Randolph, garden weed, 22748(31); Shelburne, talus, Crow's Nest, 36770(52).

*C. LEPTOPHYLLUM Nutt. Infrequent waif. - Berlin, railroad, 32031(46); Randolph 17471(19); Gorham, railroad, 12156(09); Shelburne, railroad, Deane (17).

C. Boscianum Moq. Dry rocky woods. - H Grant, top of Hart Ledge, 16627(15).
D. LANCEOLATUM Muhl. Waste ground, frequent. - Pittsbg, Hall Stream, 36253(51); Lancaster 36408(51); Berlin 35815(50); Randolph M 4066(07), 12182(09); M Location 17216(18); Shelburne Deane (15).

C. ALBUM L. Waste places, very common. - Stewartstown M 3779(07); Stratford 33949(48); Randolph 499(02), M 1379(03), 11686(08), 17176 & 17323(18); Shelburne Deane (82, 17).

C. PAGANUM Reichenb. - Stewartstown F & P 17065(17); Columbia 37681(54).

C. GLAUCUM L. Locally adventive. - Pittsbg, Hall Stream, 37234(53); Berlin 11514=M 4448(08), 16441(15), 17483(19); Lancaster, dump, 34580 & 35041(49), 36849(52); Jefferson, roadside ditch, 30284(43), 38883(57).

C. CAPITATUM (L.)Aschers. Strawberry Blite. Infrequently adventive. - Errol, Moll's Rock, Umbagog, Brewster (95); Success, roadside, 27492(39); I have also seen (27) a specimen collected as a garden weed in Randolph by Miss Lily Wells.

ATRIPLEX L. Orach.

A. PATULA L. Occasionally adventive. - Milan 13953(12); Gorham, dooryard, 14456(13).

A. PATULA, var. HASTATA (L.)Gray. - Gorham, railroad, 16104(14).

BETA L. Beet.

B. VULGARIS L. Rarely adventive. - Jefferson, dump, 11009(07).

AXYRIS L. Russian Pigweed.

A. AMARANTHOIDES L. Rare adventive. - Success, old logging-camp, 33844(48).

SALSOLA L. Saltwort.

S. KALI L. Railroad tracks. - Stark 29951(42), 35056(49); Berlin 29890(42); Jefferson 37335(53).

S. KALI, var. TENUIFOLIA Tausch. Similarly. - Stark 33234(47), 34168(48); Lancaster 36771(52); Berlin 11789=M 4304(08), 14500(13), 34022(48); Gorham 16326(14), 31251(44).

AMARANTHACEAE (AMARANTH FAMILY)

AMARANTHUS L. Amaranth.

A. HYBRIDUS L. Weed in waste places. - Stratford 33299(47), 34061(48); Shelburne Deane (15); Whitefield M 4351(08).

A. RETROFLEXUS L. Common weed in cultivated or waste ground. - Colebrook 33999(48); Berlin 38145(55), railroad, 30312(43); Randolph 508(02), M 355(02); Gorham, railroad, M 4293(08), 16604(15); Shelburne Deane (15); Carroll 38185(55).
**A. ALBUS L.** Waste ground. *Stratford F & P 17029(17); Milan 13949(12); Berlin 10678 (07), M 4307(08), 35798(50), 38144(55); Randolph 27546(39); Gorham 11475(08), M 4209 (08); Shelburne Deane (17); Whitefield M 4348(08); Dalton 11418=M 4360(08).

**A. GRAECIZANS L.** Waste ground. *Northumberland 32309(46); Lancaster 34035(48); Berlin 30407(43), 37559(54); Carroll 33140(47).

ACNIDA L. Water-Hemp.

**A. ALTISSIMA** Riddell. Rarely adventive on railroads. *Berlin 30309(43).

**AIZOACEAE (CARPET-WEED FAMILY)**

MOLLUGO L. Indian Chickweed.

**M. VERTICILLATA L.** Roadsides, railroads, and waste ground, frequent. *Stark 39950(61); Milan 13950(12); Berlin 11306(08), M 4473(08); Jefferson M 1371(03), 10799(07); Randolph 12776(10); Gorham 11474(08); Shelburne Deane (17); Whitefield 12695(10), 11573=M 4418 (08); Dalton 35648 & 35745(50), 36836(52).

**PORTULACACEAE (PURSLANE FAMILY)**

PORTULACA L. Purslane.

**P. OLERACEA L.** Cultivated ground and railroads, occasional. *Milan 13688(12); Berlin 11509=M 4504(08); Jefferson 13031(10); Randolph 12001(09); Gorham 11421(08), M 4469 (08); Shelburne 11795(08).

MONTIA L.

**M. PERFOLIATA (Donn)Howell.** Rare weed. *Jefferson*, garden of H.W. Wright, Wellman (15).

**CLAYTONIA L.** Spring Beauty.

*C. caroliniana* Michx. Rich woods, common. *Pittsburg, Second Lake, 10250=M 3436(07); Clarksville 35177(50); Stewartstown 797(40); Colebrook 33355(48); Dixville 36976(53); Columbia 27774(40), 31867(46); Stratford 13445(12); Stark 26471(37); Northumberland 35954(51), 36974(53); Lancaster 33239(48); Randolph Mrs. Moore (05), 10232=M 3310(07), 16465(17); LB Grant 514(01), 4200 feet, 16486(17); Shelburne Deane (09); C Grant, Oakes Gulf, above tree-line, Williams (93, 98), Greenman (98), Fuller (00), 11140(08), Mt. Clinton, Miss Brown (85).

**CARYOPHYLLACEAE (PINK FAMILY)**

**PARONYCHIA Mill.** Whitlow-wort.

*P. argyrocoma* (Michx.) Nutt., var. albimontana Fern. Bare ledges on mountains not of the highest altitude. *B Purchase, Carter Notch, on a very large rock at 3300 feet, Miss Endicott (94); B Grant, slide on Mt. Clinton, Tuckerman (n.d.) - TYPE specimen of the variety; cf. M.L. Fernald
in *Rhodora*, 8(1906), 104.; *S Purchase*, reported by H. St. John from Boot Spur, between Mts. Resolution and Crawford, 14040(12); *H Grant*, Mt. Crawford, 11707(08). W. Oakes (in *Hovey's Mag. of Hort.* 13(1847),217) says this plant was probably first collected in the Notch in 1843 by Drs. Chapman and Alexander; Tuckerman later got it on Mt. Crawford (1844).

**SPERGULARIA J. & C. Presl. Sand-Spurrey.**

*S. RUBRA* (L.) J. & C. Presl. Railroad tracks, occasional.—*Stewartstown* 29729(42); *Colebrook* 29754(42); *Columbia* 17698(19); *Lancaster* 12146(09), 37838(54); *Jefferson* 12803(10), 39117(58); *Randolph* 39376(58), 39899(61); *Carroll* 12696(10), 16650(16); *Whitefield* 11617=M 4354(08).

**SPERGULA L. Spurrey.**

*S. ARVENESIS* L. Cultivated fields, common.—*Pittsburgh*, Indian Stream, 11054=M 3745(07); *Clarksville* 38242(55); *Stewartstown* 29739(42); *Colebrook* 10902=M 4004(07); *Columbia* 34518(49); *W Location* 23062(32), 33342(47); *Cambridge* 18185(21); *Stratford* 23893(33); *Dummer Williams* (95), 26809(38), 35332(50); *Cambridge* 18185(21); *Stratford* 23893(33); *Dummer Williams* (95), 26809(38), 35332(50); *Lancaster* 39650(59); *Jefferson* 16875(16), 23116(32); *Randolph* 535(00), M 223(02), M 4072(07), M 4595(09), 21102(29); *Shelburne Deane* (15); *Whitefield Deane* (96); *Dalton* 34147(48), 37529(54).

**SAGINA L. Pearlwort.**

*S. PROCUMBENS* L. Railroads and waste ground; hardly native with us unless no. 32747 be such.—*Pittsburgh* 39080(58), Second Lake, gravel pit, 31648(45), Cooley, Eaton, and Pease 39890(61); *Hall Stream*, 37194(53), 37507(54); *Stewartstown* 27700(42), riverbank, 32747(47), 35990(51); *Colebrook* 25929(37); *Randolph*, weed in flowerpot, 17331(18); *Shelburne*, gravel walk, 38660(56).

**ARENARIA L. Sandwort.**

*A. lateriflora* L. Moist open soil, frequent.—*Pittsburgh*, Indian Stream, 11025=M 3774(48); *Stewartstown* 10975=M 3685(07), Hodgdon & Clapp 6169(49); *Colebrook* 29748(42); *Columbia* F & P 16790(17), 36755(52); *Stratford* 13456(12), 34341(49); *W Location* 12588(10); *Errol* 12617(10), 34356(49); *Northumberland* 13453(12), F & P 16787(17); *Lancaster* 12282(09), 36002(51); *Jefferson* 16510(17), 30253(43), 36501(52), 38331(56); *Randolph* 14116(13), 26188(37), 39099(58); *Shelburne Deane* (15, 16); *G Grant* 13665(12).

*A. groenlandica* (Retz.) Spreng. Mountain Sandwort. Gravelly and stony mountain-tops; common in the alpine region.—*Success*, Mt. Success, 11312=M 4100(08), Rushmore (27); *Shelburne*, Shelburne Mortah Mtn., Miss Church (14); *B Purchase*, Imp Mtn., 23766(33), slide on Carter Dome, 19409(24); *LB Grant*, Knife Edge, 10838(07), 12191(09), King Ravine, 2900 feet, 518(02), Newell Ridge 9893(06); *TM Purchase*, Mt. Madison, Churchill (89), Madison Huts, M 139(01), Parapot, 16491(15), Edmans Curl, 4097(04), M 4605(09), Mt. Jefferson, E. & C.E. Faxon (85), Great Gulf, Williams (95), Carriage Road, Deane (82, 84), Williams (93, 97); *S Purchase*, Summit of Mt. Washington, Garber (74), Deane (82), Miss Drake (86), Mrs. Slosson (88), Morss (89), Taylor (95), Merrill (96), Hall (n.d.), Alpine Garden, Fuller (83), E. & C.E. Faxon (85), 10555(07), 19829(26), Bigelow Lawn, E. & C.E. Faxon (95), Williams (95), Mt. Washington, indefinite, Oakes (n.d.), Mann(1862), Flint & Huntington (76), Allen (80), Manning (81), Hitchcock & Rounds (83), Sanger (86), Davis (97), B.L. Robinson &
Williams (03). *Plant. Exsicc. Gray* 213.; *C Grant*, Mt. Monroe, Greenman (98), M 4575 (09); *B Grant*, Mt. Jackson, 12300 (09), Mt. Webster, 11744 (08). E. Tuckerman in *Am. Journ. Sci.* 45 (1843), 42, n. 1, reports this from "the sandy plain of the Ammonoosuc... doubtless brought down from the mountains by the spring freshets" (this may be in Carroll).


*A. stricta* Michx. Shaded ledges, very local. *H Grant*, Hart Ledge, 16613 & 16619 (15).

**STELLARIA L. Chickweed.**

*S. MEDIA* (L.) Cyrillo. Waste places, very common weed. *Pittsburg M* 3677 (07); *Lancaster* 14221 (13); *Jefferson* 14389 (13); *Randolph* Williams (97), 10524 (07), M 4179 (08); *Shelburne* Deane (15); *S Purchase*, Summit House, Williams (03).

*S. GRAMINEA L. Grassy places, often introduced in feed. *Coblebrook* 12585 (10); *DC Grant* 16271 (14); *Dummer* 39109 (58); *Success* 33826 (48); *Northumberland* 34538 (49); *Berlin* 11627 M 4474 (08); *Lancaster* 14117 (15), 29777 (42), 33485 (48); *Jefferson* 16380 (15), 23125 (32), 23825 (33), 29474 (42), 31362 (45), 32511 (46), 32733 (47), 35221 (50); *Randolph* 16354 (15); *Gorham* 12677 (10); *Shelburne* Deane (18); *C Purchase* 12204 (09); *Carroll E. & C.E. Faxon* (86), Williams (98), 12203 (09), 27308 (39); *Dalton* 29447 (42); *C Purchase* 34844 (56).

*S. LONGIFOLIA* Muhl. Grassy places, occasional. *Stewartstown F & P* 16799 (17); *Northumberland* F & P 16788 (17); *Randolph* Churchill (89), M 1126 (03), 12064 (09); *G Grant* 13625 (12).

*S. Alsine* Grimm. Rills; frequent in the calcareous area, rare elsewhere. *Clarksville 10907 = M* 3772 & 3773 (07), 17693 (19); *Stewartstown 10406 = M* 3960 (07), 12629 (10), F & P 16569 & 16637 (17); *Columbia* 17708 (19); *Northumberland*, Lost Nation, 16731 (16).

*S. calycanthe* (Ledebr.) Bong. Cool rills, especially in the alpine region. *Pittsburg, Second Lake*, 10318 = M 3326 (07); *Stewartstown* Hodgdon & Clapp 6169 (49), 38707 (57); *Jefferson* 33092 (47); *Randolph*, Ice Gulch, Churchill (90); *LB Grant*, Madison Spring, Churchill (89); *S Purchase*, Alpine Garden, E. & C.E. Faxon (95), Churchill (95), 10557 (07), Huntington Ravine, E. & C.E. Faxon (74), F & P 16865 (17), Tuckerman Ravine, Allen (80), Hodgdon 6178 (49), summit of Mt. Washington, E. & C.E. Faxon (93), Williams (93), Deane (94), M 128 (01); *G Grant*, Glen House, E. & C.E. Faxon (96); Mt. Washington, indefinite, Oakes (n.d.), Allen (76), Flint & Huntington (76), Chickering (77), E.C. Faxon (94).

*S. calycanthe*, var. *isophylla* Fern. Similarly, but oftener at lower altitudes. *Stratford* 13463 (12); *Success* 16809 (17); *Milan* 13851 (12); *Stark*, Devil's Hop Yard, 16752 (16); *Randolph* Williams (96); *LB Grant* 16487 (15), Madison Huts, M 271 (02); *TM Purchase*, Great Gulf, E. & C.E. Faxon (79); *Dalton* 16392 (15).

*S. calycanthe*, var. *floribunda* Fern. Similarly. *Pittsburg*, First Lake, 10130 = M 3598 (07); *Stewartstown* F & P 16786 (17); *Coblebrook* 10917 (07); *Jefferson* 12698 (10); *Randolph*, Ice Gulch, Williams (96), 541 (00); *Gorham* 16679 (16); *LB Grant*, Madison Spring, Fuller (86).

The above three varieties are too close, and should perhaps be treated as one.
CERASTIUM L. Mouse-ear Chickweed.

*C. VULGATUM L. Gardens and fields, common.-*Pittsburg, Second Lake, 10317=M 3524 (07); Clarksville 36064(51); Columbia 34504(49); Stratford 13536(12), 35978(51); Milan 13811(12); Lancaster 36023(51), 37254(53); Randolph M 957 & 1094(03), 11223(08); Shilburne Deane (81, 16); *M Location* 14309(13); *S Purchase*, Summit House, Williams (01).

*C. ARVENSE L. Rarely adventive.-*Colebrook, B. Allen farm, 33354(48).

AGROSTEMMA L. Corn-cobble.

*A. GITHAGO L. Grain fields and railroads, less frequent of late years. (A.R. Clapham, T.G. Tutin, & F.F. Warburg, *Flora of the British Isles* (1952), 288, describe it as a "a common but decreasing cornfield weed").-*Stewartstown, railroad, 14015(12); Milan 15769(12); Berlin, railroad, 11640(08); Randolph Richards (97), Williams (97), 522(01), 10708(07), 11737(08), M 4459(08), 4590(09), 19095(22); Gorham, railroad, 12675(10); *M Location* Greenough (83); Shilburne 11675(08), Deane (18); *Whitefield*, railroad, 11450(08).

LYCHNIS L. Campion.

*L. DIOICA L. (White-flowered form).-*Lancaster 16398(15).

*L. ALBA Mill. Frequently adventive.-*W Location Pease & Harris 33902(48); Columbia Pease & Bean 33615(48); Stratford, dump, 34060(48); Milan 35480(50); Success 33845(48); Berlin 38361(56); Northumberland 28826(41); Stark 33911(48); Dummer 29144(41); Jefferson 19056(22), 34749(49) (also collected by Mrs. E.H. Terry; cf. B.L. Robinson in *Rhodora*, 5(1903), 235); Randolph 38881(57); *C Purchase* 37078(53); *Whitefield* 37706(54); *Dalton* 37709(54); *Lancaster* 39710(60).

*L. CHALCEDONICA L. Occasional escape.-*Colebrook 31516(45); Millsfield, Millsfield Pond, Lowe (21, from a plant transplanted to Randolph); Jefferson 19058(22); Dalton Deane (94).

*L. VISCARIA L.-*Carroll, field near Fabys, Kittredge (29), Hodgdon (51).

SILENE L. Catchfly.

*S. acaulis L, var. exscapa* (All.) DC. Alpine lawns, local.-*TM Purchase*, Great Gulf, Kennedy (95), Williams (95), Cow Pasture, E. & C.E. Faxon (90), Williams (93), Fuller (94), B.L. Robinson (01), Eggleston (01), 10546(07); *S Purchase*, Alpine Garden, Williams (98), Fuller (00), 10553(07), half-mile below summit, Chadbourn (84), Boot Spur, Fuller (94); Mt. Washington, indefinite, Oakes (n.d.), Hoar (1858), Mann (1862), Blake (1862), Chickering (74), Flint & Huntington (76), Goodale (n.d.), Pringle (77), E. & C.E. Faxon (77, 78, 80), Fuller (94), Churchill (95), Greenman (98).

*S. CUCUBALUS Wibel. Bladder-Campion. Increasingly frequent along railroads and in fields and gravelly soil.-*Pittsburg 33206(47), Second Lake, 37380(53), Indian Stream, 10429=M 3681(07); Clarksville 33645(48), 34640(49); Colebrook 10374=M 3907(07), Krochmal 1589(48); Columbia Cooley, Eaton, & Pease (61); Northumberland 16062(14); Stark, railroad,
32839(47); Milan, railroad, 13723(12), 32839(47); Lancaster 33520(48), 39147(58); Jefferson 32741(47); Berlin, railroad, 11635=M 4495(08); Randolph, railroad, 19840(26), 29372(41); Gorham, railroad, 11488(08), M 4265(08), 29556(42); Shelburne, railroad, Deane(17)

*S. CSEREI Baumg. Waste ground and railroads. - Stark 29164(41).

*S. antirrhina L. Sleepy Catchfly. Indigenous of Hart Ledge, elsewhere only adventive along railroads. - Stewartstown 29698(42); Columbia 33629(48); Stark 34509(49); Lancaster 29535(42); Jefferson 16374(15), 31354(45), 33122(47); Berlin 11636=M 4501(08); Carroll 29259(41), 33157(47); H Grant, slide on Hart Ledge, 16616(15).

*S. ARMERIA L. Escaped from cultivation. - Berlin, dump, 36308(51); Jefferson, railroad, 16639(15); Randolph, garden weed, 29817(42).

*S. GALLICA L. Escape. - Shelburne, garden weed, Deane (16); Carroll, railroad, 23144(32).

*S. NOCTIFLORA L. Frequently adventive in waste ground. - Stewartstown M 3780(07), 32769(47); Errol 12613(10), Columbia 32671(47); Milan 13740(12); Berlin M 4489(08), 29981(42); Lancaster 12819(10); Jefferson 23118(32); Randolph 12678(10); Gorham Williams(03), 10727(07), 11759=M 4327(08); Shelburne Deane (17); Carroll 12251(09), 17432(19).

SAPONARIA L.

*S. OFFICINALIS L. Bouncing-Bet. Occasionally adventive. - Randolph, railroad, 19930(26); Gorham 14429(13); Shelburne Deane (16); M Location 12922(10).

*S. VACCARIA L. Cow Herb. Rare waif. - Berlin, dump, 39171(58); Gorham, railroad, 20068(27); M Location, cellar-hole, 17212(18).

GYPSOPHILA L.

*G. ELEGANS Bieb. Escaped. - Randolph, waste heap, 12020(09), garden weed, 32814(47); Shelburne Deane (24).

*G. MURALIS L. Escaped. - Jefferson, ballast, 16610(15); Whitefield, garden weed, Deane (97); Shelburne, roadside, Deane (15), 36716(52).

DIANTHUS L. Pink.

*D. ARMERIA L. Rare waif. - Berlin 35793(50).

*D. BARBATUS L. Sweet William. Escaped. - Lancaster 38463(56); Randolph, by Moose River, 19812 & 19813(26); Shelburne Deane (27); Carroll, Cherry Mtn. Road, 27274(39), 31453(45).

*D. DELTOIDES L. Maiden-Pink. Escape. - Clarksville, roadside, 11039-M 3703(07); Randolph, ballast, 26185(37); Gorham, south of Cascade village, 36571(52), 37073(53).

*D. ATRORUBENS All. Rare escape. - Shelburne Deane (14, 20, 26).
CERATOPHYLLACEAE (HORNWORT FAMILY)

CERATOPHYLLUM L. Hornwort.

*C. demersum* L. Ponds and slow streams.  *Lancaster*, Kent Pond, 36147(51). M.W. Provost, *Techn. Circular 10 of N.H. Waterfowl Reconnaissance* (1942), states that this species is abundant in Bear Brook logan on the lower Magalloway River (i.e., in *Errol*).

NYMPHAEACEAE (WATER-LILY FAMILY)

NUPHAR Sm. Pond-lily.

*N. microphyllum* (Pers.) Fern. Ponds and slow streams, occasional.  *Pittsburg*, Second Lake, Kendall, Goldsborough, & Doolittle(04); *Stewartstown F&P 17067(17); W Location*, Magalloway River, 10622(07); *Jefferson*, Cherry Pond, 10682(07), 20059(27); *Shelburne*, Gates Creek, Greenough(82).

X *N. rubrodiscum* Morong. Ponds, frequent.  *Columbia*, Lime Pond, 10824=M3885(07);  *DC Grant*, Magalloway River, 16158(14);  *Berlin*, York Pond, 17165(18); *Jefferson*, Cherry Pond, 10654(07);  *Randolph*, Pond of Safety, 5410(04), 11110=M3306(07).

*N. variegatum* Engelm. -Ponds and slow streams, common.  *Pittsburg*, Mud Pond, Kendall, Goldsborough, & Doolittle (04); *Stewartstown*, Little Diamond Pond, 31953(46);  *Cambridge*, Umbagog, 16570(15);  *Dummer 33130(47); Success*, Success Pond, 16558(17), 33996(48);  *Randolph*, Pond of Safety, M1133(03), 10352=M3307(07); *Shelburne*, Moose Pond, Deane (83, 15, 17, 26);  *Carroll*, Ammonoosuc Lake, Williams (98);  *Whitefield*, Forest Lake, 23037(32), pond, Deane (96);  *Dalton*, Forest Lake, 17584(19).

NYMPHAEA L. Water-lily.

*N. odorata* Ait. Ponds, frequent.  *Errol*, Magalloway River, 10564(07), Umbagog Lake, Lothrop (20);  *Cambridge*, Umbagog, 16546(15);  *Columbia*, Fish Pond, 26847(38);  *Sark*, Pike Pond, Pease & Harris 34853(49);  *Milan*, Goose Pond, 36213(51), 37613(54);  *Whitefield*, Burns Pond, 14555=M5051(13), Forest Lake, 23032(32).


BRASENIA Schreb. Water-shield.

*B. Schreberi* Gmel. Ponds, frequent.  *Dummer 33131(47); Stark*, South Pond, 20621(30);  *Success*, Success Pond, 16557(17), 33974(48);  *Jefferson*, Cherry Pond, 10669(07);  *Whitefield*, 14580=M5031(13).

RANUNCULACEAE (CROWFOOT FAMILY)

RANUNCULUS L. Buttercup.

*R. trichophyllus* Chaix. White Water-Crowfoot. Shallow ponds, occasional.  *Pittsburg*, Mud Pond, Kendall, Goldsborough, & Doolittle (04);  *Dummer*, Phillips Brook, Pease & Harris 34846(49);  *Whitefield*, Burns Pond, 26026(37);  *Lancaster*, Clark Pond 34780(49);  *Shelburne*, 39363(58).

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R. subrigidus W.B. Drew. Local. - Columbia, Fish Pond, 37599 & 37615(54).

R. reptans L. Creeping Spearwort. Gravelly and muddy shores, frequent. -Pittsburg, First Lake, 10198=M 3583(07); DC Grant 36775(52); Errol 32454(46); Stark 17490(19); Northumberland 12176(09); Lancaster 12268(09); Whitefield, Burns Pond, 17792(19); Shelburne Deane (82).

R. reptans, var. ovalis (Bigel.) T. & G. - Cambridge, Umbagog, 17545(19); Dalton, Forest Lake, M 3475(08), 17576(19).

R. abortivus L., var. acrolus Fern. Woods, frequent. - Pittsburg, First Lake, 10293=M 3589 (07), Hall Stream, 31986(46); Clarksville 11013-M 3706(07), 35181(50); DC Grant 16232 (14), 36487(52); Stewardtown 10555(07), M 3946(07); Columbia 34313(49); Stratford 13535 (12); Stark 28562(41), 36467(52); Milan 13977(12); Northumberland 35920(51); Lancaster 33661(48), 36003(51), 38650(57); Jefferson 16457(17), 35105(50), 37439(54); Randolph M 978(03), 12031(09); Gorham 37403(54); Shelburne Deane (10)- TYPE of the variety.; B Purch 38296(56); LB Grant 38681(57), Duck Fall, 16486(15); TM Purchase, Great Gulf, E. & C.E. Faxon (95); S Purchase, Tuckerman Ravine, Hoar (1858), E. & C.E. Faxon (95), 12047(09); B Grant, Mt. Clinton, M 1084(03); Carroll 35375(50), Bretton Woods, 11269(08).

R. abortivus, var. euclycis Fern. Rich woods, occasional. - Errol 12642(10); Colebrook 11043-M 3808(07); Stratford 36459(52); Stark, Devil's Slide, 17487(19), 21025(29), 33415 (48); Lancaster, riverbank, 29233(41); Berlin, Mt. Forist, 16119(14); Randolph 12759(10); Carroll Greenman (98), 28812(41).

R. recurvatus Poir. Rich woods, frequent. - Pittsburg, Third Lake, 10330(07), First Lake, 10103=M 3633(07); Clarksville 35178(50); Stewardtown 10256(07); Colebrook 36087(51); Dixville 35395(50), Errol 12645(10), 38641(57); Stratford 13598(12); Northumberland 33443 (48); Stark 28561(41); Milan 13796(12); Lancaster 14203(13), 17821(20), 33375(48); Jefferson 11089(07); Randolph 580(01); Gorham 30486(44); Shelburne Deane (83), 33033(47); B Purch 38299(56); Carroll 16656(16), 30147(43), 35374(50); Dalton 16417(15), 36521 (52).

R. pensylvanicus Lf. Bristly Crowfoot. Wet woods, frequent. - Columbia 32305(46); Northumberland Robbins(n.d.); Dummer Williams (95); Milan 13957(12); Berlin 17494(19), 17848 (20); Jefferson 12802(10), 23082(32), 30988(44), 32316(46), 32903(47); Randolph Williams (95), 576(01), M 4049(07), 38844(57); Shelburne Deane (82, 08, 14, 16), 39893(61); Carroll, Fabyans, Bissell (02); Dalton 11600(08).

R. septentronicsis Poir. Alluvial woods, especially common northward. - Pittsburg, Third Lake, 10338(07), M 3493(07), Second Lake, 10251=M 3452(07), 33565(48), First Lake, 10159 (07); Clarksville 35235(50); AGA Grant, Hellgate, 12595(10); Stewardstown 10255-M 3414 (07), 36669(47), 38373(56); Colebrook 10385-M 3947(07), F & P 16566(17); Stratford 13634 (12); Stark 14150(13), 29835(42), 36830(52); Northumberland 13581(12); Lancaster 12153 (09), 36021(51), 38645(57); Jefferson 16489(17); Dalton 32336(46).

* R. REPENS L. An infrequent weed. - Randolph, Ravine House lawn, 24105(34); LB Grant, logging road in Ravine of the Castles, 16724(16).
* R. ACRIS L. Tall Buttercup. A ubiquitous weed.-Pittsburg, First Lake, 10097=M 3560(07), M 3652(07); Jefferson Mrs. Terry (99); Randolph M 238(02), 10013=M 3260 & 3294(07), 17728(19); M Location 14291(13); Shelburne Deane (15, 16, 19); S Purchase, Summit House, Kennedy (91), B.L. Robinson & Williams (01).

* R. ACRIS, var. LATISECTUS G. Beck.-Whitefield Deane (97), M 4357(08).

**THALICTRUM L. Meadow-Rue.**

*T. polygamum* Muhl. (including var. hebecarpum Fern.), Low ground, very common.-Pittsburg, Third Lake, 31689(45), cedar bog, 17690(19); Clarksville F & P 16940(17); Colebrook 10899=M 4032(07); DC Grant 16197(14); Stratford 17664(19); Stark 35366 & 35371 & 35531(50); Milan 13749(12); Lancaster Sanford (14); Jefferson 10635(07); Randolph Williams (97), M 200 & 201(02), M 4231(08), 10833(07), 16070(14), 16721(17), 21197(29); Shelburne Deane (82, 15, 18); B Purchase M 5077(13), Carter Notch, M 1475(13); S Purchase, Huntington Ravine, F & P 15534(17), Tuckerman Ravine, 11506(08); C Purchase E. & C.E. Faxon (91); C Grant, Oakes Gulf, Williams (95); Carroll, Crawford’s, E. & C.E. Faxon (91), Williams (95), Greenman (98), 32352(46); Dalton 35625(50).

**HEPATIC A L. Liverwort.**

*H. americana* (DC.) Ker. Rich woods, local.-Northumberland, Cape Horn, 33419(48); Lancaster, Mt. Prospect, 14443(13), Sanford (14), 17820(20), 36457(52), Mt. Pleasant, 14517(13); Dalton 24159(34).

*H. acutiloba* DC. Rocky woods, local.-Lancaster, Mt. Prospect, 14223(13).

**ANEMONE L.**

*A. virginiana* L. Thimbleweed. Dry woods and roadways, frequent.-Clarksville 17674(19), 34619(49); Lancaster, Mt. Prospect, 14198(13), Connors’s Woods, 32794(47); Jefferson 14459(13), 16421(15); Gorham 11662(08); Shelburne Deane (83), 11667(08), 37208(53); Carroll 16579(15); Dalton 24160(34).

*A. canadensis* L. Meadows, local.-Columbia, railroad south of Columbia Bridge, 32766(47); Jefferson, roadside (probably escaped), 36128(51).

*A. quinquefolia* L. Wood Anemone. Alluvial woods, frequent.-DC Grant 12604(10), 16229(14); Errol 12646(10); Colebrook 10918(07); Stratford 13461(12), 34319(49); Stark 33414(48); Jefferson 16512(17), 32643(47), 36040(51); Randolph 11282(08), 16433(17), 38985(58); Shelburne Miss Stowell (16), Deane (19), M Location Deane (04).

**CLEMATIS L.**

*C. virginiana* L. Low grounds and thickets, very common.-Pittsburg M 3519(07); DC Grant 16193(14); Stark 31537(45), 35057(49); Randolph Williams (95, 96), M 341(02), M 1386(03), M 4100(04), 39261(58); Shelburne Deane (83, 08), Carroll 33148(47).

*C. verticillaris* DC. Calcareous pockets in ledges, local.-Stratford, riverbank, F & P 16612(17); Stark, Devil’s Slide, 17438(19); Lancaster, Mt. Prospect, 14206(13), 36493(52), Mt.

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Pleasant, 17813(20), 31618(45); Dummer, riverbank, Harris 12010(56), Berlin, Jasper Cave, 26829(38); Gorham, Alpine Cascade, 12779(10).

CALTHA L. Marsh Marigold.

C. palustris L. Very wet clayey meadows and woods, frequent, especially in the Colebrook-Stewartstown area.-Pittsburg, Indian Stream, 11066=M 3749(07); Stewartstown 10351=M 3411(07), 27798(40), 36026(51); Colebrook F & P 16562(17); Columbia 27792(40), 33399(48); Stratford 13635(12), 33466(48); Northumberland F & P 16611(17); Randolph, rare, Lowe (17); Shelburne the Misses Christensen & Putnam (24).

COPTIS Salisb. Goldthread.

C. groenlandica (Oeder) Fern. Mossy woods, common.-Pittsburg, Third Lake, 10327=M 3515(07); DC Grant 16190(14), Stratford 13590(12); Dummer 36351(51); Stark 33382(48); Milan 13863(12); Lancaster 27573(42); Randolph M 969(03), Mrs. Moore (05), 11190(08); Shelburne Deane (82, 83, 84), Miss Stowell (16), Deane (26); B Purchase, Wild River, 34512(49), LB Grant Miss Prince (92), M 3356(07), 38685(57); TM Purchase, Great Gulf, Williams (97), M 1055(03), 11291(08), Carriage Road, Deane (82); C Grant, Oakes Gulf, Williams (93); Carroll 38984(58).

AQUILEGIA L. Columbine.

A. canadensis L. Rocky woods, infrequent.-Northumberland, Cape Horn, 16454(17); Lancaster, Mt. Prospect, common, 14205(13), Mt. Orne, 14525(13); H Grant, Hart Ledge, 16466(15).

* A. VULGARIS L. Frequently escaped from cultivation; flowers pink, purple, or white.-Stewartstown 37058(53); Colebrook, roadside, 10893=M 3975(07); Columbia, near Lime Pond, F & P 16621(17), near Fish Pond, 10373=M 3917(07), 27841(40), 36013(51), Trask Road, 34411(49); Stark, old pasture, 29553(42); Jefferson, roadside, 16402(15); Randolph, roadside, 4092(04); Shelburne Deane (17); Whitefield, pasture, Deane (96).

* A. sp.-Shelburne Deane (18).

ACONITUM L. Aconite.

* A. NAPELLUS L. Rare escape.-Jefferson, hedgerow, 37338(53).

ACTAEA L. Baneberry

A. rubra (Ait.) Willd. Red Baneberry. Rich woods and thickets, frequent.-Pittsburg, Third Lake, M 3506(07); Colebrook 10892=M 3945 & 3982(07), Stark 36452(52); Lancaster 37748(55); Randolph Williams (95), Mrs. Moore (05), 12032(09), Shelburne Deane (83, 16); C Grant, Oakes Gulf, Williams (95); Whitefield Deane (96); Carroll 27275(39), Crawford's, Miss Minns (n.d.); C Purchase 38423(56).

A. rubra, f. neglecta (Gillman) Robins. Occasional.-DC Grant Pease & Harris 33913(48), Colebrook 10885=M 3981(07); Randolph M 4256(08); LB Grant, King Ravine, 552(02); G Grant 17114(18).
A. *pachypoda* Ell. White Baneberry. Rich woods, frequent. - *Pittsburg*, First Lake, Mrs. Stevens (95); *Columbia* M 3919(07); *Stratford* 13604(12); *Lancaster* 16925(17); *Jefferson* 16839(16), 37226(53); *Randolph* Williams (95), M 376(02), M 1413(03), 11687(08); *Gorham* Williams (95), 10572(07), 29724(42); *Shelburne* Deane (83, 16), Miss Sheppard (16), Deane (19); B *Purchase* Pease & Bean (48); *Dalton* M 5017(13).


**BERBERIDACEAE (BARRY FAMILY)**

**CAULOPHYLLUM** Michx. Blue Cohosh.

*C. thalicroides* (L.) Michx. Rich woods, occasional. - *Pittsburg*, First Lake, Mrs. Stevens (95); *Clarksville* 10463=M 3713(07), 34690(49); *Colebrook* W. Boot (1855), 10925=M 3886(07), M 4030(07); *Stratford* F & P 17018(17); *Northumberland* 34544(49); *Stark*, Devil’s Slide, 17503(19), 36454(52); *Lancaster* 14247(13), 16740(16), 33356(48); *Randolph* 5379(04), 9909(06); *Shelburne* Deane (84, 16).

**BERBERIS** L. Barberry.

*B. VULGARIS* L. Pastures, infrequently adventive. - *Errol*, Errol Hill, one bush, 16532(15); *Stark* 31538(45); *Gorham*, one bush, 17413(19); *Carroll*, one bush, 28815(41); *Lancaster* 37787(55).

*B. THUNBERGII* DC. Japanese Berberry. Spreading from cultivation. - *Lancaster*, Connor’s Woods, 32798(47); *Randolph* 36462(52); frequent escape in *Shelburne*.

**PAPAVERACEAE (POPPY FAMILY)**

**SANGUINARIA** L. Bloodroot.

*S. canadensis* L. Rich woods in the Connecticut watershed, local. - *Stewartstown* 27786(40); *Colebrook* 26846(38); *Northumberland* 12128(09); *Lancaster* 12811(10), 19286(24), 32799(47), 33360(48).

**CHELIDONIUM** L. Celandine.

*C. MAJUS* L. Rare. - *M Location*, cellar-hole, 18095(21), 19139(22).

**PAPAVER** L. Poppy.

*P. SOMNIFERUM* L. Ballast weed. - *Berlin*, railroad, 14496(13); *Jefferson* 23119(32); *Randolph*, dump, 32282(46); *Shelburne* Deane (17, 28); *Whitefield* Deane (95), Shute (95).

*P. RHOEAS* L. Rare escape. - *Shelburne*, old strawberry-patch, Deane (17, 28).

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ESCHSCHOLTZIA Cham.

* E. CALIFORNICA Cham. Rare waif. - *Berlin*, dump, 38128(55).

ADLUMIA Raf. Climbing Fumitory.

*A. fungosa* (Ait.) Greene. Rocky woods, very local. Said to have grown in Lancaster for at least eighty years, according to G.B. Wellman; cf. also G.H. Tilton, *Hist. of Lancaster, N.H.* (1898), 287. - *Lancaster*, Mt. Prospect, Wellman(13), 14248(13).


*D. Cucullaria* (L.) Bernh. Rich woods, frequent. - *Pittsburg*, Third Lake, 10191=M 3474(07); *Clarksville* M 3770(07), 35182(50); *Colebrook* 33370(48), 36463(52); *Dixville* 32667(47), 36977(53); *Columbia* 34335(49); *Stratford* 13442(12); *Northumberland* 35955(51), 36980(53); *Lancaster* 33364(48); *Kilkenny* 32684(47); *Jefferson* 38396(56); *Randolph* 10233=M 3311(07), 16442(17); *Skelburne* Miss Stowell (16); *TM Purchase* E. & C.E. Faxon (82); *Carroll*, Fabyans, E. & C.E. Faxon (80).

*D. canadensis* (Goldie) Walp. Somewhat less abundant. - *Clarksville* 35179(50); *Colebrook* 33353(48); *Northumberland* 3592151; *Lancaster*, Connor's Woods 19317(24), Miss Wells (25). *Stratford*, according to J.R. Thompson, *Hist. of the Town of Stratford* (1925), 4.

CORYDALIS Medic.

*C. sempervirens* (L.) Pers. Ledges and burned ground, frequent. - *DC Grant* 10584(07); *Colebrook*, waste heap, 10773=M 4019(07); *Northumberland*, Cape Horn, 16474(17); *Lancaster*, Mt. Orne, 14523(13); *Milan* 37993(55); *Berlin*, Mt. Forist, 16120(14), 36336(51), 38358(56); *Jefferson*, ballast, 29565(42); *Randolph*, Ice Gulch, Williams (96), 607(02); *Gorham* Hervey (78), railroad, 11340(08), Pine Mtn., 10804(07); *Skelburne* Deane (81, 82, 10), 17932(20); *P Grant*, Lost Pond, 13891(12); *Carroll* 36506(52); *H Grant*, Mt. Hope, 16471(15), Hart Ledge, 16634(15).

FUMARIA L. Fumitory.


CRUCIFERAE (MUSTARD FAMILY)

DRABA L.

*D. lanceolata* Royle. Cliffs, very local. - *DC Grant*, Diamond Peaks 20614(30), Hodgdon & Steede (54).

BERTEROA DC.

* B. INCANA (L.) DC. Fields, an occasional adventive. - *DC Grant*, College Farm, 12600(10); *Berlin* 33656(48), 37555(54); *Lancaster* 36392(51), 37066(53); *Dalton* 28125(40).
THLASPI L. Penny-Cress.

* T. ARVENSE L. Railroads and waste places, frequent. - Colebrook 17810(20); Stark 33910 & 34508(48); Dummer Harris 7401(48); Success 16561(17), 33862(48); Lancaster 12784(10), 16373(15); Jefferson 16369(15), Randolph 21000(29); Gorham 17144(18); Shelburne Deane (17, 19), 36167(51).

IBERIS Dill. Candytuft.

* I. UMBELLATA L. Rare garden escape. - Randolph, railroad, 16760(16).

LEPIDIUM L. Peppergrass.

* L. CAMPESTRE (L.) R. Br. Waste places, occasional. - Pittsburg, Indian Stream, 14153(13); Columbia 32672(47), 33630(48); Berlin 29880(42), 30243(43), 31335(45); Jefferson 29518(42), 32731(47), 36152(51); Randolph 20111(27), 26184(37), 30151(43); Gorham 30543(43); G Grant 36036(51).

* L. VIRGINICUM L. Occasionally adventive. - Columbia Pease & Bean 33633(48); Northumberland 38479(56); Berlin 30240(43), 31302(45), 36289(51), 38320(56); G Grant 4033(04); Shelburne Deane (15).

* L. DENSIFLORUM Schrad. Roadsides and waste ground, common. - Stewartstown 10972=M 3676(07), 11002=M 3777(07); Jefferson 13625(12), 16701(17), 29477(42), 30259(43); Randolph Williams (96), 6416(04), 30783(44); Gorham M 4286(08), 29495(42); Shelburne Deane (18), 36166(51); G Grant M 4301(08); Whitefield Deane (95).

CAPSELLA Medic. Shepherd's-purse.

* C. BURSA-PASTORIS (L.) Medic. Omnipresent weed. - Pittsburg 10973=M 3678(07); Stewartstown 29728(42); Stratford 13633(12); Berlin 12723(10), 14497(13), 16519(15), 30868(44); Randolph Williams (97), 10636(07), M 3380 & 4080(07), 12774(10); Gorham 16593(15); Shelburne Deane (17).

CAMELINA Crantz. False Flax.

* C. SATIVA (L.) Crantz. Roadsides and waste places. - Jefferson, field, 10788(07), 16498(15); Berlin, railroad, 12722(10); Randolph 14447(13); Gorham, railroad, 12681(10); Shelburne Deane (03, 08); Carroll, railroad, 12693 & 12699(10).

NELSIA Desv. Ball-Mustard.

* N. PANICULATA (L.) Desv. Infrequent waif. - Berlin, railroad, 16515(15); Randolph, garden weed, 17370(19), meadow, 17124(18).

RAPHANUS L. Radish.

* R. RAPHANISTRUM L. Weed in waste ground. - Milan 13839(12), 37683(54).
RAPHANISTRUM, f. SULPHUREUS (Babey) Hayek. - Lancaster, garden weed, 37651 (54); Carroll 37713 (54); Dalton 37714 (54).

RAPHANISTRUM, f. ALBUS (Scheubler & Martens) Hayek. - Milan 37682 (54).

RAPHANISTRUM, f. CANDIDUS (Opiz) G. Beck. - Lancaster, garden weed, 37648 (54).

SATIVUS L. Occasionally persistent after cultivation. - Colebrook 13924 (12); Randolph Williams (97), M 222 (02); M 4252 (08); Shelburne Deane (18).

BRASSICA L. Mustard.

B. HIRTA Moench. - Shelburne Deane (84).

B. KABEL (DC.) L.C. Wheeler, var. PINNATIFIDA (Stokes) L.C. Wheeler. Very common weed. - Pittsburg 10417 - in part = M 3640 (07); Milan 39604 (59); Berlin 11646 = M 4514 (08); Randolph Williams (97), 12743 (10); Gorham 11456 (08), 17356 (19); Shelburne Deane (09); S Purchase, Summit House, Williams (01); Carroll 12716 (10).

B. JUNCEA (L.) Coss. Fields, frequent. - Lancaster Deane (96); Randolph Williams (97), 12034 (09), 37372 (53); Gorham 11459 (08); Whitefield Deane (96).

B. NIGRA (L.) Koch. Weed in cultivated ground. - Stark 38864 (57); Randolph M 202 (02); Whitefield Deane (96), M 5024 (13).

B. RAPA L. Common in fields. - Pittsburg 10997 = M 3679 (07); Stewartstown 10996 = M 3673 (07); Stark 34791 (49); Milan 13833 (12); Berlin 5699 (04); Lancaster Deane (96); Randolph 10061 = M 3280 & 4087 (07); Shelburne Deane (83), 09, 10, Whitefield Deane (96), M 4336 (08); Carroll, Crawford's, Williams (95); Dalton 37519 (54).

ERUCASTRUM Presl.

E. GALLICUM (Willd.) O.E. Schulz. Infrequent adventive. - Berlin, railroad, 30313 (44).

CONRINGIA Link

C. ORIENTALIS (L.) Dumort. Rare waif. - Shelburne, railroad, Deane (17).

SISYMBRIUM L.

S. OFFICINALE (L.) Scop. Hedge-Mustard. Waste ground, occasional. - Northumberland, dump, 32296 (46); Jefferson 12685 (10); Shelburne Deane (14), 16156 (14); Carroll 16577 (15).

S. OFFICINALE, var. - LEIOCARPUM DC. Much commoner. - Colebrook 11056 = M 3781 (07); Stratford 32273 (46); Lancaster 37633 (54); Berlin 11329 (08), M 4496 (08); Jefferson 23124 (32), 34758 (49); Randolph M 1380 (03), 11413 (08); Gorham 11772 = M 4326 (08); Shelburne Deane (14); M Location 17219 (18); Whitefield 37867 (55).
*S. ALTISSIMUM L. Tumble-Mustard. Railroads and waste ground, common. - Stewartstown 11001 (07); Success 33824 (48); Milan 13845 (12), Northumberland 12140 (09); Lancaster 12791 (10), 14552 (13), 36748 (52); Jefferson 17238 (18); Randolph 4031 (04), M 4589 (09), 23783 (51); Gorham 10713 (07); Berlin 10707 (07); Shelburne 11671 (08), Deane (13, 16), 36162 (51); M Location 17208 (18); Carroll 12700 (10), 38134 (55); Whitefield 11613 = M 4340 & 4344 (08).

* S. LOESELI I. Rare waif. - Berlin, railroad. 30310 & 30315 (43), 37558 & 37632 (54), 37978 (55).


MALCOLMIA Alt.


HESPERIS L. Rocket.

* H. MATRONALIS L. Occasional escape. - Colebrook 31501 (45); Berlin 38362 (56); Randolph 29469 (42).

ERYSIMUM L. Treacle-Mustard.

* E. CHEIRANTHOIDES L. Frequent in waste ground. - Pittsburg, Hall Stream, 38503 (56); Stewartstown 10999=M 3778 (07), 38927 (57); Colebrook F & P 16629 (17), 29687 (42); Stark 21026 (29); Milan 35464 (50); Success 14596 (13), 27478 (39), 33331 (48); Berlin 11637 (08); M 4476 & 4493 (08); Stratford 39412 (58); Northumberland 36325 (51); Lancaster 12792 (10); Randolph 10652 (07), 12775 (10), 17089 (18), 38364 & 38418 (56); Gorham 17393 (19); Shelburne Deane (09), Miss Blook (16), Deane (17); M Location 17220 (18), 19138 (22); G Grant 16525 (15); Carroll 12711 (10), Weatherby (40); Whitefield 16671 (16), 30193 (43), 30643 (44), 37868 (55); Dalton 37705 (54).

* E. INCONSPICUUM (S. Wats.) MacM. Occasional on railroads. - Stratford, near Mapleton, 33546 (48); Berlin 11304 (08); Gorham 30185 (43).

RORIPPA Scop. Yellow Cress.

* R. SYLVESTRIS (L.) Bess. Weed of gardens and dumps. - Colebrook 25980 (37); Berlin, dump, 16502 (15); Lancaster 20079 (27); Randolph, garden weed, 25626 (36), 32333 (46); Shelburne Deane (17), 38419 (56).

R. islandica (Oeder) Borbás. - Lancaster, riverbanks, 36133 (51); Jefferson 39879 (61); Dalton 37528 (54).

R. islandica, var. Fernaldiana Butt. & Abbe. Wet shores, frequent. - Pittsburg, Back Lake, 33208 (47); Success 33781 (48); Stark 12726 (10); Milan 13707 (12); Berlin M 4491 (08), 36274 (51); Jefferson Williams (95), 31387 (45); Randolph 5413 & 5414 (04), M 4190 & 4242 (08); Gorham M 4261 (08), 12870 (10); G Grant 13906 (12); Shelburne Deane (14, 16); Whitefield M 4334 (08), 14192 (13); Carroll, Fabyans, M 1372 (03).

**R. islandica**, var. *hispidula* (Desv.) Butt. & Abbe. Shores and waste ground. - *Pittsburg*, First Lake, 10170(07), 11084=M 3599(07); *DC Grant* 16196(14); *Stratford* 23919(33); *Berlin* 5420 & 5421(04); *Gorham* 16442(13).


* A. *LAPATHIFOLIA* Gilib. Occasionally escaped or persistent. - *Stewartstown*, roadside, 10258=M 3403(07); *Berlin*, roadside, 16463(17); *Gorham* 17401(19); *Shelburne* Deane (14, 24).

**BARRABEA** R.Br. Winter Cress.

* B. *VULGARIS* R.Br. Meadows, frequent, especially northward. - *Pittsburg*, Second Lake, 31975(46); *AGA Grant*, Hellgate, 14131(13); *Stewartstown* Pease & Bean 28857(41); *Lancaster* 36015(51); *Success* 33849(48); *Jefferson* 37438(54); *Randolph* 32283(46); *Gorham* 28541(41); *Carroll*, Crawford's, 16682(16); *Dalton* 36108(51).

* B. *VULGARIS*, var. *ARCUATA* (Opiz) Fries. Similar localities. - *Pittsburg* 11031=M 3724(07), 38366(56), Indian Stream, 14135(13), Hall Stream, 36223(51); *Stewartstown* 35988(51); *Columbia* 32648(47); *Lancaster* 37744(55); *Jefferson* 29475(42), 30012(43), 37428(54), 37755(55), 39051(58); *Berlin* 38363(56); *Gorham* 18229(21); *M Location* 37830(55); *Carroll*, Bretton Woods, 16662(16).

**B. orthoceras** Ledeb. Wet talus, very local. - *S Purchase*, Tuckerman Ravine, Williams (95).

**DENTARIA** L. Toothwort.

* D. *diphylla* Michx. Rich woods, frequent. - *Clarksville* 11032=M 3769(07), 35176(50); *Stewartstown* F & P 16616(17), 32586(47); *Colebrook* 11044=M 3790(07), 10420=M 3899(07); *Dixville* 32668(47), 38354(56), 38684(57); *DC Grant* 36496(52); *Errol* 12643(10); *Columbia* 33372(48), 34318(49); *Stratford* 34320(49); *Stark* 35338(50), 36453(52), 37401(54); *Lancaster* 12810(10), 19281(24), 33367(48); *Jefferson* 36041(51), 38372 & 38402(56); *Randolph* 12033(09), 24107(34); *Shelburne* 11677(08); *Carroll*, Fabyans, C.E. Faxon (80).

**CARDAMINE** L. Bitter Cress.

* C. *bellidifolia* L. Alpine brooks, very local. - *TM Purchase*, Great Gulf, Tuckerman (n.d.), W. Boot (1855), E. & C.E. Faxon (77, 79, 87, 88, 95, 96), Williams (93, 95, 97), Eggleston (98, 01), 621(01), 622=M 272(02), M 362(02), 11197(08), 12078(09), Cow Pasture, Churchill (95), 10593(07); *S Purchase*, Alpine Garden, E. & C.E. Faxon (89), Fuller (00), Huntington Ravine, F & P 16857(17); Mt. Washington, indefinite, Oakes (n.d.), Gray (1842), Mann (1862), Allen (76, 78), Flint & Huntington (76), Pringle (77), Suksdorf (87), Churchill (95).

* C. *pensylvanica* Muhl. Wet places, common. - *Pittsburg*, Third Lake, M 3495(07), First Lake, 10201(07); *Stewartstown* F & P 16571 & 16593 & 16636 & 17014(17), 33394(48), 38375(56); *Colebrook* F & P 16582(17); *DC Grant* 36786(52); *Errol* F & P 16985(17); *Stratford* 13601(12), 31939 & 32262(46); *Dummer* Williams (95), 31324(45); *Kilkenny* 32686(47); *Lancaster*
Deane (96), 36004(51), 38651(57); Jefferson 16507(17), 30037(43), 36502(52); Randolph 10016(07), M 3253(07), 16427(17), 17100(18); Shelburne Deane (83, 96, 03, 14); M Location 16421(17); TM Purchase, head of Ravine of the Castles, Williams (96); Dalton 29781(42), 32624(47).

C. pensylvanica, var. Brittoniana Farw. Shaded mossy ledges, local.-Stark, Devil's Slide, 35409(50)-a very tiny form.

C. parviflora L., var. arenicola (Britt.)O.E. Schulz. Shaded ledges and sandy soil, occasional.-Colebrook, meadow, 35980(51); Northumberland, Cape Horn, 16461(17), 33418(48); Lancaster 36388(51); Randolph, burned ground, 26518(37); Shelburne 36714(52), 36990 & 37213(53), Carroll, damp woods, 30145(43).

ARABIS L. Rock-Cress.

A. glabra (L.) Bernh. Tower-Mustard. Roadside banks, etc., especially northward; often appearing adventive.-Pittsburg, Indian Stream, 10353-M 3430(07); Clarksville 36061(51), 39880(61); Stewartstown 10367-M 3493(07), F & P 16570(17), Harris 7459(49); Colebrook 10930-M 3979(07); Dixville 16313(14); Errol 12641(10); Columbia 10481-M 3923(07); Northumberland 12170(09), 16423(15), 34548(49), 37578(54); Success 10674(07), 14123(13), 33807(48); Lancaster 33503(48); Jefferson 14360(13); Randolph 27553(39), 29157(41), Berlin 11305(08); Gorham 37832(55); Whitefield 27702(39); Dalton 29773(42).

A. hirsuta (L.) Scop., var. pycnocarpa (M. Hopkins) Rollins. Very local.-Stratford, rich woods, 32263(46); Lancaster, Mt. Prospect, 16928(17), 17236(18), 30198(43).

A. Drummondii Gray. Cliffs and rocky talus, local.-Stark, Devil's Slide, 17458(19), 20337(28), 28563(41), 35416(50), 36519(52); S Purchase, fan in Huntington Ravine, 13901(12), F & P 16881(17).


SARRACENIACEAE (PITCHER-PLANT FAMILY)

SARRACENIA L. Pitcher-plant.

S. purpurea L. Peat bogs, frequent.-Pittsburg, Fourth Lake, 35512(50), Second Lake, 10166-M 3440(07); DC Grant 16216(14); W Location 35585(50); Odell 34849(49); Stratford 33458(48); Northumberland 13626(12); Stark 29184(41); Milan 13877(12); Berlin 14492(13); Randolph, Pond of Safety, 646(02); M 1144(03), 5375(04); Shelburne Deane (82, 83, 84), 11316-M 4133(08), Deane (14), 39383(58); Carroll, Crawford's, Williams (95); Whitefield 39170(58).

DROSERACEAE (SUNDEW FAMILY)

DROSERA L. Sundew.

D. intermedia Hayne (including f. natans Heuser). Bogs and sandy shores, frequent.-Cambridge, Umbagog, 33906(48); Stark, Pike Pond, Pease & Harris 34833(49); Milan 13753(12), 19773(26), 22788(31); Berlin 13760(12), 36305(51); Lancaster 28228(40); Jefferson
10662(07), 11464(08); Shelburne 19219(23), Pease & Wells 39401(58); Carroll 20699(30); Whitefield 14416(13); Dalton 29090(41).

_D. rotundifolia_ L. Bogs and moist sand, common.-_Pittsburg_, Fourth Lake, 35510(50), Third Lake, 33207(47); _Stewartstown_ 36683(52); _DC Grant_ 16208(14); _W Location_ 35588(50); _Dixville_, Notch, Deane (17); _Success_, Mt. Success, 11301(08); _Milan_ 13800(12); _Northumberland_ 13582(12), 36160(51); _Lancaster_ 12147(09); _Berlin_ 17168(18), 31299(45); _Randolph Williams_ (95), 648(00), M 4213(08), 21129(29); Shelburne Deane (81, 82, 83, 17); _M Location_ 14396(13); _C Grant_, Oakes Gulf, 4500 feet, Fuller (00); _Carroll_ 17560(19), Crawford's, Greenman (98), 33147(47); _Dalton_ 17840(20), 33017(47).

**PODOSTEMACEAE (RIVERWEED FAMILY)**

PODOSTEMUM Michx. Riverweed.

_P. ceratophyllum_ Michx. Very local.-_Lancaster_, pond north of village, Krochmal 1420(48).

**CRASSULACEAE (ORPINE FAMILY)**

SEDUM L. Stonecrop.

*S. ACRE L. Garden escape.-_Stratford_, rocky ground, North Stratford, F & P 16907(17); _Randolph_, dump, 28222(40); _Berlin_ 38417(56).

*S. PURPUREUM_ (L.) Link. Live-evergreen. Abundantly spreading from earlier cultivation, especially in Stark.-_Pittsburg_, First Lake, 11105=M 3535(07); _Colebrook_ M 3976(07), Warren (49); _Stark_ 37389(53); _Lancaster_, railroad, 12342(09); _Randolph_ M 4588(09), 13063(10); _M Location_ Harris 890(33).

**SAXIFRAGACEAE (SAXIFRAGE FAMILY)**

PENTHORUM L. Ditch-Stonecrop.

*S. SEDOIDES L. Alluvial woods, very local.-_Lancaster_, near mouth of Israel River, 37629(54), 39306(58).

**SAXIFRAGA L. Saxifrage.**

_S. virginiensis_ Michx. Shaded ledges, not very common.-_DC Grant_ 36485(52), _Stark_, Devil's Slide, 17450(19), 20066(27); _Northumberland_ 36440(52), Cape Horn, 16453(17); _Lancaster_, Mt. Prospect, 14543(13); _Milan_, Bald Mtn., 36555(52); _Randolph_, Ice Gulch, 12874(10), 16652(17); _Gorham_, Mt. Hayes, 16405(15); _Shelburne Deane_ (09, 10), 36473(52); _H Grant_, Mt. Hope, 16452(15).

_S. rivularis_ L. Alpine rills, very local. _TM Purchase_, head of the Great Gulf, W. Booth (1855), E. & C.E. Faxon (77, 78, 79, 84, 85, 86, 88), Pringle (77, 79), E. Faxon (80, 84), Bangs (93), Williams (93, 95), Churchill (95), Eggleston (98), Fuller (00), Eggleston (01), 12069(09), 12918(10); _S Purchase_, water tank at summit, White (30), fifty feet from summit water-tank, Harris (27), Mrs. Kennedy (27); not definitely located, Oakes (n.d.), Mann (1862).
TIARELLA L. False Mitrewort.

*T. cordifolia* L. Woods, common.-*Pittsburg*, Third Lake, M 3486(07), First Lake, 10960(07); *DC Grant* 16254(14); *Columbia* 32640(47); *Stratford* 13525(12); *Milan* 39012(58); *Lancaster* Sanford (14); *Jefferson* 30043(43); *Randolph* M 345(02), M 959(03), M 3259 & 3316 (07), 10064(07), 16441(17); *Gorham* Deane (09); *Shelburne* Deane (82, 84, 09, 19); *Whitefield* Deane (95); *Carroll* 37765(55).

MITELLA L. Mitrewort.

*M. diphylla* L. Rich woods, local.-*Northumberland*, Lost Nation, 16058(14); *Dalton*, Cushman, 17385(19).

*M. nuda* L. Cold mossy woods, frequent.-*Pittsburg*, Third Lake, very abundant, 10301=M 3473(07); *Clarksville* 35169(50); *Stewartstown* 10209=M 3396(07), Hodgdon 6207(49), 35958 (51); *Coblebrook* M 3784(07), 13939(12), Hodgdon 6208(49); *Columbia* 10375=M 3834(07); *Stratford* 13511(12), 33439(48); *Stark*, Devil's Hop Yard, 16753(16), 33389(48), 35389(50); *Dummer* 16453(17); *Berlin* 16509(15); *Lancaster* 33490(48); *Randolph*, Ice Guich, Churchill (89), Williams (94, 95), Davis (97), 10818(07); *Gorham* 17801(20), 37727(55); *Shelburne* Deane (84), Farlow (94); *B Grant*, Edmands Path, 16785(16); *Whitefield* Deane (95); *Dalton* 16389(15), 17841(20).

CHRYSOSPLENIUM L. Golden-Saxifrage.

*C. americanum* Schwein. Springheads and cold rills, common.-*Pittsburg*, Deer Mtn., 31738 (45); *DC Grant* 16130(14); *Millsfield* 18173(21); *Northumberland* 16470(17); *Stark* 33390 (48); *Jefferson* 36475(52); *LB Grant*, Duck Fall, 16489(15); *Randolph* Williams (96), M 1039 (03), 10241=M 3272(07); *Gorham* 30483(44); *Shelburne* Deane (16); *B Purchase*, Carter Notch, 32702(47). Reported by W.H. Harrison from *S Purchase*, Alpine Garden (32).

RIBES L. Currant.

*R. cynosbati* L. Prickly Gooseberry. Rocky Woods, frequent.-*Stewartstown* 31992(46); *Coblebrook* 10926=M 3817 & 4034(07); *Columbia* 36797(52); *Stratford* 13521 & 13631(12); *Northumberland* 12245(09), 34585(49), 35918(51); *Stark*, Devil's Slide, 28600(41), 35380(50); *Columbia* 39846(61); *Lancaster*, Mt. Orne, 14535(13), 33392(48); *Jefferson* Fuller (95), 16726 (16), 36482(52); *Randolph* 12329(09); *Gorham* 16356(15); *Shelburne* Deane (83), 11337=M 4160(08), Deane (10, 14, 15); *Carroll* 17459(19); *Whitefield* Deane (96).

*R. hirtellum* Michx. Margins of bogs, etc., frequent.-*Pittsburg*, First Lake, 10379=M 3534 (07); *Clarksville* 36184(51); *Stewartstown*, Ladd Pond, F & P 16590(17); *Millsfield* F & P 16993 (17); *Stratford* 13605(12); *Errol* 12612(10); *Milan* 14007(12); *Lancaster* 33506(48); *Jefferson*, Cherry Pond, 29807(42); *Whitefield* Deane (96); *Carroll*, Twin Mtn., 16676(16), Cherry Mtn. Road, 26832(38), Crawford's, Williams (95), 11749(08).

*R. hirtellum*, var. *calcicola* Fern. Rare.-*Dalton* 29486(42).

*R. GROSSULARIA* L. Gooseberry. Persistent and escaped.-*Milan*, old field, 13960(12).
R. lascustrae (Pers.) Poir. Bristly Black Currant. Cold damp woods, common. -Pittsburgh, Third Lake, 10304=M 3503(07); Stewartstown Hodgdon & Clapp 6205(49); Columbia 32268(46), 32800(47); Berlin 16099(14); Jefferso 29709(42); Randolph, Ice Gulch, Williams (95), 665 (02), M 1045(03); Gorham, Alpine Cascade, Deane (84); B Purchase M 5069(13); LB Grant, Huts, 10211=M 3359(07); TM Purchase, Great Gulf, M 263(02); S Purchase, Tuckerman Ravine, Fuller (00), Ammonoosuc Ravine, 16763(16); C Grant, Oakes Gulf, Williams (93).

R. glandulosum Grauer. Skunk-Currant. Wet or rocky woods, common. -Pittsburgh, Second Lake, 10321=M 3427(07); Clarksville 35187(50); Stewartstown 27790(40); Columbia 33373 (48); Stratford 13475(12); Stark 38656(57); Berlin Deane (83), 16263(14); Jefferson 37752 (55); Randolph M 1046(03); Gorham 12525(09); Shelburne Deane (82, 14); LB Grant, Huts, 10213(07); TM Purchase, Cape Horn, 4500 feet, Williams (98), Greenman (98); S Purchase, Alpine Garden, Fuller (00), Tuckerman Ravine, Mann (1862), E. & C.E. Faxon (87), Williams (95), M 4069(04); B Purchase, Carter Dome, Fuller (84), Carter Notch, W. Boot (1855), M 5068 (13); Carroll, Twin Mtn., 16643(16); Whitefield Deane (95, 96).

R. triste Pall. Cool woods, frequent.-Pittsburgh, Third Lake, 10287=M 3478 & 3510(07), Hall Stream, 31980(46); Clarksville 35204(50); Colebrook 10842 (07), M 4027(07); Dixville, Notch, Deane (17); Stratford 13476(12); Stark 37395(54); Success 10676(07); Jefferson 32655(47), 35130(50), 36053(51), 37754(55); Randolph Williams (95), 10676½(06); Gorham 29526 (42); Location 14352(13); B Purchase, Wild River, 35572(50),38293(56); S Purchase, Tuckerman Ravine, Hoar (1858); Carroll, Twin Mtn., 16642(16), Crawford's E. & C.E. Faxon (81), Williams (95), Fabyans, E. & C. E. Faxon (80), Whitefield Deane (95).

* R. SATIVUM Syme. Garden Currant. Escaped.-Randolph, meadow, 12244(09); Shelburne Deane (21), 35901(50).

R. americanum Mill. Rare.-Whitefield, cool shade, Deane (96).

* R. NIGRUM L. Black Garden Currant. Occasionally escaped.-Lancaster, persistent on abandoned farm, 14526(13); Randolph, near Mountain View House, 10527(07), M 3314 & 4086 (07).

HAMAMELIDACEAE (WITCH-HAZEL FAMILY)

HAMAMELIS L. Witch-hazel.

H. virginiana L. Woods, frequent southward.-Northumberland 16450(17); Lancaster Deane (96); Randolph M 142(01), 4145 & 4146(04), M 4881(11); Gorham 11479(08), 16081(14), 29711(42), 33036(50), 36535(52); Shelburne Deane (82, 83), Philbrook (88), Deane (15); Location 14290(13); H Grant, Hart Ledge, 16611(15).

ROSACEAE (ROSE FAMILY)

SPIRAEA L.

S. latifolia (Alt.) Borkh. Meadow-sweet. Low grounds, common.-Pittsburgh, First Lake, M 3564 (07), Indian Stream, 11027(07); Stewartstown Hodgdon & Clapp (49); DC Grant 16175(14); Colebrook M 3937(07); Northumberland Miss Pease (18); Stark 29896(42), 32892(47); Berlin 36300(51); Randolph M 205(02), 11656(08), M 4587(09), 19886(26), 21157(29); Shelburne
Deane (82, 83, 15), 36728(52); M Location 14300(13), 36276(51); Carroll 33793(48), Crawford's, Williams (95); Dalton 33736(50); Jefferson 39154(58).

S. latifolia, var. septentrionalis Fern. Chiefly alpine.-Pittsburgh, Third Lake, 32528(46); Kilkenny, Green Ledge, 14002(12); Berlin, Mt. Forist, 25580(36); TM Purchase, Mt. J.Q. Adams, 5000 feet, 9890(06), Carriage Road, 10543(07), 12832 & 12833 (10), 32817(47); S Purchase, Alpine Garden, Williams (97), Lion Head, Hodgdon 6212 & 6213(49), Huntington Ravine, F & P 16882(17), Tuckerman Ravine, 20308(28), 33931(48), Lakes of the Clouds, B.L. Robinson 1002(01); C Grant, Oakes Gulf, 33961(48); B Purchase, Imp Camp, 3500 feet, 16763(17).

S. tomentosa L. Hardhack. Steeple-bush. Pastures, common.-Milan 13813(12), 33113(47); Randolph Williams (95), M 285(02), 4063(04), 19876(26), 21113(29); M Location 14293(13); Shelburne Deane (82, 83, 22); Dalton 35638(50).

SORBARI A.Br. False Spiraea.

*S. SORBIFOLIA (L.)A. Br. Frequently persistent and escaping.-Cohoes 10922=M 3986 (07); Stratford 13446(12); Randolph 10803(07), M 4044(07); Gorham 12893(10); Shelburne Deane (19, 26); Whitefield Deane (95), 37857(55).

PYRUS L.

*P. MALUS L. Apple. Spontaneous by roads, railroads, and in pastures.-Randolph 10757 (07), M 4189(08); Shelburne M 4158(08), Deane (26); S Purchase, Carriage Road, one mile up, 13902(12); Carroll, Cherry Mt. Road, 14386(13); Whitefield M 5047(13); Dalton M 4435 (08), M 5007(13).

P. floribunda Lindl. Purple Chokeberry. Peaty soil and dry clearings.-Columbia 35992(51); Kilkenny, Green Ledge, 14001(12); Shelburne, Wheeler Bog, Deane (82, 84), 11203=M 4129 (08), Deane (14, 16), Dalton, Forest Lake, 17568(19).

P. melanocarpa (Michx.) Willd. Black Chokeberry. Swamps, common.-Stewartstown F & P 16574(17); Cohoes 10901=M 4024(07); Stratford 13471(12); Stark 14121(13), 29950(42), 33402(48); Milan 14009(12); Northumberland 13550(12), 32644(47); Lancaster 12214(09), 36019(51); Jefferson 30039(43); Randolph 9914(06), 16293(14), 17852(20), 25248(35); Gorham 13662(12); Shelburne Deane (83, 84), Philbrook (09), Mrs. Sheffield (12), Deane (16); LB Grant 11248(08); Carroll 16578(15), 31961(46); Dalton 11493=M 4437(08), 26693(38), 29785(42), 32626(47).

P. americana (Marsh.) DC. Mountain Ash. Woods, common.-Pittsburgh, Third Lake, 10829 (07), First Lake, 10964=M 3630(07); Stewartstown Hodgdon & Clapp 6235(49); Dixville Hodgdon & Clapp, 6237(49); Milan 36118(51); Jefferson 16529(17), 36981(52), these last two with very tomentose leaves-Bray Hill Road, 35484(50)-with very pubescent leaves; Randolph 9935(06), M 3338(07), 18085(20), 39087(58); Gorham Mackintosh (25); Shelburne Deane (82, 85, 09, 16, 17); B Purchase, Carter Notch, 4695(04); P Grant Deane (22); TM Purchase, Cape Horn, Williams (03); S Purchase, Carriage Road, Deane (82).

P. decora (Sarg.) Hyland (including var. groenlandica (Schneid.) Fern.). Mountain Ash. Riverbanks and woods, ascending to subalpine areas; flowering about 7-10 days earlier than the preceding species.-Pittsburgh, First Lake, Mrs. Stevens (95); Millsfield 18194(21); Milan
AMELANCHIER Medic. Shadbush. Sugarplum.

*A. sanguinea* (Pursh) DC. Slaty river-ledges.-Stewartstown, West Stewartstown, 32767(47); Colebrook 36097(51).

*A. stolonifera* Wieg. Rocky or sandy shores, occasional.-Colebrook Pease & Harris (48); Stratford 33561(48); Cambridge, Umbagog, 16554(15); Errol, Errol Dam, F & P 16990(17), 23063(32); Northumberland 37815(55);Berlin, Head Pond, 29866(42), 35477 & 35494(50), Mt. Forist, 16101(14); Shelburne, Giant Falls, 25979(37), sandy roadside, Deane (82, 83, 10, 14).

*A. laevis* Wieg. Hedge-rows, etc., common.- Colebrook F & P 16825(17), 32832(47); Stratford 13529(12); Stark 14145(13), 17476(19), 35367(50); Northumberland 32645(47); Jefferson 37731(55); Success 33838(48); Randolph 680(02), M 4189(08), 14209(13), 17862(20); Gorham 14181(13), 16010(14); Shelburne Deane (13); B Purchase, Wild River, 16020(14); Whitefield Deane (96); Carroll 37851(55).

*A. Bartramiana* (Tausch) Roemer. Cold swamps and mountain summits, frequent.-Pittsburg, Third Lake, 26753(38), Second Lake, 10312=M 3432(07); DC Grant 16171(14); Stewartstown F & P 16662(17); Dixville 38357(56); W Location 27794(40); Stratford 13482(12); Stark Deane (23), 27288(39); Milan 36117(51); Success, Mt. Success, 11205=M 4113(08); Berlin 25275(35); Jefferson 37730(55), 38260(56); Randolph 29487(42); Gorham 37842(55); B Purchase, Imp Camp, 16758(17), W. Royce Mtn., 18137(21); P Grant Deane (20); LB Grant, Valleyway, 684(01), TM Purchase, Parapet, 10216(07), Cape Horn, Williams (98), Greenman (98); S Purchase, Tuckerman Ravine, E. & C.E. Faxon (88), Kennedy (91), Fuller (00), Eggleston (01), M 1073(03), Spaulding (19), Lakes of the Clouds, W. Booth (1855); C Grant, Oakes Gulf, Williams (93, 95), Fuller (00); Mt. Washington, indefinite, Flint & Huntingdon (76), E. & C. E. Faxon (78, 90), Eggleston (03); B Grant, Mt. Jackson, 12320(09); Carroll 14372(13), Crawford's, E. & C. E. Faxon (77, 81, 91); Whitefield 16683(16).

*A. Bartramiana x laevis*. Occasional.-Pittsburg, First Lake, 10995=M 3635(07); Stewartstown F & P 16901(17); Shelburne Deane (82, 14); M Location 14355(13); B Purchase, N. Baldface Mtn., 16044(14); Whitefield 14196(13); Carroll E. Faxon (77, 81, 14374(13).

CRATAEGUS L. Hawthorn.

*C. chrysocarpa* Ashe. Well distributed.-Pittsburg, First Lake, 10963(07), post office, 17710 (19); Clarksville 11024(07); Colebrook 17736(19); Stratford 17713(19); Northumberland 16468(17); Lancaster 14550(13), 17806(20); Jefferson 11010(07); Randolph 686(02); Gorham 17583(19); Shelburne Deane (13, 14, 16), Miss Stowell (16), Deane (17).

*C. chrysocarpa*, var. *phoenica* Palmer.-Stewartstown 38835(57), 39271 & 39413 & 39423 (58); Stark 36893(53).

*C. Faxoni* Sarg.-Northumberland, Lost Nation, 36984(53).
C. Brainerdii Sarg.- Gorham, south of Cascade, 22782(31); Shelburne Deane (13), 35834 (50); Carroll 23101(32); Dalton 35758(50).

C. macrosperma Ashe. Copeses.- Milan 39011(58); Randolph Williams (96); Shelburne, north of Moose Pond, 27530(39); Dalton 24177(34).

C. Macrosperma, var. acutiloba (Sarg.) Egglest. More frequent.- Errol Williams (93); Colebrook W. Boot (1865); Stark, Devil's Slide, 17484(19); Milan 13756(12); Berlin, riverbank, 16467(17); Whitefield 14594(13); Lancaster 37374(55), 39269(58); Shelburne, roadside near Moose Pond, 23141(32). C.S. Sargent (Rhodora, 3(1901), 23) says it is not rare in northern New Hampshire.

C. macrosperma, var. pentandra (Sarg.) Egglest.- Stark 37992(55); Gorham 38192(55).

C. macrosperma, var. roanensis (Ashe) Palmer.- Shelburne Deane (82, 83, 02, 07, 09, 13, 19).

C. basilica Beadle.- Stewartstown 37196(53); Northumberland Hodgdon, Lincoln, & Steele 11233(59); Shelburne 35898(50).

C. fretalis Sarg.- Shelburne Deane (13, 14).

C. lemingtonensis Sarg.- Stewartstown, Piper Hill, 38835(57); Shelburne Deane (16), Ruth K. Stowell (16).

C. flabellata (Spach) Kirchn., var. Grayana (Egglest.) Palmer.- Columbia 34500(49); Stratford 32300(46); Stark 38517(56); Northumberland 35610(50); Lancaster 31877(46); Jefferson 37229(53); Shelburne Deane (14); Whitefield 38262(56).

C. insolens Sarg.- Randolph, Simonds yard, Williams (96), 4036(04), 11510(08); Gorham, riverbank below Cascade, 17724(19).

C. Jesu Sarg.- Shelburne 37390(53).

C. Holmesiana Ashe.- Jefferson 39538(59).

C. arnoldiana Sarg.- Cambridge 33327(47).

C. dilatata Sarg.- Stark 35915(50); Gorham 22817(31).

C. succulenta Link.- Pittsburg 37397(53); Carroll 26919(38).

A most perplexing genus; some determinations must be regarded as tentative.

FRAGARIA L. Strawberry.

F. virginiana Duchesne. Fields and thin woods, common.- Pittsburg, First Lake, 10175(07), M 3580 & 3590(07); Stewartstown F & P 15543(17); Stratford 13541 & 13567(12); Dunmore 16549(17); Milan 33502(48); Jefferson Mrs. Terry (02); Randolph Williams (97), 693(02), M 965 & 1033(03), 4201(04), 10019-M 3291(07), 11174(08); Gorham Deane (08); Shelburne Deane (82, 03, 09, 10, 16); M Location 14296(13); TM Purchase, Carriage Road, 3500 feet, F & P 16884(17); Whitefield Deane (96).
F. virginiana, var. terreae-novae (Ryd.) Fern. Common.--Pittsburg, First Lake, 10171(07); Stewartstown F & P 16664 & 16740(17); Colebrook F & P 16580(17); Columbia Hodgdon & A. Rich (54); DC Grant 16236(14); Jefferson 16729(17); Randolph 12228(09); Shelburne Deane (26); TM Purchase, Carriage Road, 3500 feet, F & P 16870(17); C Grant, Oakes Gulf, 4800 feet, Williams (98); C Purchase 37791(55).

*F. ANANASSA Duchesne. Occasionally introduced.--Pittsburg, First Lake, 10174=M 3579 (07), Shelburne Miss Brown(20).

F. vesca L. Local.--Lancaster, Mt. Prospect, 14220(13).

F. vesca, var. americana Porter. Rocky woods, frequent.--DC Grant, Diamond Gorge, 12605 (10); Columbia, ledges in pasture, F & P 16789(17); Northumberland 33417(48); Lancaster 30210(43); Randolph M 3255(07); Gorham, Alpine Cascade, 16431(15); Shelburne Deane (83, 19), 36986(53).

SIBBALDIA L.

S. procumbens L. Headwalls of alpine ravines, under late-lying snow, very local.--S Purchase, Tuckerman Ravine, Oakes (1846-the first collection of this in the White Mountains; cf. A.S. Pease in Appalachia, 14(1917), 175), W. Boot(1855), Pringle (77), E. & C.E. Faxon (77, 78, 79, 80), Farlow (84), E. & C.E. Faxon (86, 95), Churchill (95), Williams (95, 97), Eggleston (01), 748 (02), Mackintosh (04), 11542(08), 19618(25).

POTENTILLA L. Cinquefoil.

P. fruticosa L. Shubbery Cinquefoil. Ledges and swamp, local.--Stark, Devil's Slide, 17455 (19), 20336(28), 28564(41); S Purchase, headwall of Huntington Ravine, Steele (46); Carroll, Crawford's meadow, Kennedy (95), Williams (95), 21135(29).

P. tridentata Alt. Rocky and gravelly mountain-tops, abundant at lower levels locally abundant in sandy soil.--DC Grant, Diamond Peaks, 10583(07), 20611(30); Dixville, Notch, 18147(21), 31973(46); Stratford, N. Percy Peak, 12731(10); Stark 14123(13); Dummer Harris 7458(49); Kilkenny, Green Ledge, 13959(12); Milan 10570(07), 33501(48); Berlin, Mt. Forist, 25435 (36); Jefferson 10653(07); Randolph 10872(07), M 4255(08), 16723(16), 19774(26), 21111 (29), 23924(33); Gorham 12676(10), Mt. Hayes, 12821(10); Shelburne Deane (82, 83, 15, 17), Misses Christensen & Gauthier (17), Rushmore (18), 25893(37), 35827(50); B Purchase, N. Baldface Mtn., 16042(14); LB Grant, Knife Edge, 12192(09); TM Purchase, Parapat, 16940 (15), Mt. Adams, M 256(02), Great Gulf, E. & C.E. Faxon (87), Carriage Road, Deane (82), Williams (96), B.L. Robinson (01); S Purchase, above Tuckerman Ravine, Fassett (31); C Grant, Crawford Path, Williams (93); B Grant, Mt. Clinton, St. John (09), Mt. Webster, 11715(08); H Grant, Mt. Crawford, 11710(08); Carroll, 37063(53), Crawford's miss Minus (88), Twin Mtn., 12692(10); Mt. Washington, indefinite, W. Boot(1853), Mann (1862), C.E. Faxon (72), Flint & Huntington (76), Manning (81), Churchill (95), Merrill (96).


P. tridentata, f. hirsutifolia Pease.--Milan, south of West Milan, 13871(12)-the TYPE Locality; cf. Rhodora, 16(1914), 195.
P. palustris (L.) Scop. Marsh-Cinquefoil. Boggy pond-margins, frequent. - Pittsburg, Fourth Lake, 35500 (50), Second Lake, 10242=M 3431 (07), First Lake, 10161=M 3566 (07); Stewarts-town 10386=M 3972 (07), Hodgdon & Clapp 6216 (49), 36765 (52); Errol 32471 (46); Cambridge, Umbagog, 16547 (15); Columbia 10449=M 3851 (07); Northumberland 13545 (12), 17261 (18); Lancaster 17266 (18), 33710 (48); Berlin 17473 (19), 19880 (26), 23069 (32), 29867 (42); Jefferson 10573 (07), 14237 (13); Gorham 16913 (16); Shelburne Deane (15, 19).

P. palustris, var. villosa (Pers.) Lehmann. - Cambridge, Umbagog, 18196 (21); Shelburne Deane (15).

P. arguta Pursh. Dry fields, occasional. - Randolph, Howker place, 18094 (21); Gorham, near B. & M. trestle, 12522 (09); Dalton 29107 (41).

* P. ARGENTEA L. Silvery Cinquefoil. Dry open soil, frequent. - Stratford 13553 (12); Northumberland 35809 (50), 38478 (56); Lancaster 14540 (13), Success 33827 (48); Berlin 36303 (51); Randolph 17179 (18); Gorham 12673 (10); Shelburne Deane (83), 11170=M 4103 (08); C Grant M 1415 (03), 13910 (12); TM Purchase, Base Station, 16781 (16); Whitefield 16674 (16); Dalton 37233 (53).

* P. GRACILIS Dougall. Dry meadow, local. - Randolph, near Ravine House, 20086 (27), 21007 (29).

* P. GRACILIS, var. PULCHERRIMA (Lehm.) Fern. With the last. - Randolph 20086½ (27).

* P. RECTA L. Recently adventive and becoming frequent. - Stratford 32287 (46); Stark 34803 (49), 35341 (50); Lancaster 33564 (48); Milan 34461 (49); Jefferson Lowe (21); Randolph 21006 (29), 30301 (43); Berlin 29885 (42); Gorham 30173 (43), 30617 (44); Shelburne 36666 (52), 38385 (56); Dalton 34420 (49), 37701 (54).

* P. NORVEGICA L. Waste places, common. - Pittsburg, Second Lake, 10276=M 3443 (07); DC Grant, shaded cliffs, 16165 (14), 24161 (34), 32494 (46); Milan 13708 (12); Jefferson 36047 (51); Randolph M 245 (02), 5409 (04); M Location 14338 (13); Shelburne Deane (82, 83, 15, 19); S Purchase, Summit House, Williams (01); Whitefield Deane (96); Carroll, Crawford's, Williams (95, 98), Greenman (98).

P. norvegica, var. labradorica (Lehm.) Fern. Gravelly or turf slopes in subalpine cirques, local. - S Purchase, fan, Huntington Ravine, 13894 (12), F & P 16880 (17), Tuckerman Ravine, E. & C.E. Faxon (86), 11531 (08), 13903 (12).

P. Robbinsiana Oakes. Gravelly soil in one limited locality near the head of Oakes Gulf. - C Grant, stony plain, Oakes (n.d.), Tuckerman (n.d.), Gray (1842), James (1858), Mann (1862, 1863), W. Boott (1865), Chickering (75), Pringle (77), E. & C.E. Faxon (77, 78), Allen (80), E. & C.E. Faxon (81, 88, 89), Williams (93), Churchill (95), Williams (95, 98), Greenman (98), Eggleston (98, 99), Fuller (00), B.L. Robinson (01), 711=M 286 (02), M 1069 (03), Eggleson (03), 11141 (08), Jesup (n.d.).

P. simplex Michx. Dry soil, not common. - Stratford 13574 (12), Whitefield 38291 (56).

P. simplex, var. calveccens Fern. Dry soil, common. - Pittsburg, First Lake, 10134=M 3628 (07); Stark 35517 (50); Milan 13974 (12); Randolph Williams (96), 10012=M 3277 (07), 12766.
(10); Gorham 30488(44); Shelburne Deane (10), F & P 16975(17); Location 14249(13); Carroll 37416(54).

FILIPENDULA Mill.

* F. RUBRA (Hill) Robins. Escaped. - Lancaster, meadow, 36135(51).

* F. ULMARIA (L.) Maxim. Occasionally persistent or escaped. - Stewartstown Pease & Bean 28858(41); Northumberland 34536(49), 39870(61); Jefferson 10632(07).

GEUM L. Avens.

G. canadense Jacq. Copes. - Stratford 32258(46); Lancaster, Connor's Woods, 32789(47).

G. canadense, f. glandulosum Fern. & Weath. Similar spots. - Colebrook F & P 16641(17); Stark 20063(27); Randolph 16719(16), 39729(60).

G. canadense, var. camporum (Rydb.) Fern. & Weath. - Shelburne, near Mill Brook, Deane (22).

G. laciniatum Murr., var. trichocarpum Fern. Thickets. - Columbia 10414=M 3918(07); Lancaster 17105(18).

G. aleppicum Jacq., var. strictum (Ait.) Fern. Meadows, etc., occasional. - Cambridge 37986 (55); Stewartstown 32660(47); Colebrook 10924=M 3980(07); Lancaster 34541(49); Jefferson 28807(41); Randolph Williams (97), M 242(02), 10873(07); Carroll 17419(19); Whitefield Deane (95).

G. macrophyllum Willd. Rich damp soil, frequent. - Pittsburg, Second Lake, M 3444(07); AGA Grant, Hellgate, 12598(10); Stewartstown 10262=M 3413(07); Dixville, Notch, True (31), 26798(38), 37826(55); Errol Williams (98); Kilkenny 32685(47); Jefferson 23128(32), 27041 (39), 36039(51); Randolph 702(01), 18207(21), 19845(26); P Grant Hoar (1858); B Purchase, Carter Notch, W. Booth (1855), M 5064(13); LB Grant 12309(09); TM Purchase, Base Station, E. & C.E. Faxon (78); C Purchase 11258(08); Carroll, Crawford's, Williams (98), Fabyans, Bissell (90), 14366(13); Dalton 11609(08).

G. rivale L. Water-Avens. Wet meadows and bogs, frequent. - Pittsburg 39084(58), Indian Stream, 11017(07); Stewartstown F & P 16609(17); D Grant, Diamond Farm, 16137(14); Stratford 13515(12); Stark 33408(48); Dummer 24129(34); Success 16554(17); Northumberland F & P 16572(17); Kilkenny 32687(47); Lancaster 16377(15), 37437(54); Jefferson 14238(13), 27042 (39), 30036(43); Randolph M 1056(03), 10065(07); Shelburne Deane (19), Shelburne Moriah Mtn., Munter (19); C Grant, head of Oakes Gulf, Harris (27); Carroll, Crawford's, Miss Minns (n.d.); Whitefield 28552(41), 36527(52), 37052(53); Dalton 16415(15), 17380(19), 29465(42).

G. Peckii Pursh. Common on alpine lawns and meadows, rare at lower altitudes. - B Purchase, cliffs by Blue Brook, 20123(27); P Grant, Thompson's Falls, 10704(07), Crystal Cascade, Flint (71); LB Grant, Knife Edge, 12093(09); TM Purchase, Huts, Williams (93), M 1103(03), 10848 (07), Edmands Col, M 354(02), Mt. Jefferson, 700(00), Great Gulf, Williams (95), Fuller (00), Carriage Road, Deane (82, 84); S Purchase, Summit House, Merrills (96), Alpine Garden, E. & C.E. Faxon (89, 90), Williams (96), 19831(26), Bigelow Lawn, Eggleston (98), Tuckerman Ravine,
RUBUS L. Bramble.

*R. Chamaemorus* L. Baked-apple-berry. Boggy summits of secondary mountains, locally abundant. - *Success*, Mt. Success (where reported by L.D. Pychowska in *Appalachia*, 3(1883), 235), Fuller (86), 11172=M 4093(08), Sprague (27), Rushmore (27); Shelburne Mortiah Mtn., Misses Christensen & Gauthier (17); *C Grant*, Mt. Monroe, W. Boott (1865); *S Purchase*, Mt. Pleasant, E. Faxon (77), Fuller (94), *B Grant*, Mt. Clinton, W. Boott (1853), E. & C.E. Faxon (78, 80), Allen (80), E. & C.E. Faxon (81, 83, 95), Williams (95), Eggleston (01), M 1070(03), 12357(09), Mt. Jackson, 12302 & 12318(09), St. John (12); alpine region, indefinite, Oakes (n.d.), W. Boott (1855), Chickering (1862), Flint & Huntington (76), Miss Minns (88). Often lives to great age. W.F. Ganong, *Bull. Nat. Hist. Soc. of New Brunswick*, 16(1898), 4 (quoted by G.E. Nichols, *Veg. of N. Cape Breton* (1918), 447, n. 17) followed a stem of this species in a bog for over seventeen feet.

*R. pubescens* Raf. Dwarf Raspberry. Moist woods and meadows, common. - *Pittsburg*, Third Lake, 10325=M 3514(07), Second Lake, M 3663(07); *DC Grant* 16234(14); *Columbia* M 3845(07), *Stratford* 13483(12), *Jefferson* Mrs. Terry (02), 36478(52), *Randolph* 10060(07), M 3251(07), 11149(08), 35940(51); *Shelburne* Deane (82, 17, 19); *TM Purchase*, Great Gulf, E. Faxon (77), *S Purchase*, Tuckerman Ravine, M 253(02); *C Grant*, Oakes Gulf, Williams (95, 98); *LB Grant* 38680(57); *Whitefield* Deane (96).


*R. odoratus* L. Purple-flowering Raspberry. Rich or rocky woods, especially in the Connecticut watershed. - *Stark*, Bald Mtn., 14151(13); *Northumberland* Williams (06), 22998(32); *Lancaster* 14230(13); *Jefferson* 25276(35); *Randolph* Williams (95), 12680(10), Ice Gulch, 16706(17); *Gorham* 17371(19); *Shelburne* Deane (83), Briggs (83), 37526(54); *H Grant*, Hart Ledge, 16458(15), *Whitefield* 14193(13); *Dalton* 11585=M 4404(08), M 5076(13).

*R. idaeus* L., var. *strigosus* (Michx.) Maxim. Raspberry. Pastures, woods, etc., very common.- *Stewartstown* F & P 15638(17); *DC Grant* 16248(14); *Stratford* F & P 15637(17), *Millsfield* 18171(17); *Dummer* 39072(58); *Jefferson* 16904(17); *Randolph* 11412(08); *Shelburne* Deane (83, 19); *LB Grant* F & P 15624(17); *S Purchase*, Huntington Ravine, F & P 15627(17); *Whitefield* 37863(55).


*R. idaeus*, var. *canadensis* Richards. Rich soil, especially decaying wood of corduroys, common. - *Pittsburg*, First Lake, 10958(07), F & P 15626(17); *Stewartstown* F & P 15639(17); *Calebrouk* 36674(52); *Millsfield* 18174(21); *Stratford* F & P 15636(17), *Milan* 38176(55); *Jefferson* 16905(17); *Randolph* 18222(21); *Gorham* 30189(43); *Shelburne* Deane (19); *P Grant* 17648(19);
Blackberries.


*R. arenicola* Blanch. - *Shelburne*, LeBreton Road, Deane (21).

*R. recurvicaulis* Blanch. - *Shelburne* 11162 (08).

*R. plicatifolius* Blanch. - *Jefferson*, near Cherry Pond, 10688 (07); *Randolph* 39313 (58); *Shelburne*, Philbrook Farm, Deane (26).

*R. hispidus* L. Damp soil. - *Colebrook* 29760 (42); *Jefferson* 33126 (47); *Gorham*, Mascot Pond, 16928 (16); *Dalton* 32326 (46).

*R. hispidus*, var. *obovalis* (Michx.) Fern. Railroad tracks, etc. - *Berlin* 17059 (17); *Lancaster* 12288 (09), 36746 (52); *Jefferson* Mrs. Terry (02); *Whitefield* Lowell (n.d.), 16686 (16); *Dalton* 25310 (35).

*R. trifrons* Blanch. Low thickets. - *Northumberland* F & P 15785 (17); *Milan* 23839 (33); *Berlin* 17058 (17); *Lancaster* 12111 (09); *Randolph* 12897 (10); *Gorham*, near Mascot Pond, F & P 15603 & 15748 (17); *Whitefield* 37267 (53); *Dalton* 35623 (50).


*R. jacens* Blanch. - *Lancaster* F & P 15778 (17); *Gorham*, edge of Mascot Pond, 11689 (08), 29633 (42); Mt. Hayes, 12812 (10); *TM Purchase*, Carriage Road, 32824 (47).


*R. acutifrons* Fern. Dry woods, etc., local. - *Stratford* F & P 15715 (17); *Northumberland* F & P 15716 (17); *Shelburne* F & P 15765 (17).

*R. adjacent* Fern. Peaty or sandy thickets. - *Milan* 36196 (51); *Gorham*, near Mascot Pond, F & P 15805 (17).

*R. tholiformis* Fern. Sandy roadsides and thickets. - *Stewartstown* F & P 15600 (17); *Colebrook* F & P 15604 & 15605 & 15661 & 15723 (17); *Errol* F & P 15783 (17); *Millsfield* F & P 15658 (17); *Stratford* F & P 15724 & 15728 & 15729 & 15666 (17); *Northumberland* F & P 15722 & 15784 (17); *Lancaster* F & P 15817 (17); *Randolph* F & P 15660 (17); F & P 15733 (17); *TYPE*; cf. M. L. Fernald in *Rhodora*, 42 (1940), 283.

*R. spiculiferus* Fern. Woods and thickets. - *Errol*, riverbank, F & P 15678 (17); *Gorham*, near Mascot Pond, F & P 15659 (17); *S Purchase*, Carriage Road, 2500 feet, F & P 15744 (17).
R. setosus Bigel. Swamps and damp thickets.—Stark 36331(51); Northumberland, sandy roadside, F & P 15756 & 15827(17); Berlin, bog near Head Pond, 17060(17); Shelburne F & P 15747(17); G Grant, logging road, 17204(18); Whitefield Fernald 15665(17).

R. Groutianus Blanch.—Jefferson 23083(32); Randolph Steele (59), 39699(60); Carroll 28809(41).

R. vermontanus Blanch. Thickets, common.—Pittsburg, Back Lake, F & P 15682(17); Stewarts-town F & P 15803 & 15804(17); W Location F & P 15679(17); Dummer 35351(50); Success 11770(08); Jefferson F & P 15737(17), 25291(35); Randolph 23782(33); Gorham, near Mascot Pond, F & P 15673(17); Shelburne M 4163(08), Deane (15), F & P 15746 & 15780 & 15782 & 15830(17); M Location 14306(13); Carroll 28809(41), 32357(46).


R. canadensis L. Thickets and rocky soil, common; extending to the highest elevations and farthest up the valleys of any of our blackberries.—Pittsburg, Deer Mtn., 2500 feet, 31690(45), Indian Stream, 1098=M 3762(07), F & P 15759(17); DC Grant 33915(48); Stewarts-town 10204=M 3407(07); Dixville Hodgdon & Clapp 6245(49); Stark 17085(17), 29541(42), 35415(50); Dummer F & P 15646(17); Milan 13925(12); Lancaster F & P 15683(17); Jefferson 16526(17), 23079(32); Randolph 737(02), 9911(06); Gorham 12200(09), F & P 15671 & 15681 & 15725(17); Shelburne F & P 15762(17), Deane (18); P Grant 11549(08), Ware (24); B Purchase, Wild River, 36034 & 36143(51); TM Purchase, Carriage Road, 3600 feet, F & P 15599(17), 32823(47); Carroll, Crawford's, E. Faxon (95), Williams (98).

R. canadensis x pensylvanicus.—Errol, bank of Magalloway River, F & P 15674(17); Colebrook F & P 15758(17); Dummer F & P 15761(17); Gorham, near Mascot Pond, F & P 15672(17); Dalton 35623(50).

R. elegantulus Blach.—Stewarts-town F & P 15732(17); Northumberland F & P 15644 & 15832(17); Dummer F & P 15792(17); Milan, sandy pasture, 17400(19); Randolph, roadside west of Taylor cottage, 17820(20); Shelburne Deane (19, 20).

R. allegheniensis Porter. Pastures and thickets, common southward.—Stark 35533(50); Dummer F & P 15793(17); Northumberland 13584(12), F & P 15645 & 15833(17); Lancaster F & P 15686(17), 25225(35), 28816(41); Jefferson Mrs. Terry (02), 38181(55); Randolph 9910(06); Gorham F & P 15670(17), 30175(43), 30496(44); Shelburne Deane (02, 14), F & P 15764 & 15831(17), Deane (19), 39385(58); B Purchase, Wild River, Deane (24); TM Purchase, Carriage Road, 2200 feet, 32826(47); Carroll, Crawford's, Greenman (98).

R. allegheniensis, f. suffultus Fern.—Shelburne F & P 15763(17).

R. allegheniensis, var. Gravesii Fern.—Shelburne F & P 15738(17).

R. allegheniensis, var. neosomatic Bailey.—Errol, roadside near river, K.P. Jansson (48).

R. alumnus Bailey. Pastures.—Gorham, south of Cascade, Pease (51).

R. tauvus Bailey.—Pastures.—Colebrook 37246(53).
R. glandicauulis Blanch. Sandy soil, frequent.- Stewarstown F & P 15760(17); Columbia F & P 15713(17); Stratford F & P 15622(17); Northumberland F & P 15779(17); Jefferson 11095(07), 12071(09); Randolph F & P 15781(17); Shelburne F & P 15763(17), Deane (19, 20, 22); Whitefield 16698(17).

R. nuperus Bailey.- Lancaster 36747(52); Randolph 36046(51); Shelburne 37532(54).


R. sceleratus Brainerd. Clearings, very local.- Dummer, Pontook Dam, F & P 15649(17).- TYPE.-, Stark, riverbank, 35350(50).

R. amnicola Blanch.- Gorham, near Mascot Pond, F & P 15620(17).

R. pensilvanicus Poir. Thickets.- Colebrook F & P 15794(17); Northumberland F & P 15675 (17); Jefferson Mrs. Terry (02), 16899(16).

R. pensilvanicus, f. phyllophorus Fern.- Colebrook F & P 15794.- in part.- (17); Northumberland F & P 15842(17), Lost Nation, 17149(18); Gorham, near Mascot Pond, F & P 15643(17).

R. recurvans Blanch.- Shelburne, Wheeler cemetery, F & P 15640(17), Deane (20); Whitefield Fernald 15669(17).

DALIBARDA Kalm.

D. repens L. Damp woods, frequent.- Erol Williams (95); Dummer 12658(10), 31316(45); Stratford 13510(12); Milan 13861(12); Northumberland 17150(18); Lancaster 16655(17); Jefferson 17504(19), Berlin 16505(15); Randolph Williams (96), M 1399(03), 10767(07); Gorham 13661(12); Shelburne C.E. Faxon (72), Deane (81, 82, 83, 14); B. Purchase, Wild River, 16026(14); Carroll, Crawford's, Miss Minns (n.d.), Fabyans, W. Boot (1855); Whitefield 11568 =M 4421(08), 14561=M 5020(13), 38545(56); Dalton 12267(09), 17571(19), 24169(34), 34423(49).

AGRIMONIA L. Agrimony.

A. gryposepala Wallr. Woods and roadsides, occasional.- Columbia, Lime Pond, 10466(07); Lancaster, near Martin Meadow Pond, 17818 & 17829(20); Randolph, roadside near Miss Dean's cottage, Williams (95), 16444(15); H Grant, Hart Ledge, 16612(15).

A. striata Michx. Much more common.- Pittsburg, Hall Stream, 36237(51), 37604(54); Clarksville 25982(37), 34632(49); Cambridge 16535(15), 37958(55); Stewarstown F & P 16618(17); Colebrook Hodgdon 6214(49); Milan 13738(12), 36943(52); Stark 12762(10), 17485(19), 35532(50); Lancaster 12784(10), 29228(41); Randolph 676(02), M 243(02), 12764 & 12772(10); Shelburne Deane (81, 83); Whitefield Deane (97), M 4406(08), 14190(13), 37707(54).

SANGUISORBA L. Burnet.

* S. CANADENSIS L.- Stratford, meadow by railroad, doubtless adventive, 13555(12).
ROSA L. Rose.

* R. GALLICA L. Escape. - *Randolph*, meadow, 26920(38); *Shelburne*, pasture near cellar-hole, Deane (10, 11, 14).


R. *nittida* Willd. Swamps, frequent. - *Stewartstown*, Back Lake, F & P 16661(17); *Success*, Success Pond, 33833(48); *Milan*, Mud Pond, 13759(12), 29143(41); *Berlin* 34004(48); *Lancaster*, Martin Meadow Pond, 37242(53); *Jefferson*, Mud Pond, 17350(18); *Dalton*, Forest Lake, 17574 (19).

R. *virginiana* Mill. Damp to dry thickets, etc. - *Stewartstown*, Piper Hill, Hodgdon 6238(49), Ladd Pond, 34099(48); *Milan* 36202(51); *Randolph*, pasture, 12179(09); *Gorham*, railroad, 29548(42); *Shelburne* Deane (21).

R. *palustris* Marsh. Swamps. - *Columbia*, Lime Pond, 10458(07); *Northumberland*, bog, 12116 (09); Stark, Pike Pond, 23778(33).

R. *carolina* L. Sandy soil. - *Lancaster*, railroad, 32790(47); *Gorham*, near Dixon's, 32777(47).


* R. CINNAMOMEA L. Cinnamon Rose. Persistent and a common escape. - *Pittsburg* 11028=M 3725(07); *Stewartstown*, roadside, 10340=M 3388(07); *Colebrook*, cellar-hole, 10923=M 3985 (07); Stratford 13636(12); *Randolph*, roadside, 10852(07), M 4199(08); *Shelburne*, roadside, 11323=M 4164(08), Deane (09).

R. *blanda* Ait. Native on Connecticut River banks, adventive along railroads. - *Columbia*, riverbank, F & P 16600(17); *Stratford*, railroad, 13637(12), 31958(46); *Northumberland*, riverbank, 12134(09), 30140(43); Stark 35339(50); *Lancaster*, by old house, 16384(15), riverbank, 34999(49), railroad, 36741(52), 37649(54); *Berlin* 35475(50); *Randolph*, railroad, 12035(09), 10528(10), 24182(34), 35314(50); *Carroll*, railroad, 12717(10); *Whitefield* 37864(55).

PRUNUS L. Cherry, Plum.


* P. NIGRA Ait. Canada Plum. With us apparently always introduced and persistent, especially in Clarksville and Stewartstown. - *Clarksville* 10456=M 3697(07); *Stewartstown* 32583(47), Columbia 10840=M 3916(07), 27775(40); *W Location* 27777(40); *Errol* 12619(10); *Milan* 14008(12); *Randolph* 12233(09); *M Location* 10587(07); *Shelburne* Deane (09); *Carroll* 14364 (13), 36442(52); *Whitefield* 14593(13); Dalton 11588=M 4450(08).
P. depressa Pursh. Sand-Cherry. River gravels and pebbly shores, rare.-Shelburne, Evans Island, Deane (21, 22, 26).

P. pensylvanica Lf. Wild Red Cherry. Dry woods, burns, and hedge-rows, very common.-Pittsburg, Third Lake, 10155 (07); DC Grant 16184 (14); Stratford 13488 (12); Northumberland 35956 (51), 37764 (55); Lancaster 32578 (47); Jefferson 39009 (58); Randolph Williams (95), Mrs. Moore (05), 11625 (08); Gorham 16074 (14); Shelburne Deane (83, 10, 16); TM Purchase, Carriage Road, Kennedy (91); S Purchase, floor of Tuckerman Ravine, M 1066 (03); B Grant, Mt. Clinton, Williams (95); Carroll 37419 (54).

P. serotina Ehrh. Wild Black Cherry. Hedge-rows and woods, frequent.-Pittsburg, First Lake, 10089=M 3642 (07); W Location 33341 (47); Stewartstown 32678 (47); Stratford 13531 (12); Stark 38328 (56); Milan 13752 (12); Randolph M 1464 (03), 10829 (07); Gorham 16078 (14); Shelburne Deane (16, 19); M Location 14287 (13).

P. virginiana L. Choke-Cherry. Clearings, burns, open ledges, etc., very common.-Pittsburg, First Lake, M 3533 (07); Columbia 35991 (51); DC Grant 16182 (14); Stratford 13519 (12); Stark 33395 (48); Northumberland 33404 (48); Jefferson 35097 (50); Randolph Williams (95), M 1463 (03), 10758 (07), M 3533 & 4083 (07), 11143 (08); Shelburne Deane (82, 09); Carroll 37420 (54).

LEGUMINOSAE (Pulse Family)

LUPINUS L. Lupine.

* L. POLYPHYLLUS Lindl. Increasingly escaped and spreading.-Jefferson 28615 (41); Shelburne Deane (26). Both the white and the pink-flowered forms also escape in our area (e.g. Randolph).

TRIFOLIUM L. Clover.

* T. ARVENSE L. Rabbit-foot Clover. Dry roadsides and fields, common.-Colebrook 29741 (42); Lancaster 33025 (47); Jefferson F&P 16908 (17), 30600 (44), 3135 (45); Randolph Williams (95), 792 (02), M 385 (02); Gorham 11466 (08); Shelburne Deane (82, 08, 17); Dalton 25305 (35), 37240 (53).

* T. PRATENSE L. Red Clover. Meadows, very common.-Pittsburg, First Lake, 10109=M 3650 (07); Randolph Williams (97), M 790 (03), 11177 (08); Shelburne Deane (83).

* T. PRATENSE, f. LEUCOCRACEUM Aschers. & Prandl. Occasional.-Stark, three stations, 1630 (14); Dummer 37324 (53); Milan 37325 (53); Shelburne Deane (21).

* T. REPENS L. White Clover. Grasslands, very common.-Pittsburg, First Lake, 10164=M 3646 (07); Colebrook M 3999 (07); Milan 13775 (12); Randolph Williams (97), 10068 (07), M 4186 (08); Shelburne Deane (15); M Location 14349 (13).

* T. HYBRIDUM L., including var. ELEGANS (Savi) Boiss. Alsike Clover. Roadsides, common.-Pittsburg, First Lake, Mrs. Stevens (95), 10107=M 3649 (07); Milan 13771 (12); Randolph Williams (97), M 203 (02), 11178 (08); LB Grant M 4604 (09); Shelburne Deane (15, 17); TM Purchase, Cape Horn, Williams (97).
**T. AGRARIUM L.** Hop-Clover. Waste ground, frequent. -Pittsburg 11030=M 3726(07); Clarksville 36067(51); Colebrook 11077=M 3803(07); Milan 31321(45); Success 10641(07); Jefferson 30610(44), 31374(45), 35330(50); Randolph 789(02), 9913(06), 21112(29); Gorham Williams (95), 30490(44); Shelburne Deane (82), 11118=M 41110(08), Deane (10); M Location 14304(13); Carroll, Crawford's. Greenman (98).

**T. PROCUMBENS L.** Low Hop-Clover. Roadsides and railroads, occasional.-Clarksville 39940(61); Stewartstown 29696(42); Colebrook 31505(45); Stratford 35609(50); Milan 33081(47); Stark 29944(42), 32350(47), 35523(50); Jefferson 31352(45), 37337(53); Berlin 11634(08), 11764=M 4307 & 4308(08); Gorham 30214(49).

**MELILOTUS Mill.** Sweet Clover.

**M. OFFICINALIS (L.) Lam.** Yellow Melilot. Waste ground, occasional.-Columbia 32810(47); Stratford 33560(48); Stark 29555(42), 32894(47), 33914(48), 35529(50); Success 33863(48); Lancaster 34435(49); Berlin 30302(43); Randolph 12218(09), 23707(33), 24183(34); Gorham 10726(07); Shelburne 36045(51).

**M. ALBA Desr.** White Melilot. Wasteground, commoner.-Stewartstown 36232(51); Stratford 32266(46), 33589(48); Stark 36899(47); Success 33846(48); Berlin 11629=M 4487(08); Randolph 23689(33), 27305(39); Gorham M 4260(08), 12674(10), 29510(42); Shelburne Deane (83, 09), 36052(51); M Location 19141(22).

**MEDICAGO L.** Medick.

**M. SATIVA L.** Alfalfa. Cultivated and sometimes persistent or escaped.-Lancaster 34425(49), 36745(52); Milan 33087(47); Berlin 30297(43), 30892(44); Shelburne Deane (11).

**M. LUPULINA L., var. GLANDULOSA Neir.** Black Medick. Roadsides and trodden places.-Colebrook 38838(57); Stewartstown, railroad, 29735(42); Stratford 31938(46); Stark 33249(47), 34605(47), 34605(49), railroad, 35535(50); Milan 33083(47); Berlin, railroad, 11633(08), 30244(43), 35797(50); Randolph, grain-field, 16319(14); Gorham, railroad, 11773=M 4325(08), 29507(42), 30406(43), 36407(51).

**AMORPHA L.**

**A. FRUTICOSA L.** Indigo-Bush. Rare escape.- Dummer Flint (73).

**PETAIOSTEMUM Michx.**

**P. CANDIDUM Michx.** White Prairie-Clover. Rare waif.- Gorham, railroad, 11468(08).

**ROBINIA L.** Locust.

**R. PSEUDO-ACACIA L.** Infrequently escaped.-Shelburne Deane (17); Whitefield 16699(16).

**DESMODIUM Desv.** Tick-trefoil.

*D. glutinosum* (Muhl.) Wood. Rich woods, local.-Shelburne Deane (83), Miss Margessen (15).
D. canadense (L.) DC. Local, sometimes along railroads.-Lancaster, old railroad, 33024(47), 34762(49); Randolph, railroad, one clump, 29821(42); Shelburne Deane (81, 82, 83, 13, 15), 33035(47), 36668(52).

LESPEDEZA Michx. Bush-Clover.

* L. CAPITATA Michx., var. VELUTINA (Bickn.) Fern. Rare adventive.-Lancaster, several clumps along old railroad, 29240(41).

VICIA L. Vetch.

* V. SATIVA L. Rare waif.-Randolph, oat-field, 19412(24), 19854(26).

* V. ANGUSTIFOLIA Reichard. Waste ground.-Stark, railroad, 33909(48); Lancaster, old railroad, 17148(18); Shelburne Deane (13, 17).

* V. ANGUSTIFOLIA, var. SEGETALIS (Thuill.) W.D.J. Koch. More frequent adventive.-Colebrook, railroad, 34912(49); Columbia, roadside, 16524(15); Stratford, railroad, 13944(12); Success 33993(48); Berlin, railroad, 11515=M4499(08); Lancaster, railroad, 12795(10); Jefferson 16566(15), 23126(32), 25280(35), railroad, 12865(10); Randolph M 344(02), 16052(14); Gorham 12899(10), 16602(15); MLocation, cellar-hole, 17221(18); Carroll, railroad, 12708(10).

* V. TETRASPERMA (L.) Moench. Rare waif.-Columbia, railroad, 32805(47).

* V. HIRSUTA (L.) S.F. Gray. Rare waif.-Columbia, railroad, 33632(48).

* V. CRACCA L. Common weed of grass-lands.-Stewarts town 11057=M3670(07); Columbia 33634(48); Stratford 13573(12); Milan 13692(12); Randolph Williams (96), M204(02), 11279(08), 21077(29), 22604 & 22605(31); Shelburne Deane (81, 82, 14, 16).

* V. VILLOSA Roth. Often planted by roadsides.-Randolph, grain-field, 800(97), 19085(22); Whitefield 37956(55).

CICER L. Chick-Pea.

* C. ARIETINUM L. Rare waif.-Berlin, dump, 17136(18).

LATHYRUS L. Vetchling.

* L. PRATENSIS L. Rare adventive.-Gorham, south of Cascade, 17850(20), 30235(43).

PISUM L. Pea.

* P. SATIVUM L. Escaped.-Berlin M 4481(08); Randolph M 4251(08); Gorham, railroad, 11526(08); Shelburne, railroad, 11703(08), Deane (13).

APIOS Medic. Groundnut.

A. americana Medic. Alluvial thickets, local.-Lancaster, by Israel River, 12788(10); Shelburne 11688=M4172(08), Deane(15).

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PHASEOLUS L. Bean.

* P. VULGARIS L., var. HUMILIS Alef. Waste ground, occasional. - Pittsburg, Third Lake, 10288=M 3649(07); Stewartstown, railroad, 10971=M 3674(07); Berlin M 4486(08); Shelburne, riverbank, Deane (15); Whitefield M 4342(08).

AMPHICARPA Ell. Hog-Peanut.

A. bracteata (L.) Fern. Alluvium of the larger valleys, occasional elsewhere. - Stark, Devil's Slide, talus, 28566(41); Northumberland 12166(09), 35596(50); Lancaster, Mt. Orne, roadside, 14527(13); Shelburne 11135=M 4177(08), Deane (14, 15, 16); Dalton 12380(09).

LINACEAE (FLAX FAMILY)

LINUM L. Flax.

*L. USITATISSIMUM L. Railroads and waste ground, sporadic. - Stratford 32264(46); Success 33970(48); Dummer 35043(49); Stark 29753(42); Berlin M 4472 & 4500(08), 30234(43); Jefferson 10780(07); Randolph 9918(06), M 4467(08); Gorham 10805(07); Shelburne 11670(08), Miss Cresfield (14), Deane (18); Carroll, Fabyans, 11427(08); Whitefield 11611(08), 14590(13); White Mountains, indefinite, Hoar (1858).

OXALIDACEAE (WOOD-SORREL FAMILY)

OXALIS L. Wood-Sorrel.

O. montana Raf. Damp, especially primeval, spruce and fir forests. - Pittsburg, First Lake, 11006=M 4595(07); Colebrook M 4004(07); Dixville Hunnewell (12); Stratford 13444(12); Dummer F & P 16547(17); Randolph M 982(03), 10214(07), 19874(26); Shelburne Deane (81, 82, 83, 84, 16); LB Grant 12331(09); Whitefield Deane (95); Carroll, Crawford's, Jenks (83), Miss Minns (88).

O. montana, f. rhodantha Fern. - Randolph, Sylvan Way, 19178(23); LB Grant, Crag Camp, St. John (11).

* O. CORNICULATA L. Waste ground. - Colebrook, railroad, 29679(42); Stratford 35105(49).

O. europea Jord. A common weed. - Pittsburg, Indian Stream, 10989=M 3742 & 3775(07); Stewartstown 10967(07); Stratford 11592(12); Stark 39891(61); Milan 13805(12); Berlin 38204(55); Jefferson 39815(60); Randolph Williams (96), 814A(02), 11219(08); Location 14297(13); Gorham 30485(44); Shelburne Deane(82, 13, 16), 39645(59); Whitefield Deane (96).

O. europea, f. cymosa (Small) Wieg. - Northumberland 36353(51); Jefferson Mrs. Terry (02); Randolph M 343(02), M 4599(13), 17609(19), 32487(46); Gorham 16607(15); Shelburne 36667(52); Whitefield 11618=M 4338(08).

O. europea, f. villicaulis Wieg. - Randolph, vegetable garden, 17125(18).
GERANIACEAE (GERANIUM FAMILY)

GERANIUM L. Cranesbill.

G. Bicknelli Britt. Open woods and clearings, local. - Lancaster, Mt. Prospect, ballast, 14544 (13); Dalton, waste ground near Scott Junction, 29096 (41); Shelburne, Evans farm, 36539 (52); H Grant, Hart Ledge, 16636 (15).

G. carolinianum L., var. confertiflorum Fern. Rocky woods, very local. - DC Grant, Diamond Peaks, Hodgdon & Steele (54).

G. Robertianum L. Rocky woods, local. - Stewartstown 31742 (45); Lancaster, Mt. Prospect, 14586 (13), 39164 (58); Shelburne, Crag, Deane (83, 14, 19).

ERODIUM L'Hér. Storksbill.

* E. CICUTARUM (L.) L'Hér. Rare waif. - Shelburne Deane (04).

TROPAEOLACEAE (INDIAN-CRESS FAMILY)

TROPAEOLUM L. Nasturtium.

* T. MAJUS L. - Shelburne, self-sown, Deane (18).

POLYGALACEAE (MILKWORT FAMILY)

POLYGALA L. Milkwort.

P. sanguinea L. Grassland, rare. - Shelburne, Evans farm, Misses Toppan & Balch (20), 36690 & 36712 (52). Reported by W.H. Harrison from Pine Link, Gorham (34).

P. verticillata L. Dryish fields, rare. - Shelburne 35820 (50).

EUPHORBIACEAE (SPURGE FAMILY)

EUPHORBIA L. Spurge.

* E. HELIOSCOPIA L. Rarely adventive. - Berlin, waste ground, 11794= M 4494 (08).

* E. CYPARISSIAS L. Cypress Spurge. Persistent and spreading, especially in Shelburne. - Colebrook 10843=M 3990 (07); Stratford 13630 (12); Milan 14004 (12); Stark 12769 (10); Randolph Williams (97), 831 (02), M 1000 (03); Shelburne Deane (09), Mrs. McMillan (10- Plant. Essicc. Gray. no. 230), Deane (10, 11; cf. Rhodora, 12 (1910), 57-61), 37873 (55).

* E. PEPLUS L. Rare waif. - Whitefield, garden weed, Deane (97).

* E. COROLLATA L. Flowering Spurge. Occasionally adventive. - Randolph Evans (17), 17192 (18), 19768 & 19900 (26), 20980 (29) - station extant in 1951; M Location, field near Barnes Brook, Harris 898 (33).
*E. COROLLATA, var. MOLLIS Millspaugh. Dry fields.-Shelburne, Evans farm, 36572 & 36700(52).

*E. SUPINA Raf. Railroads and waste ground, common.-Stark 29899(42); Northumberland 38191(55); Lancaster 12161(09); Berlin 11310(08), 11765-M 4329(08), 35794(50); Jefferson 11432(08); Randolph 29159(41); Gorham 11487(08); Shelburne 11651(08); Whitefield 11616-M 4343(08); Carroll 33282(47), 36933(52); Dalton 35847(50).

*E. VERMICULATA Raf. Common along railroad ballast.-Pittsburg, Hall Stream, 33767(48); Stewardstown 29701(42); Columbia 17718(19); Lancaster 34746(49); Stark 12761(10), 27694(39), 29153 & 29155(41), 33235(47); Dummer 13951(12); Berlin 11523-M 4483(08), 30313(43), 35063(49), 35796(50); Randolph 19128(22); Gorham 11486(08), 39268(58); Shelburne Deane (82, 83); Carroll 12697(10); Whitefield 16069(14); Dalton 12279(09), 29767(42).

*E. SERPYLLIFOLIA Pers.-Gorham, on dung in pasture near B. & M. station, 17087(17).

*E. GLYPTOSPERMA Engelm. Railroads and waste ground.-Dummer 35042(49); Stark 29838 & 29839(42); Milan 29852(42); Berlin 34007(48), 35795(50), 38194(55); Randolph, dryish meadow, 18138(21); Carroll 16591(15), 27699(39).

CALLITRICHACEAE (WATER-STARWORT FAMILY)

CALLITRICHAE L. Water-Starwort.

*C. palustris* L. Shallow water and muddy ground, frequent.-Pittsburg, Second Lake, 31632 & 31656(45), First Lake, 16526(15), 33181(47), 35030(49); Errol F & P 17075(17); Cambridge 38465(56); Odell 34852(49); Stratford, Nash Stream, 16302(14); Jefferson 38131(55); Randolph 11187(08); Shelburne Deane (18), Pease & Wells 39365(58); Whitefield 11536(08).

*C. heterophylla* Pursh.-Berlin, outlet of Head Pond, 17827(20), Androscoggin River, 30866(44); Jefferson 38895(57); Gorham 16863(16); Shelburne Pease & Wells 39366(58).

*C. anceps* Fern.-Randolph, Watson Pond, 4170(04), 19895(25); B Purchase, South Carter Lake, 22999(32); P Grant, Lost Pond, E. & C.E. Faxon (82).

EMPETRÁCEAE (CROWBERRY FAMILY)

EMPETRUM L. Crowberry.

*E. nigrum* L. Mountain summits, especially on the higher peaks, common.-Success, Mt. Success, 11167=M 4124(08); Shelburne, Shelburne Moriah Mtn., Misses Christensen & Gauthier (17); Gorham, Gorham Moriah Mtn., 25331(35); LB Grant, Durand Ridge, Fuller (86), Ravine of the Castles, M 387(02), Hawker Ridge, 4050(04); TMP Purchase, Huts, 10237(07), Mt. Clay, Williams (98), Carriage Road, Deane (82, 84), E. & C.E. Faxon (86), B.L. Robinson (01); S Purchase, Alpine Garden, E. & C.E. Faxon (78, 79), Williams (96, 98), Summit House, Merrill (96), Lakes of the Clouds, Williams (93), Tuckerman Ravine, Eggleston (98); Mt. Washington, indefinite, Oakes (n.d.), F. Booth (1816), W. Booth (1855), Mann (1862), Flint & Huntington (76), Pringle (77), Fairbanks (83), Greenman (98); H Grant, Mt. Crawford, Russell (1852).
E. atropurpureum Fern. & Wieg. Ledges and disintegrating rock, usually not on the highest peaks, frequent.-Success, Mt. Success, 11165(08); B Purchase, Imp Mtn., 23764(33), Carter Notch, W. Boott (1855), 4086(04); TM Purchase, Mt. J.Q. Adams, 10876(07), Lowe's Bald Spot, 17497(19), 32830(47), Carriage Road, 12842(10), F&P 16746(17); Mt. Washington, indefinite, Oakes (n.d.), Hoar (1858), Chickerling (1862); B Grant, Mt. Webster, Fuller (94), 11784(08); H Grant, Mt. Crawford, 11460(08).

ANACARDIACEAE (CASHEW FAMILY)

RHUS L. Sumac.

R. typhina L. Dry soil, frequent.-Columbia 10903=M 3921(07); Lancaster 16741(16); Randolph Williams (97), 5691(04); Gorham M 4054(07); Shelburne Deane (82, 83), Williams (95); Dalton M 5006(13).


R. glabra L. Local.-Colebrook 10894=M 3882(07); Randolph Williams (95, 96).

R. glabra, var. borealis Britt. Local.-Jefferson, near Cherry Pond, 11436(08).

R. radicans L. Poison Ivy. Alluvium along the Androscoggin and Connecticut Rivers; also along road-shoulders and railroads.-Gorham 10711(07), M 4284(08); Shelburne Deane (83, 16). More common (especially in Shelburne) than its infrequent collection might suggest.

R. radicans, var. Rydbergii (Small) Rehd. Chiefly in rocky or alluvial woods, frequent.-Pittsburg, above Third Lake, Richards (48); Stark, talus of Devil's Slide, 17465(19); Northumberland, Cape Horn, Hodgdon (59); Berlin, railroad, 11641=M 4509(08); Randolph, Ice Gulch, 11499(08), 12877(10), 16705(17); Gorham, woodroad, Sugar Hill, 29529(42); Shelburne, roadside, 11204=M 4156 & 4177(08), alluvial woods, 12249(09).

AQUIFOLIACEAE (HOLLY FAMILY)

ILEX L. Holly.

I. verticillata (L.)Gray. Black Alder. Low ground, frequent.-Stewartstown, Back Pond, 36764 (52); Errol 10505(07); Cambridge, Umbagog, 16539(15), 18155(21), 32861(47); Stratford 32308(46); Stark 29833(42), 36826(52); Northumberland 12120(09), F & P 17017(17); Dummer 37548(54); Milan 35425(50); Lancaster, Baker Pond, 17258(18), Martin Meadow Pond, 17814 & 17817(20); Jefferson 25307(35); Randolph 11195(08), 17601(19); Shelburne, Moose Pond, Deane (82, 16), 23132(32); Whitefield, Hale Pond, Deane (96), 30323(43), Burns Pond, 11534=M 4388(08); Dalton, Forest Lake, 17569(19), 19047(22), 24196(34).

I. verticillata, var. tenuifolia (Torr.)S. Wats. Swampy woods.-Colebrook, cedar bog, F & P 16711(17); Stark 17441(19), 18091(20); Jefferson, Mud Pond, 18075(21); Dalton, cedar bog, 17573(19), 17839(20).

_N. mucronata_ (L.) Trel. Damp woods and open ledges, common.-Pittsburg, Third Lake, 31709(45), Second Lake, 10819=M 3439(07); Stewartstown 32581(47); DC Grant 16237(14); W Location 27778(40); Dixville, Notch, Williams (95), 32677(47); Errol 36498(52); Odell 34843(49); Strafford 13480(12); Stark 23808(33); Northumberland 37400(54), 38657(57); Milan 13859(12), 32660(47), 37610(54); Lancaster 29570(42); Jefferson 30040(43), 35972(51), 36471(52); Berlin 25274(35); Randolph 844(02), M 333(07); Shelburne Deane (81, 82, 83); TM Purchase, Lowe's Bald Spot, 17499(19); B Purchase 38297(56), North Baldface Mtn., 16049(14), Carter Notch, 32717(47); H Grant, Mt. Crawford, 11785(08); Carroll 36433(52); Dalton 17546(19), 17859(20); C Purchase 37804(55)

CELASTRACEAE (STAFF-TREE FAMILY)

CELASTRUS L. Bittersweet.

_C. scandens_ L. Local.-Stark, common rocky talus of Devil's Slide, 17468(19), 28614(41), 36523(52); Northumberland 37844(55); Lancaster Schmid (49); Shelburne, riverbank, 11201(08).

ACERACEAE (MAPLE FAMILY)

ACER L. Maple.

_A. spicatum_ Lam. Mountain-Maple. Cool woods and in new growth, very common.-Pittsburg, Third Lake, 10302=M 3501(07), First Lake, M 3529(07); Colebrook 10890=M 3978 & 4029(07); Columbia 10491(07); Strafford 13499(12); DC Grant 16159(14); Dummer F & P 16550(17); Stark 32911(47); Jefferson W. Boott (73), 16880(16); Lancaster 38558(56); Randolph Williams (97), M 971 & 1041 & 1469(03), M 1921(04), 10050=M 3265(07); Gorham Deane (83), 29613(42); Shelburne C.E. Faxon (n.d.), Deane (92), Greenough (83), Deane (16); P Grant E.L. Mackintosh (25); B Grant M 1080(03); Whitefield Deane (95, 97), St. John (12); Dalton 36024(51).

_A. pensylvanicum_ L. Striped Maple. Moosewood. Cool woods, common.-Pittsburg, Third Lake, M 3481(07); Stark 35444(50); Lancaster 38622(56); Randolph Williams (97), 849(01); Mrs. Moore (05); Gorham Hervey (78), 29727(42); Shelburne Deane (81, 83), Philbrook (83), Williams (95); Whitefield Deane (95); Carroll 35260(50).

_A. saccharum_ Marsh. Sugar Maple. Upland woods, very common.-Pittsburg, First Lake, 10178=M 3528(07); Milan 13741(12); Lancaster Deane (96); Randolph 11517(08); Shelburne Deane (83), Philbrook (83).

_A. rubrum_ L. Red Maple. Low woods, common.-Pittsburg, First Lake, 10179=M 3530(07); Cambridge, Umbagog, 16538(15), 18153(21); Jefferson 38999(58); Randolph M 1452 & 1453(03); Mrs. Moore (05), 11529(08); Gorham 16083(14); Shelburne Philbrook (83), Deane (83, 10); B Purchase, Wild River, 16017(14); TM Purchase, Lowe's Bald Spot, 2700 feet, 32821(47); Whitefield Deane (95).

_A. saccharinum_ L. Soft Maple. Riverbanks, common.-Pittsburg 33203(47); W Location 12584(10), 33340(47); Strafford 13580(12); Stark 14149(13), 21027(29); Northumberland 12261(09); Lancaster 12106(09), 34747(49); Gorham M 4057(07), 16083(14); Shelburne, Wheeler Bog, Deane (83), 11161=M 4138(08), Deane (16, 23), 27407(39).
BALSAMINACEAE (TOUCH-ME-NOT FAMILY)


*I. pallida* Nutt. Pale Jewelweed. Moist deciduous woods, locally abundant northward. *Pittsburgh*, Third Lake, 33189 (47); *Lancaster*, Second Lake, 19106 (22); *Dixville*, Notch, 10561 (07); *Deane* (17); *DC Grant*, Diamond Peaks, 20663 (30); *Stark*, Devil's Slide, 17467 (19); *Kilkenny*, Priscilla Brook, 33211 (47); *Jefferson*, Starr King trail, 23891 (33), 25286 (35); *Lancaster*, Mt. Prospect, 809 (00).


*I. capensis* Meerb. Spotted Touch-me-not. Damp Places, common. *Colebrook* 10888 = M 3924 (07); *Jefferson* M 132 (01), 10742 (07), 31011 (44); *Randolph Williams* (95), 810 (02), M 241 & 394 (02), 12887 & 12888 (10); *Gorham* 36396 (51); *Shelburne Deane* (82, 84); *Whitefield Deane* (97), M 5028 (13).


RHAMNACEAE (BUCKTHORN FAMILY)

RHAMNUS L. Buckthorn.

*R. alnifolia* L'Hér. Swamps, locally abundant. *Pittsburgh*, East Inlet, Steele (53); *Clarksville* Pease & Bean 33614 (48); *Stewartstown* 27833 (40), 38926 (57); *Stark*, Crystal, railroad ditch, 29834 (42); *Milan*, near Marston station, 13847 (12), 14120 (13), 19769 (26); *Whitefield*, near Bethlehem line, 17508 & 17509 (19).

*R. FRANGULA L. Rare adventive. *Northumberland*, one tree in wooded pasture of Potter farm, Hodgdon, Clapp, & Yeager 4822 (44), at same place, 36372 (51).

VITACEAE (VINE FAMILY)


*P. inserta* (Kerner) K. Fritsch. *Shelburne*, riverbank, Deane (21).

*P. inserta*, f. *dubia* Rehd. Alluvial or rocky woods, frequent. *Pittsburgh*, Indian Stream, M 3732 (07); *Stewartstown* 10453 = M 3694 (07); *Colebrook* 36109 (51); *Stark*, Devil's Slide, 17462 (19); *Milan* 14003 (12); *Northumberland*, Cape Horn, 16475 (17); *Lancaster*, Mt. Prospect, 14204 (13), 22619 (31); *Berlin*, waste heap, 30408 (43); *Jefferson* 25309 (35); *Gorham* 11457 (08), 12248 (09); *Shelburne* 11331 = M 4152 (08), Deane (17).
VITIS L. Grape.

V. novae-angliae Fern. Alluvial or rocky thickets, local. -Stark, Devil’s Slide, 17439(19); Gorham, riverbank, 17409(19), 31623(45); Shelburne Deane (82), 10798(07), M 4159(08), 16908(16), 17787(19), Deane (22).

TILIACEAE (LINDEN FAMILY)

TILIA L. Linden. Basswood.

T. americana L. Rich woods, common. -Stratford 32301(46); Dummer 36376(51); Stark 32905(47); Lancaster 16727(16), 36206 & 36391(51); Jefferson 16399(15); Milan 34446(49); Randolph 10613(07); Gorham 16359(15); Shelburne Deane (82, 83), A.P. Briggs (83), 11678 (08), M 4174(08), Miss Lowell (14), Deane (14), 36210(51); Whitefield Deane (95).

MALVACEAE (MALLOW FAMILY)

MALVA L. Mallow.

* M. NEGLECTA Wallr. Barnyard weed. -Gorham 12796(10), 16328(14); Shelburne Deane (18); S Purchase, Summit House stable, Harris (27); Dalton 29805(42).

* M. VERTICILLATA L., var. CRISPA L. Persistent. -Jefferson 16897(16).

* M. MOSCHATA L., f. HETEROPHYLLA (Vis.) Hayek. Musk-Mallow. -Stewartstown 34681 (49); Milan 33141(47); M Location, cellar-hole, 19136 & 19146(22).

* M. MOSCHATA, f. LACINIATA (Desr.) Hayek. The commonest form. -Pittsburg, Indian Stream, 11063=M 3734(07); Colebrook 860(01), 10372=M 3883 & 3974(07); Cambridge Williams (06), Ware (22); Milan 29156(41); Berlin 17334(18); Randolph 12079(09); Gorham M 4266(08); Shelburne Deane (19); Carroll 17433(19).

GUTTIFERAEE (ST. JOHN’S-WORT FAMILY)

HYPERICUM L. St. John’s-wort.

* H. PERFORATUM L. Dry pastures and roadsides, common. -Columbia 10471=M 3878 (07); Milan 13724(12); Randolph Williams (95), M 240(02), 9912(06); Gorham 16933(16), 29634(42); Shelburne Deane (82, 83, 14); M Location 12851(10).

H. ellipticum Hook. Wet places, common. -Pittsburg, Indian Stream, 10948(07), 33176(47); Colebrook M 3987(07); Errol 32851(47); Odell 34811(49); Dummer 29849(42), 31310(45), 34816(49); Milan 13804(12); Northumberland 12138(09); Jefferson 31363(45), 35656(50); Randolph Churchill (89), Williams (96), M 239(02), 11554(08), 21099(29); Gorham 30614 (44); Shelburne Deane (82, 83, 13, 14, 15); M Location 14310(13); Dalton 29092(41); Carroll 14385(13), 26905(38), Crawford's, Williams (95), Fabyans, E. & C.E. Faxon (91), Twin Min., 17563(19).

H. boreale (Britt.) Bickn. Margins of ponds and streams, frequent. -Errol F & P 16984(17); Dummer 36812(52); Stark 29874(42); Berlin 13850(12); Lancaster 12800(10); Jefferson
12931(10), 34907(49); Shelburne Deane (14), 23134(32); Whitefield Deane (96, 97), 14558=M 5040(13), 17791(19), 36899(52); Carroll, Crawford's, Williams (95).


*H. muticum* L., var. parviflorum (Willd.) Fern. Low ground, common. *Pittsburg* F & P 16959 (17); *Colebrook* F & P 16583(17); *Jefferson* 16819(16); *Randolph* Williams (95), 12351(09), 21126(29); *Shelburne* Deane (83, 14, 15, 16); *Whitefield* Deane (96); *Carroll* 33155(47).

*H. majus* (Gray) Brittt. Sandy soil, frequent. *Colebrook* 10920=M 4003(07); *Dummer* 37321 (53); *Milan* 13729(12); *Jefferson* 37336(53), 38043(55); *Randolph* Williams (96), 4175 & 4176 (04); *Shelburne* Deane (15, 16), 36726(52); *Whitefield* Deane (96, 97); *Carroll* 33154(47), Fabyans, E. & C.E. Faxon (95), Kennedy (95).

*H. canadense* L. Ditches and excisscated places, common. *Stratford* 32288(46); *Stark* 32895 (47); *Milan* 38163(55); *Jefferson* 32904(47), 35658(50), 39900(61); *Randolph* Williams (95, 96), 10766(07), 12231(09), 21107(29); *Location* 14350(13); *Shelburne* Deane (16); 7M *Purchase* 32807(47); *Carroll* 14383(13), 27698(39), 32346(46), Crawford's, E. & C.E. Faxon (95), Kennedy (95), Williams (95).


*H. virginicum* L., var. *Fraseri* (Spach) Fern. Marsh St. John's-wort. Swamps and borders of ponds, frequent. *Pittsburg*, Third Lake, 33180(47); *Errol* 32470(46); *Cambridge* 16558(15), 18186(21); *Odell* 34838(49); *Dummer* Williams (96), 33118(47); *Stark* 29857(42), 32311(46); *Success* 33787(48); *Berlin* 30863(44); *Lancaster* 34782(49); *Jefferson* W. Boott (73), 30269 (43), 34909(49); *Randolph* 4026(04), 9906(06); *Shelburne* Deane (82, 83, 15, 18), 39394(58); *Whitefield* Deane (96), M 5039(13); *Dalton* M 4374(08), 17565(19).

**CISTACEAE** (ROCKROSE FAMILY)

**LECHEA** L. Pinweed.

*L. maritima* Leggett. Local. *Corham* 11467(08).

*L. intermedia* Leggett. Dry soil, southward. *Randolph* 19848(26); *Location* Harris 903 (33); *Carroll* 32398(47); *Whitefield* 30292(43), 37305(53); *Dalton* 11610(08), 29105 & 29106 (41)

*L. intermedia*, var. *juniperina* (Bickn.)Robins. Commoner. *Lancaster* 37654(54); *Jefferson* 11415(08); *Randolph* Williams (95), 9907(06), M. 4463(08), 16799 & 16938(16), 21100(29), 39417(58); *Shelburne* Deane (84, 86), E. & C.E. Faxon (86), Deane (02, 07), 11668(08), Deane (13), 29901(42); *Purchase*, Wild River, 16029(14); *Carroll* 33146(47); *Dalton* 11467=M 4366(08); *Whitefield*, Hazen's, 36903(52).

**VIOLACEAE** (VIOLET FAMILY)

**VIOLA** L. Violet.

*V. cucullata* Ait. Wet places, common. *Stark* 33398(48); *Berlin* 11630(08); *Jefferson* 35111 (50); *Randolph* 5746(04), Mrs. Moore (05), 10059(07), M 3262(07), 12014(09), 12780(10),
V. cucullata x septentrionalis. - Shelburne Deane (09, 10, 14).

V. papilionacea Pursh. Damp soil, frequent. - Jefferson 33091 (47); Randolph 38944 (57), 39658 (60); Whitefield 38940 (57).

V. nephrophylla Greene. Gravelly shores, local. - Colebrook, Beaver Falls, F & P 16741 (17); Shelburne Deane (19).

V. septentrionalis Greene. Woods and clearings, common. - Stewartstown F & P 15557 (17); Columbia 33371 (48); DC Grant 16228 (14); W Location 27779 (40); Colebrook F & P 16567 & 16709 (17); Stratford 13460 & 13585 (12); F & P 16743 (17); Stark 36508 (52); Northumberland 12142 (09), 35922 (51), 37398 (54); Lancaster Sanford (14), 33366 (48), 36458 (52); Jefferson 16495 (17), Randolph 12184 & 12281 (09), 16436 (17), 26519 (37), 37728 (55); Gorham 12194 (09), 14183 (13), 33529 (48), 35967 (51); Shelburne Deane (83), Miss Evans (04), Deane (09, 10), Miss Stowell (16), Deane (19), 36479 (52), 37000 (53); Dalton 12370 (09).

V. novae-angliae House. Rare and perhaps needing further study. - Shelburne Deane (19).

* V. FIMBRIATULA Sm. Railroad ballast, adventive from farther south. - Berlin 16518 (15), 35470 (50); Jefferson 22768 (31); Randolph 17610 (19); Gorham 29632 (42); G Grant 19407 (24); Whitefield 11425 (08), 37551 (54); Carroll 38063 (55).

V. Selkirkii Pursh. Rich woods, especially under sugar maples, frequent. - Clarksville 34688 (49), 35167 (50); DC Grant 16221 (14), 36488 (52); Stewartstown 32579 (47); Colebrook 11074 = M 3789 (07), 26835 (38); Millsfield 18159 (21); Columbia 3675 (52); Stratford 13505 (12), 16534 (17); Stark 28629 (41); Milan 17119 (18), 36558 (52); Northumberland 33442 (48); Berlin 25397 (36); Lancaster 29615 (42), 32623 (47), 35082 (50); Jefferson 18214 (21); Randolph Williams (96), 11147 (08), 12227 (09), 16653 (17), 27782 (40); Gorham 29615 (42), 29958 (43), 37726 (55); Shelburne Deane (89, 09, 19); B Grant, Mt. Clinton, C.E. Faxon (78, 81); Carroll 11446 (08), 16666 (16), 17422 (19), 30149 (43).

V. palustris L. Alpine brooks, frequent. - LB Grant, Salmacis Fall, Wardwell (06), Huts, 10212 (07); TM Purchase, Great Gulf E. & C.E. Faxon (86, 87); S Purchase, Alpine Garden, Preble (98), Fuller (00), Tuckerman Ravine, Hoar (1858), Mann (1862), E. & C.E. Faxon (85, 86), Fuller (94), Williams (97), Eggleston (97, 98, 01), M 1074 (03), 12050-M 4579 (09), Lakes of the Clouds, Fuller (94), 19832 (26), Hodgdon & Wade 6274 (49); C Grant, Oakes Gulf, Horsford (78), Williams (93, 98), Greenan (98), 11139 (08), M 4548 (09); Mt. Washington, indefinite, Oakes (n.d.), Flint & Huntington (76), Pringle (77), Allen (78), Farlow (84).

V. pallens (Banks)Brainerd. Wet places, common. - Colebrook 11042 (07), 36461 (52); Stratford 13395 (12); Stark 36433 (52); Dummer 37323 (53); Randolph M 1052 (03), 4073 & 4182 (04), Mrs. Moore (05), Wardwell (06), 10026 (07), M 3261 (07), 11236 (08); Gorham Deane (09), 29956 (43); Shelburne Deane (04, 09, 10, 16), Miss Brown (19); P Grant Mackintosh (25); S Purchase, Tuckerman Ravine, 893 (02), 11546 (08); B Grant, Mt. Webster, 2800 feet, Williams (98); LB Grant 38682 (57); Carroll 11257 (08).
V. incognita Brainerd. Moist woods, common. - Pittsburg, Third Lake, M 3509(07), Second Lake, 10218(07), First Lake, Mrs. Stevens (95), 10125(07); Colebrook 11049=M 3793(07), Hodgdon & Clapp 6464(49); Dixville Hodgdon & Clapp 6272(49); DC Grant 16226(14); Stratford 13504(12); Lancaster 37747(55); Randolph 5378 & 6401(04), Mrs. Moore (05), 10760(07), 11281(08), 19885(26), 21082(29); Shelburne Deane (09, 10, 13); B Purchase Bean (47); M Location 14265(13); LB Grant 12065(09), 16479(17); C Purchase 11273(08); Whitefield Deane (95).

V. incognita, var. Forbesii Brainerd. - Shelburne Deane (20).

V. renifolia Gray. Cool woods, especially in somewhat calcareous situations, frequent. - DC Grant 16224(14); Stewarttown F & P 16678(17); Colebrook Hodgdon 37275(49); Columbia 27795(40), 38640(57); Stratford 13600(12); Dummer 31304(45), 37327(53), 38315(56); Northumberland 16471(17), 33429(48); Lancaster 12828(10), 35096(50), 36429(52); Jefferson 27306(39); Shelburne Deane (09, 19); Whitefield Deane (95); Dalton 11594=M 4436(08).

V. renifolia, var. Brainerdii (Greene) Fern. Rather more frequent. - Pittsburg, First Lake, 10124=M 3606(07); Stewarttown 10260=M 3412(07); Colebrook 11075=M 3794(07), 13867(12), 29749(42); Stratford F & P 16742(17); Milan 13737(12), 14274(13), 36563(52); Berlin 16504(15), 29141(41); Lancaster 14524(13), 29614 & 29616(42); Jefferson 16872(16), 31005(44); Randolph 872 & 873(02), 10855(07), 11285(08), 16295(14); Gorham M 1440(03), 11242(08), 29966(43); Shelburne Deane (09, 10); Carroll 17423(19), 30158(43), 36082(51), 37766(55), 38923(57); Whitefield Deane (95).

V. rotundifolia Michx. Early Yellow Violet. Cool, chiefly deciduous woods, common. - Stratford 13443(12); Northumberland 36975(53); Lancaster 14273(13), Sanford (14), 28819(41); Randolph Williams (96), 4143(04), 9900(06), M 3256(07), 21080(29), 35938(51); Gorham 29957(43), 38968(58); Shelburne Deane (84, 09); 37435(54); B Purchase Bean (47); TM Purchase, Carriage Road, Forbes (14); Dalton 32638(47); Carroll 17427(19), 30159(43), 38921(57); Crawford's, Kennedy (91).

V. pubescens Ait. Downy Yellow Violet. Local. - Lancaster, Mt. Prospect, 16916(17), 37250(53).

V. pensylvanica Michx., var. leioarpa (Fern. & Wieg.) Fern. Smooth Yellow Violet. Rich, especially alluvial, woods, frequent. - Clarksville 11035=M 3715(07), 33626(48), 34618(49); Stewarttown 27786(40); DC Grant 36503(52); Errol 12615(10); Dixville 10607(07), 26982(38); Colebrook 11080=M 3818(07); Columbia 27783(40), 37601(54); Millsfield 18193(21); Stratford 13478(12); Stark 27024(39), 33426(48), 36447(52); Dummer 34358(49); Lancaster 12790(10), 14202(13), 29569(42), 36445(52); Berlin 29142(41); Jefferson 31009(44), 36503(52); Randolph Mrs. Moore (05), 12080(09), 16297(14), 16444(17); Gorham 31389(45); Shelburne Deane (04, 09, 19), 36483(52); Carroll 30153(43), 37776(55); Dalton 16407(15).

V. canadensis L. Canada Violet. Rich deciduous woods, frequent northward and in the Lyman, Lisbon, and Cambrian formations. - CA Grant 14164(13); Clarksville 11034=M 3716(07), 34689(49), 35180(50); AGA Grant, Crystal Mts., 12627(10); Stewarttown 12666(10), 27787(40), 31998(46), 32608(47); Colebrook 11073=M 3810(07), Hodgdon 6276(49); Dixville 10624(07); Columbia F & P 16586(17), 34312(49); Stratford 13477(12); Lancaster, Mt. Prospect, common, 14436(13), 16917(17), 32569(47), 37245(53), E.B. Welch(n.d.).
V. conspersa Reichenb. Woods, somewhat local.- Clarksville 34635(49); Colebrook 29681 (42); Columbia 27715(40), 31839(46), 36464(52), 38639(57); Northumberland, riverbank, 12129(09); Lancaster, Mt. Prospect, 16923(17), 36456(52), 37696(54), 39145(58); Shelburne Deane (10)

*V. ADUNCA Sm. Sparingly adventive along railroads.- Gorham 11484(08), 30239(43); Carroll, Crawford's, 34069(48), Carroll Tank, 38854(57).

V. adunca, var. minor (Hook.) Fern. Heads of alpine ravines, local; at lower altitudes rare.- Colebrook, dry pasture, 29681(42); Columbia, near Lime Pond, 10437(07); TM Purchase, Great Gulf, W. Boott (1855); S Purchase, Alpine Garden, E. & C. E. Faxon (78), Fuller (00), Huntington Ravine, fan, 4000 feet, F & P 16756(17); C Grant, Oakes Gulf, E. & C.E. Faxon (81), Williams (93, 98), Greeman (98), 11225(08), 12039(09); alpine, indefinite, Oakes (n.d.).

*V. TRICOLOR L. Johnny-jump-up. Garden escape.- Lancaster 34779(49); Jefferson, railroad, 16638(15); Randolph M 342(02), 5406(04), 12255(09), 16497(17); Berlin, dump, 38159 (55); Gorham M 4262(08); Shelburne Deane (27); M Location 17211(18); Whitefield Deane (19).

*V. ARvensis Murr. Fields and roadsides.- Colebrook, field near Kidderville, 33377(48), and spreading in 1953; Columbia, roadside, E. Columbia, 26850(38).

THYMELEACEAE (MEZEREUM FAMILY)

DIRCA L. Leatherwood.

D. palustris L. Rich woods, very local.- Lancaster, Mt. Prospect, 14222(13), Mt. Pleasant, Shute (18), 20089(27).

LYTHRACEAE (LOOSTEREIF FAMILY)

LYTHRUM L. Loosestrife.

*L. SALICARIA L. Rare waif.- Stark, railway ditch, 38151(55); Randolph, Watson Pond, 24170(34).

ONAGRACEAE (EVENING-PRIMROSE FAMILY)

LUDWIGIA L.

L. palustris (L.) Ell., var. americana (DC.) Fern. & Grisc. Muddy shores infrequent.- Lancaster 34765(49); Jefferson, Little Cherry Pond, 12933(10); Dalton, Connecticut River, 11599(08), John's River, 29779(42).

EPILOBIUM L. Willow-herb.

E. angustifolium L. Fireweed. Swamps, clearings, and burns, common.- Pittsburg, First Lake, M 3645(07); Colebrook 10898-M 3873 & 4018(07), 10421(07); DC Grant 16238(14); Northumberland 36341(51); Stark 32927(47); Lancaster, Mt. Prospect, 16919(17); Randolph Williams (95, 96), M 206(02), 39317(58); Shelburne Deane (82, 83); TM Purchase, Mt. J.Q. Adams,
5000 feet, 9891(06), Cape Horn, Williams (97); S Purchase, Huntington Ravine, F & P 16853 (17), Tuckerman Ravine, 11491(08), M 5086(13); C Grant, Oakes Gulf, Williams (95), 33979 (48); Carroll, Crawford’s, Spaulding (16); Dalton 35746(50).

_E. angustifolium_ f. _albiflorum_ (Dumort.) Haussk. Infrequent. _Columbia_, railroad near Columbia Bridge, a large station, 32277(46); Success, roadside, 16261(14); Gorham, Mt. Hayes, 12814(10).

* E. HIRSUTUM L. Rare waif.- _Berlin_, railroad yards, 37566(54).

_E. strictum_ Muhl. Swamps, common.- _Pittsburg_, Hall Stream, 37605(54); DC Grant 32467 (46); Stewartstown, Ladd Pond, 13945(12); Columbia 13979(12); Northumberland 36345(51); Milan 13701(12); Jefferson 11430(08), 30270(43), 35667(50), 39897(61); Randolph 923(02); M Location 14298(13).

_E. leptophyllum_ Raf. Bogs and wet ground, common.- _Clarksville_ 34693(49); Colebrook 13941(12), 25213(35); Columbia W. Boott (1855), 23875(33); Dummer 34815(49); Success 33792(48); Stark 29152(41); Milan 13727 & 13731(12); Northumberland 38100(55); Lancaster 12151(09), 17145(18), 29237(41); Jefferson 10808(07), 23087(32), 35061(49), 39762 (60); _Berlin_ 27476(39); Randolph Williams (95), 928(00), 11685(08), M 4583(09), 19844(26), 21110(29); Gorham 16606(15), 30424(43); G Grant 13912(12); Carroll 32347(46), 33158 (47), Crawford’s, Williams (95); Whitefield 14559=M 5041(13), 36902(52); Dalton 12363 (09), 33028(47).

_E. palustris_ L. Boggy places, especially on the high mountains.- _Stewartstown_, cedar bog, 25934(37); Columbia, near Lime Pond, 23878(33); TM Purchase, Cape Horn, Williams (01), Great Gulf, Eggleston (98); S Purchase, Alpine Garden, Williams (97), B.L. Robinson (01), Huntington Ravine, F & P 16852(17), Raymond Cataract, E. & C.E. Faxon (97), Williams (97), Tuckerman Ravine, E. Faxon (77), Williams (99); Mt. Washington, indefinite, Churchill (90), Pringle (78).

_E. palustris_, var. _grammadoxyllum_ Haussk.- _Stark_, swamby woods near Crystal Station, 2983(42).

_E. palustris_, var. _oliganthum_ (Michx.) Fern. Boggy places, frequent.- _Stewartstown_ 25934(37); Colebrook F & P 16949(17); Stark 23792(33); Lancaster, Coös Junction, 12126(09); Jefferson 23135(32), 30252(43); Randolph 21125(29), 25249(35), near Pond of Safety, 12264(09); Gorham 30424(43); Shelburne, Moose Pond, 23135(32); TM Purchase, Great Gulf, E. & C.E. Faxon (98); S Purchase, Lakes of the Clouds, Allen (80); Carroll, Crawford’s, E. & C.E. Faxon (95), Williams (95); Whitefield M 5041(13).

_E. palustris_, var. _labradoricum_ Haussk. Alpine ravines, local.- _LB Grant_, King Ravine, Farlow (82), 20331(28), gully 926(02), 12067(09); TM Purchase, Great Gulf, Eggleston (98); S Purchase, Huntington Ravine, F & P 16858(17), Tuckerman Ravine, Eggleston (99), 11504(08), Lakes of the Clouds, Allen (80), Williams (01), B.L. Robinson (01); Mt. Washington, indefinite, Tuckerman (1840), Gray (1842), Pringle (78), Allen (80), Churchill (90).

_E. coloratum_ Biehler.- _Whitefield_, roadside, abundant, Deane (97).

_E. glandulosum_ Lehmd., var. _adenocaulon_ (Haussk.) Fern. Low ground, common.- _Pittsburg_ 33222(47), First Lake, Mrs. Stevens (95); Stewartstown 36233(51); DC Grant, Diamond Peaks,
24165(34), swale, 16147(14); Stark 38162(55); Dummer Williams (95), 26786(38); Millsfield 18166(21); Odell 34831(49); Milan 13745(12); Lancaster Sanford (14); Jefferson Fuller (95), 31001(44), 39375(58); Randolph Churchill (89), Williams (95), 925(00), M 399(02), M 4466(08), M 4596(09); Gorham Deane (82); Shelburne Deane (81, 14); P Grant, Crystal Cascade, W. Booth (n.d.); TM Purchase, Base Station, E. & C.E. Faxon (91); Carroll, Fabyans, E. & C.E. Faxon (91), Kennedy (95), Bretton Woods, Hunnewell (12); Whitefield Deane (96, 97); Dalton 34140(48).

_E. ciliatum_ Raf. Shaded cliffs, infrequent. ·DC Grant, Diamond Peaks, Hodgdon & Steele (55); Northumberland, Cape Horn, 25198(35); Randolph, Ice Gulch, 12875(10), 16650(17); Shelburne, Crow's Nest, 36729(52); H Grant, Hart Ledge, 16618(15).

_E. Hornemannii_ Reichenb. Alpine rills, rarely at lower altitudes. ·Randolph, Ice Gulch, Williams (95), 12532(09), near Hitchcock Fall, 17368(19); B Purchase, brook on Nineteen-Mile Brook, 12907(10); LB Grant 927(00), 3148(03), Salmacis Fall, Williams (95), gully in King Ravine, 12155(09); TM Purchase, Great Gulf, E. & C.E. Faxon (90), Williams (95), E. & C.E. Faxon (96, 97), Jefferson Brook, 11191(08); S Purchase, Alpine Garden, E. & C.E. Faxon (90), Fuller (94), Camel Trail, 33980(48), Tuckerman Ravine, Pringle (77), Fuller (88), J.F. Collins (89), E. & C.E. Faxon (90), Williams (93), Merrill (96), Eggleson (99), 11547(08), 12077(09), Hodgdon et al. 6281(49), Huntington Ravine, Floyd (09); C Grant, Oakes Gulf, E. & C.E. Faxon (90), 12025(09), Lakes of the Clouds, B.L. Robinson (01); Mt. Washington, indefinite, Oakes (n.d.), Tuckerman (n.d.), Gray (1842), Allen (78), Sargent (01).

_E. alpinum_ L. Similar localities, often confused with the preceding. ·LB Grant, Castles Brook, 16712(16); S Purchase, Tuckerman Ravine, W. Booth (1855), Hoar (1858), E. & C.E. Faxon (90), Williams (95), Kennedy (95), Eggleson (99), 12049(09); C Grant, Oakes Gulf, E. & C.E. Faxon (90), B.L. Robinson (01), Williams (01), M 4557(09); Mt. Washington, indefinite, Flint & Huntington (76), Pringle (77), C.E. Faxon (78).

OEOTHERA L. Evening-Pimrose.

_O. biennis_ L. Sandy or gravelly soil, common and variable. ·Stewartstown F & P 17084(17); Odell 35773(50); Stark 29873(42), 35558(50); Milan 37585(54); Jefferson Mrs. Terry (02), 12857(10), 35593(50), 39904(61); Randolph Williams (95), 935(02), 5688(04), M 4246(08), 12891(10), M 4848(10), M 4862 & 4863 & 4864 & 4880 & 4892 & 4893(11), 30812(44); Gorham 12246(09); Shelburne Deane (82, 83), M 4875(11), Deane (12, 14); M Location 17225(18), 22697(31); Whitefield 14322(13).

_O. crucifata_ Nutt. Similar localities, local. ·Columbia 37697(54); Randolph, railroad track, 37542(54), 38916(57), 39172(58), 39726(60); Gorham 37950(55).

_O. parviflora_ L. Gravelly soil, frequent. ·Stewartstown F & P 15561(17); Colebrook 10895=M 3926(07); Stark 32896(47); Milan 13854(12); Randolph 14473(13); Gorham 12247(09); Shelburne Deane (15, 17, 19).

_O. perennis_ L. Pastures, etc., common. ·Pittsburg, Indian Stream, 11019=M 3751(07); Dummer 31309(45); Milan 13716(12); Jefferson Mrs. Terry (02), 16403(15), 39094(58); Randolph 934(02), M 207(02), M 3374(07); Shelburne Deane (15); M Location 14340(13); Carroll, Crawford's, Williams (95), 31456(45).

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CIRCAEA L. Enchanter's Nightshade.

*C. quadrirulata* (Maxim.) Franch. & Sav., var. *canadensis* (L.) Hara. Rocky woods, local.- *Stark*, Devil's Slide, 17466(19), 20065(27), 35445(50); *Shelburne*, Crag, Deane (84, 16).

*C. canadensis* Hill. Rich woods, local.- *Lancaster* 12827(10).

*C. alpina* L. Moist woods, common.- *Clarksville* M 3771(07); *Stewartstown* Hodgdon & Clapp 6170(49); *Colebrook* 11051(07); *DC Grant* 16267(14); *Lancaster* 14328(13), 39165 (58); *Jefferson* 36054(51); *Randolph* M 288(02), 11185(08), 21117(29); *Gorham* 29720(42); *Shelburne* Deane (82, 84, 16); *S Purchase*, Tuckerman Ravine, Manning (81), Gulf of the Slides, M 1425(03); *Whitefield* Deane (95).

HALORAGADACEAE (WATER-MILFOIL FAMILY)

MYRIOPHYLLUM L. Water-Milfoil.

*M. alterniflorum* DC. Lakes.- *Pittsburgh*, First Lake, Kendall, Goldsborough, & Doolittle (04); *Cambridge*, Umbagog, 18206(21); *Lancaster*, Baker Pond, 17280(18).


*M. Farwellii* Morong. Shallow ponds.- *Pittsburgh*, Second Lake, 31659 & 31661(45), 34090 (48), First Lake, Kendall, Goldsborough, & Doolittle (04); *Stewartstown*, logan, F & P 17043 (17); *Dummer*, Pontook Dam, 33102 & 33134(47); *Randolph*, Pond of Safety, 25232(35).

*M. humile* (Raf.) Morong. Ponds.- *Success*, Success Pond, Schenk (80); *Lancaster*, Ice House Pond, Pease, Krochmal, & Richards 33984(48).

*M. tenellum* Bigel. Sandy shores.- *Pittsburgh*, Third Lake, 31702(45); *Success*, Success Pond, 33977(48); *Shelburne*, creek near Gates Cottage, E. & C.E. Faxon (86).

HIPPURIDACEAE (MARE'S-TAIL FAMILY)

HIPPURIS L. Mare's-tail.

*H. vulgaris* L. (including *f. fluviatilis* (Coss. & Germ.) Glück). Submerged or on muddy shores.- *Pittsburgh*, pond in north corner, Hodgdon & Steele (55), Scott's Bog, Krochmal 1139(47) (cf. *Rhodora*, 50 (1948), 210), Second Lake, 34086(48); *Cambridge*, Androscoggin River, Krochmal (48); *Lancaster*, oxbow, Krochmal (48); *Shelburne*, creek near Moose Pond, 35833(50), 39364 (58).

ARALIACEAE (GINSENG FAMILY)

ARALIA L.

*A. racemosa* L. Spikenard. Rich woods, frequent.- *Clarksville* 34705(49); *Colebrook* 10896 (07); *Columbia* F & P 16632(17); *Dummer* 28345(40); *Milan* 14064(12); *Stark* 35582(50); *Lancaster* 17725(19), 23080(32); *Jefferson* 27272(39), 31015(44), 32523(46), 37233(53);
Randolph Williams (95, 97), 945 (02), M 1384 & 1385 (03); Shelburne C.E. Faxon (72), Deane (82, 83, 84, 16); Dalton M 5083 (13).

*A. hispida* Vent. Bristly Sarsaparilla. Rocky, sandy, or burned soil, common. - Stratford 31879 & 31941 (46); Milan 13928 (12); Success 11780=M 4321 (08); Berlin 16111 (14); Randolph Williams (97), 943 (02), M 225 (02), 21097 (29); Gorham Deane (82), M 4063 (07); Shelburne Deane (15), 36035 (51); B Purchase, N. Baldface Mtn., 16043 (14); H Grant, Mt. Hope, 16457 (15).

*A. nudicaulis* L. Wild Sarsaparilla. Woods, common. - Pittsburg, Third Lake, 10308 (07), First Lake, M 3610 (07); Stratford 13474 (12); Milan 13928 (12); Randolph M 1035 (03), M 3297 (07), M 4184 (08), 11175 (08); Gorham Williams (95); Shelburne Deane (83); Carroll, Bretton Woods, C.E. Faxon (89).

**PANAX L. Ginseng.**

*P. quinquefolius* L. Ginseng. Rich rocky woods, scarce and nearly exterminated. - Stark, Devil's Slide, 17481 (19), Steele (53); Shelburne, Crag, Deane (84, 16, 17).

*P. trifolius* L. Dwarf Ginseng. Alluvial woods, locally abundant. - Randolph Mrs. Moore (05), 10357 (07), 16418 (17); Jefferson 37735 (55).

**UMBELLIFERAE (PARSLEY FAMILY)**

**HYDROCOTYLE L. Water-Pennywort.**

*H. americana* L. Moist places, common. - Stewartstown 10968=M 3692 (07); Colebrook 10363 (07); Dummer 29859 (42); Milan 14065 (12); Berlin 35811 (50); Lancaster 17619 (14), 29574 (42); Jefferson W. Boott (74), 31437 (45); Randolph 12671 (10), 21130 (29), 22821 (31); Gorham M 4297 (08), 39256 (58); Shelburne Deane (82); Whitefield Deane (82, 97).

**SANICULA L. Black Snakeroot.**

*S. marilandica* L. Rich woods and thickets, common. - Pittsburg, Third Lake, 10177=M 3480 (07); Clarksville 17675 (19); Columbia M 3842 (07); Stratford 17684 (19); Lancaster Deane (96), 16926 (17), 24136 (34); Gorham 16425 (15); Shelburne Deane (82); Whitefield 14197 (13); Dalton 16412 (15).


**OSMORHIZA Raf. Sweet Cicely.**

*O. Claytonii* (Michx.) C.B. Clarke. Moist woods, frequent. - Errol 38688 (57); Clarksville 11062=M 3720 (07), 34687 (49); Dixville Hunnewell (12); Colebrook 10423=M 3812 (07); Stratford 13570 (12); Northumberland 34545 (49), 36175 (51); Milan 13785 (12); Kilkenny 32692 (47); Lancaster 14199 (13), Sanford (14), 24132 (34), 25227 (35); Jefferson 11090 (07), 27283 (39); Berlin 16102 (14); Randolph Williams (96), 961 (01), M 1104 (03), 4020 (04), M 3247 (07); Gorham 13663 (12), 16005 (14), 29617 (42), 3445 (49); Shelburne Deane (17), 33032 (47); LB Grant 24194 (34); Whitefield Deane (96), 30142 (43); Carroll 17420 (19), 30157 (43); B Purchase 37013 (53), 38286 (56).
**O. longistylis** (Torr.) DC. Rich woods, local. *Stratford* 31989 & 32279(46); *Lancaster* 16387 (15).

**O. chilensis** H. & A. Rich woods, occasional. *Pittsburg*. Third Lake, 10192=M 3492(07); Second Lake, 10187=M 3527(07); *CA Grant* 14136(13); *AGA Grant*, Crystal Mts., 12668(10); Clarksville 11061=M 3721(07); *Stewartstown*, Little Diamond Pond, 12632(10); *Millsfield* 35394 (50); Dixville 37819(55); *Stratford*, Percy Peaks, 12744(10); Kilkenny, Priscilla Brook, 32691 (47); *Randolph*, Ice Gulch, 19074(22); Mossy Glen, 16499(15); *Gorham*, Alpine Cascade, 16432 (15); LB Grant, Castle Path, 24194(34), Pine Peak, 20345(29); *B Purchase*, Carter Notch, Forbes (07).

**BUPLEURUM** L. Thoroughwax.

*B. ROTUNDIFOLIUM* L. Rare garden weed. *Whitefield Doring* (94).

**ZIZIA** W.D.J. Koch. Golden Alexander.

**Z. aurea** (L.)W.D.J. Koch. Meadows and thin woods, common. *Stewartstown* 10969=M 3669(07); *Stratford* 13571(12); Milan 39027(58); *Dummer Harris* 7279(48); Randolph E. & C.E. Faxon (78), Churchill (89), Williams (97), 975(02), M 950(03), Mrs. Moore (05), 25975 (37); *Gorham* Mackintosh (25); Shelburne Deane (14, 16); *B Purchase*, Wild River, 16019(14); Whitefield Deane (96).

**CICUTA** L. Water-Hemlock.

**C. bulbifera** L. Swamps and margins of ponds, frequent. *Pittsburg*, Second Lake, 31639(45); *DC Grant* 32466(46); Colebrook 39372(58); Stratford 17655(19); Northumberland 17245(18); Stark 23813(33), 29872(42); Milan 13876(12), 33110(47); Lancaster 28229(40), 29235(41), 34776(49); Jefferson, Cherry Pond, 10688(07); Berlin 19881(26); Gorham 10710(07); Shelburne Deane (85, 14, 18), 29942(42); Whitefield 11535=M 4423(08), 14557(13), 17794(19); Dalton 17567(19), 35645 & 35862(50).

**C. maculata** L. Wet meadows, somewhat local. *Jefferson* 17495(19), 31625(45), 39386(58); Gorham 19221(23).

**CRYPTOTAENIA** DC. Honowrt.

**C. canadensis** (L.) DC. Shaded banks, local in the Connecticut valley. *Colebrook* 16314(14); Dalton 16428(15).

**CARUM** L. Caraway.

*C. CARVI* L. Meadows and roadsides, common. *Pittsburg*, First Lake, 10961=M 3655(07); Clarksville 36098(51); Columbia Eaton (61); Randolph Williams (95), 949(02), M 208(02), M 954 & 1093(03); Gorham M 4236(08); Shelburne Deane (14, 15).


**AEGOPODIUM** L. Goutweed.

*A. PODAGRARIA* L. Persistent from gardens. *Colebrook*, field, 34415(49).
SIUML Water-Parsnip.

*S. suave* Walt. Muddy banks, frequent. - *Clarksville* Hodgdon & Clapp 6284 (49); DC Grant 16140 (14), 36784 (52); *Cambridge* Umbagog, 16553 (15); Errol 23870 (33), 32481 (46); *Stratford* 17660 (19); *Dummer Williams* (95), 36380 (51); Stark 29858 (42), 34616 (49), 36923 (52); *Northumberland* 17246 (18); *Lancaster*, Clark Pond, 34781 (49), Krochmal 1541 (48); *Jefferson* 32914 (47); Gorham M 4061 (07), 11439 (08); Shelburne Deane (82, 84), 29906 (42); Dalton 11604 = M 4370 (08).

**CONIOSELINUM** Hoffm. Hemlock-Parsley.

*C. chines* (L.) BSP. Cool moist woods, occasional. - *Pittsburg*, Second Lake, 10311 = M 3426 (07); DC Grant 32490 (46); *Columbia* 17714 (19); *Stratford* W. Boott (1855), F & P 16953 (17), 32278 (46); *Lancaster* 14532 (13), 19398 (24), 29238 (41); Shelburne 11691 = M 4176 (08), 16910 (16), Deane (14); Dalton 11540 = M 4368 (08).

**ANGELICA** L. Angelica.

*A. atropurpurea* L. Alluvial soil, chiefly in the Connecticut watershed; also moist heads of alpine ravines. - *Pittsburg*, 10865 = M 3684 (07); *Northumberland* F & P 16584 (17); *Lancaster* 12221 (09), Sanford (14), 16087 (14); *S Purchase*, fan in Huntington Ravine, F & P 16902 (17), Tuckerman Ravine, E. Faxon (77), Churchill (89), Williams (95), M 1487 (03), 11092 (07), M 5089 (13); P Grant, Glen Ellis, 19072 (22); C Grant, Oakes Golf, Williams (96).

**PASTINACA** L. Parsnip.

*P. SATIVA* L. Roadside escape. - *Jefferson* Williams (95); Randolph 12359 (09); Gorham M 4240 (08); Shelburne Deane (82, 18); Carroll 26787 (38), 31454 (45); Whitefield 14194 (13).

**HERACLEUM** L. Cow-Parsnip.

*H. maximum* Bartr. Wet meadows and roadsides; frequent at low levels and locally in subalpine ravines. - *Pittsburg*, Third Lake, M 3505 (07), Second Lake, M 3629 (07), First Lake, 10822 = M 3656 (07); Colebrook 958 (01); *Jefferson* 16540 (17); Randolph Williams (96), M 346 (02), M 956 (03), 12688 (10); Gorham Deane (15); Shelburne Deane (15, 17); P Grant Deane (16); *TM Purchase*, Great Gulf, Williams (95); *S Purchase*, Tuckerman Ravine, M 289 & 290 (02); C Grant, Oakes Golf, Kennedy (95), Williams (95); Carroll, Crawford’s, Fuller (94).

**DAUCUS** L. Carrot.

*D. CAROTA* L. Rare adventive. - Randolph 30635 (44).

**CORNACEAE** (DOGWOOD FAMILY)

**CORNUS** L. Dogwood.

*C. canadensis* L. Bunchberry. Woods and edges of pastures, very common. - *Pittsburg*, Second Lake, M 3643 (07), First Lake, 10205 = M 3559 (07); Dixville Cooley, Eaton, & Pease (61); DC Grant 16180 (14); Stratford 13587 (12); Randolph Williams (95), M 976 (03), Mrs. Moore (05), M 3375 (07), 12157 (09), 22779 (31); Shelburne Deane (82, 83, 14); B Purchase M 5066 (13); LB Grant
12095(09); TM Purchase, Mt. J.Q. Adams, 12707(10), Carriage Road, Deane(82); S Purchase, Tuckerman Ravine, Williams (95), Gulf of Slides, White (30), Boot Spur, M 393(01); C Grant, Oakes Gulf, Williams (93), White (30); Carroll, Crawford's, Williams (95), Spaulding (16); Whitefield Deane (97).

C. canadensis L., f. purpurascens (Miyabe & Tatewaki) Hara.- S Purchase, head of Tuckerman Ravine, 5200-5300 feet, Fasset 22615(49).

C. stolonifera Michx. Wet places, common.- Pittsburg, Second Lake, 10349=M 3461(07); Clarksville 35188(50); Stewartstown 13923(12), 27842(40), 31978(46), 35987(51), 37057(53); Colebrook 33837(48), Hodgdon 6285(49), 36092(51); Columbia 38696(57); DC Grant 16161(14); Cambridge, Umbagog, 18195(21); Dummer 33509(48), 37460(54); Milan 32639(47); Stratford 13522(12); Northumberland 32646(47), 35611(50); Lancaster 16422(15), 29225(47); Berlin 16464(17); Gorham 16106(14), 29504(42), 31288(45); Shelburne Deane (82, 83, 02, 16), Misses Christensen & Gauthier (03); B Purchase, Wild River valley, 34453(49), 35659(50); Carroll E. & C.E. Faxon (84), Williams (95), 14373(13), 16652(16); Dalton 39315(58).

C. rugosa Lam. Mostly on rocky talus, somewhat local.- Stark, Devil's Slide, 20662(27), Northumberland, Cape Horn, 16455(17); Lancaster, Mt. Prospect, 17596(19), 17812(20), 37436(54), 39279(58); Berlin, near Jasper Cave, 14507(13); Shelburne Deane (82, 83, 14), 26037(37), 36734(52); Dalton 22606(31), 24157(34); H Grant, Mt. Hope, 16454(15).

C. alternifolia Lf. Woods, frequent.- Stewartstown 27836(40), 36672(52); Stratford 13517(12); Lancaster Deane (96), 33505(48); Jefferson 29732(42), 37854(55); Randolph 10566(07), M 3299 & 3337(07); Shelburne Deane (83), 37434(54); Carroll, Crawford's, Minns (n.d.); TM Purchase, Lowe's Bald Spot, 32831(47); Dalton 14588=M 4895(13), 29463(42), 36025(51).

PYROLACEAE (WINTERGREEN FAMILY)

CHIMAPHILA Pursh.

C. umbellata (L.) Bart., var. cisalantica Blake. Pipsissewa. Dry woods, frequent.- Clarksville 11038=M 3767(07); DC Grant 16215(14); Cambridge Williams (06); Stark 29946(42); Dummer 18179(21); Milan 13838(12), 36814(52); Berlin 17491(19); Jefferson 31007(44), 34649(52); Randolph Williams (95), 12526(09); Gorham Williams (95), 12258(09); Shelburne Deane (82, 83, 16), 35836(50); M Location 35271(50); C Grant 23753(33); B Purchase, Carter trail, Spaulding (19); Whitefield 37304(53).

MONESES Salisb. One-flowered Pyrola.

M. uniflora (L.) Gray. Cold mossy woods, local.- Colebrook 10370=M 3930(07), 13865(12), 17856(20); Dummer 31326(45); Shelburne Deane (81, 82, 83, 16).

PYROLA L. Shinleaf.

P. secunda L. Woods, frequent.- Pittsburg, First Lake, Mrs. Stevens (95); DC Grant 16245(14), 37572(54); Millsfield 18172(21); Milan 13767(12); Stark 35732(50), 36512(52); Lancaster 14228(13); Jefferson 16871(16); Randolph Williams (93), 11516(08); TM Purchase, Base Station, E. & C.E. Faxon (78); M Location 11530(08); C Grant 32829(47); Shelburne C.E. Faxon (n.d.), Deane (81, 83); Carroll, Crawford's, Williams (95); B Grant, Mt. Clinton, Fuller (94); Whitefield Deane (96).
P. secunda, var. obtusata Turcz. Cold mossy woods and cedar-bogs, occasional. - Clarksville F & P 16930(17); Colebrook 10371=M 3931(07); 13940(12), F & P 16638(17), 17855(20); Columbia 10493(07); Stratford 33440(48); Jefferson, Mud Pond, 16585(15); Randolph, Ice Gulch, Churchill (89), Williams (94, 95), Davis (97), 10134(00); Dalton 17842(20); P Grant 39238(58).

P. minor L. Mossy woods, occasional.- Success, near Mahoosuc Notch, 16012(14); Gorham E. Faxon (78); Shelburne, Shelburne Moriah Mtn., Munter (18); B Purchase, Wild River, 16015 (14), 35547(50), Carter Notch, 32741(47); LB Grant, Salmacs Fall, 16488(15), Mt. Adams, E. & C.E. Faxon (88); TM Purchase, Great Gulf, W. Boott (1855), Fuller (94), Base Station, E. & C.E. Faxon (91); S Purchase, Tuckerman Ravine, Williams (95), Mt. Washington, indefinite, Flint & Huntington (76); Carroll, Crawford's, W. Boott (1855), E. & C.E. Faxon (85).

P. virens Schweigger, f. paucifolia Fern. Woods, frequent southward. - Dummer 31306(45), Stark 18090(20); Lancaster 14214(13), Sanford (14); Randolph Williams (93, 96), M 3190(06), M 4038(07), 11417(08); Gorham 29608(42); Shelburne C.E. Faxon (n.d.), Shelburne Moriah Mtn., Munter (19); LB Grant, Mt. Adams, Lowe (80); S Purchase, Mt. Resolution, 14044(12); Carroll 35376(50); B Grant, Mt. Clinton, Fuller (94); H Grant, Mt. Hope, 16459(15); Dalton 16094(14).

P. virens, var. convoluta (Bart.) Fern. - Shelburne Deane (82, 83).

P. elliptica Nutt. Woods, common.- Clarksville 10428=M 3768(07), F & P 16960(17); DC Grant 16247(14); Colebrook M 4016(07), 31506(45); Stratford 13575(12); Dummer 31325 (45); Milan 13751(12); Jefferson 30996(44); Randolph, Williams (93, 97), Ware (02), 10831 (07), M 4041(07); Gorham 29725(42); Shelburne Deane (82, 83, 10), M 4875(11), Deane (15); B Purchase, Wild River, 36144(51); M Location 14346(13); Carroll 28810(41), Crawford's, Kennedy (95), Williams (95); Whitefield Deane (96).

P. rotundifolia L., var. americana (Sweet) Fern. Woods, occasional.- Colebrook F & P 16712 (17); Northumberland 12144(09); Stark 32901(47), 34600(49); Milan 13733(12); Randolph 23750(33), 27392(39); Shelburne Deane (81, 82, 83); M Location 14347(13); Carroll 27309 (39), 33153(47), 37552(54), Bretton Woods, Kennedy (97); Dalton 36718(52).

P. asarifolia Michx. Alluvial woods, local.- Stratford 13576(12); Milan, Chickwolney Stream, 19921(26); Gorham, by Peabody River, 11480(08); Shelburne Deane (83, 16), Weatherby (16), Deane (21, 22, 24); B Purchase, Wild River, 36145(51).

P. asarifolia, var. purpurea (Bunge) Fern. Swampy woods, rare.- DC Grant, alluvium by Dead Diamond River, 12601(10).

MONOTROPA L. Indian-pipe.

M. uniflora L. Woods, common.- DC Grant 16275(14); Dixville Williams (95); Milan 13956 (12); Berlin 16262(14); Randolph Williams (95), M 377(02), 11787(08), 39291(58); Shelburne Deane (83, 15), Goodale (15); Carroll, Crawford's, Williams (95).

M. Hydropthys L. Pinesap. Woods, occasional.- DC Grant 10582(07); Colebrook 10751=M 3783(07); Lancaster Sanford (14), 16921(17), 24134(34); Randolph Williams (94), Mrs. Moore (01), 12265(09); Shelburne Deane (15, 16), Rushmore (27), 35855(50); LB Grant 1016(00); 214
ERICACEAE (HEATH FAMILY)

LEDUM L. Labrador-tea.

*L. groenlandicum* Oeder. Peaty soil, common. - *Pittsburg*, Second Lake, 10348=M 3457(07), First Lake, Mrs. Stevens (95); *DC Grant* 16211(14); *Errol* 12618(10), 32495(46), 34378(49); *Stewartstown* 27838(40), 34085(48); *Dixville*, Notch, Deane (15), 18197(21), Hodgdon & Clapp 6435(49); *Coblebrook* 10897=M 4022(07); *Columbia* 27838(40); *Stratford* 12746(10), 33447(48); *Odell* 34840(49); *Northumberland* 13642(12); *Dummer Harris* 7673(51); *Milan* 13780(12), 19772(26), 32662(47); *Success* 11127=M 4097(08); *Lancaster Deane* (96), 12240(09); *Berlin* 14504(13), 17169(18); *Jefferson* 17349(18); *Randolph* Davis (97), M 3334(07), 11217(08), M 4209 & 4457(08), M 4600(09); *Gorham* 14030(12); *Shelburne* Deane (82, 10, 14), Gentian Pond, Miss Sheppard & Miss Lowell (14), Shelburne Moriah Mtn., Miss Christensen & Miss Gauthier (17); *M Location* 14295(13), 16419(17); *B Purchase*, North Baldface Mtn., M 4048(13), 16030(14); *LB Grant*, Huts, 10836(07); *TM Purchase*, Parapet, M 1054(03), 16485(15), Edmunds Col, M 3178(05), Mt. Clay, E. & C.E. Faxon (89), Lowe’s Bald Spot, 17502(19), Carriage Road, Deane (82), E. & C.E. Faxon (90); *S Purchase*, Alpine Garden, E. & C.E. Faxon (87), Fuller (00), B.L. Robinson (01), 19805(26), Tuckerman Ravine, Fuller (83), Miss Brown (85), Miss Minns (88), M 4560(13), Hodgdon 6293(49); *C Grant*, Mt. Monroe, E. & C.E. Faxon (85), Williams (91, 95), M 4539(09); *B Grant*, Mt. Clinton, Williams (95); *H Grant*, Mt. Crawford, 11752(08); Mt. Washington, indefinite, Oakes (n.d.), Lowell (1847), W. Boot (1853), Flint (71), C.E. Faxon (72), Hervey (n.d.), Flint & Huntington (76), Manning (81), Forbes (00); *Carroll* 14368(13), 31960(46), 32272(47); Whitefield 11581(08), 14460(13).

RHODODENDRON L.

*R. lapponicum* (L.) Wahlenb. Alpine barrens, common. - *LB Grant*, Knife Edge, Chadbourne (84), 12736(10); *TM Purchase*, Mt. Madison, Fuller (86), Cutter (92), Davis (97), 1026(01), M 3360(02), Parapet, 3149(03), Mt. Adams, Miss Wiggins (80), Chadbourne (84), Fuller (86), Great Gulf, 11199(08), Cow Pasture, Williams (98), Cape Horn, Williams (96), Carriage Road, Deane (84), Williams (97); *S Purchase*, near Summit House, Flint (71), E. & C.E. Faxon (84), Merrill (96), Mrs. Flynn (07), Alpine Garden, E. & C.E. Faxon (79, 87, 90, 95), Farlow (94), Eggleston (99, 01), Lion Head, E. & C.E. Faxon (90), Williams (96), Hodgdon, Gale & Fasset (6295(49), Tuckerman Ravine, Hoar (1858), 19806(26), Boot Spur, Forbes (01), M 173(01), Lakes of the Clouds, Williams (93), Eggleston (03), 10279(99), Mt. Pleasant, Miss Minns (85); *C Grant*, Mt. Franklin, E. & C.E. Faxon (81), Mt. Washington, indefinite, F. Boot (1816), Oakes (n.d.), Gray (1842), Chickering (1864), E. & C.E. Faxon (72), Flint & Huntington (76), E. & C.E. Faxon (78, 88, 94), Hervey (n.d.), Pringle (979), Churchill (95), Merrill (96), Eggleston (98).

*R. canadense* (L.) Torr. Boggy pastures and peaty soil, common. - *Pittsburg*, Second Lake, 10245=M 3456(07); *Stewartstown* 32656 & 32673(47); *DC Grant* 16212(14); *Errol* 36499(52); *Cobblebrook* M 3798(07), 38335(56); *Columbia* 35999(51); *Stratford* 13518(12); *Cambridge* 16557(15), 18154(21); *Dummer* 24127(34); *Stark* 14141(13), 33937(48), 38330(56); *Northumberland* 32675(47), 33939(48); *Success* 11207=M 4109(08); *Lancaster* Sanford (14); *Jefferson* 17507(19), Krochmal 1568(48); *Randolph* 2528(03), M 1049(03), 4028(04), 10235=M 332(07), 23835(51); *Gorham* 38367(56), Pine Mtn., 32633(47); *M Location* 14294(13), 16420(17), 22597(31); *Shelburne* Deane (82, 84), Philbrook (84), Deane (09), Misses Shepard 215.
& Lowell (14); B Purchase, West Royce Mtn., 18134(21), North Baldface Mtn., 16039(14), Imp Mtn., 16760(17); TM Purchase, Six Husbands Trail, 12237(09); C Grant, Oakes Gulf, 11215(08); C Purchase, Twin Rivers, 11252(08); B Grant, Mt. Clinton, M 1082(03), Mt. Webster, 11720(08); H Grant, Mt. Crawford, 11754(08); Carroll 32362(46), 3743(54); Whitefield Deane (96).

LOISELEURIA Desv. Alpine Azalea.

L. procumbens (L.) Desv. Peaty or stony soil in the alpine region, frequent. - LB Grant, Nowell Peak, M 3352(07); TM Purchase, Parapat, 1013(01), Mt. J.Q. Adams, 9894(06), Mt. Adams, Miss Prince (92), Mt. Clay, E. & C.E. Faxon (84), Chadbourne (84), Williams (86), Great Gulf, E. & C.E. Faxon (87); S Purchase, Summit House, Taylor (95), Deane (97), Alpine Garden, Williams (95, 98), Eggleston (99), Fuller (00), B.L. Robinson (01), Boot Spur, Williams (94), Lakes of the Clouds, Williams (93); Mt. Washington, indefinite, F. Boott (1816), Oakes (n.d.), Lowell (1847), Hoar (1858), Flint & Huntington (76), E. & C.E. Faxon (77, 78), Pringle (77), Manning (79), Farlow (84), Hodgdon & Wade 6292(49); C Grant, Mt. Monroe, C.E. Faxon (85), B.L. Robinson (01), Crawford Path, Williams (95).

KALMIA L. Laurel.

K. angustifolia L. Sheep Laurel. Pastures, bogs, and mountain-tops, common. - Pittsburg, Second Lake, 10243=M 3463(07); Stewartstown 10974=M 3693(07), 23868(33), 32496(46); Errol 38929(57); Colebrook 10431=M 3800(07); Stratford, North Percy Peak, 12740(10); Stark 29554(42); Milan 36116(51); Northumberland 13454 & 13547(12); Success M 4312 & 4719(08); Lancaster 31999(46), 33480(48); Jefferson 29484(42); Randolph 4696(04), 21115(29); Shelburne Deane (82, 84, 15, 16), Misses Sheppard & Lowell (14), Misses Christensen & Gauthier (17); M Location 14308(13); B Purchase, West Royce Mtn., 18132(21), Imp Mtn., 16764(17), North Baldface Mtn., 16040(14); TM Purchase, Lowe's Bald Spot, 17501(19), 32822(47), Base of Mt. Washington, Leland (79); B Grant, Mt. Jackson, 12321(09); Carroll 33164(47); Whitefield 16684(16), 37858(55).

K. polifolia Wang. Pale Laurel. Cold bogs and peaty soil on mountains, frequent. - Pittsburg, Second Lake, 10320(07); Stewartstown F & P 16679(17); DC Grant 16210(14); Errol 34377 & 34917(49); Odell 34829(49); Northumberland 13548(12), 17147(18), 29137(41), 38653(57); Lancaster 12271(12), 13720(12), 32661(47); Success Fuller (86), 11128=M 4099(08); Berlin 14502(13), 34008(48); Randolph, Pond of Safety, 10236=M 3331(07), 16442(17); Shelburne Deane (82, 84, 04), Philbrook (83), M 4131(08), 25617(36), 34672(49), Dream Lake, 19206(23); TM Purchase, Mt. J.Q. Adams, 9892(06), Cape Horn, Williams (97, 98), B.L. Robinson (01), Carriage Road, Deane (82); S Purchase, Tuckerman Ravine, Schrenk (n.d.), M 260(02), Lakes of the Clouds, C.E. Faxon (77), Kennedy (91), Fuller (94), Ammonoosuc Ravine, 16771(16); Mt. Washington, indefinite, F. Boott (1816), Oakes (n.d.), Flint & Huntington (76), Churchill (90), Williams (93); C Grant, Crawford Path, Kennedy (91), Oakes Gulf, 33959(48); B Grant, Mt. Clinton, Williams (95), M 108(03), Mt. Jackson, 12301(09); Whitefield Pease & Lennox 36822(52).

PHYLLODOCE Salisb.

P. caerulea (L.) Bab. Rocky and peaty alpine regions, especially under late snowbanks. - LB Grant, Nowell Peak, M 3364(07); TM Purchase, Mt. Madison, 987(01), Mt. J.Q. Adams, 10875(07), Mt. Jefferson, 12234(09), Mt. Clay, Chadbourne (84), Williams (98), M 3193(06).
Great Gulf, 11200(08), Six Husbands Trail, 12234(09); S Purchase, Summit House, Garber (74), Deane (97), Alpine Garden, E. & C.E. Faxon (88, 89, 90), Churchill (95), Williams (95), Eggleston (99), B.L. Robinson (01), Bigelow Lawn, Eggleston (01), Tuckerman Ravine, Fuller (00), M 4559 (09), 33952(48), Boot Spur, Fuller (94), Gulf of Slides, 23771(33), Lakes of the Clouds, W. Boot (1855), E. & C.E. Faxon (84, 87, 95), Williams (93), Fuller (94); C Grant, Oakes Gulf, E. & C.E. Faxon (93), Williams (98), B.L. Robinson (01), 11229(08), Mt. Monroe, E. & C.E. Faxon (85, 93), Churchill (85); alpine region, indefinite, F. Boot (1816, 1831 (cf. A.S. Pease in Appalachia, 14(1917), 170); Oakes (n.d.), Gray (1842), Lowell (1847), Chickering (1862), C.E. Faxon (72), Flint & Huntington (76), Pringle (77), Fairbanks (83), Farlow (84), Churchill (90), Hitchings (90), Merrill (96), Davis (97), Eggleston (98), Hodgdon & Wade 6281(49).

ANDROMEDA L.

A glaucophylla Link. Peat bogs and pond-margins, frequent. - Stewartston, Back Lake, F & P 16677(17), 26032(37), 36766(52); DC Grant 16209(14); Errol 34916(49); Odell 34830(49); Northumberland 13546(12), 17153(18), 29136(41), 38660(57); Stark, Pike Pond, 35725(50); Lancaster Deane (96), 12349(09), 26971(38), 28230(40); Milan 19771(26), Mud Pond, 13848(12); Berlin, Head Pond, 14505(13), 34021(48); Jefferson, Cherry Pond, 10667(07), Little Cherry Pond, 14510(13), 22767(31); Shelburne, Wheeler Bog, Deane (81, 82), Philbrook (83), 11315(08), 25616(36), 34673(49); Whitefield Pease & Lennox 36821(52), Forest Lake, 23017(32), Weed Pond, 14414(13). Formerly at Pond of Safety in Randolph (L.D. Pychowska in Appalachia, 3(1883), 220).

CHAMAEDAPHE Moench. Leatherleaf.

C calyculata (L.) Moench., var. angustifolia (Ait.) Rehd. (including var. latifolia (Ait.) Fern.). Boggy shores, common; occasional on mountain-tops.- Pittsburg, Second Lake, 10246=M 3459(07); W Location 35607(50); Errol, Long Pond, 34347(49), 36484(52); Cambridge, Umbagog 16559(15); Odell 34824(49); Northumberland 13555(12); Stark 33236(47); Milan 13758(12), 22793(31), 23832(33); Success, Mt. Success, 11166(08); Berlin 17170(18); Randolph, Pond of Safety, 991(02), 16463(17); Shelburne Deane (81, 82, 83), M 4128(08), 38993(58), Gentian Pond, Misses Shepard & Lowell (14), Shelburne Moriah Mtn., Misses Christensen & Gauthier (17), Deane (19); B Purchase, Imp Mtn., 16767(17); H Grant, Mt. Crawford, 11756(08); Carroll 16653(16), 32363(46), 34071(48); Whitefield 37412(54).

CASSIOPE D. Don.

C. hypnoides (L.) D.Don. Moist heads of alpine ravines, especially under late-melting snowbanks, somewhat local.- LB Grant 12100(09), King Ravine, F & P 16846(17); TM Purchase, Mt. Adams, 3245(02), Mt. Clay, Chadbourne (84), Williams (97, 98), Great Gulf, E. & C.E. Faxon (84, 87), 11211(08); S Purchase, cone of Mt. Washington, Hunt (1840- Univ. of Illinois Herb.), Merrill (96), Deane (97), M 279(02), Alpine Garden, E. & C.E. Faxon (89), Williams (95), Eggleston (99, 01), B.L. Robinson (01), 10549(07), Tuckerman Ravine, E. & C.E. Faxon (85), Fuller (94, 00), 993(01), 19616(25), Boot Spur, Fuller (94), Forbes (01), Lakes of the Clouds, W. Boot (1855), Williams (93), C Grant, Oakes Gulf, Williams (98), 33932(48); Mt. Washington, indefinite, Oakes (n.d.), Greene (n.d.), Bigelow (1841), Gray (1842), Hoar (1858), Mann (1862), Ward (75), Flint & Huntington (76), Farlow (84), E. Faxon (85), Churchill (95), E. Faxon (95), Merrill (96). W. F. Flint, Trees and Shrubs composing the N.H. Forests (1891), 22, thinks this is, "probably the smallest shrub in America."
EPICAEA L. Trailing Arbutus.

E. repens L., var. glabrifolia Fern. Rocky or sandy alluvial woods, frequent.—Errol 12616 (10), 32469 (46); Stratford 13508 (12); Stark 14139 (13); Northumberland 13562 (12); Dummer 36808 (52); Milan 13836 (12); Berlin 4700 (04); Jefferson 12932 (10); Randolph M 1130 (03); Shelburne Deane (82), 10802 (07), 111681/2 = M 4112 (08), Deane (09), 36543 (52); B Purchase, Wild River, 16022 (14), 17934 (20), 36878 (52); Carroll, Crawford’s, Williams (95); Whitefield 14571 = M 5029 (13); Dalton 25292 (35).

GAULTHERIA L. Wintergreen.

G. procumbens L. Checkerberry. Woods and clearings, common southward.—Stark 35524 (50); Jefferson 12805 (10); Randolph Williams (95, 96), 4151 & 41511/2 (04), M 4462 (08); Gorham 12269 (09), 29637 (42), 39286 (58); Shelburne Deane (82, 83), M 4333 (08), Deane (15); Whitefield Deane (97), 11572 = M 4390 (08); Carroll 33156 (47).

G. procumbens, f. suborbiculata Fern.—Milan 13856 (12).

G. histidula (L.) Bigel. Creeping Snowberry. Cool, mossy woods, common.—Pittsburg, Second Lake, 10274 = M 3441 (07), 31676 (45), 37384 (53); DC Grant 16222 (14); Dixville Hodgdon & Clapp 6298 & 6299 (49); Success M 4092 (08); Dummer 31303 (45); Milan 39889 (42), Northumberland 39248 (58); Lancaster Deane (96); Jefferson Williams (95); Randolph Williams (93), 12229 (09); M Location 14394 (13); G Grant W. Booth (1855), Manning (81); B Purchase, Carter Notch, M 5062 (13); Shelburne Deane (82), Batchelder (83), Deane (14); LB Grant 12332 (09); TM Purchase, Cape Horn, Williams (01), B.L. Robinson (01); S Purchase, Tuckerman Ravine, Forbes (01); Carroll, Crawford’s, Jenks (83), Bretton Woods, Williams (93), Hunnewell (12); Whitefield 37413 (54).

ARCTOSTAPHYLOS Adans. Bearberry.

A. Uva-ursi (L.) Spreng., var. coactilis Fern. & Macbr. Sunny slopes and ledges, rare.—Berlin, east of Head Pond, 19077 (22); H Grant, Hart Ledge, 16633 (15).

A. alpina (L.) Spreng. Alpine Bearberry. Alpine lawns, etc., local.—TM Purchase, Cape Horn, Williams (93, 96), Carriage Road, E. Faxon (80), E. & C.E. Faxon (93); S Purchase, Alpine Garden, Williams (95, 96, 98), Eggleston (99), B.L. Robinson (01), 10559 (07), Lion Head, E. & C.E. Faxon (90), Tuckerman Ravine, Hoar (1858), Fuller (00), Boott Spur, E. & C.E. Faxon (78, 79), Farlow (84), Forbes (01), Mt. Franklin, Steele (54), Mt. Pleasant, Fuller (94); C Grant, Oakes Gulf, Steele (53); Mt. Washington, indefinite, F. Boott (1816), Oakes (n.d.), Flint & Huntington (76), Pringle (77), Graves (91); B Grant, Mt. Clinton, Gray (1842), E. & C.E. Faxon (77, 78, 81, 83), Williams (95), Kennedy (95), Eggleston (01).

CALLUNA Salbs. Heather.

* C. VULGARIS (L.) Hull. Rare adventive.—Randolph, roadside near Bowman, Mrs. French (22), 19102 (22), 19865 (26); the station now extinct.

GAYLUSSACIA HBK. Huckleberry.

G. baccata (Wang.) K. Koch. Thickets, especially near ponds, occasional.—Errol, Long Pond, 37984 (55); Stark, Pike Pond, 23779 (33); Milan, Nay Pond, 19174 (23); Berlin, Head Pond,
19068(22), York Pond, 17189(18); Jefferson, Mud Pond, 17348(18); Shelburne, top of Larch Hill, Deane(25); B Purchase, open ledges, Wild River, 17933(20); Dalton, Forest Lake, 17572(19).

VACCINIUM L.

V. uliginosum L., var. alpinum Bigel. Alpine Bilberry. Very common on alpine lawns and heaths, and occasionally found at lower levels.-Stark, Crystal, Phillips Brook, 20610(30), 32819(47); Success, Mt. Success, 11126(08); Berlin, riverbank, Deane (83); Randolph, Ice Gulch, 11497(08), 16654(17); M Location, bank of Peabody River, 17205(18), 35270(50); B Purchase, Imp Mtn., 16761(17), West Royce Mtn., 18136(21), North Baldface Mtn., 16032(14); LB Grant, Jefferson Notch, 11235(08), King Ravine, 12094(09), Huts, 10230(07), Mt. Madison, Chadbourn(84), M 226(02), Mt. Adams, Fuller (86), M 1057(03); TM Purchase, Great Gulf, Williams (95), Carriage Road, Deane (82), E. & C.E. Faxon (88), Miss Gauthier (15), Howe's Bald Spot, 17581(19); S Purchase, Alpine Garden, Fuller (95, 00), Lion Head, E. & C.E. Faxon (87), Hodgdon & Harrington 6311(49), Tuckerman Ravine, Williams (95), Merrill (96), 19804(26); C Grant, Mt. Monroe, E. Faxon (85), Williams (95); Mt. Washington, indefinite, Flint (71), Flint & Huntington (76), E. & C.E. Faxon (77), Deane (84), Williams (93); B Grant, Mt. Clinton, Williams (95), Mt. Webster, 11716(08), H Grant, Mt. Crawford, 11755(08); Carroll, Crawford's, railroad-cutting, 16665(16).

V. cespitosum Michx. Dwarf Bilberry. Common in the alpine region; at lower levels chiefly in sandy or gravelly alluvium.-AGA Grant, Hellgate, 12636(10); DC Grant, Diamond Gorge, 12639(10), 16154(14), 36489(52); Randolph, Williams (96), 12522(09), 16478(17), 24102(34); Gorham, riverbank, 12326(09), 14243(13), 29503(42), 36537(52); M Location, riverbank, 13666(12), 17206(18), 35268(50), 36272(51); B Purchase, Wild River, 36138(51), Carroll, Bretton Woods, 16659(16); LB Grant 12096(09), King Ravine, 12092(09); TM Purchase, Mt. J.Q. Adams, 10847(07), Mt. Adams, Fuller (96), Six Husbands Trail, 12235(09), Mt. Clay, Chadbourn (84), Cape Horn, Williams (98), Carriage Road, E. & C.E. Faxon (88); S Purchase, Summit House, Forbes (02), Alpine Garden, E. & C.E. Faxon (90), Williams (93), Fuller (94), Churchill (95), 19810(26), Hodgdon & Wade 6312(49), Tuckerman Ravine, Eggleston (98), 11490(08), 12045=M 4562(09), Lakes of the Clouds, Allen (80); C Grant, Mt. Monroe, E. & C.E. Faxon (85), Williams (95); Mt. Washington, indefinite, Oakes (n.d.), W. Boot (1858), Hoar (1858), Mann (1862), Goodale (n.d.), Flint & Huntington (76), Manning (81), Farlow (84), E. Faxon (90).

V. myrtillusoides Michx. Sour-top Blueberry. Pastures and woods, very common.-Pittsburg, Second Lake, 10244=M 3460(07); Colebrook Hodgdon 6316(49); DC Grant 16235(14); Stratford 13485(12); Success M 4094(08); Northumberland 33428(48); Jefferson 16530(17), 30441(43), 35969(51); Randolph, Williams (97), 10680 & 10698(07), M 3330(07); Shelburne Deane (83, 04, 14, 17); TM Purchase, Lowe's Bald Spot, 17579(19), Carriage Road, 4000 feet, F & P 16856(17); S Purchase, Tuckerman Ravine, E. & C.E. Faxon (85), M 1065(03); C Grant M 1087(03); Mt. Washington, indefinite, Oakes (n.d.), W. Boot (1853), Flint & Huntington (76), Fairbanks (83); Whitefield Deane (97).


V. vacillans Torr.-Shelburne, dry hillsides, Deane (83).
V. angustifolium Ait. Mountain-tops, common. - Success, Mt. Success, 11206=M 4125(08); B Purchase, North Baldface Mtn., 16034(14); LB Grant, Nowell Ridge, 1048(01), M 3349(07); TM Purchase, Mt. JQ Adams, 10874(07). Pararapet, 10228(07), Mt. Clay, W. Boot(1855), Cape Horn, Williams (96), Carriage Road, Deane (84); S Purchase, Alpine Garden, E. & C.E. Faxon (89, 95), Williams (95), Churchill (95), Fuller (00), Lakes of the Clouds, Eggleston (01); C Grant, Oakes Gulf, E. & C.E. Faxon (95), 33937(48); B Grant, Mt. Clinton, M 1072(03), Mt. Jackson, 12298(09); Mt. Washington, indefinite, Oakes(n.d.), Sprague(n.d.), Allen (78), Miss Minns(n.d.), Deane (84), Farlow (84), E. & C.E. Faxon (85), M 297(02), Eggleston (03).

V. angustifolium, var. laevifolium House. Mostly at lower elevations, common. - Stratford 13485(12); Lancaster 12108(09), 14534(13); Randolph 10681(07), 12371(09); Gorham 29502 & 29523(42); Shelburne Deane (04, 14), 39384(58); B Purchase, North Baldface Mtn., 16048(14); TM Purchase, Lowe's Bald Spot, 17496(19), Carriage Road, Deane (26); Whitefield Deane (96).

V. angustifolium, var. hypolasium Fern.- Stratford 13501(12); TM Purchase, Carriage Road, 3500 feet, F & P 16871(17).

V. angustifolium, var. nigrum (Wood) Dole. With the var. laevifolium, common. - Errol F & P 17071(17); Northumberland, Cape Horn, 16448(17); Kilkenny, Green Ledge, 13961(12); Berlin 16100(14), 17482(19); Jefferson 16822(16); Randolph 10681(07), 30044(43); Gorham 12217(09), 29528(42); Shelburne Philbrook (83), Deane (83, 84, 14); Carroll 36107(51); Dalton 17512(19).

V. angustifolium, var. nigrum x myrtilloides. - Randolph, opposite Town Hall, 20104(27).

V. corymbosum L. Highbush-Blueberry. Pond-shores, local. - Lancaster, Martin Meadow Pond, 35482(50), Schmid (50); Jefferson, Cherry Pond, 34908(49); Whitefield Deane (96, 97), 23031(32), Knothole Road, Lennox & Pease 36834(52); Dalton, Forest Lake, 17577(19).

V. corymbosum, var. albiflorum (Hook.) Fern. - Berlin, sphagnum bog north of Head Pond, 17825(20).

V. Viitis-Idaea L., var. minus Lodd. Mountain Cranberry. Common on gravelly or mossy mountain-tops, occasional in sandy or dry soil at lower levels. - Dixville, Notch, E. & C.E. Faxon (87), Deane(15), 18149(21), 31972(46); Stratford, North Percy Peak, 12747(10); Stark, Christine Lake, 14125(13); Success, Mt. Success, Fuller(86), 11208=M 4098(08); Lancaster Deane(96), pasture, 17588(19); Milan 23830(33); Berlin 17142(18); Randolph Williams(97), 11699(08), Ice Gulp, M 4601(09); Gorham 12517(09), 16002(14), 27390(39), 36547(52); Shelburne Deane (82, 83, 14), 25894(37), Shelburne Moriah Mtn., Misses Christensen & Gauthier (17); B Purchase M 5061(13), North Baldface Mtn., 16035(14); M Location 14395(13); C Purchase, Falls of the Ammonoosuc, 11416(08); LB Grant, Nowell Ridge, 12305(09), King Ravine, 1036(01); TM Purchase, Mt. Madison, Churchill (89), M 227(02), Mt. Adams, Blankinship (94), Mt. Jefferson, E. & C.E. Faxon (85), M 366(02), Mt. Clay, E. & C.E. Faxon (89), Carriage Road, Deane (82), E. & C.E. Faxon (85, 90), Williams (98), B.L. Robinson (01); S Purchase, Alpine Garden, E. & C.E. Faxon (90), Tuckerman Ravine, Hoar (1858), Merrill (96), Boot Spur, E. & C.E. Faxon (87), Fuller (94), Lakes of the Clouds, Williams (93); C Grant, Oakes Gulf, Churchill (95), Mt. Monroe, E. & C.E. Faxon (85); Mt. Washington, indefinite, F. Boot (1816), Oakes(n.d.), Lowell (1846, 1847), Mann (1862), C.E. Faxon (72), Flint & Huntington (76), Pringle (77), Allen (78), Rich (80), Manning (81), Fairbanks (83), Hervey (n.d.), Churchill (95), Eggleston (98); B Grant, Mt. Clinton, St. John (09); H Grant, Mt. Crawford, 11786(08).
V. *Oxyccocos* L. Small Cranberry. Bogs, frequent.- *Pittsburg*, Second Lake, 10272=M 3433 (07); *Errol* 34920 (49); *Stewartstown*, Back Lake, F & P 16745 (17); *Colebrook* 10907=M 4020 (07); *Odell* 34850 (49); *Stark* 29531 (49); *Success*, Mt. Success, 11303=M 4101 (08); *Northumberland* Oakes (n.d.), 13451 (12); *Lancaster*, Baker Pond, 17257 (18); *Jefferson*, Cherry Pond, 11511 (08); *Milan*, Mud Pond, 13831 (12); *Berlin* 34020 (48), 35471 (50); *Shelburne* Deane (82, 83, 14, 15), 25619 (36), *Shelburne* Moriah Mn., Misses Christensen & Gauthier (17), *TM Purchase*, Six Husbands Trail, 12236 (09); *B Purchase*, Mt. Lethe, 10523 (07), *North Baldface* Mn., 16036 (14); *C Grant*, Oakes Gulf, Fuller (00); *B Grant*, Crawford Path, Kennedy (91), Mt. Clinton, Fuller (94), Mt. Jackson, 12299 (09); *Whitefield* 36809 (52), 39144 (58); *Dalton* 12362 (09).

V. *Oxyccocos*, var. *ovalifolium* Michx.- *Shelburne*, Wheeler Bog, Deane (14); *C Grant*, Oakes Gulf, Churchill (95). Too near the last-named.

V. *macrocarpon* Ait. Large Cranberry. Bogs, frequent.- *Stewartstown*, Back Lake, F & P 16771 (17); *Odell* 34851 (49); *Cambridge*, Umbagog, 16556 (15), 33903 (48); *Milan* 19785 (26); *Lancaster* 12382 (09); *Jefferson*, Cherry Pond, 11512 & 11513 (08); *Randolph* 29057 (32); *Gorham* 12209 (09); *Shelburne* Deane (83, 13); *Whitefield* Deane (96), 14417 (13).

**DIAPENSIACEAE (DIAPENSI FAMILY)**

**DIAPENSI L.**

*D. lapponica* L. Common on alpine barrens and lawns and locally abundant at Dixville Notch.- *Dixville* 18198 (21); *LB Grant*, King Ravine, 1036 (01), Spur Trail, M 3350 (07); *TM Purchase*, Mt. Madison, Chadbourne (84), M 3358 (07), Huts, 10231 (07), Mt. Adams, Blankinship (94), Great Gulf, Williams (98), Cow Pasture, Williams (93), Churchill (95), Williams (98), Cape Horn, Williams (98); *S Purchase*, Summit House, W. Boott (1853), Philbrook (82), Deane (82, 84), Merrill (96), Bailey (10), Alpine Garden, Fuller (83), E. & C.E. Faxon (90), Williams (97, 98), Fuller (00), 19827 (26), Tuckerman Ravine, Mann (1862), Lakes of the Clouds, E. & C.E. Faxon (88), Boott Spur, Fuller (94); Mt. Washington, indefinite, F. Boott (1816), Oakes (n.d.), Gray (1842), Sprague (n.d.), W. Boott (1853), Hoar (1858), Chickering (1862), Flint (71), Chickering (75), E. & C.E. Faxon (76), Flint & Huntington (76), Rudkin (82), Miss Prince (90), Merrill 643 (96), Davis (97), Greeman (98); *C Grant*, Crawford Path, Williams (95), M 1068 (03), Mt. Pleasant, Miss Minns (85); *B Grant*, Mt. Clinton, E. & C.E. Faxon (81), Mt. Webster, 11783 (08), Mt. Jackson, 12297 (09).

**PRIMULACEAE (PRIMROSE FAMILY)**

**LYSIMACHIA L.** Loosestribe.

*L. terrestris* (L.) BSP. Low ground, common.- *Pitbull*, First Lake, Mrs. Stevens (95); *DC Grant* 16231 (14); *Colebrook* 10900 (07), M 4017 (07); *Columbia* 10467 (07), M 3914 (07); *Stark* 32898 (47); *Dummer Williams* (95), 31328 (45); *Success* 33835 (48); *Berlin* 9898=M 3212 (06); *Randolph* 1070 (02), 4027 (04); *Shelburne* Deane (82, 83, 02); *M Location* 14307 (13); *B Purchase*, Wild River, 35568 (50); *Carroll*, Crawford's, Williams (95), 33292 (47).

*L. NUMMULARIA* L. Moneywort. Occasionally escaped.- *Stewartstown* 36670 (52); *Colebrook* Krochmal 1390 (48); *Dummer Harris* 7358 (48); *Lancaster*, roadside, 16728 (16); *Shelburne* Deane (24).
L. ciliata L. Alluvial soil, frequent. -Pittsburg, Third Lake, 32525(46), Indian Stream, 11053= M 3751(07), Hall Stream, 3376(48); Stewaritskon 33671 & 36768(52); Colebrook 10484=M 3912(07); Columbia 32295(46), 33686(48); Stratford 17651(19); Errol Williams (95); Stark 23775(35), 32910(47); Odell, logging road, 16303(14); Dummer Harris 7464(49); Northumberland 12137(09), 17250(18); Lancaster 12137 & 12149(09), 29305(58); Milan 13874(12); Randolph 12219(09); Gorham 14184(13); Shelburne Deane (81, 82, 83, 14, 15); M Location 14269(13); B Purchase Steele (54).

L. hybrida Michx. Rare. -Randolph, meadow near Adams cottage, 16755(16), 39744(60).

TRIENTALIS L. Star-flower.

T. borealis Raf. Damp woods, common. -Pittsburg, First Lake, M 3617(07); DC Grant 16249(14); Colebrook 10366=M 3932(07); Stratford 13588(12); Randolph Mrs. Moore (05), M 3258(07), 11176(08), 19875(26); Shelburne Deane (83, 15, 16); LB Grant 1075(00), 11196(08); TM Purchase, Mt. J.Q. Adams, 12706(10), Carriage Road, Deane (82); S Purchase, Alpine Garden, Williams (95), B.L. Robinson (01), Boot Spur, 33940(48); Whitefield Deane (95, 96).

OLEACEAE (OLIVE FAMILY)

FRAXINUS L. Ash.

F. americana L. (including f. iodocarpa Fern.) Rich woods, frequent southward. -Stratford 13557(12); Lancaster 34610(49); Jefferson Williams (95), 32517(46), 36406(51), 38103(55); Randolph Williams (97), M 1427(03), 4051(04), 10854(07), 11144(08); Shelburne Deane (82, 95). A.K. Chittenden, Forest Conditions in northern N.H. (1905), 60, reports this tree at 2300 feet elevation on Mt. Hayes in Gorham.

F. nigra Marsh. Swamps, common. -DC Grant 16205(14); Colebrook 29763(42); Lancaster 16097(14), 36033(51); Randolph Williams (96), 10526(07); Shelburne Deane (82, 83, 18); Whitefield Deane (95), 16687(16), 30294(43); Dalton 17381(19).

SYRINGA L. Lilac.

*S. VULGARIS L. Persistent and spreading around old house-sites. -Randolph 10792(07), M 3313 & 4045(07); Shelburne Deane (18); M Location 10531(07).

GENTIANACEAE (GENTIAN FAMILY)

GENTIANA L. Gentian.

G. clausa Raf. Closed Gentian. Very local and of somewhat uncertain status. -Randolph, Pasture Path, Miss Wells (23), ballast near Ravine House, 24098(34); Carroll, esker near Zealand River, 21199(29), railroad, 33317(47).

G. lineata Froel. Bogs and wet meadows, sporadic. -Pittsburg, Second Lake, 34113(48); Errol 16533(15); Cambridge 10621(07); Dummer 25625(36); Stark 28346(40); Milan 13964(12), 17940(20), 22794(31); Berlin 27476(39), 33121(47), Bog Dam, 33274(47), Success 16536(15); Lancaster 12825(10); Jefferson 20702(30), Riverton, 36273(51); Shelburne Deane (83, 85, 15), Gentian Pond, Misses Sheppard & Lowell (14), Sprague (14), Dream Lake, Miss Johnson (24).

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HALENIA Borkh. Spurred Gentian.

*H. deflexa* (Sm.) Griseb. Very local. - *Colebrook* F & P 16624 & 16946(17), *Columbia* 36754 (52)

MENYANTHES L. Buckbean. Bogbean.

*M. trifoliata* L., var. *minor* Raf. Edges of ponds and wet meadows, occasional. - *Pittsburg*, Fourth Lake, 35508(50); *Stewartstown*, Back Lake, F & P 16605(17), Stewartstown Hollow, 10762=M 3970(07); *Odell*, Devil's Washbowl, Pease & Harris 34898(49); *Stark*, Christine Lake, 14148(13); *Lancaster* 17146(18); *Jefferson*, Little Cherry Pond, 22761(31); *Shelburne*, Wheeler Bog, Deane (82, 04), 11328=M 4133(08), 35832(50), Moose Pond, 23120(32).

NYMPHOIDES Hill. Floating-heart.


APOCYNACEAE (DOGBANE FAMILY)

VINCA L.


APOCYNUM L. Dogbane.

*A. androsaemifolium* L. Dry soil, common. - *Pittsburg*, Indian Stream, 11068=M 3763(07); *Dummer* 35357(50); *Lancaster* 34562(49); *Jefferson*, Mrs. Terry (n.d.); *Randolph*, Williams (95, 97), Ware (02), M 210(02), M 1006(03), 4204(04), M 4193(08); *Gorham* 17345(18); *Shelburne* Deane (82, 83); *M Location* 14354(13); *Whitefield* Deane (97), M 4395(08).

*A. medium* Greene. Shores, ballast, etc. - *Pittsburg* F & P 16997(17); *DC Grant* 36774(52); *Milan* 37586(54); *Randolph*, railroad, 29163(41); *Shelburne* 39143(58); *B Purchase*, Wild River, 36877(52); *Dalton*, riverbank, 17383(19).

*A. sibiricum* Jacq. Gravelly or sandy shores, common. - *Stewartstown* 36769(52); *DC Grant*, Diamond Gorge, 10617(07), M 3205(06); *Stratford* 23892(33); *Lancaster*, Kent Pond, 36132(51); *Gorham* 12199(09); *Shelburne* Deane (82, 83), C.E. Faxon (n.d.), 11332=M 4168(08), Deane (14, 19).

ASCLEPIADACEAE (MILKWEED FAMILY)

ASCLEPIAS L. Milkweed.

*A. incarnata* L. Swamps and shores, frequent. - *Colebrook* 33797(48); *Stewartstown* 36804(52); *Cambridge*, Umbagog, 16545(15); *Stratford* 17712(19); *Lancaster* 12107(09), 34561(49); *Jefferson*, Cherry Pond, 13001(10); *Shelburne* (83, 16).

*A. SYRICA* L. Roadsides and fields, frequently adventive. - *Colebrook* 10945=M 4001(07); *Columbia* 39642(59); *Lancaster* 14246(13); *Northumberland* 39981(62); *Jefferson* 23065(32); *Randolph* 16294(14); *Gorham* M 4276(08), 14320(13); *Shelburne* Deane 82, 16).

CONVOLVULACEAE (CONVOLVULUS FAMILY)

CONVOLVULUS L. Bindweed.

* C. SEPIUM L. Wild Morning-Glory. Thickets and waste ground, frequent. *Colebrook* 10887=M 3927(07); *Stark*, railroad, 29165(41), 34529(49), 35372(50); *Northumberland* 12212(09); *Lancaster* 12122(09), 22607(31); *Berlin* 16127(14); *Jefferson* 12923(10); *Randolph* M 4074(07); *Gorham* M 4238(08); *Shelburne* Deane (82, 83, 16), 36691(52); *M Location* 12186=M 4573(09); *Whitefield* Deane (96).

CUSCUTA L. Dodder.

* C. Cronovit Willd. Low thickets, locally abundant.*Shelburne* Deane (15, 16), 17786(19), 35900(50), 37687(54).

POLEMONIACEAE (POLEMONIUM FAMILY)

COLLONIA Nutt.

* C. LINEARIS Nutt. Railway ballast.*Stratford* 34501(49), 37564(54); *Dummer* 29827(42); *Berlin* 34005(48), 37631(54); *Jefferson* 39284(58).

PHLOX L.

* P. PANICULATA L. Persistent.*Jefferson*, old cellar-hole, 20697(30).

BORAGINACEAE (BORAGE FAMILY)

SYMPHYTUM L. Comfrey.

* S. OFFICINALE L. Infrequent adventive.*Shelburne* Deane (81, 82); *Whitefield*, roadside, Deane (97).

LYCOPOPSIS L. Bugloss.

* L. ARVENSIS L. Rare railroad weed.*Randolph*, garden weed, 38127(55); *Whitefield*, near Hazen Junction, 11428(08).

ECHIUM L. Blueweed.

* E. VULGARE L. Ballast of Canadian National Railway.*Stratford* 35602(50); *Berlin* 34002(48); *Gorham* 29508(42).

CYNOGLOSSUM L. Hound's-tongue.

* C. boreale Fern. Rich rocky woods, local.*Lancaster*, Mt. Prospect, 14219(13); *Shelburne*, Crow's Nest, Deane (12), Miss Blaney (12).

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* C. AMABILE Stapf & Drum. Rare waif. - Randolph, henyard, Lowe (50).

**MYOSOTIS** L. Forget-me-not.

**M. SCORPIOIDES** L. Wet ground and ditches, often adventive. - Pittsburg, First Lake, 10116=M 3536 (07); Clarksville 34695 (49); Stewartstown 32756 (47), Hodgdon & Clapp 6328 (49); Colebrook Knochmal 1392 (48); Northumberland 16059 (14), 34539 (49), 38474 (56); Lancaster 12123 (09), 28828 (41); Jefferson 16879 (16), 16528 (17), 23841 (33), 35591 (50), 36055 (51); Randolph 16071 (14), Harris (32)=Plant. Exsicc. Gray. no. 583; Shelburne Deane (18); Whitefield 30136 (43); Dalton 14565=M 5078 (13), 16090 (14), 29775 (42), 32329 (46); Carroll 38543 (56).

**M. LAXA** Lehm. - Pittsburg, brook near Camel's Rump Mtn., 19107 (22), Third Lake, 31688 (46).

**M. SYLVATICA** Hoffm. Garden weed. - Shelburne Deane (15, 17).

**AMSINCKIA** Lehm.

**A. BARBATA** Greene. Rare waif. - Dixville, roadside, 37834 (55); Shelburne, railroad, Deane (18).

**LAPPULA** Moench. Stickseed.

**L. ECHINATA** Gilib. Chiefly adventive on railroads. - Stark 21029 (29); Milan 29853 (42); Lancaster 14546 (13); Berlin 31319 (45), 35432 (50); Gorham 11471 (08); Shelburne 36165 (51).

**HACKELIA** Opiz. Beggar's Lice.

_H. americana_ (Gray) Fern. Cliffs and talus, rare. - DC Grant, Diamond Peaks, Steele (54).

**VERBENACEAE (VERVAIN FAMILY)**

**VERBENA** L. Vervain.

_V. hastata_ L. Low ground, occasional. - Columbia 16720 (17); Stratford 19166(22); Milan 38572 (56); Northumberland 17154 (18); Success 11761=M 4376 (08); Lancaster 12807 (10); Jefferson 10785 (07), 30991 (44); Randolph 11669 (08), 24195 (34); Gorham M 4062 (07); Shelburne Deane (82), 36212 (51); Dalton 35860 (50), 36840 (52).

**LABIATAE (MINT FAMILY)**

**TRICHOSTEMA** L. Bluecurls.

_T. dichotomum_ L. Dry soil, mostly on railroad ballast. - Lancaster 37637 (54); Jefferson 11451 (08); Randolph 9905 (06), 37352 (53); Gorham 12521 (09); Shelburne 38179 (55).

**SCUTELLARIA** L. Skullcap.

_S. lateriflora_ L. Damp places, common. - DC Grant 16233 (14), 36777 (52); Cambridge, Umbagog, 18188 (21); Errol 32498 (46); Millsfield 34826 (49); Odell 34837 (49); Stratford 225.
17652(19); Stark 32913(43), 38160(55); Dumner Williams (95), 33119(47); Success 33779 (48); Milan 13795(12), 37590(54); Lancaster Krochmal 1545(48); Jefferson 31250(44), 32313(46); Randolph Williams (97), 10728(07), 21131(29); Gorham M 4058(07), M 4280 (08), 39335(58); Shelburne Deane (81, 83), 11674(08), M 4872(11), Deane (14); Whitefield 11560(08).

*S. epilobiifolia* A. Hamilton. Borders of ponds, etc., frequent.-Pittsburg. Second Lake, M 3607 (07), Back Lake, 33184(47); Clarksville 34634(49); Stewartstown F & P 16607(17), Hodgdon & Clapp 6332(49); Colebrook 10915=M 4006(07), 32813(47); Columbia 10468=M 3828(07), 10483(07), 37598(54); DC Grant 16202(14); W Location 34913(49); Success 10739(07), 27480(39); Milan 36183(51); Stark 36829(52); Berlin 10677(07), 14449(13); Randolph 17937(20); Gorham 17404(19), 27391(39); Shelburne Deane (81, 82, 14, 15); Whitefield Deane (97), 23007(32), 27281(39); Dalton 24137(34); Jefferson 39153(58), 39896(61).

NEPETA L. Catnip.

*N. CATARIA L. Occasionally adventive near houses.-Columbia 13984(12); Stark 36188 (51); Berlin 11638=M 4478(08), 33143(47); Lancaster 14516(13), 31680(45); Randolph 11482 (08); M Location 17217(18); Shelburne Deane (81), 11672(08).

GLECHOMA L. Gill-over-the-ground.

*G. HEDERACEA L., var. MICRANTHA Moricand. Damp places, frequent.-Clarksville 35234(50); Colebrook F & P 16628(17), Stratford 13556(12); Lancaster, alluvial woods, 36022 (51), 38649(57); Jefferson 30063(43); Gorham 17215(18); Shelburne 11322=M 4165(08), Deane (16, 17); LB Grant 38678(57); Carroll 16813(16); Dalton 32000(46).

PRUNELLA L. Selfheal.

*P. VULGARIS L. Adventive in lawns, etc.-Stewartstown, Piper Hill, Hodgdon & Clapp 6334 (49); Lancaster 17277(18); Shelburne, pine grove, Deane (22).

*P. vulgaris, var. lanceolata* (Bart.) Fern. Woods, roadsides, etc., common.-Pittsburg, Indian Stream, M 3758 & 3759(07); Clarksville 10982=M 3765(07); Dumner 31329(45); Stark 35365 (50); Milan 13834(12); Lancaster 14176(13); Randolph Williams (97), M 212 & 262(02), M 986(03), M 4250(08), M 4602(09), 21118(29), 28118(40); Gorham 29721(42), 30167 (43); Shelburne Deane (83, 14, 26); M Location 14315(13); TM Purchase, Cape Horn, Williams (97), B.L. Robinson (01, 03), Williams (03); Carroll 14369(13), 35377(50), 38544(56), Crawford’s, Miss Minns (n.d.), Williams (95), 28808(41); Dalton 16096(14); C Purchase 38486(56).

*P. vulgaris, var. lanceolata, f. candida* Fern.-Clarksville 10982=M 3764(07); DC Grant, Swift Diamond valley, 16132(14); Stratford F & P 16822(17), Northumberland F & P 16833(17); Randolph Evans (17); Shelburne Deane (25).

*P. vulgaris, var. lanceolata, f. iodocalyx* Fern.-Pittsburg, First Lake, 10194=M 3531(07); DC Grant 16284(14); Berlin 16698(16); Randolph 4180(04), 16296(14); Gorham 29721(42); Shelburne Deane (82); P Grant Hodgdon 6335(49); TM Purchase, Carriage Road, 3500 feet, F & P 16869(17); Whitefield Deane (97).

*P. vulgaris, var. lanceolata, f. rhodantha* Fern.-Pittsburg, Indian Stream, 10992=M 3760 (07)-TYPE.; Colebrook 11048=M 3792(07), F & P 17025(17); Northumberland, riverbank,
LEONURUS L. Motherwort.

*L. CARDIACA L. Barnyards, etc.-*Pittsburg, First Lake, Mrs. Stevens (95);*Clarksville* 33643 (48);* Stark 17477(19);* Milan 13952(12);* Lancaster 17115(18);* Jefferson 10781(07);* Randolph 12070(09);* Shelburne 11673(08);* Deane (18).

GALEOPSIS L. Hemp-Nettle.

*G. TETRAHIT L., var. BIFIDA (Boenn.)Lej. & Court. Waste places, common.-* Colebrook 1128(01);* Jefferson 39387(58);* Randolph Williams (96), M 1378(03), 4082 & 4203(04), 12073(09), 12771(10);* Gorham Mackintosh (22);* Shelburne Deane (82, 84, 18), Rushmore (26);* P Grant Mackintosh (24);* Carroll, Crawford's, Jenks (83), Bretton Woods, Deane (97);* Whitefield Deane (97).

*G. TATRAHIT, var. BIFIDA, f. ALBIFLORA House.-*Pittsburg 33204(47);* Northumberland 36338(51);* Cambridge, Umbagog, Deane (16);* Jefferson W. Boott (73), 39865(61);* Shelburne Deane (81, 14, 18, 19);* G Grant W. Boott (1855), Manning (81).

LAMIUM L. Dead-Nettle.

*L. MACULATUM L. Roadside.-*Clarksville 36091(51);* Stewartstown, South Hill, 32591 (47).

STACHYS L. Hedge-Nettle.

*S. PALUSTRIS L., var. PILOSA (Nutt.)Fern. Adventive by roads and railroads.-*Stratford F & P 17026(17);* Randolph, copse by station, 17178(18), 21114(29).

*S. PALUSTRIS, var. NIPIGONENSIS Jennings.-*Stratford 37562(54);* G Grant, Carriage Road, Brown & Seymour 5297(39), 32827(47).

*S. PALUSTRIS, var. HOMOTRICA Fern.-Success, old pasture, 14597(13);* Berlin, near Jasper Cave, 26828(38);* Gorham 16323(14);* Randolph 19787(26);* Shelburne Deane (26).

*S. tenuifolia Willd., var. platyphylla Fern.-*Stratford, riverbank, 17705(14), 32269(46);* Lancaster, riverbank, 38499(56).

MONARDA L.

*M. DIDYMA L. Bee Balm. Occasional escape.-*Errol, Errol Hill, Williams (95), 16525 (15);* Dunmer 20609(30);* Carroll, Cherry Mtn. Road, 31440(45).

*M. FISTULOS A L., var. MOLLIS (L.)Benth. Wild Bergamot. Rare adventive.-*Carroll, pasture, 22750(31).
HEDEOMA Pers. Pennyroyal.  

*H. pulegioides* (L.) Pers. Dry soil, infrequent.- *Randolph* Williams (96), 1129(02), 17864 (20) *Shelburne* Deane (84), 11666(08), Deane (13, 15), 34660(49), 37212(53).

**SATUREJA L. Calamint.**

*S. vulgaris* (L.) Fritsch, var. *neogaea* Fern. Banks and thickets, most frequent in the calcareous districts.- *Pittsburg, First Lake*, 10095=M 3666(07), *Indian Stream*, 11018(07); *Clarksville 25336 (37), 33627(48), 36065(51); Stewartstown 10085=M 3687(07), *Hodgdon* & *Clapp* 6330(49), 36673(52); *Colebrook* 13930(12); *Columbia M* 3870(07), 32804(47), 33685(48), 36758(52); *Dummer* 16220(14); *Stark* 17456(19); *Lancaster 12793(10); Whitefield 30204(43); *H Grant*, Hart Ledge, 16617(15).

**THYMUS L. Thyme.**

*T. SERPYLLUM* L. Rarely spreading from cultivation.- *Jefferson* 16866(16)-in 1955 still persistent at this station-; *Randolph*, turf near Library (61); *G Grant* 40003(62).

**LYCOPUS L. Bugleweed.**

*L. uniflorus* Michx. Low ground, common.- *Pittsburg, Third Lake*, 33183(47); *DC Grant* 16242(14), 33900(48); *Odell* 34842(49); *Stark* 32317(46); *Success* 33780(48); *Lancaster* 33022 & 33023(47); *Jefferson* W. *Boott* (74), M 136(01), 30994(44), 32321(46); *Randolph* Williams (97), 4030 & 4038 & 4039(04), M 4071(07), 21121(29); *Shelburne* Deane (81, 82, 18), *B Purchase* M 5059(13); *Carroll* 32358(46), 33147 & 33285(47); *Dalton* 29781(42), 32330(46).

*L. americanus* Muhl. Damp soil, frequent.- *Pittsburg, Second Lake*, 31637(45); *Colebrook* 10921=M 4000(07), *F & P* 16689(17); *Dixville* Hunnewell (12); *Stratford* 19115(22); *Stark* 36911(52); *Milan* 13860(12), 35424(50); *Northumberland* 36355(51); *Jefferson* 30268(43), 31343(45), 32902(47); *Randolph* Churchill (89), Williams (96, 97), 1134(02), 21155(29); *Gorham* 4142(04); *Shelburne* Deane (81, 14, 15), 36211(51); *Dalton* 29781(42), 34775(49), 35622(50); *Whitefield* Deane (97).

**MENTHA L. Mint.**

*M. PIPERITA* L. Peppermint. Infrequently adventive in wet places.- *Clarksville* 38230(55); *Jefferson* 30300(43), 35774(50); *Whitefield*, outlet of Burns Pond, 14592=M 5030(13).

*M. CARDIACA* Baker. Occasional.- *Lancaster* 1451(13); *Berlin* 29876(42), 33142(47), 38203(55); *Randolph* 11793(08); *Gorham* 16922(16); *Shelburne* C.E. Faxon(n.d.), 1137(01) Deane (14); M Location 12845(10), 19137(22).

*M. arvensis* L. Damp soil, common.- *Pittsburg, Third Lake*, 31705(45); *Columbia* 13974 (12); *Lancaster* 38500(56), 39332(58); *Berlin* 29877(42); *Randolph* M 352(02), 12256(09); *Gorham* 11441(08), 12894(10); *Shelburne* Deane (14); *Jefferson* 37328(53); *Whitefield* M 4349 (08); *Dalton* 29776(42).

M. arvensis, var. villosa (Benth.) S.R. Stewart. Damp soil, common. - Pittsburgh, Third Lake, 33195(47); Clarksville 34683(49); DC Grant 16139(14); Stewartstown 29692(42), 38836(57); Strasford 32299(46); Lancaster 12826(10), 34790(49); Jefferson 16834(16); Randolph Williams (97), 9917(06), 21124(29); Shelburne Deane (83, 14, 15); Whitefield M 4428(08); Dalton 32331(46).

M. arvensis, var. villosa, f. lanigera S.R. Stewart. - Stewartstown F & P 16604(17).

M. arvensis, var. villosa, f. glabrata (Benth.) S.R. Stewart. - Stewartstown Hodgdon & Clapp 6331(49); Shelburne Deane (15).

Solanaceae (Nightshade Family)

Solanum L. Nightshade.

* S. dulcamara L. Rare waif. - Berlin, dump, 38123(55), 38360(56).


* S. vulgaris Mill. Weed in vegetable garden. - Randolph 19851(26).

* S. rostratum Dunal. Waif. - Randolph, henyard, 26831(38).

Physalis L. Ground Cherry.

* P. lancifolata Michx. - Milan, dry pasture, 27389(39).

* P. heterophylla Nees. Locally adventive. - Gorham, near B. & M. trestle, 14182(13), 16918(16), pasture, 16608(15).

* P. heterophylla, var. ambiguus (Gray) Rydb. - Shelburne, pasture, Deane (14), 31708 (45).

Datura L. Jimsonweed.

* D. stramonium L. Rare waif. - Berlin 38241(55).


Petunia Juss.

* P. violacea Lindl. Waif. - Strasford, river beach, 23920(33).

Scrophulariaceae (Figwort Family)

Verbascum L. Mullein.

* V. thapsus L. Dry soil, frequent. - Clarksville M 3699(07); Colebrook Warren(49); Columbia 37697(54); Berlin 37387(53); Randolph Williams (96), M 350(02), M 4253(08), 12177 (09); Shelburne Deane (82, 83, 14, 25).
*V. NIGRUM L. Rare escape.- Jefferson 19062(22), Deane (26), 37341(53).

*V. BLATTARIA L. Infrequent adventive in fields and roadsides.- Berlin 36287(51), 38470 (56); Shelburne Deane (26); Whitefield Deane (97).

*V. BLATTARIA, f. ALBIIFLORA (Don) House.- Colebrook, B. Allen farm, Pease & Mrs. Allen 33991(48).

LINARIA Mill. Toadflax.

*L. VULGARIS Hill. Butter-and-Eggs. Roadside and waste places, frequent.- Colebrook 10871= M 4012(07), 29689(42); Stark 34558(49); Lancaster 12213(09); Milan 13870(12); Berlin 36824(52); Jefferson 30794(44), 39809(60); Randolph 4034(04), M 5097(13), 29822(42); Gorham M 4268(08), 12889(10), 16443(15); Shelburne Deane (16, 24); P Grant 23751(33); Carroll 16568(15); Dalton 35891(50).

*L. CANADENSIS (L.) Dumont. In our area limited to railroad tracks.- Stewartstown 11000 (07); Colebrook 29689(42); Columbia 17679(19); Lancaster 12269(09); Jefferson 12866(10), 22758(31); Berlin 31318(45); Whitefield M 4345(08), 30285(43); Carroll 12701(10), 26237 (37), 33289(47); Dalton 35458(50).

*L. MAROCCANA Hook. f. Rare garden weed.- Shelburne Miss Brown (25).

CHAENORRHINUM Reichenb.

*C. MINUS (L.) Lange. Common on railroad tracks.- Stewartstown F & P 16944(17), 29699 (42), 36217(51); Colebrook 17811(20), 25938(37); Columbia 17720(19); Stratford 39550 (59); Stark 32893(47); Dummer 29848(42); Berlin 12734(10); Jefferson 17237(18), 23088 (32), 31356(45); Randolph 20084(27), 21109(29), 39404(58); Carroll 26907(38), 33150(47), 36931(52); Whitefield 37302(53).

SCROPHULARIA L. Figwort.

*S. LANCEOLATA Pursh. Adventive in pastures and clearings.- DC Grant 16255(14); Colebrook 28086(40); Columbia F & P 16585(17); Stratford 33586(48); Northumberland 39791 (60); Millsfield 18210(21); Milan 17399 & 17464(19), 26811(38); Success 10675(07), M 4320 (08); Lancaster 12808(10); Jefferson 10565(07), 29488(42); Randolph 12102(09), 20999(29); Gorham 12520(09), 14442(13), 37077(53); Shelburne B.L. Robinson & Williams (03), 11321= M 4142(08); B Purchase, Wild River, 36879(52), 38964(57); Carroll 12712(10), 16569(15); Dalton 14595=M 5009(13).

CHELONE L. Turtlehead.

C. glabra L. Wet places, common.- Pittsburg, Third Lake, 31699(45), 33191(47), Hall Stream, 36245(51); Clarksville F & P 17008(17), 38234(55); Colebrook Warren (49); Stark 31538(45); Dummer Harris 7413(48); Milan 13855(12), 23873(33); Northumberland Williams (06), 39791(62); Jefferson 39755(60); Randolph Williams (95), M 352 & 353(02), 9915(06);
Gorham 27401(39), 29726(42); Shelburne Deane (83, 13); B Purchase 36908(52); Carroll, Crawford's, Spaulding (16); Whitefield Deane (97), 11495=M 4357(08); Dalton 35654(50).

*C. glabra, f. tomentosa* (Raf.) Pennell. Milan, riverbank, 23873(33).

*C. glabra, f. elatior* Raf. - Clarksville F & P 17009(17).


*P. DIGITALIS* Nutt. Occasional adventive. Stark 25261(35); Jefferson 34459(49); Randolph 16438(15), Burbank (15), 16724 & 16726(17); Gorham 12519(09); M Location 14280(13); Shelburne Mrs. McMillan (08), Deane (08, 10).

*P. PALLIDUS* Small. Infrequent. - Randolph, lawn, 30026(43); Shelburne, thin woods near Moose Pond, Ware (23)-persistent, spreading in 1953-, 25870(37), 35837(50); Dalton 36533 (52).

*P. HIRSUTUS* (L.) Willd. Rare. - Northumberland 31942(46).

MIMULUS L. Monkey-flower.

*M. ringens* L. Wet places, occasional. - DC Grant, 16142(14); Colebrook 10884=M 4011 (07), 33766(48), Krotchmal 1388(48); Northumberland 12139(09); Lancaster 12112(09); Shelburne Deane (81, 82, 83), 11319=M 4141(08), Deane (08, 16); Dalton 11602=M 4383 (08).

GRATIOLA L.


G. aurea Muhl. Scarce. - Cambridge, Umbagog, Pease & Harris 33905(48); Dummer, Pontook Reservoir 36807(52).

LINDERNIA All.

*L. dubia* (L.) Pennell. Muddy shores, occasional. - Pittsburg 17694(19); Stewartstown 36763 (52); Colebrook 3375a(48); Cambridge 26367(37); Dummer 36780(52); Lancaster 25668 (36); Berlin, Head Pond, 35727(50); Jefferson 30984(44).

*L. dubia*, var. *riparia* (Raf.) Fern. Similar localities. - Errol F & P 16988(17), 32500(46); Milan 38119(55); Stratford 32261(46); Stark 29829(42); Lancaster 12799(10); Jefferson 10790(07); Randolph 4000(04); Gorham 16592(15); Dalton 11596=M 4443(08), 12296(09), 29778 (42).

DIGITALIS L. Foxglove.

* D. PURPUREA* L. Garden escape. - Randolph, roadside, 17135(18); Shelburne Deane (27, 28).
VERONICA L. Speedwell.

* V. LONGIFOLIA L. Escape.-Berlin 32508(46); Jefferson, riverbank, 36171(51), 39803(60).

* V. CRINITA Kit.-Whitefield, cellar-hole, South Whitefield Rd., 39112(58).

V. alpina L., var. unalascensis C. & S. Alpine rills, local. - TM Purchase, Great Gulf, E. & C.E. Faxon (85, 87), Williams (93), Fuller (94), M 4532(09); S Purchase, Huntington Ravine, E. & C.E. Faxon (85), Tuckerman Ravine, W. Boott (1855), Hoar (1858), Mann (1862), Allen (76), E. & C.E. Faxon (77, 85), Worcester (n.d.), Manning (81), Fuller (88), Miss Minns (88), Churchill (89, 91), Williams (95), Merrill (96), Eggleston (98), Fuller (00), 1202(00), 1203(02), M 261(02), 10730(07), M 4576(09), 19789(26), Hodgdon et al. 6342(49); C Grant, Oakes Gulf, E. & C.E. Faxon (89), Williams (96), B.L. Robinson (01), 12028=M 4551(09), 20132(27), 39858(48), indefinitely located, Oakes (n.d.), Flint & Huntington (76), Pringle (77), Allen (78). A report from King Ravine in LB Grant needs verification.

* V. SERPYLLIFOLIA L. Grassy places, throughout.-Pittsburg, Second Lake, 10275=M 3442(07); Strafford 13594(12); Milan 13812(12); Kilkenny 32635(47); Lancaster 38647(57); Randolph M 988(03), 5377(04), Mrs. Moore (05), M 3188(06), M 3426(07); Gorham Deane (09); Shelburne Deane (83, 16); Dalton 32625(47).

V. tenella All. Damp wood-roads, etc., frequent.-Pittsburg, Third Lake, 10331=M 3496(07); AGA Grant, Hellgate, 12592(10); DC Grant 36490(52); Strafford 35964(51); Stark 33381(48); Kilkenny 32694(47); Lancaster, Mt. Prospect, 16920(17), 33363(48); Jefferson 37421(54); Randolph 10049(07), 16431(17), 39382(61); Gorham 16430(17) - one specimen with white flowers., C Purchase, Base Station, 11256(08); Carroll 11271(08).

* V. OFFICINALIS L. Pastures and wood-roads, rapidly spreading.-Colebrook 26842(38), 29683(42), 31518(45), 32753(47), Hodgdon 6341(49), 36676(52), Columbia 29750(42), 32811(47); Northumberland 39557(59); W Location 34914(49); Millsfield 18190(21); Dunmore Harris 7280(48); Success 14137(13); Berlin 31300(45); Jefferson 27273(39), 31261 & 31736(45); Randolph 27383(39); Gorham 29491(42); Shelburne 35544(52); M Location 14271(13); B Purchase 23767(33); LB Grant, logging road, 16697(16); P Grant, Crystal Cascade, 17082(17), 27658(39); Carroll 32531(46), 34073(48), 35378(50), 36085(51); C Purchase 37032(53), 37807(55), 38436(56).

* V. OFFICINALIS, f. ALBIFLORA (G. Don) House.-P Grant, footpath, 37856(55).

* V. CHAMAEDYRS L. Rare waff. Lancaster, locally abundant on Mt. Prospect, 31653(45), 37295(53); Randolph, garden weed, 39828(61), coll. Mrs. Joensson.

V. scutellata L. Wet places, frequent.-Pittsburg, First Lake, 10199=M 3595(07); AGA Grant, Hellgate, 12591(10); DC Grant 16256(14); Errol 37937(55); Stark 32888(47), 36922(52); Dunmore Williams (95), 34818(49); Milan 13712(12); Strafford 17721(19); Northumberland 16476(17); Lancaster 12145(09), 33711(48), 34783(49), 36005(51); Jefferson 38915(57); Randolph Williams (97), 12328(09), 12679(10), 21116(29); Gorham 16361(15); Shelburne Deane (83), 12198(09), Deane (15); Carroll 33293(47); Dalton 17575(19), 34427(49).

V. americana (Raf.) Schwein. Brooklime. Wet places, frequent.-Pittsburg, Second Lake, 10000 =M 3520(07), Hall Stream valley, 37214(53); Clarksville 33644(48), 34711(49);
C. septentrionalis Lindl. Heads of subalpine ravines, locally abundant; rarely descending to lower levels.- **TM Purchase**, Mt. J.Q. Adams, 9907(06), Peabody Spring, 10846(07), Mt. Clay, W. Booth (1855), Williams (97), Great Gulf, E. & C.E. Faxon (87), Williams (95), 12037=M 4568(09), Carriage Road, Deane (84), B.L. Robinson (01), 10545(07); **Purchase**, Alpine Garden, E. & C.E. Faxon (90), Huntington Ravine, F & P 16849(17), Turner Ravine, Hoar (1858), Mann (1862), Allen (76), Miss Minns (n.d.), Fuller (84), Manning (84), Miss Brown (85), E. & C.E. Faxon (85, 90), Churchill (89), Williams (95), Merrill (96), M 172(01), M 1060(03), M 4565(09), Hodgdon 6344(49), Gulf of Slides, 23759(33); **Grant**, Oakes Gulf, E. & C.E. Faxon (89, 90), Williams (93), B.L. Robinson (01), 12024=M 4550(09), indefinite, Oakes (n.d.), W. Booth (1853), Flint & Huntington (76), Rich (80), Churchill (90), J. Robinson (01); **Grant**, roadside near Pinkham Notch camp, Kennedy (91), 12051(09), 19177(23). Station now destroyed.

MELAMPYRUM L. Cow-wheat.

**M. lineare** Desr. Peaty and rocky alpine heaths, occasional.- **Success**, Mt. Success, 11313(08); **Gorham**, Mt. Hayes, 12822(10); **Purchase**, Imp Mt., 16765(17); **Grant**, Mt. Pleasant to Mt. Clinton, Kennedy (95), Mt. Clinton, Williams (95), Mt. Webster, 11743(08); **Purchase**, Carriage Road, 12830(10), Mt. Resolution to Mt. Crawford, 14049(12); **Grant**, Mt. Crawford, 11732(08), Mt. Hope, 16473(15).

**M. lineare**, var. americanum (Michx.) Beauverd. Dryish open woods, occasional.- **Errol**, Errol Dam, ledges, 16217(14); **Stratford**, Percy Peaks, 12748(10); **Milan**, 36813(52); **Berlin**, Mt. Forist, 16118(14), 16506(15); **Gorham** 12773(10); **Semburne** Deane (85), 11159=M 4104(08), Deane (15), 35539(50), 39146(58); **Purchase**, Ammonoosuc Ravine, 16767(16); **Dalton**, near Forest Lake, 17570(19).

EUPHRASIA L. Eyebright.

**E. Oakesii** Wettst. Alpine region, very local.- **TM Purchase**, Carriage Road, E. Faxon (96); **Grant**, head of Oakes Gulf and slopes of Mt. Monroe, Oakes (n.d.), E. & C.E. Faxon (77, 79, 81, 91), Pringle (77), E. Faxon (79), Manning (81), Williams (93, 01), Eggleston (01), B.L. Robinson (01). **Plant** _Exsc. Gray_. no. 61-, 1174=M 298(02), 20131(27), indefinite, Oakes (n.d.) - **TYPE**, Flint & Huntington (76), Stone (n.d.).
E. Williamsii Robins. Alpine region on the east side of Mt. Washington, very local. - *TM Purchase*, Cape Horn, E. & C.E. Faxon (96), Williams (96, 01), 4107 & 4863(04), 10595(07); *S Purchase*, Alpine Garden, Williams & B.L. Robinson (01); *Plant. Exsicc. Gray*. no. 60., Lion Head, 12527(09), Huntington Ravine, Steele (55).

E. canadensis Townsend. Pastures and roadside; local. - *Pittsburg*, roadside, Hall Stream, 38509(56), 39892(61); *Clarksville*, roadside, 34685(49), *Stewartstown*, pasture, 25937(37), railroad, 29694(42); *Gorham*, pasture at south end of Church St., 16742(16), 19825(26); *G Grant*, common around Glen House, W. Boot (1865), Allen (78), Mrs. Bartow (88), Kennedy (91), Forbes (02), M 1424(03), 10761(07), 11550(08), M 4300(08), Forbes (14), Spaulding (19), 39350(58).

Rhinanthus L. Yellow-rattle.

* R. CRISTA-GALLI L. Very locally adventive from the north. - *Pittsburg*, north of Third Lake, 26757(38), 31687(45), Pease & Harris 33544(48), Happy Corner, 39881(61).

R. borealis (Sterneck)Chabert. Turfy subalpine slopes, local. - *TM Purchase*, Carriage Road, J. Robinson (01); *S Purchase*, Lion Head, E. & C.E. Faxon (90); *C Grant*, Oakes Gulf, E. & C.E. Faxon (77, 79, 90), Worcester (79), E. Faxon & Kennedy (91), Williams (93, 96, 07), 16573(15), 33957(48), indefinitely located, Flint & Huntington (76).

Orobanchaceae (Broom-Rape Family)


E. virginiana (L.)Bart. Beech woods, common. - *Millsfield* 18191(21), *Randolph* Miss Cook (93), M 141(01), 4037(04), 19869(26); *Gorham* 16909(16); *Shelburne* Deane (83, 84), Greenough (87), Deane (16), 29274(41), 39378(58); *Carroll*, Crawford's, Miss Minns(n.d.).


E. virginiana, f. atropurpurea Pease.- *Randolph* 18087(20)-TYPE-, 20742(30)-in part-,

Orobanchae L. Broom-rape.

O. uniflora L. Damp soil, infrequent. - *Randolph* 10356=M 3305(07), 28601(41), 31294(45); *Gorham* 16718(16).

Lentibulariaceae (Bladderwort Family)

Utricularia L. Bladderwort.

U. purpurea Walt. Ponds and slow streams, occasional. - *Millsfield*, Moose Pond, Krochmal (48); *Dummer*, Corner Pond, Krochmal (48); *Stark*, Pike Pond, 34834(49); *Milan*, near Long Pond, 22803(31); *Berlin*, outlet of Head Pond, 34006(48).

U. inflata Walt., var. minor Chapm. Local. - *Dummer*, Pontook, 33103 & 33133(47); Shelburne, creek, 35819(50).

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U. geminiscapa Benj. Muddy or sphagnum shores, infrequent. - Errol, Akers Pond, 26319 (37); Cambridge, Umbagog, 18205 & 18206(21); Berlin, Dead River, 17832(20); Shelburne, Wheeler Bog, Pease & Wells 39400(58); Carroll, small pond on Cherry Mtn. Road., 34789 (49).

U. vulgaris L. Ponds and slow streams, common. - Pittsburg, Second Lake, 31660(45), 34087 (48); First Lake, Kendall, Goldsborough, & Doolittle (04); Stewartstown F & P 17000(17), Northumberland 17273(18); Stark, South Pond, 20620(30); Dummer 2765(39); Berlin, Dead River, 4703(04); Lancaster, Baker Pond, 17269(18); Jefferson, Cherry Pond, 29059(32); Randolph, Pond of Safety, 4010(04); Gorham 17405(19); Shelburne Deane (14, 27), 26859(38); Carroll, Ammonoosuc Lake, 34052(48); Whitefield Deane (96), Weed Pond, 14462(13), Burns Pond, 26026(37); Dalton, Scott Junction, 12355(09).

U. minor L. Shallow water, rather infrequent. - Stewartstown, wet meadow, 10396-M 3973 (07), Ladd Pond, 11104-M 3958(07), F & P 17036 & 17037(17), 16634 & 17044(17), 34076 (48); Lancaster, Baker Pond, 17242(18); Carroll, pool near Twin Mountain, 17562(19), Ammonoosuc Lake, 34053(48).

U. intermedia Hayne. Shallow water, frequent. - Stewartstown F & P 17045(17), Back Lake, F & P 16803(17), 2593(37), 36803(52); Columbia, Lime Pond, 10867-M 3857(07), F & P 16824(17); Milan, Mud Pond, 13754(12); Berlin, Dead River, 14477(13), 17831 & 17833(20), Head Pond, 14475(13), 35709(50); Lancaster, Clark Pond, 12379(09), 26966(38), Martin Meadow Pond, 36191(51); Shelburne, river, 26854(38); Whitefield, Burns Pond, 26024(37).

U. cornuta Michx. Pond shores, frequent. - Pittsburg, Fourth Lake, 35509(50); Stark, Christine Lake, 21009(29); Milan 22789(26), 36199(51); Success, Success Pond, 20307(28), 33816 (48); Berlin, Head Pond, 14474(13), 19064(22), 35473(50); Shelburne, Wheeler Bog, Deane (81), Dream Lake, 19212(23); Carroll, Ammonoosuc Lake, Williams (95), 20700(30); Whitefield, Weed Pond, 14410(13).

U. resupinata B.D. Greene. Pond-shores, rare. - Berlin, Head Pond, Pease & Harris 35707 (50). Possibly nos. 34797 & 34805, sterile specimens from Pike Pond in Stark, should be referred here.

PHRYMACEAE (LOPSEED FAMILY)

PHRYMA L. Lopseed.

P. Leptostachya L. Rich alluvial woods, very local. - Stratford 32271(46).

PLANTAGINACEAE (PLANTAIN FAMILY)

PLANTAGO L. Plantain.

* P. MAJOR L. Roadsides and yards, common. - Pittsburg, First Lake, M 3561(07); Milan 13815(12); Success 11762-M 4330(08); Randolph 1219(02), M 955(03), 12185(09), 23091 (32); Gorham 29711(42); Shelburne Deane (14); S Purchase, Summit House, Williams (01); Carroll/14400(13).

* P. MAJOR, f. ROSEA (Dcne.) Prah. - Millsfield, muddy roadside, 16318(14); Gorham 16476 (15).
P. major, var. Pilgeri Domin.-Stewartstown 36234(51); Colebrook, Beaver Falls, F & P 16568(17); Shelburne Deane (83).

*P. RUGELLII Dcne. Roadside and damp places, frequent.-Millsfield 18189(21); Lancaster 12313(09); Jefferson 16732(17); Randolph 19922(26)-leafy-sca ped-, 23084(32); Gorham 16429(15); Shelburne 35903(50); Carroll 31439(45).

*P. LANCEOLATA L. Ribgrass. Pastures and roadsides, frequent.-Pittsburg, Indian Stream, 10994=M 3744(07), Hall Stream, 38512(56); Stewartstown 37079(53); W Location 33337(47); Errol 16312(14); Clarksville 34682(49), 36066(51); Stratford 13607(12); Randolph 16862(16), 30597(44), 38928(57); Shelburne Mrs. McMillan (12), Deane (18).


*P. ALTISSIMA L. Similar localities, rare.-Columbia 38239(55).

*P. ARISTATA Michx. Rarely adventive.-Randolph, lawn-weed, 16911(17); Carroll, Cherry Mt. Road, 11445(08).

*P. INDICA L. Rare waif.-Berlin, railroad track, 30296(43).

RUBIACEAE (MADDER FAMILY)

GALIUM L. Bedstraw.

G. triflorum Michx. Moist woods, common.-Pittsburg, Second Lake, M 3525(07), First Lake, 10126=M 3604(07); Dummer 16548(17), 36378(51); Randolph M 1050(03), 11189(08), 21085(29); Shelburne C.E. Faxon (n.d.), Deane (83, 09, 15); Whitefield Deane (95); Carroll 39257(58).


G. triflorum, var. asprelliforme Fern.-Gorham 29612(42).

G. kamtschaticum Steller. Cold damp woods, occasional.-Pittsburg, Second Lake, 10249=M 3458(07); Stewartstown, Little Diamond Pond, 12628(10); Randolph, Ice Gulch, 1231(02); B Purchase, Carter Notch, Forbes (02), 32701(47); TM Purchase, Great Gulf, Fuller (94); S Purchase, Tuckerman Ravine, Churchill (95), Williams (95), Hodgdon et al. 6352(49), Giant's Stairs, 14043(12); P Grant 36532(52); C Grant M 1077(03), Crawford Path, Kennedy (91); B Grant, Mt. Clinton, E. & C.E. Faxon (79), Fuller (94), Williams (95); Carroll, Crawford's, Miss Minns (85, 88).

G. lanceolatum Torr. Rocky woods, local.-Lancaster, Mt. Tug, 16735(16), Mt. Prospect, 14216(13), 30208(43); Dalton, Dalton Mtn., 11584=M 4416(08), 24166(34); Shelburne, base of Crag, Deane (16).

*G. BOREALE L. Meadows, occasional.-Northumberland 34572(49); Lancaster 32783(47); Jefferson 37522(54); Randolph 21151(29); Gorham 33521(48); Shelburne 35818(50); Dalton 17844(20).
*G. BOREALE, var. INTERMEDIATE DC. Equally frequent.- Success 19760(26); Lancaster 28122(40); Jefferson 18213(21); Randolph M 4042(07), 12741(10), 17853(20); Shelburne 36664(52); Whitefield 37840(55), railroad, 16064(14), 30606(44); Dalton 35848(50).

*G. BOREALE, var. HYSSOPIFOLIUM (Hoffm.) DC. Occasional in mowings.- Jefferson 39875(61).

*G. VERUM L. Escape.- Northumberland, Lost Nation, 34554(49); Dalton 37715(54).

*G. MOLLUCO L. Recently rapidly spreading in meadows and by roadides.- Pittsburg, near Mud Pond, 33173(47); Clarksville 33621(48); Pease & Bean 34591(49), 39882(61); Stewartstown, railroad, 29695(42), 33625(48); Northumberland 29043(41), 34535(49); Lancaster 39840(61); Jefferson 23941(33), 33749(48), 35358(50), 39866(61); Randolph 38365(56), 38918(57); Whitefield 30134(43); Shelburne 36545(52).

G. palustre L. Wet places, frequent.- Pittsburg, Third Lake, 31686(45); Clarksville 34620(49); Stewartstown 36240(51); Colebrook 36073(51); Stark 38164(55); Dummer 24104(34), 36124(51); Northumberland 16060(14); Lancaster 28123(40); Jefferson 16710(16), 30595(44), 33489(48); Randolph M 1135(03), 16709(16); Gorham 12763(10); Whitefield 14235(15), 18077(21), 35496(50); Dalton 34417(49).

G. trifidum L. Cold bogs, occasional.- Clarksville 34590(49); DC Grant 33893(48); Errol 32455(46); Stewartstown, cedar-bog, F & P 16795(17), Ladd Pond, F & P 16774(17); Columbia, Fish Pond, 16620 & 16737(17), 37607(54); Dummer F & P 16548(17); Northumberland 38101(55); Lancaster 28221(40); Jefferson 37847(55), Cherry Pond, 11462(08) in part., 29255(41), Pease, Krochmal, & Richards 33988(48), 34902(49), Mud Pond, 35740(50); Dalton 19402(24); Whitefield, Hazen Pond, 38064(55).

G. tinctorum L. Damp places, common.- Pittsburg, First Lake, 10200(07), M 3584(07), Indian Stream, 11016(07), M 3776(07); Stewartstown M 3672(07); Colebrook F & P 16929(17); DC Grant 16257(14); Odell 34822(49); Stark 39237(58); Dummer 34819(49); Milan 13808(12); Success 33782(48); Berlin 17076(17); Lancaster 12148(09), 34784 & 34786(49), 34900 & 34901(49), 35657(50), 38268(56); Jefferson, Cherry Pond, 11462(08) in part., 16878(16), Mud Pond, 17328(18), 16519(17); Berlin 38954(57); Randolph Williams (96), 10765(07), M 3335(07), 12226(09); Shelburne Deane (81, 82, 83, 15); M Location 14303(13); B Purchase M 5060(13); Whitefield Deane (96, 97), 34788A(49); Carroll 12694(10), Crawford's, Williams (95), 33287 & 33294(47), 34055(48); Dalton 24168(34).

G. tinctorum, var. subtilorum (Wieg.) Fern.- Columbia, Lime Pond, F & P 16817(17); Randolph 12010(09).

G. brevipes Fern. & Wieg. Muddy shores, local.- Dummer, Pontook reservoir, 36950(52).

G. asperllum Michx. Low ground, common.- Pittsburg, First Lake, Mrs. Stevens (95); DC Grant 16187(14); Stratford 34037(48), Krochnal 1584(48); Stark 34606(49); Milan 13705(12); Jefferson M 5008(13), 16851(16); Randolph M 245(02), 11624(08), 28209(31), 39285(58); Shelburne Deane (81, 83), Briggs (83); Carroll, Breton Woods, Hunnewell (12).
MITCHELLA L.  Partridge-berry.

* M. repens* L. Woods, common. - *Colebrook* 10368=M 3934(07); *Stratford* 13565(12); *Milan* 13825(12); *Lancaster* 16733(16); *Randolph* Williams (96), 6092(04), M 4452(08), M 4526(09); *Carroll* 38922(57).

CEPHALANTHUS L. Buttonbush.

* C. occidentalis* L. Low ground, scarce. - *Northumberland* 12132(09); *Shelburne*, hen-yard, Deane (14, 25). Cf. Deane in *Rhodora*, 4(1902), 243, 244.

HOUSTONIA L. Bluets. Innocence.

* H. caerulea* L. Grassy places, infrequent northward, elsewhere common. - *DC Grant*, Diamond Gorge, 12607(10), 36776(52); *Stratford* 13593(12); *Stark* 27270(39), 32820(47); *Jefferson* 38370(56); *Randolph* M 989(03), 12021(09); *Shelburne* Deane (82, 14, 15, 16), 25613(36); *M Location* 14329(13), 17312(18); *B Purchase* 35543(50), 38298(56).

* H. caerulea*, var. *Faxonorum* Pease & Moore. Moist borders of streams and gravelly places in the subalpine region. - *Shelburne*, Dryad Fall, 25976(37)- perhaps best placed here.- *TM Purchase*, Mt. J.Q. Adams, 9944(06), head of Great Gulf, 11198(08), 12880(10); *S Purchase*, Summit House, Deane (97), Alpine Garden, 10558(07), Huntington Ravine, F & P 16752(17), Tuckerman Ravine, M 291(02), M 4047(07)- *TYPE of this variety*, 10732(07), 11502(08), 12048= M 4580(09), M 5084(13), 19795(26), 22819(31), Lion Head, Hodgdon & Wade 6350(49), Boott Spur, Williams (93), Gulf of Slides, 23773(33), Bigelow Lawn, Williams (95, 01), Lakes of the Clouds, Harris (41)- *Plant. Exsic. Gray*. No. 1185-; *C Grant*, Oakes Gulf, Kennedy (90), Williams (98), M 4553 & 4574(09), 12046(09), 33936(48).

CAPRIFOLIACEAE (HONEYSUCKLE FAMILY)


* D. Lonicera* Mill. Dry woods and clearings, very common. - *Pittsburg*, Third Lake, 10305(07), First Lake, 10965=M 3636(07); *Stewartstown* 32774(47); *Columbia* 27840(40); *Stark* 36514(52); *Jefferson* W. Boott (73), 16531(17); *Randolph* Williams (97), M 1001(03), Mrs. Moore (07), 11240(08); *Gorham* Williams (97), M 1048(03); *Shelburne* Deane (82, 83, 02), 37207(53); *M Location* 14353(13); *TM Purchase*, Carriage Road, Kennedy (91); *S Purchase*, fan, Huntington Ravine, 4000 feet, F & P 16755(17), 19076(22); Mt. Washington, indefinite, Hervey (n.d.); *Carroll* 33151(47); *Whitefield* Deane (97), 39115(58).

LONICERA L. Honeysuckle.

* L. villosa* (Michx.) R. & S. Occasional. - *Northumberland* 35917(51); *Jefferson* 35110(50); *S Purchase*, Tuckerman Ravine, 1253(01); *Carroll*, bog, Williams (95), 12713(10), 32780(47).

* L. villosa*, var. *Solonis* (Eat.) Fern. Moist places, frequent. - *Pittsburg*, East Inlet, Steele (53); *Stewartstown* F & P 16575(17); *Errol* 12611(10), 32842(47); *Cambridge* 12650(10), 16534(15); *Success* 10640(07), 16555(17); *Stark* 33396(48); *Lancaster* 33497(48); *Jefferson*, Cherry Pond, Krochmal 1559(48); *S Purchase*, Summit House, Hoar (1858), Lakes of the Clouds,
W. Boott (1855), Alpine Garden, Steele (52); C Grant, Oakes Gulf, Steele (52); Whitefield Deane (96), 14195(13), 28543(41); Dalton 19048(22), 26734(38); Carroll 37431(54).

_L. villosa_, var. calvoscens (Fern. & Wieg.) Fern. Bogs, frequent.-Stewartstown 12718(10), 28117(40); Milan 13781(12); Lancaster, Martin Meadow Pond, 28119(40); Randolph M 4203(08); S Purchase, west side of Mt. Washington, 11183(08), Alpine Garden, Greenman (98), Fuller (00), Tuckerman Ravine, M 257(02), 10729(07), Boot Spur, Fuller (94), Lakes of the Clouds, E. & C.E. Faxon (86), Eggleston (98); _C Grant, Oakes Gulf, Williams (93), Kennedy (95), Greenman (98), 33960(48), Mt. Monroe, 11214(08).

_L. villosa_, var. _tonsa_ Fern. Occasional.-Pittsburg, Second Lake, 10176(07), First Lake, 10099(07); Stewartstown 32649(47); Colebrook F & P 16563(17); Stratford 13470(12); Jefferson 11263(08); Randolph 11246(08); Whitefield Deane (96); S Purchase, Alpine Garden, Steele (53); _C Grant, Oakes Gulf, Steele (53).

*L. XYLOSTEUM* L. Occasional escape.-Northumberland, riverbank, 35617(50).

*L. BELLA* Zabel. Rare escape.-Stewartstown, rocky island in Connecticut River, 35998(51); Berlin 37976(55).

*L. TARTARICA* L. Tartarian Honeysuckle. Escaped and spreading.-Whitefield, railroad, 16086(14), 29470(42); Dalton, railroad, 29476(42).

_L. canadensis_ Bartr. Woods, common.-Pittsburg, Third Lake, M 3482(07); Stewartstown 10324=M 3390(07); _DC Grant_ 12615(14), 38683(57); Colebrook 10377=M 3898(07); Columbia 27784 & 27791(40); Stratford 13447(12); Stark 29546(42); Dummer 38314(56); Jefferson 35233(50); Randolph Williams (96), M 1438(03), M 3304(07), 10697(07), 35939(51); Gorham 29970(43); Shelburne Deane (81, 82, 16); B Purchase, Carter Notch, Spaulding (19); Whitefield Deane (95); Carroll, Fabyans, C.E. Faxon (80); LB Grant 38672(57).

SYMPHORICARPOS Duham. Snowberry.

*S. ALBUS* (L.) Blake, var. _LAEVIGATUS_ (Fern.) Blake. Persistent and spreading at old house-sites.-Berlin 16264(14), 38195(55); Randolph 5690(04), M 4460(08); _M Location_ 10683(07), 22598(31); Whitefield Deane (97), 35493(50), 36403(51).

LINNAEA Gronov. Twinflower.

_L. borealis_ L., var. _americana_ (Forbes) Rehd. Moist woods, common.-Pittsburg, First Lake, Mrs. Stevens (95), 10122=M 3611(07); Stewartstown 10261=M 3401(07); Colebrook Miss Bell (89), Hodgdon 6356(49); Columbia M 3840(07); Success 16553(17), Stark 29537(42); Lancaster Deane (96); Berlin 36115(51); Randolph Williams (96), 1252(99), M 977(03), M 3191(06), M 3353(07); Harris (32)-Plant. Exstcc. Gray. no. 589, Shelburne Deane (81, 82, 83, 84), C.E. Faxon (n.d.), _M Location_ 14292(13); LB Grant 1251(97); TM Purchase, Cape Horn, Williams (97), B.L. Robinson (01); S Purchase Williams (97), Boot Spur, M 273(02), Hodgdon & Harrington 6357(49); _C Grant, Oakes Gulf, Williams (93); B Grant, Mt. Clinton, Fuller (94), Williams (95); Whitefield Deane (96), M 4419(08); Carroll Miss Prince (92), Crawford's, Miss Minns (n.d.), 32729(47).
VIBURNUM L.

V. alnifolium Marsh. Hobblebush. Moist woods, common. -Pittsburg. First Lake, 10956=M 3612(07); Stratford 13479(12); Jefferson 29704(42), 35112(50); Randolph Williams (95), M 1428 & 1451(03), 5380(04), Mrs. Moore (05); Shelburne Deane (82, 83), Philbrook (83); B Grant, Mt. Clinton, Williams (95); Whitefield Deane (95).

V. cassinoides L. Wild Raisin. Swamps, common. -Pittsburg. First Lake, 10959=M 3618(07); DC Grant 16174(14); Stark 35363(50); Northumberland 13578(12), 37816(55); Dummer 33518(48); Jefferson 16492(17); Randolph M 4295(08), 12354(09), 25297(35); Gorham 16107(14); Shelburne Deane (82, 84, 15, 16); TM Purchase, Lowe’s Bald Spot, 17500(19); B Purchase, North Baldface Mtn., 16031(14); Carroll 31962(46), 37845(55), Crawford’s, Greenman (98); Whitefield M 4394(08), 16700(16); Dalton 29467(43).

V. Lentago L. Rare. -Shelburne, border of Leighton woods, Deane (19, 20); Northumberland Schmid (51).

V. recognitum Fern. Wet thickets, occasional. -Cambridge, Umbagog, 16540(15), 32840 (47); Stark 36575(52); Milan 13786(12); Berin 16508(15); Randolph 10759(07), 30179(43), 39107(58); Shelburne, Knobble, Deane (82), Moose Pond, 23121(32).

V. acerifolium L. Dockackie. Rocky woods, southward. -Lancaster, Mt. Prospect, 14213 (13); Gorham, riverbank, 16079(14), 16904(16); Shelburne Deane (82, 83), 11160=M 4148(08), 36731(52), 37530(54); Dalton 11537=M 4427(08), 24155(34).

V. edule (Michx.) Raf. Cold woods, occasional. -Stark, Devil’s Hopyard, 16758(16); Randolph, Ice Gulch, 16651(17); LB Grant, Valleyway, M 3361(07); TM Purchase, Great Gulf, 1266(02); S Purchase, Tuckerman Ravine, E. & C.E. Faxon (78, 85, 86, 87), Lamb (84), Churchill (89, 95), Williams (95), Fuller (00), 1265(01), M 1076(03), 11508(08), Spaulding (19), Gulf of Slides, 23772(33); C Grant, Oakes Gulf, C.E. Faxon (78), Williams (95, 98), Greenman (98), B.L. Robinson (01), 11213(08), 12042(09); B Purchase, Carter Dome, abundant, 12902(10), Carter Notch, 32715(47).

V. trilobum Marsh. Highbush Cranberry. Low grounds and hedgerows, frequent at lower levels. -Pittsburg. First Lake, 10957=M 3619(07); Hall Stream, 36252(51); DC Grant 16189 (14); Clarksville 38238(55); Stewartstown 36788(52), 37056(53); Northumberland 32674(47); Dummer 33517(48); Milan 13807(12); Berlin 30911(44); Lancaster Deane (96); Jefferson Fuller (95), 3233(01), M 3406(07), 32740(47); Randolph Watson (95), 1262(01), 10225(07); Gorham Williams (95), 16075(14); Shelburne Deane (82, 83), 13118=M 4139(08), Deane (15), Munter (19); B Purchase, Wild River, 36044 & 36164(51); Carroll 14441(13), 31452 (45); Dalton 11419=M 4367(08), 29466(42).

SAMBUCCUS L. Elder.

S. canadensis L. Damp or rich soil, frequent. -DC Grant 16160(14); Lancaster 39874(61); Randolph Williams (97), M 244(02), M 4222(08); 12081(09); Gorham M 4223(08); Shelburne Deane (82, 84); S Purchase, Summit of Mt. Washington, Williams (01); Carroll 39175(58).

S. pubens Michx. Woods and clearings, frequent to common. -Pittsburg. Second Lake, 10343= M 3422(07); DC Grant 16148(14); Millsfield 32680(47); Stratford 13490(12); Northumberland
S. pubens, f. calva Fern. Occasional.- Randolph Mrs. Moore (05), 11148(08), 16445(17).

VALERIANACEAE (VALERIAN FAMILY)

VALERIANA L. Valerian.

* V. OFFICINALIS L. Garden escape, especially in the region of Jefferson.- Jefferson 31767 (45); Randolph 16496(17); Carroll, railroad, 34062(48).

DIPSACACEAE (TEASEL FAMILY)

KNAUTIA L.

* K. ARVENSIS (L.) Duby. Established in one station.- Stark, field near Dummer line, 28752 (41), 34510(49), 37455(54), 39160(58). In 1958 it had spread to several hundred plants.

CUCURBITACEAE (GOURD FAMILY)

CUCURBITA L. Gourd.

* C. PEPO L. Pumpkin. Waste ground.- Stratford, riverbank, 23943(33); Jefferson, dump, 11091(07); Shelburne, riverbank, Deane (27).

ECHINOCYSTIS T. & G.

* E. LOBATA (Michx.) T. & G. California Cucumber. Dumps and riverbanks, frequent.- Stewartstown, hotel yard, 10309(07); Colebrook 33776(48); Stratford, riverbank, 23926(33); Lancaster, dump, 12337(09); Berlin 5701(04); Jefferson 34804(49), 35655(50); Randolph, riverbank, 12514(09); Gorham, railroad, 11094(07), M 4283 & 4295(08); Dalton, riverbank, 22620(31), 29160(41), 35702(50); Whitefield 11437(08).

CAMPANULACEAE (BLUEBELL FAMILY)

SPECULARIA Fabricius. Venus's Looking-glass.

* S. PERFOLIATA (L.) A. DC. Waif.- Randolph, meadow, 33764(48).

CAMPANULA L. Bellflower.

* C. PATULA L. Waif.- Randolph, dump, 32281(46).

* C. RAPUNCULOIDES L. Occasional garden escape.- Stark 12860(10); Randolph Williams (97), M 1373(03), 10771(07), M 4594(09); Whitefield 36402(51); Carroll 31438(45), 34828 (49).

* C. LACTIFLORA Bieber. Escape.- Randolph 38233(55), pointed out by F.W. Kilbourne.
* C. PUNCTATA Lam. escape. - Shelburne Deane (23, 24, 25).

C. rotundifolia L. Harbell. Cliffs, local; heads of alpine ravines, frequent. - DC Grant, Diamond Gorge, 10616(07); Stark, Devil's Slide, 17449(19); Berlin, Jasper Cave, 14509(13); Jefferson, railroad, 30795(44); Randolph, Ice Gulch, 16649(17); Shelburne Deane (83, 21); TM Purchase, Great Gulf, W. Boott (1855), E. & C.E. Faxon (79), 12881(10), Carriage Road, Deane (84); Purchase, Alpine Garden, E. & C.E. Faxon (85), Williams (93, 95), 10550(07), 12513(09), Huntington Ravine, Sprague (14), Tuckerman Ravine, W. Boott (1855), Miss Sanger (86), Lakes of the Clouds, Churchhill (90); C Grant, Oakes Gulf, Tuckerman n.d., E. & C.E. Faxon (77, 82, 85), Allen (80), Mt. Monroe, Williams (95, 96); Mt. Washington, indefinite, F. Boott (1816), Gray (1842), W. Boott (1853), Mann (1862), Rich (80); B Grant, Mt. Webster, 11778(08); H Grant, Mt. Crawford, 11733(08); Carroll, Crawford’s, railroad, Miss Minns (85), Williams (95).


C. aparinoides Pursh. Swales, frequent. - Stewartstown 36216(51), 36772(52); Milan 36198(51), 37587(54); Stark 23776(33), 34925(49), 35521(50); Lancaster 12787(10); Jefferson 31349(45), 32890(47), 37315(53), 39864(61); Randolph 9901(06), M 4584(09), 19823(26), 21185(29), 39331(58); Gorham 16544(15), 30613(44); Shelburne Deane (83, 14); Carroll 16815(16).

C. uliginosa Rydb. Rare. - Shelburne, Philbrook Farm, Deane (21); Jefferson 39718(60).

* C. DIVARICATA Michx. A rare railroad adventive. One large clump only known. - Randolph 18093(20), Deane (25), 21162(29), 38626(56), still persisting in 1961(39810).

LOBELIA L.

* L. SPICATA Lam. Occasionally adventive in dry pastures. - Pittsburg, Hall Stream, 37200(53); Colebrook 10378(07); Stark 23809(33), 34602(49); Milan 13802(12); Randolph Williams (93, 97), 1277(02), Mrs. Moore (07); Shelburne Mrs. Drown (16), Deane (26), 36209(51), 36665(52); Whitefield Deane (96), 37307(53).

* L. SPICATA, var. HIRTELLA Gray. - Milan 27412(39); Jefferson 12023(09); Randolph 18076(21); Gorham 16706(16); Dalton 12150(09) - in part.


L. inflata L. Fields and pastures, common. - Pittsburg, Indian Stream, 11022(07); DC Grant 16145(14); Colebrook 29752(42); Stark 32897(47), 35525(50); Milan 13814(12); Randolph 1280(02), M 1377(03), M 1930(04), Mrs. Moore (07), 21098(29), 39168(58); Gorham 16925(16); Shelburne Deane (82, 83, 15); M Location 14335(13); P Grant Forbes 3509(00); Carroll Williams (95), 31459(45), 33817(48); Dalton 29777(42); Whitefield Deane (97), M 4412(08).

L. Kalmii L. Bogs and seepy slopes, locally frequent in the calcareous area. - Stewartstown, Ladd Pond, 10389=M 3955(07), F & P 17005(17); Colebrook 13985 & 13988(12), Hodgdon 6363(49), 39373(58); Dalton W. Boott (1855).

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L. Dortmanna L. Water-Lobelia. Shallow ponds, frequent.-Pittsburg, Third Lake, 31691 (45), Round Pond, Kendall, Goldsborough, & Doolittle (04); Success, Success Pond, 33828(48); Lancaster, Martin Meadow Pond, 35492(50); Carroll, Saco Lake, 11738(08), Ammmonoosuc Lake, anon.(n.d.), 34064(48); Dalton, Forest Lake, 17511(19); Whitefield, Burns Pond, 14560 (13).

COMPOSITAE (COMPOSITE FAMILY)

EUPATORIUM L. Thoroughwort.

E. maculatum L. Joe-Pye-weed. Low ground, common.-Pittsburg, Second Lake, 31670(45), First Lake, Mrs. Stevens (95), M 3638(07); Stewartstown 36250(51); Columbia 37253(53); DC Grant 16194(14); Dixville Hodgdon & Clapp 6434(49); Cambridge 18151(21); Stark 35560(50); Jefferson 30283(43), 35583(50); Randolph 11697(08), 17920(20), 21196(29); Gorham Dean (25); Shelburne Deane (14, 15), 39889(61); Whitefield Deane (96).

E. maculatum, f. Faxoni Fern.-Carroll, Crawford's, C.E. Faxon (84).-TYPE.

E. maculatum, var. foliosum (Fern.) Wieg. A less frequent shade form.-Pittsburg, Indian Stream, F & P 17068(17); Errol 32504(46); Stratford 32284(46); Jefferson 16836 & 16837(16); Randolph, wet slides in the Ice Gulch, 11498(08).

E. perfoliatum L. Boneset. Wet pastures, frequent.-Columbia 29751(42); Northumberland 39559(59); Dummer 33117(47); Jefferson 14458(13), 16884(16), 31003(44); Randolph Williams (96), 1394(02), M 4597(09), 14490(13); Gorham 16884(16); Shelburne Deane (19, 22).

E. rugosum Houtt. White Snakeroot. Rich damp woods, locally abundant, especially northward.-Pittsburg, Deer Mtn., 31678(45), Third Lake, 32524(46), Second Lake, 19117(22), Back Lake, F & P 16983(17); Stewartstown 14020(12); DC Grant 32462(46); Errol 32505(46); Millsfield 18192(21); Dixville E. Faxon (72); Odell 35772(50); Stratford 33281(47); Kilkenny, Mt. Pliny, 11011(08); Jefferson 23843(33); Berlin 35813(50); Randolph, Ice Gulch, Churchill (89), 1397(02); Shelburne Miss Bracket (16); P Grant, Glen Boulder Trail, Floyd, (03), 13920 (12); S Purchase, Giant's Stairs, 14045(12); H Grant, Hart Ledge, 16637(15); Carroll 16576 (15), Crawford's, Williams (95); C Purchase 38882(57).

GRINDELIA Willd. Tarweed.

*S. SQUARROSA (Pursh) Dunal. Rare waif.-Lancaster, beside grain-shed, 12820(10).

SOLIDAGO L. Goldenrod.

S. caesia L. Rocky woods, southward.-Shelburne Deane (14); Lancaster 31619 & 31681(45); Dalton 14566-M 5007(13).

S. caesia, f. axillaris (Pursh) House. Rocky woods, local.-Lancaster, Mt. Prospect, 14514 (13), Mt. Orne, 14522(13), 31628(45); Shelburne Deane (14, 15, 16); H Grant, Hart Ledge, 16615(15).
S. flexicaulis L. Moist woods, frequent.-Pittsburg, Deer Mtn., 31677(45), Third Lake, 32531 (46); Stewartstown 13929(12); Colebrook 13987 & 13997(12); Strafford F & P 17027(17), 17670(19), 33280(47); Stark Krochmal 1508(48); Millsfield 18202(21); Success 10649(07); Lancaster 14519(13), 36387(51); Jefferson 16859(16); Randolph Churchill (89), H.J. Williams (97), M 336(02), 9923(06), M 4453(08), 39314(58); Gorham 16927(16), 20118(27); Shelburne Deane (83), C.E. Faxon(n.d.), Deane (13, 14, 15), 38890(57); M Location Harris 1271 (33); Whitefield 11575(08).

S. squarrosa Muhl. Frequent on gravelly banks in the larger river-valleys, and on open ledges on the lower mountains.-Stewartstown 14014(12), DC Grant 10608(07), 16201(14); Errol 23073(32), 32506(46); Strafford 17701(19), 33270(47); Stark 28343(40), 29166(41); Northumberland 36348(51); Success 11767=M 4311(08); Berlin 5418(04), M 4511(08); Gorham Morong (74), Deane (84), 11440(08), 20125(27), 21140(29); Shelburne E. Faxon (72), Deane (84, 16); M Location 10535(07), 17222(18); B Purchase, Wild River, 16599(15); S Purchase, Giant’s Stairs, 14026(12); C Grant 23754(33); B Grant, Mt. Webster, 11748(08); H Grant, Mt. Crawford, 11728(08); C Purchase 11525(08); Whitefield 27705(39), 38549(56); Dalton 14587=M 4896(13), 29801(42).


S. macrophylla Pursh. Moist woods, especially in primeval forest, common.-Pittsburg, Third Lake, 33190(47); Second Lake, 31621(45); Stewartstown F & P 16615(17); Colebrook Hodgdon 6357 & 6368(49); Columbia 37592(54); Dixville 18146(21); Stark 36831(52); Milan 13927 (12); Berlin 36269(47); Jefferson W. Boot (74), 29731(42); Randolph 25420(03), 9908(06), 19835(26); Shelburne Deane (17), True (31); B Purchase, Carter Notch, M 5067(13), Wild River, 35556(50); G Grant Manning (81), Deane (82); LB Grant F & P 15573(17); TM Purchase, Great Gulf, C.E. Faxon (82); S Purchase, Alpine Garden, C.E. Faxon (79), Boot Spur, M 274(02), Tuckerman Ravine, Fuller (83), Merrill (96); Carroll 32361(46), 34802(49); White Mountain, indefinite, Flint & Huntington (76), Pringle (77), E. Faxon (82), Blankinship (94), Floyd & Forbes (07).

S. macrophylla, var. thyroidea (Mey.) Fern. Moist alpine localities frequent; often in scrub.-LB Grant, Valleyway, 12333(09), Nowell Peak, 12308(09); TM Purchase, Carriage Road, Williams (96), 12837(10), Miss Gauthier (15); S Purchase, Summit House, E. Faxon (87), Churchill (90), Miss Gauthier (15), Alpine Garden, Oakes(n.d.), Fuller (83), Williams (93, 95, 96, 01), B.L. Robinson (01), 10457 & 10551(07), 12512(09), A.K. & W.H. Harrison (36), Tuckerman Ravine, Hoar (1858), Hodgdon & Wade 6370(49); Mt. Washington, indefinite, Oakes(n.d.), Flint & Huntington (76).

S. macrophylla x rugosa.-Carroll, near Twin Mtn., F.M. Graves (29).


S. bicolor L. Silverrod. Dry soil, common.-DC Grant, Diamond Peaks, 10619(07); Stark 23811(33); Milan 10539(07), 13726(12), 17315(18), 22795(31); Northumberland 17252(18), 36340(51); Lancaster 12273(09), 14529(13); Berlin 5424(04), M 4507(08), 19879(26); Jefferson 30997(44); Randolph 10580(07); Gorham 11458(08), M 4288(08), 20116(27), 31624 (45); Shelburne Deane (83), Blankinship (94), Deane (13, 14), B Purchase 36883(52); S Purchase, Mt. Resolution to Mt. Crawford, 14037(12), Carroll 16582(15), 33139(47); Dalton 35747(50).

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S. bicolor x caesia.-Shelburne Deane (15).

S. bicolor x hispida.-Gorham F & P 17074 (17).

S. hispida Mühl. Dry open soil, locally common.-Milan 38566 (56); Berlin 5425 (04), M 4512 (08), 35074 (49), 38564 (56); Gorham Deane (85), 10705 (07), M 4289 (08), F & P 17073 (17), 20115 (27), 39267 (58); Shelburne E. Faxon (72), Deane (14, 16), 29265 (41), 38885 (57); Dalton 14569 (13).

S. puberula Nutt. Infrequent.-Pittsburg, dam at Second Lake, 37363 (53); Jefferson, dry woods near Waumbeck Junction, 16818 (16), 33123 (47); Randolph, railroad, recently adventive and spreading, 27545 (39); Shelburne Deane (14), 38896 (57).

S. Cutleri Fern. Alpine "lawns", common; rarely at lower levels.-Randolph, railroad at 1200 feet, 20096 (27); Shelburne; Shelburne Moriah Mtn., Misses Christensen & Gauthier (17); LB Grant, Durand Ridge, Churchill (89); TM Purchase, Madison Huts, 1473 (00), 12339 (09), Mt. Adams, Farlow (82), Fuller (86), Blankinship (94), Great Gulf, E. & C.E. Faxon (82), Cow Pasture, Williams (97), Carriage Road, Deane (82), Williams (96, 97), Eggleston (01), 4098 & 5404 (04), Forbes (14); S Purchase, Alpine Garden, Fuller (83), E. & C.E. Faxon (87, 93, 94), Williams (93), 1476-M 275 (02), A.K. & W.H. Harrison (36), Tuckerman Ravine, Hoar (1858), 19802 (26); Mt. Washington, indefinite, F. Boott (1816), Oakes (n.d.), Gray (1842), Mann (1862), C.E. Faxon (77), Pringle (77, 78), Allen (78), Miss Prince (90), Williams (93), Mrs. Terry (98), Eggleston (98); C Grant, Crawford Path, Williams (93), Oakes Gulf, E. & C.E. Faxon (93), Mt. Monroe, E. & C.E. Faxon (85), Mt. Pleasant, Fuller (94); P Grant, roadside near Thompson Falls, Grigg (14).

S. Cutleri x Randii.-TM Purchase, near Half-way House, Forbes (14).

S. Randii (Porter) Britt. Open ledges and gravelly soil, especially on the lower mountains, frequent.-Stark, Devil's Slide, 20335 (28), railroad, 29949 (42), 34170 (48); Kilkenny, Green Ledge, 13958 (12); Berlin, riverbank, Deane (83); Randolph, railroad, 17851 (20); Goreham 16329 (14), Mt. Hayes, 12862 (10), Pine Mtn., 16310 (14), 20117 (27), 29636 (42); Shelburne, Crag, Miss Gauthier (15), Mine Brook, 11774 (08), Baldcap, Deane (84), C.E. Faxon (86), 29943 (42), 35835 (50); B Purchase, Wild River, 36907 (52), Eagle Crag, 20126 (27); P Grant, Crystal Cascade, 10793 & 10817 (07); TM Purchase, Carriage Road, 10571 (07), Miss Gauthier (15); S Purchase, Giant's Stairs, 14048 (12); B Grant, Mt. Webster, Rich (80), 11741 & 11742 & 11746 & 11747 (08); C Grant, Dry River, 23755 (33); H Grant, Mt. Crawford, 11709 & 11753 (08), Mt. Hope, 16474 (15), Hart Ledge, 16628 (15); Carroll, Crawford's 11739 (08), 33295 (47), Fabyans, 37668 (54).


S. juncea Ait. Dry banks, common.-Northumberland 12121 (09), 22997 (32); Lancaster 12110 & 12287 (09); Berlin 5700 (04); Shelburne Deane (83, 13, 17), 33030 (47); B Purchase, Wild River, 36139 (51); Randolph 39524 (59).

S. juncea, var. scabrella (T. & G.) Fern.-Lancaster, Mt. Tug, 16739 (16).

S. arguta Ait. Open woods, occasional. - Northumberland 37574 (54); Lancaster 14554 (13); Jefferson 5419 & 5667 (04), 10633 (07), 30995 (44), 37227 (53); Randolph 13921 (12); Gorham 14067 (12), 29723 (42), 39266 (58); Shelburne Deane (84, 14, 16), 31617 (45); Carroll 16580 (15), 34072 (48); S Purchase, Mt. Resolution, 14050 (12); H Grant, Hart Ledge, 16614 (15).

S. arguta x rugosa (?). - Dalton, near Whitefield line, 29784 (42).

S. nemoralis Ait. Dry open soil, very common southward. - Colebrook 29757 (42), Northumberland 17267 (18); Milan 17319 (18); Lancaster 29239 (41); Jefferson 16842 (16); Randolph 1477 (02), M 338 (02), 19877 (26), 39346 (58); M Location Harris 1270 (35); Gorham 12890 (10), 16605 (15), 20122 (27); Shelburne Deane (13, 14); Dalton 35744 (50).

S. rugosa Ait. Pastures and borders of woods, very common. - Pittsburg, Second Lake, 31667 (45), First Lake, Mrs. Stevens (95), F & P 16996 (17); Colebrook 13995 (12); Columbia 39627 (59); Stratford 17671 (19); Northumberland 17263 (18); Milan 17318 (18); Jefferson 16856 (16), 30998 (44); Randolph M 337 (02), 11483 & 11661 (08), 17850 (26); Gorham 16920 (16), 20119 (27); Shelburne Deane (84, 13); M Location Harris 1278 (33); B Purchase M 5065 (13), 36882 (52); Whitefield 11563-M 4424 (08); Dalton M 4375 (08), 35741 (50).

S. rugosa, var. villosa (Pursh) Fern. Damp woods, frequent. - Stewartstown F & P 17003 (17); W Location F & P 16992 (17); Millsfield F & P 16994 (17), 34844 (49); Dummer 28344 (40); Stark 20339 (29), 36358 (51); Berlin 36268 (51); Jefferson 17340 (18), 29710 (42); Randolph H.J. Williams (97), 17088 (17), 17232 & 17233 & 17235 (18); Gorham 30332 (43); B Purchase, Carter Notch, 20339 (28); P Grant 17083 (17), 19850 (26); S Purchase, Carriage Road, 16305 (14); Carroll, Crawford's, Spaulding (17).

S. rugosa, var. aspera (Ait.) Fern. - Stratford, gravelly bank, 30966 (44).

S. canadensis L. Pastures and thickets, very common. - Pittsburg, Second Lake, 31696 (45), First Lake, Mrs. Stevens (95); DC Grant 16185 (14); Colebrook 13996 (12); Northumberland 17253 (18); Milan 17317 (18); Success 27479 (39); Berlin Deane (83); Jefferson 11552 (08), 16855 (16); Randolph Williams (97), 1464 (02), M 392 (02), 11552 & 11659 & 11660 (08); Gorham 16929 (16), 20121 (27), 29719 (42); Shelburne Deane (83, 14, 15); M Location Deane (27); Whitefield Deane (97), M 4398 (08); Dalton 35742 (50).

S. canadensis x Randii. - S Purchase, Carriage Road near 2 Mile sign, Churchill (89).

S. altissima L. Local. - Dalton, site of B. & M. station, 39823 (60), cope near Whitefield line, 29783 (42), 35864 (50); Whitefield, Hazen's Junction, 37301 (53); Randolph 40025 (62).

S. altissima x canadensis. - Randolph, railroad, 29823 (42).

S. gigantea Ait. Low grounds, occasional. - Jefferson 16586 (15); Randolph 13922 (12); Shelburne 11704 (08) - in part.

S. gigantea, var. leiophylla Fern. Alluvial thickets, frequent. - Pittsburg 36231 (51); Colebrook 13991 (12); Columbia 37680 (54); Stratford 17251 (18), 17702 (19), 23899 (33); Northumberland 19091 (22), 35616 (50); Stark 16306 (14), 33992 (48); Lancaster 12352 (09), 14536 (13);
Jefferson 17339(18), 30274(43); Randolph 27552(39); Shelburne Deane (84, 15), 37686(54); Whitefield 11564=M 4402(08), 36342(51); Dalton 23114(32), 25296(35), 35640(50), 39330(58).

S. graminifolia (L.) Salisb., var. Nuttallii (Greene) Fern. Pastures and roadsides, very common. - Pittsburg, Third Lake, 33194(47), Second Lake, 31666(45); Clarksville 17692(19); Cobrook 13992(12); Northumberland 17256(18); Dummer Harris 7427(48); Milan 13739(12), 17316(18); Berlin 19067(22); Jefferson M 135(01), 16841(16), 30277(43); Randolph Williams (97), M 1383(03), 11678(08), 12277(09), 21159(29); Gorham 16916(16), 20120(27); Shelburne Deane (83, 02), M 4878(11), Deane (13, 14, 15), 38893(57); M Location Harris 1279 (33); B Purchase, Wild River, 35565(50); Carroll Spaulding (27); Whitefield Deane (97), M 4420(08); Dalton 35743(50).

BELLIS L. English Daisy.

* B. PERENNIS L. Rare escape. - Shelburne, lawn weed, Deane (19, 23).

ASTER L.

A. divaricatus L. Very local. - Gorham, Pine Mtn. trail, 36896(52).

A. macrophyllus L. Moist woods and roadsides, common. - Stark 29183(41); Northumberland 36389(51), 37575 & 37576(54), 39781 & 39793(60); Berlin 29140(41); Randolph 1333(02); Dalton 35629(50); Carroll 33149(47).

A. macrophyllus, var. pinguifolius Burgess. - Randolph, near Pond of Safety, 4697 & 5408 (04).

A. macrophyllus, var. velutinus Burgess. Frequent. - Columbia 14068(12); Stark 29183(41); Berlin 29140(41); Lancaster 14521(13); Jefferson 32315(46); Randolph 1332(01); Gorham Hervey (78), 12778(10); Shelburne Deane (83); G Grant 13905(12); B Purchase 4083(04); P Grant, Glen Ellis, Knowlton (21), Eliz. Mackintosh (24).

A. macrophyllus, var. sejunctus Burgess. - Northumberland 26904(38), 36913(52); Milan 13734(12); Dummer 39779(60); Success 10648(07); Jefferson 23081(32); Randolph 1329(02); Gorham 11454(08), 12873(10), 14061(12); Shelburne Deane (15); B Purchase, Wild River, 35571(50), 36880(52).

A. cordifolius L. Woods and roadsides, common. - Pittsburg 33197(47); Clarksville 38235 (55); Columbia 34091(48); Milan 36934(52); Lancaster 29232(41); Jefferson 16858(16), 30796 (44); Randolph 1325(02), M 395(02), 16299(14); Shelburne Deane (84, 11, 13, 14); B Purchase 36881(52); Whitefield 30289(43); Dalton 39327(58).

A. cordifolius, var. polycephalus Porter. - Lancaster, Mt. Prospect, 14515(13); Milan 37693 (54); Berlin 11643=M 4514(08); Gorham 12891(10).

A. cordifolius, var. racemiflorus Fern. - Northumberland F & P 16974(17); Lancaster 36393 (51), Mt. Tug, 17621(19); Jefferson 36383(51).
A. cordifolius, var. Furbishiae Fern.-Colebrook 13999(12); W Location Lincoln, Pease, & Steele 38557(56); Stark 24097(34); Milan 36936(52); Lancaster 14530(13), 36390(51); Randolph 36927(52); Gorham 14063(12); Shelburne 37721(54), 38884(57).

A. cordifolius x lateriflorus.- Dalton, alluvial woods near Cushman, 18144(21).

A. ciliolatus Lindl. Damp woods, rare.- Jefferson, a few plants on path to Mud Pond, 17341 (18).

A. ciliolatus, var. comatus Fern.- Lancaster; Mt. Prospect, 37695(54).

A. undulatus L. Dry soil, southward.- Gorham, Cascade, 17260(18); Shelburne Deane (13), 37209(53), 38253(55); H Grant, Hart Ledge, 16620(15); Whitefield 27706(39); Dalton 14568-M 4897(13).

A. undulatus, var. lorigformis Burgess. Rare.- Shelburne 38252(55).

X A. tardiflorus L. Probable hybrid. Frequent in moist soil, with A. cordifolius and A. puniceus.- Stewartstown 13936(12); Kilkenney, Priscilla Brook, 33214(47); Dummer 28335(40); Jefferson 16869(16), 35759(50); Randolph 16901 & 16941(16), 36400(51); Gorham 16931 & 16932 & 16893(16); Shelburne E. Faxon (72).

X A. tardiflorus, f. vestitus Fern.- Errol F & P 16891(17); Colebrook 13886 & 13887(12), 17722(19); Lancaster, Mt. Prospect, 37661(54); Randolph 16300(14), 17259(18); Gorham 16892 & 16930 & 16934(16).

A. puniceus L. Low ground, very common.- Pittsburg, First Lake, Mrs. Stevens (95); Stewartstown 14021(12); Colebrook 13989(12); Dummer Deane (15); Milan 33258(47); Lancaster 37678(54); Jefferson 16849(16), 32515(46), 35779(50); Randolph H.J. Williams (97), M 347 (02), 9919(06), M 4464(08), 16939(16); Gorham M 4294(08), 17326(18); Shelburne Deane (84, 15), 29257(41); B Purchase 36924(52); Dalton 39328(58).

A. puniceus, f. albiflorus (Farw.) Shinners.- Randolph 16940(16); Gorham 17325(19).

A. puniceus, f. demissus (Lindl.) Fern. Occasional.- Pittsburg, Second Lake, 31641 & 31665 (45); Errol 32497(46); Randolph Williams (97); Carroll 26906(38); Whitefield 30295(43).

A. puniceus, var. oligocephalus Fern.-Occasional at lower elevations, locally abundant in subalpine ravines.- Stark, Phillips Brook, 29836(42); Randolph 4110(04), 3896(06); TM Purchase, Cape Horn, Williams & B.L. Robinson (01); S Purchase, Tuckerman Ravine, C.E. Faxon (72), Merrill (96), 11505(08), 19103(22); C Grant, Oakes Gulf, 20130(27), 33939(48).

A. radula Ait. Bogs and low ground, frequent.- Errol 32477(46), 38904(57); Success 16287 (14); Milan 13728(12), 23829(33), 33161(47), 36381(51), 36825(52); Jefferson 12781(10), 30271(43), 33093(47), 39894(61); Randolph 10670(07), 21198(29), 37645(54); Berlin 19882 (26), 30231(43); Gorham 14078(12), 16322(14), 29618(42); Shelburne Deane (85), 12201 (09), Deane (17), 19210(23), 35538(50); Dalton 25294(35); Whitefield 11571-M 4420(08), 30288(43).

A. radula, var. strictus (Pursh) Gray. Rare.- Carroll, Crawford's, bog, E. Faxon (89), Williams (95).
A. vimineus Lam. Scarce.-Shelburne, near Wheeler Bog, 38887(57).

A. lateriflorus (L.) Britt. Woods, chiefly alluvial.-Columbia 17732(19), 24193(34), railroad, 29820(42); Dalton 18144(21), 33021(47), 35626 & 35637(50).

A. lateriflorus x Tradescanti.-Errol, Errol Dam, F & P 16995(17).

A. praecultus Poir., var. angustior Wieg. Alluvial soil, colonial.-Columbia 39622(59); Shelburne 37692(54); B Purchase, Wild River, 38965(57).

A. simplex Wild. Alluvial soil, especially in the larger valleys.-Pittsburg. Second Lake, 31669(45), First Lake, 31622(45), 33201 & 33202(47), 35033(49), 37381(53); DC Grant 16157(14), 32493 & 32503(46), 33901(48); Stewartstown 13951(12), F & P 17055(17), 17688(19); Columbia 13969(12); Stratford 17731(19); Northumberland 17268(18); Lancaster 14533(13), 29236(41), 31614(45); Jefferson 12926(10), 16888(16); Randolph 16571(15), 16937(16), 23156(32), 29824(42); Gorham 10725(07); Berlin 11766-M 4305(08); Dummer 23890(33); Milan 14005(12); G Grant 12886(10); Shelburne Deane (13); Whitefield 17798(19); Dalton 11601(08).

A. simplex x vimineus.-Jefferson, Flaherty Road, 26916(38). The parentage of this plant needs further study.

A. simplex, var. ramosissimus (T. & G.) Cronq.-Milan, riverbank, 36373(51); Jefferson 39388(58), 39921(61); Dalton 36280(51).

A. Tradescantia L. Wet shores, occasional.-Errol, Umbagog, Purdie (97), 32479 & 32480(46); Cambridge, Umbagog, 16567(15), 33335(47); Dummer 39570(59); Milan 23837(33), 33109(47); Shelburne 39637(59).

A. juniceps Rydb. (?) Rare and not an exact match.-Northumberland, swale, 36910(52).

A. foliaceus L. Gravelly shores; also in alpine and subalpine areas.-Lancaster, by Israel River, 12789(10); Berlin Eggleston (99); Randolph, meadow, 17373(19); Gorham, pasture, Eggleston (99), 16500(15), 33038(47); Shelburne Deane (18); P Grant 23819(33); TM Purchase, Cape Horn, B.L. Robinson 1005(01), 12834(10); S Purchase, Carriage Road, E. & C.E. Faxon (87), Eggleston (98), 10541(07), F & P 16749(17), Tuckerman Ravine, Churchill (89), 10746(07); C Grant, Oakes Gulf, E. & C.E. Faxon (90, 93, 96), Williams (96), 16574(15).

A. foliaceus, var. arcuans Fern.-Berlin, railroad, 30241(43), Berlin Falls, Williams (99).

A. johannensis Fern. Shores.-Stark, rocky brook-bank, Crystal, 20624(30), Lancaster, riverbank, 25656(36); Shelburne Deane (02).

A. johannensis, var. villicaulis (Gray) Fern.-Jefferson 17353(18); Shelburne Blankinship (94); Carroll, old meadow on Cherry Mt. Road, 20701(30).

A. novi-belgii L. Somewhat local.-Stark, Crystal, 37359(53); Milan 38565(56); Lancaster 38905(57); Jefferson 35668(50); Berlin 11644-M 4513(08), 29870(42), 30233(43); Randolph 16320(14); Gorham 10724(07), 11485(08), 16942(16), 17396(19); Shelburne Deane (13, 15, 16), 36294(51); Dalton 35642(50).

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A. nemoralis Ait. Peaty shores of ponds, local. Stark, Pike Pond, Pease & Harris 34808(49), 35724(50), South Pond, 36827(52); Milan, Mud Pond, 13690(12), 26366(37), Long Pond, 22791(31); Berlin, Head Pond, 13849(12), 19063(22); Shelburne, Dream Lake, 19215(23).

A. nemoralis, f. albiflorus Fern.-Stark, South Pond, 36828(52).

A. Blakei (Porter)House. Wet thickets, rare.-Whitefield, near Hazen Junction, 37310(53).

A. acuminatus Michx. Woods and clearings, common.-Pittsburg, Second Lake, 31642(45), First Lake, Mrs. Stevens (95); Columbia 29759(42); DC Grant 16176(14); Stark 31536(45); Milan 13857(12); Berlin 35812(50); Jefferson 16850(16); Randolph Williams (95), 9897(06), 19843(26); Gorham Williams (95), 16926(16), 29722(42); Shelburne Deane (83, 14, 15); TM Purchase, Cape Horn, Williams (01); B Purchase M 5078(13).

A. acuminatus, f. discoides Kunze. Frequent, monstrous form.-Pittsburg, Deer Mtn., 31631(45); Errol 32502(46); Columbia 29744(42); Millsfield 18201(21), 34825(49); Northumberland 17244(18); Lancaster 14520(13); Randolph Williams (96), 1335(00), M 3197(06), 19841(26), 21079(29); Gorham 18224(21); LB Grant 4701(04), 12869(10); TM Purchase, Cape Horn, Williams (01); S Purchase, Carriage Road, 10540(07); P Grant 23085(32), 23752(33); B Purchase 36884(52); C Purchase 36928(52); Whitefield 14572=M 5032(13); Dalton 24176(34).

A. umbellatus Mill. Open places, very common.-Pittsburg, First Lake, Mrs. Stevens (95); Stewartstown 13933(12); DC Grant 16191(14); Northumberland 17254(18); Dummer Harris 7426(48); Milan 13696(12), 17314(18); Berlin Krohnal 1519(48); Jefferson 16876(16); Randolph Churchill (89), Williams (97), M 348(02), 11681(08), 39258(58); Gorham 16914(16); Shelburne Deane (83), Blankinship (94), Deane (13); S Purchase, Tuckerman Ravine, 11544(08); C Grant, Oakes Gulf, Williams (01); B Purchase 36885(52); Whitefield Deane (97), 11570=M 4346(08); Dalton 35735(50).

*A. LINARIIFOLIUS L. Locally adventive on railroads.-Northumberland 30133(43), 35600 & 35904(50); Randolph 18092(20), 19101(22), 21161(29); Whitefield 37306(53).

ERGERON L. Fleabane.

E. pulchella Michx. Robin's-plantain. Moist banks, frequent southward.-Columbia 38637(57); Stark 14133(13), 29540(42), 33400(48); Dummer 24126(34), 38303(56); Northumberland 13640(12), 33406(48); Lancaster 16376(15), Jefferson M 1078(03), 16381(15); Randolph M 985(03), M 3322(07), 11261(08); Gorham 16003(14); B Purchase, Wild River, 16027(14); C Purchase 11254(08); Carroll 30156(43), 36083(51), 37432(54); Dalton 16411(15).

E. pulchellus, white-flowered form. Occasional.-Carroll 33454(48); Whitefield, Kimball Hill, 30135(43).

E. philadelphicus L. Meadows, common.-Pittsburg, Second Lake, 10240(07), First Lake, M 3558(07); AGA Grant, Hellgate, 12599(10); Dixville 37835(55); Colebrook Krohnal 1391(48); Strafford 13466(12); Dummer 39101(58); Lancaster 36018(51); Jefferson Fuller (95), 38475(56); Randolph 11280(08), 39867(61); Gorham Deane (82); Shelburne Deane (81, 82, 16); Whitefield Deane (95); Carroll, Bretton Woods, E. & C.E. Faxon (80), Crawford's, C.E. Faxon (79), 36093(51); Dalton 38416(56).
E. annuus (L.) Pers. Roadside, etc., occasional.-Pittsburgh M 3743(07); Columbia 37600(54); Dummer Williams (95); Lancaster 17618(19), 34748(49); Jefferson 38826(57); Randolph Williams (97), M 339(02), 4094(04), 10586(07); B Purchase, Wild River, 36142(51); Whitefield 39123(58).

E. strigosus Muhl. Fields, common.-Pittsburgh, Indian Stream, 11065(07); DC Grant 16164(14); Colebrook F & P 16579(17); Stratford F & P 16820(17); Stark 35526(50); Milan 13744(12); Lancaster 39126(58); Randolph Williams (96, 97), M 245(02), 11222(08); Shelburne Deane (82, 15), 37684(54); M Location 14311(13); B Purchase, Wild River, 35545(50); Carroll, Crawford’s, Williams (95); Dalton 35639(50), 37539 & 37711(54).

E. strigosus, var. septentrionalis (Fern. & Wieg.) Fern.-Fields, common.-Pittsburgh, Second Lake, M 3647(07), First Lake, 10163(07); Colebrook F & P 16710(17); Jefferson 16853(16), F & P 16818 & 16819(17); Gorham 16647(17); Shelburne Deane (82, 25); Carroll 17424(19).

E. canadensis L. Horse-weed. Waste ground and fields, common.-Colebrook, railroad, 29688(42); Stark 38161(55); Milan, railroad, 13803(12); Success M 4318(08); Berlin, railroad, M 4310(08), 16435(15); Jefferson, railroad, 16845(16); Randolph Williams (95), M 4454(08), railroad, 11558(08); Gorham M 4285(08), 39288(58); Shelburne M 4877(11), Deane (15, 17, 18), 36185(51); G Grant M 4302(08); Dalton M 4358 & 4363(08), railroad, 29765(42), 35748(50); Whitefield 11557=M 4431(08); Carroll 33284(47).

ANTENNARIA Gaertn. Cudweed.

A. canadensis Greene. Dry banks, common.-Pittsburgh, First Lake, 10132=M 3538 & 4632(07), 10294(07); Clarksville 36079(51); Dixville, Notch, 31971(46); Errol 36491(52); Stratford 13553(12); Stark 33379 & 33493(48), 35336(50), 37402(54); Milan 13844(12), 25262(35); Northumberland 33407(48); Jefferson 30015 & 30034(43), 32742(47), 36468(52); Randolph 10025=M 3301(07); Gorham 39678(60); M Location 14345(13); Shelburne Deane (04, 10, 14); TM Purchase, Carriage Road, 3300 feet, F & P 16747(17), 32809(47); S Purchase, Carriage Road, Forbes (14); Carroll, Crawford’s, Williams (98); Whitefield Deane (97, 10).

A. neglecta Greene. Pastures, common.-Stewartstown 27712 & 27713(40), 37009(53), 38376(56); Stark 37789(55); Northumberland 36985(53); Jefferson 38393(56); Randolph 37406(54), 38413 & 38414(56); Shelburne Deane (09, 10, 15); Whitefield Deane (97), 38292(56).

A. neodioica Greene. Dry banks, common.-Dixville 31982(46); Stark 29539(42), 33412(48), 36526(52); Stratford, South Percy Peak, 12730(10); Lancaster 16924(17), 32743(47); Jefferson 30014(43), 35222(50); Milan 13843(12), 33498 & 33500(48), 36565(52); Shelburne Deane (03, 09, 10); M Location 14313(13); B Purchase, North Baldface Mtn., 16033(14); TM Purchase, Carriage Road, 3300 feet, F & P 16748(17); Carroll 31955(46).

A. neodioica, var. attenuata Fern. Similar habitats.-Pittsburgh, First Lake, 10131=M 3631(07); Colebrook 34350(49); Columbia F & P 16697(17); Errol 12649(10); Stratford 13564(12); Northumberland 16462(17); Stark 35368(50); Randolph M 964(03), 10010=M 3267(07); Gorham M 1047(03); S Purchase, Carriage Road, Forbes (14); H Grant, Mt. Hope, 16450(15); Carroll, Fabyan’s, Williams (98).

A. petaloidea Fern. Dry fields and banks, occasional.-Stewartstown F & P 16897(17); Colebrook 10472=M 3892(07); Stratford 13534(12); Randolph 1292(02), 12150(09), 12670(10); Shelburne Deane (10).
A. munda Fern. Dry woods and banks, occasional. - Stark 35335(50); Milan 12633(10), 13837(12); Berlin, near Head Pond, 29887(42); Gorham 27053(39), 33528(48); Shelburne 37206(53); M Location 12850(10); Carroll, Fabyans, Williams (98).

A. fallax Greene. Open woods, infrequent. - Colebrook 36095(51); Gorham, Mt. Hayes, 12824 (10), 27053(39); Dalton 16413(15).

A. Parlinii Fern. Open rocky woods, rare. - Shelburne, Crow's Nest, 36732(52).

A. Brainerdii Fern. Open rocky woods, rare. - H Grant, south peak of Mt. Hope, 16451(15).


ANAPHALIS DC. Pearly Everlasting.

A. margaritacea (L.) C.B. Clarke. Gravelly soil along streams, often subalpine. - Colebrook 36704(52); DC Grant 16188(14); W Location 35613(50); Odell 35775(50); LB Grant, Madison Path, 4000 feet, 14434(13); King Ravine, F & P 16848(17); TM Purchase, Great Gulf, 12904 (10), Cape Horn, Williams (97); P Grant, near Glen Ellis, 17646(19); S Purchase, fan in Huntington Ravine, 19100(22), New River, 13919(12); Shelburne, roadside, Deane (83). Possibly belonging here is Clarksville, West Road, 34657(49), with leaves broad and floccose above.

A. margaritacea, var. subalpina Gray. - Dixville 38917(51); TM Purchase, Madison Gulf Trail, 17210(18); S Purchase, fan in Huntington Ravine, F & P 16862(17), Carriage Road, 17498(19).

A. margaritacea, var. angustior (Miquel) Nakai. Rare. - Stark, railway, 38152(55); Berlin, one clump on a dump, 36297(51); B Purchase, Wild River, 36752(52); Gorham, Pine Mtn. 38953(57).

A. margaritacea, var. intercedens Hara. The commonest form, in pastures and clearings, abundant. - Pittsburg. Third Lake, 32527(46), Second Lake, 37375(53), village M 3659(07), 33174(47); DC Grant 37570(54); Colebrook 29747(42); Odell 35764(50); Stark 35527(50); Dunner 36352(51); Milan 17313(18); Jefferson 16854(16); Berlin 30401(43); Randolph Williams (95), M 294(02), 9904(06), 19890(26); Gorham 16912(16), 30404(43); Shelburne Deane (83); B Purchase M 5056(13), 36906(52); TM Purchase, Great Gulf, 4300 feet, 12903 (10); Whitefield Deane (97), M 4400(08), Carroll 36929(52).

GNAPHALIS L. Cudweed. Everlasting.

G. Macounii Greene. Dry pastures and roadsides, frequent. - Pittsburg 34081(48); DC Grant 32464(46); Errol 32478(46); Colebrook 14051(12); Columbia 13971(12); Odell 35761(50); Stratford 17703(19), 29344(41); Northumberland 39556(59); Dunmer 34149(48); Milan 10569(07), 13840(12), 34128(48), 38567(56); Berlin 11639-M 4480(08); Jefferson 12930 (10), 16867(16); Randolph Williams (96), Miss Richards (96), 1405(02), M 365(02), 37373 (53); Gorham 11477(08); Shelburne Deane (83), 11626(08), Deane (15); B Purchase, Wild River, 16600(15); LB Grant 10660(07); Dalton 11589(08), 12369(09).

G. obtusifolium L. Dry fields, occasional. - Stewartstown 34093(48); Stratford 34036(48); Jefferson 25822(36); Gorham 34133(48); Shelburne Deane (15); Whitefield 26975(38); Dalton 33322(47), 37656(54).

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G. uliginosum L. Roadsides, gardens, and waste places, common.-Pittsburg 33200(47), Second Lake, 31636(45); DC Grant 32460(46), 37568(54); Colebrook 29742(42); Milan 13774(12), 33241(47); Lancaster 25667(36); Jefferson 16885(16), 30264(43); Randolph Williams (95), M 1376(03), 11653(08), 21103(29); Gornham 16924(16); Shelburne Deane (83); Carroll, Crawford’s, Williams (95); Whitefield Deane (97), 11574=M 4405(08); Dalton 34153(48).

G. supinum L. Subalpine ravines and alpine slopes, often under late snowbanks, local.-S Purchase, Alpine Garden, E. & C.E. Faxon (96, 97), Williams (96, 99), 1403=M 276(02), Tuckerman Ravine, W. Boott (1855), E. & C.E. Faxon (77, 79, 81, 85), Allen (78), Churchill (90), Williams (93, 95), Merrill (96), Eggleston (98, 99, 01), 1404(00), Lakes of the Clouds, Churchill (90); alpine region, indefinite, Oakes (n.d.), Tuckerman (1858), Pringle (77, 79).

*G. SYLVIATICUM L. Infrequently adventive in turf.-Pittsburg, East Inlet, Steele (53), 38897(57), Scott Bog, 38898(57), Second Lake dam, 36887(52); Stewartstown, pasture, 29737(42); Errol, dry pasture, 34915(49); Success, old logging railroad, 11768=M 4319(08).

INULA L. Elecampane.

*I. HELENIUM L. Adventive in pastures and roadsides.-Northumberland 16477(17); Dummer 33120(47), 24156(48), 36823(52); Jefferson 14275(13); Shelburne Deane (83); Whitefield 11565=M 4407(08).

IVA L.

*I. XANTHIFOLIA Nutt. Henyards, etc., rarely adventive.-Berlin, henyard, 10709(07), 30890(44); Jefferson 17737(19).

AMBROSIA L. Ragweed.

*A. TRIFIDA L. Waste ground.-Lancaster, railroad, 12152(09), Shelburne Deane (25). Reported from Berlin; S.K. Harris.

*A. ARTEMISIIFOLIA L. Railroads and roadsides.-Pittsburg 34096(48); Stark, railroad, 29947(42); Gornham, railroad, 1145(08); Whitefield 17788(19).

*A. ARTEMISIIFOLIA, var. ELATOR (L.) Descourtis. Roman Wormwood. Our commonest form, too common along shoulders of roads and in waste places.-Colebrook 31519(45); Northumberland 39794(60); Stark 29846(42); Milan 33244(47); Lancaster 37653(54); Randolph 1288(02), M 386(02), 9913(06); Gornham 16327(14); G Grant, Glen House, 19073(22); Dalton 25655(36); H Grant, Hart Ledge, 16635(15).

*A. ARTEMISIIFOLIA, var. ELATOR, f. VILLOSA Fern. & Griscom.-Pittsburg, 33205(47), Hall Stream, 37596(54); Colebrook 29677(42); Stark 25682(36); Jefferson 16865(16).

*A. ARTEMISIIFOLIA, var. PANICULATA (Michx.) Blankinship.-Shelburne Deane (15).

*A. PSILOSTACHYDA DC., var. CORONOPIFOLIA (T. & G.) Farw. Becoming more frequent.-Stark, railroad, Crystal, 33260(47), 34519(49); Milan, near airport, 33115(47); Berlin, railroad, 11718=M 4505(08), 30242(43); Gornham, millyard, 14185(13); Dalton, railroad, 25679(36), 37662(54).
**X. ITALICUM Moretti. Rare garden weed.** - *Gorham 10714(07).

**HELIOPSIS** Pers. Ox-eye.

**H. HELIANTHOIDES (L.)Sweet, var. SCABRA (Dunal)Fern. Alluvial banks, local.** - *Pittsburg, by river west of Indian Stream, F & P 16963(17); Milan, dump, 33112(47); Shelburne, persistent for twenty-five years, Deane (13).

**RUDBECKIA L. Coneflower.

**R. LACINIATA L. Stark, one plant by roadside, apparently adventive, 34794(49); Jefferson, meadow, 38116(55), 38892(57), 39808(60).

**R. LACINIATA, var. HORTENSIS Bailey. Golden-glow. Escaped on dumps and roadsides.** - *Stark, near Crystal, 36371(51); Jefferson Krochmal 1546(48); Shelburne Deane (18); Carroll 34847(49).

**R. SEROTINA Nutt. Black-eyed Susan. Fields, frequent.** - *DC Grant 16223(14); Colebrook 10410=M 3906(07); Stratford 33559(48); Stark 34520(49); Milan 13693(12); Jefferson 16882 (16); Randolph Williams (97), 1447(02), M 236(02); Shelburne Deane (82, 16), 36692(52); M Location 14255(13); Whitefield Deane (96).

**R. SEROTINA, f. PLENIFLORA (Moldenke)Fern.&Schub. Shelburne Deane (82).

**HELIANTHUS L. Sunflower.

**H. ANNUUS L. Waste places.** - *Stark, railroad, 34924(49); Success 33994(48); Berlin, dump, 16516(15); Randolph 4019(04), M 4587(09), 37370(53); Shelburne, oat-field, Deane (17, 18, 19); Whitefield M 4352(08).

**H. LAETIFLORUS Pers.-Northumberland, Groveton, 38633(56); Berlin, waste ground, 36292 & 36377(51), 38155(55).

**H. LAETIFLORUS, var. RIGIDUS(Cass.)Fern.-Berlin, waste ground, 29861 & 29882(42); Dalton, railroad, 37663(54).

**H. LAETIFLORUS, var. SUBRHOMBOIDEUS (Rydb.)Fern. Adventive along Canadian National Railway.** - *Stark 29845(42); Berlin 11524(08), 17834(20); Gorham 11470(08), 12767 (10), 16325(14), 17830(20).

*H. decapetalus L. Alluvial copses.** - *Stratford F & P 17028(17), 17700(19), 33279(47), 34995(49); Lancaster 12276(09), 29230(41); Jefferson 10783(07); Randolph 33300(47); Gorham 11663(08); Shelburne Deane (15); Carroll 14363(13), 34801(49).

**H. TUBEROSUS L. Waste ground.** - *Randolph 39781(60); Gorham, near railroad, 29292 (41); Whitefield, millyard, 30311(43).- persistent in 1954.

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BIDENS L.

*B. cernua L.* Stick-tight. Wet places, frequent. *Pittsburg* 17685(19), Back Lake, 33185(47); *Stewartstown* 14019(12), 19113(22); *Colebrook* Krochmal 1588(48); *Stratford* 35014(49); *Milan* 33261(47), Nay Pond, 22781(31), 36368(51); *Stark* 29833(42); *Dummer* 31818(45); *Berlin* Head Pond, 17077(17); *Lancaster* 25301(35), Martin Meadow Pond, 26316(37); *Jefferson* 12934(10), Cherry Pond, 10664(07), 11435(08), Mud Pond, 17377(18); *Randolph* 6406(04), Mrs. Moore (04), 25249(35); *Gorham* 12895(10); *Shelburne Deane* (18), 17785(19), 29954(42); *Dalton* M 4376(08), 29806(42), 43141(48); *Whitefield*, Hale Pond, 30307(43), Hazen Pond, 22769(31), 36895(52); *Carroll* 33316(47).

*B. cernua*, var. *elliptica* Wieg.- *Stewartstown*, logan, F & P 16999 & 17001(17), 19114(22); *Stratford* 17683(19); *Shelburne Deane* (14, 15).

*B. cernua*, var. *oligodonta* Fern. & St. John. Muddy shores, occasional.- *Pittsburg*, First Lake, 31662(45); *Success*, Success Pond, 10738(07); *Shelburne*, slough, 29910(42).

*B. cernua*, var. *minima* (Huds.) Pursh. Occasional.- *Pittsburg*, East Inlet, Steele (53); *Stewartstown*, Ladd Pond, 13946(12), F & P 17081(17); *Columbia*, Lime Pond, 29680(42); *Errol*, Akers Pond, 23887(33), 32499(46); *Berlin*, Head Pond, 19070 & 19096(22), Dead River, 19883(26).

* B. TRIPARTITA L.* Rare adventive.- *Randolph*, henyard, 12909(10).

* B. VULGATA Greene. Waste places, frequent.- *Pittsburg* 33198(47); *Colebrook* 29675(42); *Stratford* 17699(19), Krochmal 1582(48); *Jefferson* 16840 & 16887(16); *Randolph* 6418=M 1929(04), 11553(08), 12908(10), 17343 & 17346(18); *Gorham* 38950(57); *Shelburne Deane* (15).

* B. FRONDOSA L.* Waste ground, frequent.- *Stratford* 17663 & 17699(19); *Milan* 33243(47); *Northumberland* 36354(51), 39796(60); *Berlin* M 4411(08); *Randolph* M 1457(03), 9905(06), M 3196(06), M 4068(07), 16788(16); *Gorham* 16594(15); *Shelburne Deane* (83), 29905(42); *Whitefield Deane* (97), M 4877a(11), 17789(19).

COSMOS Cav.

* C. BIPINNATUS Cav. Rare escape.- *Stratford*, riverbank, 23934(33); *Shelburne* Miss Brown(27).

GALINSOCA R. & P.

* G. CILIATA (Raf.) Blake. Increasingly frequent and aggressive in waste places.- *Colebrook*, weed in flower-pot, 17809(20), garden weed, 25981(37), 29697(42); *Stark*, roadside, 25683(36); *Berlin* 38168(55), ballast at Godfrey Dam, 26402(37), Main Street, 23734(33), Head Pond, 35733(50), railroad, 30232(43); *Lancaster* 34034(48), 37639(54), 38201(55); *Jefferson*, ballast, 23130(32), garden weed, 36835(52), 37334(53); *Randolph*, roadside, 19619(25), garden weed, 20101(27), two stations in woods on Beechwood Way, (60); *Gorham*, railroad, 29826(42); *Shelburne* 37536(54); *Dalton* 37700(54); *Carroll* 38542(56); *Whitefield* 37869(55).
HELENIUM L. Sneezeeweed.

* H. NUDIFLORUM Nutt. Weed in cultivated ground and yards.- Dummer Harris 7534 (49); Randolph Mrs. Macfarlane (34), lawn of church, 35776 (50); Shelburne 38627 (56).

GAILLARDIA Foug.

* G. PULCHELLA Foug.- Shelburne Deane (19, 26).

ACHILLEA L. Yarrow.

* A. PTARMICA L. Sneezeeweed. Garden escape.- Jefferson, roadside, 36088 (51), Cherry Mtn. Road, 20625 (30); Randolph 32334 (46), 36800 (52); Shelburne Deane (25); Whitefield, railroad, 11615=M 4339 (08).

A. borealis Bong. Wet rocks, rare at lower levels, local at heads of alpine ravines.- DC Grant, Diamond Gorge, 12608 (10); TM Purchase, Cape Horn, Williams (01), 12836 & 12843 (10), Miss Gauthier (15); S Purchase, Alpine Garden, C.E. Faxon (85), M 277 (02), Tuckerman Ravine, 11503 (08); C Grant, Oakes Gulf, Steele (46), 33930 (48).

A. Millefolium L. Fields and roadsides, common.- Pittsbug, First Lake, 10096=M 3651 (07); DC Grant 16173 (14); Stratford 13572 (12); Stark 33268 (47); Milan 36564 (52); Jefferson Mrs. Terry (03), 25781 (36); Randolph Williams (97), 12866 (02), M 209 (02), M 975 (03), 10066 (07), 38948 (57); Gorham 12181 (09); Shelburne Deane (82, 15); M Location 14312 (13), 17218 (18); S Purchase, Summit House, Williams (95), Tuckerman Ravine, Floyd (07); B Purchase, near Carter Dome, Dandeno (00), M 5054 (13); Whitefield Deane (97), M 4335 & 4356 (08); Carroll 14365 (13).

* A. Millefolium, f. ROSEA Rand & Redfield. A rather frequent escape.- Columbia 37698 (54); Northumberland, Lost Nation, 16061 (14), 36176 (51); Stark 29538 (42), 35337 (50); Lancaster 14235 (12), 28222 (40); Jefferson 14393 (13); Randolph 11245 (08); Shelburne Deane (14).

* A. LANULOSA Nutt. Scarce.- Berlin, dump, 38304 (56).

ANTHEMIS L. Chamomile.

* A. COTULA L. Dooryards and waste ground.- Lancaster 12162 (09); Milan 13835 (12); Berlin, railroad, 11642=M 4503 (08), 37557 (54); Jefferson 37300 (53); Randolph Williams (96), M 1382 (03), M 4079 (07), 11521 (08); Gorham 10722 (07); Shelburne Miss Dulin (17), Deane (17, 25); M Location 17213 (18); Whitefield 14589 (13); Dalton 11592=M 4440 (08).

* A. TINCTORIA L. Escape.- Columbia, waste-heaps, 26844 (38), 34679 (49); Lancaster, dump, 34577 (49); Randolph, roadside, 20105 (27), 31386 (45); Berlin, dump, 38321 (56).

MATRICARIA L.

* M. MARITIMA L., var. AGRESTIS (Knaf) Wilmott. Adventive.- Jefferson, field, 36105 (51); Randolph, dooryard, 11012 (07); Berlin 37977 (55).
M. MATRICARIOIDES (Less.) Porter. Pineapple-weed. Common roadside weed.-Pittsburg, Third Lake, 33182(47), village, 34080(48), Hall Stream, 38526(56); Clarksville 33650(48); DC Grant 32488(46), 36787(52); Colebrook, railroad, 29753(42); Columbia 32812(47); Cambridge 32862(47); Success 33823(48); Lancaster, railroad, 14545(13), 28817(41); Jefferson 29567(42), 30601(44), 37441(54); Berlin 22796(31); Randolph 10224(07), M 4078(07), M 4894(13), 19842(26), 21101(29); Gorham 16324(14); Carroll, railroad, 14471(13); Dalton 22601(31).

CHRYSANTHEMUM L.

* C. LEUCANTHEMUM L., var. PINNATIFIDUM Lecoq & Lamotte. Daisy. Meadows, common.-Pittsburg, First Lake, 10090-M 3620(07); Milan 12634(10); Jefferson Mrs. Terry (03); Randolph M 247(02), 11137(08); Shelburne Deane (15); M Location 14301(13); TM Purchase, Carriage Road, Williams (01, 03), 10556(07).

TANACETUM L. Tansy.

*T. VULGARE L. Old house sites; waste ground, especially about Berlin.- Colebrook 27755 (42); Stratford 13655(12); Success 23836(33), 33851(48); Berlin 30276(43); Lancaster 12365 (09); Whitefield M 4353(08).

*T. VULGARE, f. CRISPUM (L.)Hayek. Occasional.-Stark 16301(14); Randolph 12009 (09); Gorham 16439(15); Shelburne 1493(01).

ARTEMISIA L. Wormwood.

*A. BIENNIS Willd. Railroads, etc.-Stratford 38122(55); Berlin 10745(07), M 4490(08), 30891(44); Gorham, riverbank, 17637(14), railroad, 11473(08); Whitefield, railroad, 11614 (08).

*A. ANNUA L. Waste places.-Berlin, railroad, 16440(15); P Grant Eggleston (01).

*A. ABROTANUM L. Escape.-Jefferson Wellman (08).

*A. PONTICA L. Persistent.-Gorham, old garden site, M 4296(08).

*A. VULGARIS L. Mugwort. Dumps, logging-camps, and waste places.-Stewartstown 10115= M 3384(07); Stratford Williams (06), 33943(48); Northumberland Williams (06), 13641(12); Stark 35045(49); Success 10737(07); Berlin 5496(04), M 4517(08); Lancaster 12356(09); Jefferson 16868(16); Randolph 16894(16); Gorham Williams (03), M 1433(03), 10712(07), M 4471(08); LB Grant, logging-road, 11429(08).

*A. LUDOVICIANA Nutt., var. GNAPHALODES (Nutt.)T. & G. Ballast of Canadian National Railway.-Stark 32320(46); Berlin 30400(43), 35806(50); Gorham 11330(08), 12798 (10), 30403(43), 39418(58).

*A. LUDOVICIANA, var. PABULARIS (Nels.)Fern. Rare waif.-Lancaster, railroad siding, 36744(52).
A. ABSINTHIUM L. Waste places, especially northward.-Pittsburg, First Lake, Mrs. Stevens (95), village, 10452=M 3723(07); Clarksville 10427=M 3701(07); Colebrook 14052(12); Columbia F & P 16601(17); Jefferson 16731(17), 17351(18).

TUSSILAGO L. Coltsfoot.

T. FARFARA L. Frequently adventive, especially on wet gravelly or clayey banks.-Pittsburg, Third Lake, 31704(45), Scott Bog, 38962(57), First Lake, 10292=M 3554(07), Hall Stream, 37192(53); DC Grant, Diamond Gorge, 16214(14), 36796(52), Stewartstown 13934(12); Colebrook 10870=M 4010(07), 10492=M 3884(07); Columbia 27796(40); Dixville 3855(56), 38677(57), Dunmore 20608(30), 33457(48), 34333(49), Milan 13948(12), Northumberland 13639(12), 16063(14), Lancaster 12124(09), Jefferson 16889(16), 29275(41), 31249(44); Gorham 9914(06); LB Grant 32359(46); C Purchase 11255(08); Dalton 16404(15).

PETASITES Mill. Sweet Coltsfoot.

P. palmatus (Ait.)Gray. Damp ground, local.-Colebrook F & P 16578(17); Columbia, Lime Pond, 29758(42); Success, springy woods near Success Pond, 16539(17), Carroll 38658(57), 38990(58).

ARNICA L.

A. mollis Hook. Mountain brooks and ravines, local.-Shelburne, Dryad Fall, 19715(26), 26036(37); LB Grant, King Ravine, 1307(02), 12183(09); P Grant, Crystal Cascade, Farlow (17); TM Purchase, Madison Gulf, 16495(15), Great Gulf, 12901(10); S Purchase, Huntington Ravine, F & P 16854(17), Tuckerman Ravine, W. Booth (1855), Hoar (1858), Mann (1862), E. & C.E. Faxon (72), Manning (81), Farlow (82), E. & C.E. Faxon (85), Churchill (89), E. & C.E. Faxon (90, 95), Williams (95), Merrill (96), Eggleson (98), M 771(01), 295(02), 10734(07), M 5090(13), 22818(31), Gulf of Slides, 23770(33); C Grant, Oakes Gulf, E. Faxon (85), E. & C.E. Faxon (91), Churchill (95), Williams (95, 96), Fuller (00), 12027(09), 20129(27), 33955(48), indefinite, Oakes (n.d.), Flint & Huntington (76), Pringle (77).

A. mollis, var. petiolaris Fern. Less abundant, and perhaps not distinct from the type.-Shelburne, Mill Brook, Deane (84, 18); LB Grant, King Ravine, 1306(01); S Purchase, Huntington Ravine, fan, 13896(12), Raymond Cataract, 13913(12), Tuckerman Ravine, E. Faxon (85), Fuller (88), 1304(98); C Grant, Oakes Gulf, 16572(15).

ERECHTITES Raf. Fireweed.

E. hieracifolia (L.)Raf. Clearings.-Stark 37369(53); Shelburne 11620(08), 37703(54).

E. hieracifolia, var. intermedia Fern. Clearings and burns, occasional.-Pittsburg, south of Rump Mtn., 19142(22); Stewartstown 19112(22); Success 12863(10); Jefferson 16844(16); Randolph 12868(10), 17344(18); Gorham, Mt. Hayes, 12861(10); C Grant M 1488(03).

E. hieracifolia, var. praetaxa (Raf.)Fern.-Gorham, roadside clearing, 38952(57).

SENECIO L. Ragwort.

S. VULGARIS L. Infrequent garden weed.-Randolph 16675(16); Shelburne Deane (16).
*S. VISCOSUS L. Waif. - Berlin, railroad, 30258(43), 38124(55).

*S. Robbinsii Oakes. Wet meadows, very common. - Pittsburg, First Lake, 10151(07), M 3653 (07); Stewartstown 38920(57); Colebrook F & P 16581(17), 31517(45); D Grant 16135(14); Stark 35364(50); Milan 13732(12); Berlin 27477(39); Jefferson M 948(03); 16490(17); Randolph Williams (97), M 980(03), M 3187(06), 10696(07), 19712(26), 25925(37); Gorham M 4227(08); M Location 14339(13); Shelburne Deane (83, 03, 09); I B Grant, 2900 feet, 1453 (02); TM Purchase, Lowe's Bald Spot, 32825(47), Carriage Road, 3500 feet, F & P 16883(17); Carroll, Owl's Head, 3000 feet, Fuller (95), Bretton Woods, Hunnewell (12); Whitefield Deane (95, 96); Dalton 16414(15).

*S. aureus L., var. aquilonius Fern. Golden Ragwort. One station in moist woods; now obliterated by flooding. - Pittsburg, River Road, 10316=M 3523(07). With Sympecarpus foetidus.

CALENDULA L.

*C. OFFICINALIS L. Rare escape. - Jefferson, woods near Waumbek Hotel, 11103(07).

ARCTIUM L. Burdock.

*A. LAPPA L. Occasional in waste places. - Pittsburg, First Lake, 17687(19), 33187(47); Columbia Hodgdon & Clapp 4849(44); Jefferson 20807(30); Shelburne 20342(28).

*A. NEMOROSUM Lej. & Court. Scarce. - Shelburne Deane (16).

*A. MINUS (Hill) Bernh. Waste places, frequent. - Stewartstown 36251(51); Northumberland 36339(51); Lancaster 12311(09), 38071(55); Jefferson 10809(07); Randolph M 349(02), M 4073(07), 11532(08), 16914(17); Dalton M 4896(13).

ECHINOPS L. Globe-Thistle.

*E. SPHAEROCEPHALUS L. Garden escape. - Whitefield, dump, 30299(43) - persistent in 1954.

CIRSIUM Mill. Thistle.

*C. VULGARE (Savi) Tenore. Pastures, occasional. - Northumberland 36330 & 36337(51); Dummer 26824(38); Milan, riverbank, 13703(12); Berlin 30258(43), 36295(51); Randolph 1384(02), M 270(02); Shelburne Deane (83, 14).

*C. muticum Michx. Low woods and swamps, common. - Pittsburg, Indian Stream, 11067(07); Stewartstown Hodgdon & Clapp 6383(49); DC Grant 16192(14), 32491(46); Dixville W. Boot (1855); Colebrook M 3908(07); Odell 33137(47); Stark 35355(50); Northumberland 36347 (51); Lancaster Deane (96); Milan 13704(12); Jefferson 30811(44); Randolph 12074(09); Carroll 14435(13), 20704(30), 32360(46), Crawford's, Williams (95).

*C. pumilum (Nutt.) Spreng. Pastures, infrequent. - Jefferson 33124(47); Dalton 35670(50); Whitefield 37269(53).
C. ARVENSE (L.) Scop. Canada Thistle. Pastures and waste ground, common. - Berlin 36293 (51); Jefferson M 136(01); Randolph Williams (96), 12059(09); Gorham M 428(08); Shelburne Deane (83); Whitefield Deane (97), M 4355(08).

C. ARVENSE, f. ALBIFLORUM (Rand & Redfield) R. Hoffm. Occasional. - Stark 21030(29); Dummer 27420(39); Berlin 16520(15); Whitefield 14573(13).

C. ARVENSE, var. INTEGRIFOLIUM Wimm. & Grab. Rare. - Randolph 19197(23).

CENTAUREA L. Star-Thistle.

C. CYANUS L. Waste places. - Randolph 10826(07), 11623(08); Shelburne Deane (17, 20).

C. MONTANA L. Rare escape. - Gorham, railroad, (62); Carroll 36106(51).

C. JACEA L. Rare adventive. - Randolph, meadow, 20316(28).

C. NIGRA L., var. RADIATA DC. Knapweed. Occasional. - Pittsburg, Hall Stream, 37606 (54); Millsfield 37618(54); Columbia 38243(55); Colebrook 38839(57); Stark 23001(32), 34638(49), 36570(52), 37612(54); Milan Harris & Humes 7688(51); Lancaster 31615(45); M Location Lowe (33).

C. MACULOSA Lam. Rare adventive. - Lancaster, near Whitefield line, 37238(53).

ARNOSERIS Gaertn.

A. MINIMA (L.) Schweiger & Koerte. Rare lawn weed. - Randolph 16910(17).

CICHORIUM L. Chicory.

C. INTYBUS L. Waste places. - Pittsburg, Hall Stream, local in one pasture, 36236(51); Stewartstown 36767(52); Stratford 32270(46); Dummer 35046(49); Lancaster 36742(52); Berlin 11631(08), 36290(51); Gorham 11757(08); Shelburne Deane (18, 22); C Grant 10534 (07), M 4299(08), 13907(12).

HYPOCHOERIS L.

H. RADICATA L. Adventive in grass-seed. - Randolph 17369(19); Shelburne 27310(39).

LEONOTODON L. Fall-Dandelion.

L. AUTumnalis L. Lawns, etc. - Northumberland 33264(47); Jefferson 3090(47), 38866 (57); Randolph 29730(42); Gorham 16921(16); Shelburne 31616(45).

TRAGOPOGON L.


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T. PRATENSIS L. Goat's Beard. Occasional by roadsides. -Stewartstown 31994(46); Colebrooke 34150(48), 34416(49); Columbia 34678(49); Lancaster 28829(41); Berlin 33526(48), Harris 7456(49).

TARAXACUM Zinn. Dandelion.

*T. ERYTHROSPERMUM Andrz. Pastures, frequent. - Dummer 33116(47); Stratford 13566 (12); Milan 13773(12); Lancaster 36020(51); Randolph M 1485(03); Gorham 16923(16); Shelburne Deane (10, 19).

*T. OFFICINALE Web. Common weed. -Pittsburg, Third Lake, 10154=M 3487(07); Stewartstown 29738(42), 37217(53); DC Grant 12610(10), 16213(14); Stratford 13638(12); Milan 13711(12); Success Lowe (33); Randolph 5405(04), M 3377 & 3378(07); LB Grant, Madison Huts, M 1099(03); Shelburne Deane (15, 26); S Purchase, Huntington Ravine, F & P 16875(17), Summit House, Williams (95); Whitefield Deane (97).

An immature specimen collected in a gully in King Ravine, LB Grant 12154(09), may belong here; in the first edition it was treated as T. ceratophorum (Ledeb.) DC.

SONCHUS L. Sow-Thistle.

*S. ARvensis L. Waste ground, frequent. - Pittsburg, Third Lake, 32533(46), 33199(47), 33818(48); Stewartstown, railroad, 14017(12); Columbia, Lime Pond, 29756(42), East Columbia, 26852(38); Stark 34614(49), 35530(50); Dummer 35055(49); Berlin 10835(07), M 4306(08), 30882(44), 36323(51); Lancaster 12312(09), 34854(49); Jefferson, railroad, 30813(44); Randolph 23781(33), 33929(48); Gorham, railroad, 11622=M 4328(08); Dalton 32340(46), 34139(48).

*S. ARvensis, var. GLABRESCENS Guenth., Grab. & Wimm. Similar habitats. - Colebrooke, waste ground, 29762(42); Stark, railroad, 29948(42); Berlin, railroad, 30314(43), 30882(44); Gorham Deane (16); Jefferson 39976(62).

*S. OLERACEUS L. Garden weed, occasional. - Lancaster Deane (96); Berlin 11717=M 4485 & 4501 & 4510(08), Gorham Deane (14).

*S. ASPER (L) Hill. Waste ground. - Berlin 5698(04), 37646(54); Jefferson, ballast, 23142 (32); Randolph, garden weed, M 372(02), 18079(20); Gorham 11461(08), Deane (14); Shelburne Deane (18); Dalton 34163(48).

*S. ASPER, f. GLANDULOSUS Beckh. Similar localities. - Pittsburg 37716(54); Northumberland 38206(55); Berlin 37640(54); Jefferson 37666(54), 40021(62).

*S. ASPER, f. INERMIS (Bisch.) G. Beck. - Lancaster, dump, 12348(09); Whitefield, railroad, 11559(08); Jefferson 39940(61).

LACTUCA L. Lettuce.

*L. SCARIOLA L. Prickly Lettuce. Rare. - Lancaster, dump, 34587(49), 36843(52).

*L. SCARIOLA, f. INTEGRIFOLIA (Bogenh.) G. Beck. - Berlin, railroad, 30894(44).
L. canadensis L.  Roadsides, clearings, etc., common. - Lancaster 34774(49); Randolph Williams (96), 1429(02), M 1374(03), 28223(40); Gorham 16632(15), 36397(51); Whitefield 14323(13).

L. canadensis, f. angustata Wieg.- Columbia 26853(38); Milan 14006(12); Stark 36842 (52).

L. canadensis, var. obovata Wieg.- Randolph, railroad, 26315(37).

L. canadensis, var. longifolia (Michx.) Farw.- Milan 13824(12), Lancaster 37251 & 37303 (53); Jefferson 30616(44); Randolph 12105(09); Shelburne Deane (83), 39377(58); Dalton 29108(41).

L. canadensis, var. longifolia, f. angustipes Wieg.- Colebrook 10866=M 3942 & 3953(07); Jefferson 17582(19); Dalton 37241(53).

L. canadensis, var. latifolia Ktze.- Dummer 39778(60); Jefferson 39601(59); Randolph 12765(10), 14057(12), 21185(29), 39754 & 39800(60); Carroll 17460(19).

L. canadensis, var. latifolia, f. exauriculata Wieg.- DC Grant 16172(14); B Purchase, near Carter Dome, Dandeno(00).

L. hirsuta Muhl., var. sanguinea (Bigel.) Fern.- Shelburne Deane (84).

L. biennis (Moench) Fern. Low grounds, common. - Clarksville 26038(37); Stratford 32286 (46); Lancaster 17642(19); Jefferson 14432(13), 16833(16); Randolph Fuller (86), Churchill (89), Williams (96), 1430(01), M 340(02); Gorham 31524(45)-11 feet, 2 inches high-, Shelburne Deane (82, 83, 15); Whitefield Deane (97), M 5074(13).

Crepis L.

^ C. CAPILLARIS (L.) Wallr. Meadows, etc., locally abundant. - Stewartstown, Bishop's Brook, 17697(19), 34592(49), Creampoke Road, Pease & Bean 28878(41).

Prenanthes L. Rattlesnake-root.

P. trifoliolata (Cass.) Fern. Occasional. - Randolph Williams (96); Shelburne Deane (83, 84, 14, 15, 18); Carroll, Crawford's, E. & C.E. Faxon (89), Williams (95); Dalton 35766(50).

P. trifoliolata, var. nana (Bigel.) Fern. Alpine region, common. - LB Grant, Durand Ridge, Churchill (89), Nowell Ridge, 12317(09); TM Purchase, Mt. Adams, Farlow(n.d.), Star Lake, Fuller (86), Mt. Clay, 1441(02), Carriage Road, Deane (84), Cape Horn, E. Faxon (93), Williams (96, 01), B.L. Robinson (01); S Purchase, Alpine Garden, E. & C.E. Faxon (79, 90, 96), Williams (01), Tuckerman Ravine, Hoar (1858), Allen (78), E. & C.E. Faxon (85, 90), Williams (93), Eggleston (01), Lakes of the Clouds, Williams (01), B.L. Robinson (01), Mt. Pleasant, E. & C.E. Faxon (85); C Grant, Oakes Gulf, W. Booth (1853), Williams (95, 96); H Grant, Mt. Crawford, 11729(08); indefinite, Gray (1842), Flint & Huntington (76), Pringle (77), Rich (80), Farlow (84).

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P. altissima L. Woods, common.- Pittsburg, Second Lake, 31697(45); Colebrook 29734(42); Dummer 37326(53); Kilkenny 33213(47); Lancaster 14549(13); Jefferson 16848(16); Randolph Churchill (89), Williams (96), 9908(06), M 3207(06), 10567(07), 19896(26); C Grant 13908(12); Carroll, Crawford's, Spaulding (16); Whitefield Deane (97).

P. altissima, f. integra Rousseau.- B Purchase, Carter Dome, Dandeno (00); S Purchase, Tuckerman Ravine, Williams (95); C Grant, Oakes Gulf, Williams (96).

P. altissima, f. hispidula Fern.- Pittsburg, Third Lake, 33192(47); Lancaster 14548(13); Randolph 14451(13), 21139(29); Gorham 16911(16); Shelburne Deane (18).

P. Bootii (DC.)Gray. Alpine regions, common.- LB Grant, above King Ravine, Farlow (82); TM Purchase, Great Gulf, W. Boot (1855), Williams (93), Eggleston (98), Carriage Road, Deane (84); S Purchase, Summit House, Fuller (00), Williams (01), Alpine Garden, E. & C.E. Faxon (85, 89, 90), Williams (93, 96), 1444=M 278(02), Tuckerman Ravine, Hoar (1858), C.E. Faxon (86), Merrill (96), Lakes of the Clouds, B.L. Robinson 950(01), Camel Trail, 33967(48); C Grant, Oakes Gulf, Fuller (00), Mt. Monroe, W. Boot (1865), Mt. Washington, indefinite. Oakes (n.d.), Gray (1842), Mann (1862), Flint & Huntington (76), Pringle (77), Allen (78), Rich (80), Farlow (84), Churchill (90). Gray, Synopt. Fl. of N. America (1886), 435, says: "first collected by (J.W.)Boott and Bigelow."

HIERACIUM L. Hawkweed.

* H. PILOSELLA L. Rather recently adventive.- Colebrook 31507(45), 37831(55); Columbia 36057(51); Stratford 35977(51); Berlin 36113(51), top of Deer Mtn., 33330(47); Randolph, church lawn, 35575(50); Gorham 37072(53); Lancaster 38703(57), 39839(61).

* H. FLAGELLARE Willd. Scarce adventive.- Shelburne 37449(54).

* H. AURANTIACUM L. Devil's Paint-brush. A ubiquitous weed, ruining many farms.- Pittsburg, First Lake, 10111=M 3662(07); Colebrook 13975(12); Errol Williams (03); Milan 13710 (12); Lancaster M 1091(03), 9902(06), 39444(58); Gorham M 4332(08); Shelburne Deane (14, 15); M Location 14281(13); S Purchase, Mt. Pleasant, at 4200 feet, 16788(16), near Lion Head at 5500 feet, Harris (27), Tuckerman Ravine, 4000 feet, Hodgdon et al. (49); Carroll 14440(13); Whitefield M 5042(13).

* H. AURANTIACUM x FLORENTINUM (?).- C Grant, Glen House, 23688(33); Dalton, pasture, 29541(42).

* H. FLORIBUNDUM Wimm. & Grab. Fields and roadsides, frequent.- Columbia 36089(51); Stark 37872(55); Randolph 20296(28); Jefferson 37850 & 37855(55); Whitefield 37860(55).

* H. PRATENSE Tausch. King Devil. Increasingly adventive.- Millsfield 37823(55); Jefferson 19614(25), 37451(54); Randolph 35310(50); TM Purchase, Carriage Road, 32828(47); Shelburne 36551(52), 39098(58); Whitefield 37859(55), 38279(56).

* H. PRAEALTUM Gochnat, var. DECIPIENS W.D.J. Koch. Becoming frequent.- Stewarts-town 32765(47), Pease & Harris 33549(48); Stratford 35205(50); Stark 28559(41); Northumberland 31950(46); Milan 37523(54); Jefferson 27806(40), 35219(50), 39091(58); Randolph, cemetery, 35232(50).
H. FLORENTINUM All. King Devil. Roadsides, becoming common. - Stewarsttown Pease & Harris 33534 (48); Stradford F & P 16613 (17); Stark 29542 (42); Berlin 31297 (43), 36127 (51); Lancaster 30207 (43), 39445 (58); Jefferson Mrs. Macfarlane (39), 30609 (44); Berlin 38325 (56); Randolph 20998 (29), 30612 (44); G Grant 23687 (33); B Purchase, Wild River, 34452 (49); Carroll 33448 (48), 36084 (51), Crawford's, 16645 (16); Dalton 16420 (15); Whitefield 37452 (54).

H. VULGATUM Fries. Rare. - Stark, railway, 34167 (48).

H. Robinsonii (Zahn) Fern. Rocky shores, very local. - DC Grant, Diamond Gorge, 10513 (07).

H. canadense Michx. Rare. - Dalton 35859 (50).

H. canadense, var. fasciculatum (Pursh) Fern. Rare. - Colebrook, Hughes Road, 29761 (42).

H. paniculatum L. Rocky or dry woods, frequent southward. - Stark 17021 (17); Northumberland, Cape Horn, 26845 (38); Lancaster 14551 (13); Randolph 11736 (09); Gorham 11442 (08); Shelburne Deane (83, 16); S Purchase, Carriage Road, 13900 (12); H Grant, Mt. Crawford, 11735 (08).

H. paniculatum, f. glandulosum R. Hoffm. Scarce. - Shelburne, roadsides near Leadmine Bridge, 11692 (08).

H. scabrum Michx. Dry woods and pastures, common. - Pittsburg, First Lake, Mrs. Stevens (95); Milan 13799 (12), Jefferson 16857 (16); Randolph Williams (95), M 296 (02), M 1477 (03), 11658 (08), M 4859 (10), 19897 (26), 21096 (29); Gorham M 4275 (08), 16861 (18); Shelburne Deane (83, 85, 15); B Purchase, near Carter Dome, Dandenos (00); Carroll, Crawford's, Kennedy (91); Whitefield Deane (97).
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