BOTANY
OF THE
NORTHERN AND MIDDLE STATES;

OR

A DESCRIPTION OF THE PLANTS FOUND IN THE UNITED STATES, NORTH OF VIRGINIA,
ARRANGED ACCORDING TO THE NATURAL SYSTEM.

WITH

A SYNOPSIS OF THE GENERA ACCORDING TO THE LINNEAN SYSTEM—
A SKETCH OF THE RUDIMENTS OF BOTANY, AND
A GLOSSARY OF TERMS.

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TO THE

Rev. Lewis D. Des Schweinitz, Ph. D.

This work is inscribed,

As a tribute of respect and esteem,

By his obliged friend,

Lewis C. Beck.
THE object of this work is to furnish a description of
the plants of which it treats, adapted to the present
state of botanical science. In accordance with this de-
sign, I have followed the natural method of arrange-
ment, which has already received the sanction of the
best botanists of Europe, and cannot fail of being adopt-
ed by those of our own country. For the purpose of con-
tributing in some degree to the accomplishment of this
desirable result, I have given, as shortly as possible, the
characters of the Natural Orders, which are arranged
according to the method of Jussieu as modified by De
Candolle. In this part of the work, I have con-
sulted with great advantage the article Botany in
the new edition of the Encyclopaedia Britannica: and indeed, I have, with few exceptions, adopted the
arrangement and characters of the orders there given.
Of the article in question, I regret that I have as yet
been unable to ascertain the name of the author, but it
bears throughout the impress of one who is thoroughly
versed in the subject of which it treats. I should also
mention, that I have derived much assistance from Prof.
Lindley’s Introduction to the Natural System.

With regard to the Genera, some alterations, and as it
is conceived, improvements, will be observed by the bot-
anist. These consist, generally, in the adoption of the
views of De Candolle and others, who have made the
natural system a particular study. As some of the Lin-
næan genera are thus divided, and others remodelled, it
may form a ground of objection on the part of those
who have not duly considered the subject. But it
should be remembered, that Botany is a progressive
science; and it would be strange indeed if the labors
of botanists, since the time of Linnaeus, should not have
resulted in a more correct knowledge of plants, and
hence of the proper mode in which they should be grouped together. It is difficult to determine the true import of the Linnæan maxim, "let the genus give the character"; but if it is intended by it that the characters thus established should be so modified as to embrace all new plants, or that the genera should not be divided as nature seems to warrant, it is, in my opinion, quite as much honored "in the breach as in the observance."

In the description of the Species, in addition to my own observations, I have freely availed myself of all the sources of information within my reach. The works on American Botany have been constantly consulted; especially Pursh's Flora, Torrey's Flora and Compendium, Elliott's Sketch, Nuttall's Genera, Bigelow's Florula, Muhlenberg's Grasses, and his Catalogue, &c. In this part of the work, it has been my object to give an accurate and sufficiently detailed description, together with the habitat and geographical range of each species, and such popular characters and illustrations as it was thought would be an additional guide to the beginner. It may be observed, that I have generally adopted the specific characters of De Candolle, as far as the Natural Order Compositae. With regard to the Glumaceae, I have, with few exceptions, adopted the views of Dr. Torrey. Dr. Hooker's valuable Flora Bor. Amer. and Richardson's Appendix to Franklin's Narrative, have afforded me the means of determining the Northern limits of many of our plants. For the Southern limits I have generally depended upon Elliott, and upon the information which I have received from my friends, Prof. T. R. Ingalls of Louisiana, and Dr. Isaac Branch of South Carolina; and for the Western, upon my own observations, and upon those of Mr. Nuttall, and other botanists who have explored the region west of the Mississippi. I should also state, that while this work was
passing through the press, I received through the kindness of Mr. Albert R. Fox of Sand Lake, a catalogue of the plants found by Dr. Houghton, now of Detroit, in his interesting tour to the sources of the Mississippi.

This work being intended as a text-book for the beginner, as well as a convenient manual for the more advanced botanist, I have added a Sketch of the Rudiments of Botany, drawn chiefly from Prof. Lindley's Outlines, and the article in the Encyclopædia, to which I have before referred;—a Glossary of Terms, and a Table of the Linnaean Classes and Orders. And to accommodate those who wish to investigate plants according to the Artificial System, a Synopsis of the Genera is also introduced, containing under each genus a reference to the Natural Order, and the page where the species are described. I have not introduced any cultivated exotics, for the reasons, 1st, that it would have materially increased the size and expense of the work; and 2dly, that observation has satisfied me of the injurious effects, of commencing the study of botany with the examination of plants, which are often so much changed in their characters by a difference of climate, soil, cultivation, &c.

It only remains for me to present my acknowledgments to those individuals who have afforded me assistance and encouragement, in the prosecution of my design. To the Rev. L. D. de Schweinitz, I am under particular obligations, for the important aid which he has rendered. Nor should I omit to mention, that I am indebted to Dr. Asa Gray, of Utica, for much interesting information concerning the Botany of Western New-York. In all cases it has been my object to give due credit for every new or interesting fact which has been communicated to me.

Albany, May, 1833.
### ABBREVIATIONS AND CHARACTERS

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- ⊗ Annual.
- ♂ Biennial.
- ♦ Perennial.
- ♃ Shrubby or arboreous.

**Can.** Canada,

**Car.** South Carolina, unless preceded by an **N.** when it is intended for North Carolina.

**W.** to **Miss.** As far West as Missouri.

**W.** to **Mich.** As far West as Michigan.
SKETCH OF THE RUDIMENTS OF BOTANY.

ELEMENTARY ORGANS.

1. The tissue of which plants consist, appears under four forms, viz: cellular tissue, woody fibre, spiral vessels, and ducts. These are called elementary organs.

2. **Cellular Tissue** or **parenchyma** is composed of transparent vescicles, variously cohering with each other. It is the only form universally found in plants; the other forms being often partially or entirely wanting.

3. **Woody Fibre** is a tissue consisting of elongated tubes, similar to the vescicles of cellular tissue, and is therefore often called elongated cellular tissue.

4. **Spiral Vessels** are formed of elastic tissue, twisted spirally into the form of a cylinder, and capable of being unrolled. They only exist in plants propagated by stamens and pistils, and hence the two primary divisions of the vegetable kingdom into Vasculares and Cellulares.

5. **Ducts** are elongated, transparent tubes, composed of tissue that is not capable of unrolling.

6. All these forms are covered by a membrane called the **cuticle**.

7. From peculiar combinations of the elementary organs are formed the compound organs.

ROOT.

8. The **root** is formed by the descending and dividing fibres of the stem; and by it plants are with few exceptions fixed to the earth, and nutriment absorbed.

9. It is distinguished from the stem by the absence of leaves, of pith even in those plants in which it is abundant in the stem, and of spiral vessels.

10. It usually consists of three parts; the **neck**, (**collum**) or line of separation from the stem; the **body** or middle portion; and the **fibres** or little roots, through which the nourishment is principally derived.

11. The following are the principal kinds of roots:

   a. **Conical**, or principal tap root as it is sometimes called; tapering downwards and emitting fibres from various parts of its surface; as in the carrot.

   b. **Fusiform**, when the conical root is attenuated towards the neck, as well as below; as in the radish.

   c. **Napiform**, when it is swollen out extremely in the upper part and suddenly attenuated below; as in the turnip.

   d. **Abrupt**, when the fusiform root is as it were cut off suddenly.
e. Fibrous, a collection or bundle of fibres connected by a common head and often merely by the base of the stem; as in the grasses.

f. Fasciculated, when the fibres swell out slightly in the middle.

g. Tuberos, a fibrous root bearing either at its neck or here and there attached to its fibres one or more tubers, fleshy, and containing much starchy succulent matter. These tubers are properly short subterranean stems, containing usually eyes or buds from which new plants arise.

—The root should be called tuberosus.

h. Granulated, a collection of small tubercles with eyes fit for the reproduction of a plant, but not enveloped by cellular tissue filled with starchy matter.

i. Bulbous, consisting of a number of scales or coats closely applied to each other, with a crown at the top and fibres below.—It performs the office of a bud, and such roots may rather be termed bulbiferous.

12. The direction of the root is usually towards the centre of the earth; but it is sometimes contorted or bent upwards and downwards in a zigzag manner; or creeping when it proceeds laterally at right angles from this. These have often been confounded with subterranean branches; the last of which only are troublesome to the agriculturist.

STEM.

13. This is the part which springs upwards during the germination of a seed; it is the intermediate body between the root and the leaves.

14. When the stem of a plant arising from a seed is evident, the plant is termed caulescent; and when not apparent or scarcely so, the plants have received the name of acaules, or stemless.

15. When the stem instead of ascending, stretches either wholly or in part, under ground, emitting here and there roots from below and branches or leaves which rise upwards, it is called a rhizoma; or if it do not emit fibres, a cormus. Most of what Linnaeus incorrectly described as creeping roots are of the former description.

16. Stolons or runners are long stems of a peculiar nature issuing horizontally from a plant, and emitting only from the extremity roots and leafy buds, as in the strawberry.

17. The stem varies in structure, in three principal modes.

18. In vascular plants it is either formed by successive additions to the outside of the wood, when it is called Exogenous; or by successive additions to its centre, when it is called Endogenous. In cellular plants it is formed by the union of the base of the leaves, or by a simple elongation or dilatation where no leaves or buds exist.

19. The stem of Exogenous plants may be distinguished into the pith, the medullary sheath, the wood, the bark, the medullary rays, and the cambium.

20. The pith is a mass of spongy cellular tissue occupying the centre of the stem.

21. The medullary sheath surrounds the pith, and consists of spiral vessels and ducts. It communicates on one side with the pith and on the other with the medullary rays, leaf buds and veins of the leaves.

22. The wood lies upon the medullary sheath and consists of concentric layers, one of which is formed every year. These layers are
composed of cellular tissue, woody fibre and ducts, and are traversed by the medullary rays composed of cellular tissue, and connecting the centre with the circumference. —The fully formed or central layers are called the heart-wood, and the exterior the alburnum.

23. The bark surrounds the wood, and like it consists of concentric layers, but of these the hardest or most fully formed is exterior and the youngest interior. Each concentric layer is composed of woody fibre and ducts covered externally by a layer of cellular tissue; —the woody fibre and ducts constituting the liber; and the outer cellular tissue, the epidermis.

24. The cambium is a viscid secretion which is formed in the spring, between the liber and alburnum.

25. The stem of Endogenous plants presents no distinction of pith, medullary rays, wood and bark, but is formed of bundles of ducts and spiral vessels interspersed through a cellular tissue; and this is surrounded by a stratum of cellular tissue and woody fibre different from bark, inasmuch as it cannot be separated from the stem itself. Such plants have their diameter increased by the addition of central vascular tissue and ducts.

26. Projections from the medullary sheaths sometimes reach the circumference of the stem and branches, forming what are called nodi, to which are attached leaves and leaf buds, and the spaces between these are called internodia.

27. Whatever is produced by the evolution of a leaf bud is a branch: A spine therefore is a kind of branch; it differs from the prickle which is a mere dilatation of the cellular portion of the bark.

28. The stem peculiar to the grasses and other allied tribes is termed a culm. This is simple, or rarely branched, generally hollow within or fistulose, and separated at intervals by knots or partitions from which issue the leaves.

29. The stem may be simple or branched, and with the branches may be cylindrical, or conical; round, (terete,) or angled; smooth, furrowed, or rough, or hairy, &c.

30. With regard to duration the stem is

a. Annual, (©) when it is completely developed and decays during the same season.

b. Biennial, (♀) when it produces fruit the second season and then decays.

c. Perennial, (2£) when it produces flowers and fruit during many successive seasons.

31. The term herb or herbaceous employed in opposition to perennial, denotes that the stem generally dies down to the ground every year.

LEAF-BUDS.

32. Buds are of two kinds, leaf-buds and flower-buds.

33. Leaf-buds consist of rudimentary leaves surrounding a vital point, the tissue of which is capable of elongation; upwards in the form of stem, and downwards in the form of wood or root:

34. Flower-buds consist of rudimentary leaves surrounding a point, which does not elongate after it is once developed, and assumes when fully developed, the form of reproductive apparatus.
35. Leaf-buds are of two kinds; the regular only found in the axils of the leaves; and the adventitious which may be produced wherever there is an anastomosis of woody fibre.

36. Leaf-buds have sometimes been confounded with roots by old botanists. A bulb is a leaf-bud.

LEAVES.

37. Leaves are those expansions which issue laterally from the stem and branches of plants. They take their origin from the bark, and are always to be observed, whether perfect or rudimentary, immediately below the leaf-buds.

38. Those leaves situated near the root are often larger, and of a different shape from those higher up the stem; the former are termed radical, the latter cauline.

39. A leaf consists of a petiole, a lamina or limb, and a pair of stipules; but sometimes only one of these three parts can be observed.

40. The petiole is the channel through which the vessels of the leaf are connected with those of the stem; it is formed of one or more bundles of spiral vessels and woody fibre, enclosed in a cellular integument.

41. The lamina of a leaf is an expansion of the parenchyma of the petiole, and is transversed by veins which are ramifications or extensions of the bundles of vascular tissue of the petiole; or when there is no petiole, of the stem.

42. These veins either branch in various directions among the parenchyma, anastamosing and forming a kind of net-work, or they run parallel to each other, being connected by single transverse unbranched veins; the former structure being characteristic of Exogenous, and the latter, of Endogenous plants. To this the Coniferae and Cycadeae form perhaps the only exceptions; these having the stems of the Exogenous, but the same arrangement of the veins as in the Endogene.

43. The principal vein of a leaf is a continuation of the petiole, running in a direct line from the base to the apex of the lamina, and is called the midrib.

44. The lamina is variously divided and formed; it is usually thin and membranous, with a distinct upper and under surface, but sometimes becomes succulent, when the surfaces cannot be distinguished.

45. A leaf is either simple or compound; simple when its lamina is undivided, or when, if separated into several divisions, these segments are not articulated with the petiole; compound when the lamina is articulated with the petiole.

46. The modes in which leaves are divided are distinguished by particular names, as pinnate, pinnatifid, bipinnate, bipinnatifid, &c. &c. These terms apply to the mode of division, and are equally applicable to simple and compound leaves.

47. Stipules are those small foliaceous organs sometimes situated on each side at the base of the petiole. They never occur in the Endogene, nor in any Exogenous plants that have sheathing petioles, and are rarely found in genera with opposite leaves. They are sometimes transformed into leaves; they sometimes have leaf-buds in their axils; and sometimes also they are changed into spines.
48. Leaves are originally continuous with the stem, but afterwards, from a cause which is still unknown, an articulation more or less complete takes place and the fall of the leaf ensues.

49. The mode in which leaves are arranged within their bud is called vernation or gemmation. This varies much in different groups of plants.

FLOWER-BUDS.

50. The flower-bud consists of imbricated rudimentary or metamorphosed leaves, the external or inferior of which are usually alternate, and the internal or superior always verticillate or opposite; the latter are called floral envelopes and reproductive organs.

51. The leaves from the axils of which the flower-buds arise are called bracts, (bracteae,) or floral leaves; and those leaves which appear on the pedicel between the bracts and calyx, are called bracteoles. These, although essentially distinct, are often confounded with the former.

52. When a single bract is rolled together, highly developed, and coloured, and is placed at the base of the form of inflorescence called a spadix, it is named a spathe, (spatha.)

53. When several bracts are verticillate or densely imbricated around the base of the forms of inflorescence called the umbel, or capitulum, they are termed an involucere; and those at the base of each partial umbel are called involucels.

54. Small imbricated bracts are often called scales; as in the Compositae.

55. Bracts, when placed immediately below the stamens and pistils, as in apetalous flowers, are only distinguished from the calyx by being alternate with each other, and not verticillate; hence the glumes and paleae of grasses are bracts and not calyx.

56. The elongation of the axis of the flower bud from the point of its connexion with the stem, as far as the floral envelopes, is called the peduncle.

57. When several peduncles spring from the axis near to each other, the axis is termed a rachis, and the peduncles themselves are called pedicels.

58. Those axes that spring from the earth and bear no true leaves are denominated scapes.

59. The modes in which the flower-buds are arranged are called forms of inflorescence; and the order in which they unfold, is called the order of expansion.

INFLORESCENCE.

60. When a flower-bud gives rise to only one flower, terminal on its peduncle, and the axis of the plant does not elongate beyond the bud, the flower is commonly called terminal and solitary.

61. When the axis, however, continues to elongate and the bract retains the form and size of a leaf, the flower is called axillary and solitary.

62. If the buds instead of giving rise to one terminal flower have the axis elongated, bearing several flowers, and each flower on a peduncle, a raceme is formed.
63. When each flower is sessile or placed in the axil of the bracts, without a peduncle, a spike is produced: Hence the only difference between a spike and raceme is, that in the former the flowers are sessile and the latter stalked. The term spike, however, is applied in those cases where the peduncle is scarcely perceptible.

64. A spadix is a sort of spike, in which the flowers are closely packed together upon a succulent axis, which is enveloped in a spathe.

65. An ament or catkin, is a spike, the bracts or scales of which are nearly of equal size and closely imbricated, and which is articulated with the stem.

66. When a bud produces flower-buds, with a little elongation of its own axis, either a head, (capitulum,) or an umbel is produced. The former bears the same relation to the latter as the spike to the raceme; that is, they differ in the flower-buds of the head being sessile, and of the umbel having pedicels.

67. A raceme, the lowest flowers of which have long pedicels and the uppermost short ones, forming a sort of level top, is a corymb.

68. A panicle is a raceme, the flower-buds of which have, in elongating, developed other flower-buds.

69. A panicle, the middle branches of which are longer than those of the base or apex, is termed a thyrsus.

70. A panicle, the elongation of all the ramifications of which is arrested, so that it assumes the appearance of an umbel, is called a cyme. The cyme may have the lateral branches very short and the flowers clustered together, forming a fascicle; or it may be so contracted and the ramifications of it so little apparent, as to be confounded with the true head, when it is called a glochidium.

71. In all the modes of simple inflorescence, that is those which proceed from the buds of a single branch, the flowers expand first at the base and last at the summit. This kind of expansion is called centripetal.

72. When the inflorescence is compound, or the result of the expansion of several buds or branches, the uppermost or central flowers are first developed, and lastly the outer or lower ones. This kind of expansion is called centrifugal.

FLORAL ENVELOPES.

73. These immediately surround the stamens and pistils and are formed of one or more whorls of variously modified leaves. When they consist of but one whorl, they are called calyx; when of two whorls, the outer is called calyx, the inner corol, (corolla.)

74. If the floral envelopes are of such a nature that it is not obvious whether they consist of both calyx and corol, or calyx only, they receive the name of perianth, or perigonium.

75. Some plants have no floral envelopes; the flowers are then said to be naked or achlamydocous.

76. The calyx consists of two or more divisions, usually green, called sepals, which are either distinct, when a calyx is said to be polysepalous, or which unite by their margins in a greater or less degree, when it is called monosepalous or monophyllous, (more properly gamosepalous.)
77. The corol or corolla consists of two or more divisions, more or less coloured, called petals; when the petals are distinct, a corol is said to be polypetalous; when they are united by the margins, it is called monopetalous, (more properly gamopetalous.)

78. When all the petals are equal, the corol is said to be regular, but when they are unequal in size or cohere unequally, it is then called irregular.

79. The regular monopetalous corol varies greatly in its form, being campanulate or bell-shaped, infundibuliform or funnel-shaped, rotate or wheel-shaped, &c.

80. The calyx or corol are said to be labiate or bilabiate, when the sepals or petals are united in one or two parcels.

81. The papilionaceous corol consists of five petals; the upper one, usually larger than the others, is called the vexillum or standard; the two lateral ones, the alae or wings; and the two lower ones, usually more or less united together by their lower margins, the carina or keel.

82. When the petal tapers conspicuously towards the base, it is said to be ungulicate or clawed; its lower part is called the unguis or claw, its upper, the limb.

83. The dilated apex of the pedicel, from which the floral envelopes and stamens arise, is called the torus or receptacle.

84. Whatever intervenes between the bracts and the stamens belong to the floral envelopes, and is either calyx or corol; of which nature are many of the organs commonly called nectaries.

85. The manner in which the floral envelopes are arranged before they expand is called their estivation, or praefloration.

DISK.

86. Whatever intervenes between the stamens and pistils receives the general name of disk.

87. The disk usually consists of an annular elevation encompassing the base of the ovary; but it sometimes appears in the form of a glandular lining of the tube of the calyx, as in the Rose; or of tooth like hypogynous processes, as in the Cruciferæ; or of a fleshy mass, as in Lamium.

88. The disk sometimes appears to be a mere cellular expansion of the torus, (83) as in Nelumbium.

89. It is one of the parts commonly called nectary.

STAMENS.

90. The whorl of organs immediately within the petals is composed of bodies called stamens, and they are essential to the production of seed.

91. When stamens and pistils occur in the same flower it is termed perfect or hemaphrodite; but when the stamens are in one flower and the pistils in another, the flowers are imperfect or dichotous.

92. The number of stamens is variable; five or ten being the usual number among the Exogenous, and three to six among the Endogenous plants.
03. When the stamens do not contract any union with the sides of the calyx, they are hypogynous; as in Ranunculus.

04. When they contract adhesion with the side of the calyx, they become perigynous; as in Rosa.

05. If they are united both with the surface of the calyx and of the ovary, they are epigynous; as in Umbelliferae.

06. The stamen consists of a filament and an anther.

07. The filament is the body which arises from the torus, and is sometimes cylindrical, or awl-shaped, or prismatical, and is even at times expanded; as if into a scale or petal; but it is not essential to the stamen.

08. The filaments are usually free or isolated from each other; but they are sometimes united into one tube, when they are called monadelphous; or into two parcels, diadelphous; or into several, polyadelphous.

09. When they are united into a solid body along with the style, they form what is called a column, and are said to be gynantrous.

10. The anther is a kind of bag borne by the filament, and corresponds to the lamina of a leaf. It is sessile when there is no filament, or it is placed at the top of the filament in various ways.

101. The bags or cells of the anther are termed lobes, and the solid substance which connects them, corresponding to the midrib of a leaf, the connectitum. These cells are usually two in number; sometimes they are four, rarely one.

102. The lobes or cells of the anthers open in different ways by what is called the line of dehiscence; sometimes only a portion of this line opens, the anther is then said to dehisce by pores; Ex. Azalea.

103. The anthers frequently grow together by their margins, as in the Compositae; when they are called syngenesious.

104. The anther contains and frequently emits a matter called the pollen, the use of which is to give life to the ovule or young seed.

105. When the grains of pollen burst, they again discharge a multitude of very minute particles, called molecules, or granules.

106. When the grains of pollen easily detach from each other, they are said to be pulverulent, and then they may be either perfectly smooth or they may be viscous.

107. Sometimes the grains contained in one cell or bag, instead of separating readily, cohere into what is termed a pollen mass, (pollinia.) Ex. Orchidæ.

PISTIL.

108. The pistil or pistillum is the organ which occupies the centre of a flower, within the stamens, and is the fruit-bearing apparatus of plants.

109. It is distinguished into three parts, viz: the ovary, the style, and the stigma.

110. The ovary is a hollow case enclosing the ovules or young seeds. It contains one or more cavities called cells.

111. The stigma is the upper extremity of the pistil.

112. The style is that part which connects the ovary and stigma; but it is often wanting, when the stigma is said to be sessile.
113. The pistil is either the modification of a single leaf, or of one or more whorls of modified leaves; the latter being termed carpels.

114. When the margins of the folded leaf out of which the carpel is formed meet and unite, a copious development of cellular tissue takes place, forming what is called the placenta.

115. If no union takes place among the carpels, the ovary is termed apocarpous, as in Ranunculus; but if there is an adherence, so that a compound ovary is formed, it is called syncarpous.

116. When carpels unite, those parts of their sides which are contiguous grow together, and form partitions between the cavities of the carpels, called dissepiments.

117. When these dissepiments are so contracted as not to separate the cavity into a number of distinct cells, but merely project into a cavity, the placenta which occupy the edges of these dissepiments become what is termed parietal.

118. If the dissepiments are abortive or obliterated, the placenta remaining unaltered in the axis, a free central placenta is formed.

119. A one-celled ovary may also be formed out of several carpels in consequence of the obliteration of the dissepiments; Ez. Nut.

120. If the ovary adheres to the sides of the calyx it is called inferior, and the calyx is said to be superior.

121. If it contracts no adhesion with the sides of the calyx, it is called superior, and the calyx inferior.

OVULUM.

122. The ovule or ovulum is a body borne by the placenta, and is destined to become the seed; its position is of great importance in determining natural affinities.

123. When the ovule is fixed by its base to the bottom of one of the cells of the ovary, of which it takes the direction, it is said to be erect; or if it hangs from the summit of the cell, it is inverted.

124. When it is attached to the middle portion of the placenta, it may have an upright direction, and is then called ascendant, or point downwards and is then suspended. Generally, however, the erect and ascendant ovule are confounded under one name, and the inverted and suspended are known by the term pendulous.

125. The ovule is either sessile, or on a stalk called the funiculus or podosperm; and in either case the point by which the union is formed is termed the base of the ovule, and the other extremity the apex.

126. The ovule consists of a nucleus and two external coats; the outer of which is called the testa or primine sac; and the inner, the internal membrane, or secundine sac, or the tegmen.

127. The base of the nucleus is always incorporated with the base of the internal membrane, and their common base is attached at some points to the testa. The junction of the three, forms the chalaza.

128. The mouths of the primine and secundine sacs usually contract into a small aperture called the foramen of the ovule, or the exostome. It is through this foramen that the molecules of the pollen are introduced into the nucleus; and its position indicates the future position of the radicle of the embryo, the radicle being always next the foramen.
129. When the apex of the nucleus is contiguous to the base of the ovule, a connection takes place between the base of the ovule and the base of the nucleus, by a bundle of vessels called a raphe.

FRUIT.

130. Fecundation having taken place, the floral envelopes usually fade away, the stamens disappear and the pistil increases in size and becomes the fruit.

131. Hence the fruit should have the same structure as the pistil, but this is not always the case, for as the pistil advances to maturity many alterations take places, in consequence of abortion, non-development, obliteration or even union of parts.

132. The base of the fruit is the part where it is joined to the peduncle; the apex is where the remains of the style are found.

133. The portion of the pistil called the ovary is in the ripe fruit termed the pericarp.

134. The pericarp consists of three parts, the outer coating called the epicarp, the inner lining called the endocarp or putamen, and the intermediate substance named the sarcocarp or mesocarp. Sometimes these three parts are readily distinguished, as in the peach; but they frequently form one uniform substance, as in the nut.

135. The axis of the fruit is often called columnella; the space where two carpels unite is named the commissure.

136. If the pericarp neither splits nor opens when ripe, it is said to be indehiscent; but if it does split or open, it is said to dehisce, or to be dehiscent; and the pieces into which it divides are termed valves.

137. When a fruit is in its simplest state, or formed by the transformation of one carpellary leaf, there may be two sutures or lines by which it may open, the one where the margins of the leaf or the placenta meet, called the ventral suture, the other at the part corresponding to the midrib of the leaf, or the dorsal suture.

138. If, in a compound fruit, the line of opening corresponds with the junction of the carpels the dehiscence is septicidal. Formerly in this kind of dehiscence the valves were said to be alternate with the dissepiments.

139. If the opening is by the dorsal suture of each carpel, the dehiscence is loculicidal; or as it was formerly said, the dissepiments are opposite to the valves.

140. When a separation of the pericarp takes place across the cells horizontally, the dehiscence is transverse.

141. If the dehiscence is effected by partial openings of the pericarp, it is said to take place by pores.

142. All fruits are either simple or multiple; the former proceeding from a single flower, as the Apple, Nut, Strawberry, &c.; the latter formed out of several flowers, as the Pine-apple, Fig, &c.

143. Simple fruits are either indehiscent or dehiscent; of the former the most important are the caryopsis, the utricle, the achenium and the drupe.

144. The caryopsis, is where the pericarp is very thin and membranous, and adheres firmly to the integument of the seed; Ex. Wheat and Barley.
145. The *uticle* is similar to the caryopsis, the pericarp being membranous, but it has no adherence with the seed.

146. The *achenium, (acine,)* in which the pericarp is hard and bony, as well as distinct from the proper covering of the seed; as in the Composita.

147. A *drupe* is a fleshy nut enclosing a putamen; *Ex.* Cherry and Peach.

148. The *nut* contains a putamen, but the sarcocarp is coriaceous, instead of being fleshy.

149. The dry dehiscent fruits are the follicle and the legume.

150. The *follicle* is a carpel dehiscing by the ventral suture, and having no dorsal suture.

151. The *legume* is a carpel having both ventral and dorsal sutures, by either of which or by both or neither it may dehisce; rarely the sides fall off, bearing nothing but sutures, which then form a kind of frame, called a *replum.* When articulations take place across the legume and it falls into several pieces, it is said to be *lomentaceous.*

152. Of fruit formed of several carpels the principal are the capsule, the silique, gland, berry, orange, pome, and pepo.

153. The *capsule* is a many-celled, dry dehiscent pericarp.

154. The *silique, (or pod,)* consists of two (or four) carpels fastened together, the placenta of which are parietal and separate from the valves, remaining in the form of a replum and connected by a membranous expansion; when the silique is very short, or broader than it is long, it is called a *silicle* or *pouch.*

155. The *gland* is a dry bony, indehiscent, one-celled and one-seed-ed fruit, proceeding from an ovary of several cells and seeds, and enclosed by an involucre called a *cupule.* *Ex.* Quercus.

156. The *berry* is a succulent fruit, the seeds of which lose their adhesion when ripe, and lie loose in pulp; as the grape or gooseberry.

157. The *orange* is a berry having a pericarp, separable into an epicarp, an endocarp and a sarcocarp, and the cells filled with pulpy bags, which are cellular extensions of the sides of the cavity.

158. The *pome* is a union of two or more inferior carpels, the pericarp being fleshy and formed of the floral envelope and ovary firmly united.

159. The *pepo* is composed of about three carpels, the sides of which do not turn far inwards, nor the margins unite. It is a one-celled, fleshy, indehiscent fruit, with parietal placenta.

160. The most remarkable modifications of multiple fruits are the cone, pine-apple, and fig.

161. The *cone* or *strobile* is an indurated ament. When it is much reduced in size, and its scales cohere, it is called a *galbulus*; as in Thuja.

162. The *pine-apple* in a spike of inferior flowers, which all grow together in a fleshy mass.

163. The *fig* is a fleshy, hollow, dilated apex of a peduncle, within which a number of flowers are arranged, each of which contains an achenium.
SEED.

164. The seed is the ovule arrived at maturity.

165. It consists of integuments, albumen and embryo; a naked seed is only found in those rare cases in which the ovule is naked.

166. The seed proceeds from the placenta, to which it is attached by the funiculus; sometimes this becomes expanded about the seed into a fleshy body, called the aril.

167. The scar which indicates the union of the seed with the placenta, is called the hilum or umbilicus.

168. The integuments are called collectively testa, and consist of membranes resulting from the sacs of the ovule. These membranes are called by various names.

169. Between the integuments and the embryo of some plants lies a substance called the albumen or perisperm; the nature of this is of great importance.

170. The albumen is sometimes farinaceous, as in the grasses; coriaceous and almost cartilaginous, as in many Umbeliferae; ruminated or wrinkled as in Anonaceae; horny as in the coffee-bean; or thin and membranous, as in many Labiateae.

171. The embryo is the organized body that lies within the seed, which is destined to become a plant similar in all respects to the parent. It is usually solitary in the seed, but occasionally there are two or several.

172. The embryo consists of the cotyledons, the radicle, the plumula and the neck.

173. The cotyledons represent the undeveloped leaves.

174. The plumula, is what is destined to become the stem, and is therefore a rudimentary leaf-bud.

175. The radicle is the rudiment of the root, and by germination becomes the root.

176. The neck or collum is the line of separation between the radicle and the portion above it.

177. The number of cotyledons varies from one to several.

178. Plants that have but one cotyledon, or if with two, then the cotyledons alternate with each other, are Monocotyledonous. These are also Endogenous plants.

179. Plants that have two cotyledons placed opposite each other, or a greater number placed in a whorl, are called Dicotyledonous. These are also Exogenous plants.

180. Plants that have no cotyledons, are said to be Acotyledonous. But this term is only applied to cellular plants, which having no stamens and pistils, can have no seed.

181. When the radicle is so bent that it touches the back of one of the cotyledons, it is said to be dorsal, or the cotyledons incumbent.

182. When the radicle is applied to the edge or cleft of the cotyledons, it is said to be lateral, or the cotyledons accumbent.

183. When the seed is called into action, germination takes place and growth commences.
Abortion, an imperfect development of any given organ.
Abruptly pinnate, pinnate with even pairs only, wanting the odd or terminal leaflet.
Accombrnt, lying on, prostrate, a term employed in Cruciferae, 182.
Aceroce, stiff, linear, and sharp, as in the leaves of the Pines.
Acine or achenium, 146.
Acotyledonous, 180.
Aculeate, prickly.
Aculeus, a prickle; growing to the bark, not to the wood.
Acuminate, taper pointed, more than acute.
Acute, ending in a sharp point.
Adnate, growing to, affixed laterally.
Agglomerated, bunched, crowded together.
Aggregate, standing together, many on the same receptacle, but not compound.
Alated, see Winged.
Albumen, 169.
Alternate, placed alternately on opposite sides of the stem.
Ament, or cattin, 65.
Amplexicaul, see Clasping.
Ancipital, two edged.
Androgynous, having barren and fertile flowers on the same spike, or the same plant, but no perfect ones.
Annual, 30 a.
Anther, 100.
Antheriferous, bearing anthers.
Apetalous, without petals.
Apex, end, tip, or sharp extremity.
Aphylous, without leaves.
Appendiculate, having some appendage.
Appressed, pressed against or close to.
Approximate, near together.
Apterous, without wings. A term applied to some parts of flowers.
Arboraceous, like a tree.
Arborscent, approaching to the size of a tree.
Arcuate, curved or bent like a bow.
Aril, 166.
Aristate, awned, ending in a bristle.
Armed, furnished with thorns or prickles.
Articulated, jointed.
Ascending, rising from the ground obliquely.
Assurgent, rising upwards.
Attenuated, gradually diminished or tapering.
Auriculate, having an ear-like base.
Aven, a stiff bristle, frequently rough or bearded; as in the flowers of certain grasses.
Avened, having awns.
Awenless, without awns.
Axil, the angle between a leaf and stem on the upper side.
Axillary, growing in or from the axil.
Baccate, berried, having a fleshy coat or covering.
Banner or vexillum, 81.
Barren, producing no fruit, containing stamens only.
Beak, any thing which resembles the beak of a bird, hard short points.
Berry, 156.
Bicuspidate, with two points.
Bidentate, with two teeth.
Bienniaal, 30 b.
Bifid, two cleft, cut nearly in two parts.
Biglandular, having two glands.
Bilabiate, having two lips.
Bilobed, having two lobes.
Bilocular, having two cells.
Binate, growing two together.
Bipinnate, twice pinnate, when both the leaf and its subdivisions are pinnate.
Bipinnatifid, twice pinnatifid, both the leaf and its segments being pinnatifid.
GLOSSARY OF TERMS.

Bifurcated, twice ternate, the petiole supporting three ternate leaves.  
Bicarinate, two valved.  
Border, the brim, or spreading part of a coroll.  
Brachiate, branches opposite, and each pair at right angles with the preceding.  
Brae, 51.  
Bulb, 36, 11 i.  

Caducous, falling early, sooner than deciduous.  
Cespite or cespitose, growing in tufts.  
Calcarate, resembling, or furnished with, a spur.  
Calli, small callosities or rough protuberances.  
Calyptriform, shaped like a calyx.  
Calciferous, furnished with an additional outer calyx.  
Calyptraform, shaped like a calyptra or extinguisher.  
Calyx, 73.  
Campanulate, bell-shaped.  
Canaliculate, channeled or furrowed.  
Canescent, whitish, hoary.  
Capillary or capillaceous, very slender, resembling a hair.  
Capitate, shaped like a head, or bearing a head.  
Capsule, 153.  
Carina, 81.  
Carinated, keeled, furnished with a sharp or prominent back like the keel of a vessel.  
Carpel, 113.  
 Caryopsis, 144.  
Canthium, see Ament.  
Caudate, having a tail; as in some seeds.  
Caudex, the main body of a tree or root.  
Caudescent, 14.  
Cauline, growing on the stem.  
Cell, a cavity or compartment of a seed vessel, or anther.  
Cellular, made up of little cells or cavities.  
Chaffy, made of short membranous portions like chaff.  
Ciliate, fringed with parallel hairs.  
Cirrrose, or cirrhose, bearing a tendril.  
Clasping, surrounding the stem partly or quite, with the base of the leaf.  
Clavate, club shaped, larger at top than bottom.  
Claw, the taper base of a petal, 82.  
Cleft, split or divided less than half way.  
Clavate, shaped like a Roman buckler.  
Coadunate, united at base.  
Cochliform, resembling the shell of a snail.  
Coloured, different from green which is the common colour of plants.  
Columella, 135.  
Column, 99.  
Coneose, covered with cottony hair.  
Compound, made up of similar simple parts.  
Compressed, flattened.  
Concave, 101.  
Conglomerate, crowded together.  
Confluent, running into one another.  
Connate, joined together at base.  
Connivent, converging, the tips inclining towards each other.  
Contorted, twisted, bent from a common position.  
Convoluted, rolled together.  
Coriaceous, leathery, tough and thick.  
Corneous, horny, having a consistence like horn.  
Coriaceous, horn shaped.  
Corolla or Corolla, 77.  
Coriaceous, belonging to the bark.  
Corvus, 67.  
Costate, ribbed.  
Cotyledon, 171-2.  
Creeping, 12, 16.  
Crenate, scolopoded, having sharp notches on the edge separated by round or obtuse dentures.  
Crenulata, finely or minutely crenate.  
Crowned, having a circle of projections round the upper part of the tube of a flower, on its inside.  
Cruiform, or cruciate, consisting of four petals placed like a cross.  
Crustaceous, having a hard brittle shell.  
Cuculate, hooded or cowled, rolled or folded in; Ex. spathe of Arum triphyllum.
Cucurbitaceous, like gourds or melons.

Culm, or straw, 23.

Cuneate, or cuneiform, wedge-shaped.

Cupule, 155.

Cuspidate, having a sharp straight point.

Cuticle, 6, 23.

Cylindrical, round and not tapering, cylinder shaped.

Cyme, 70.

Cynose, bearing or flowering in cymes.

Deciduous, falling off, in opposition to persistent and evergreen, later than caducous.

Declined, or declinate, turned downwards.

Decomposed, twice compound, composed of compound parts.

Decumbent, leaning upon the ground, the base only erect.

Decurrent, when the edges of a leaf run down the stem or stalk.

Decussate, see decurrent.

Decussate, or decussating, in pairs crossing each other.

Deflected, bent off.

Dichiscent, gaping or cracking open.

Deltoid, nearly triangular.

Dentate, toothed, edged with sharp projections separated by notches, larger than serrate.

Denticulate, minutely toothed.

Dentures, teeth, the sharp parts which separate notches.

Depauperated, few flowered.

Depressed, flattened or pressed in at top.

Diaphanous, transparent.

Dickomotous, forked, dividing into two equal branches.

Dickous, containing two grains or seeds.

Dickyledonous, 179.

Didymous, twin.

Didynamous, belonging to the class Didynamia, with two short and two long stamens and a ringent corol.

Diffuse, scattered, widely spread.

Digitate, when a petiole gives off five or more leaflets from a single point at its extremity.

Dimidiate, halved.

 Dioecious, having the barren and fertile flowers on different plants.

Discoid, having a disk covered with florets, but no ray.

Disk, 86; also the centre of a head of flowers of Compositae.

Dissepiments, the partition or internal wall of a pericarp.

Distichous, two-rowed; producing leaves or flowers in two opposite rows.

Dicharicate, diverging so far as to turn backward.

Divergent, spreading, separating widely.

Dorsal, growing on, or belonging to, the back.

Drooping, inclining downward, more than nodding.

Drupaceous, bearing, or resembling, drupes.

Drupe, 147.

Echinatate, beset with prickles, hedge-hog like.

Efferse, a term applied to a loose one-sided panicle; Ex. Juncus effrusus.

Elliptic, oval.

Elongated, exceeding a common or average length.

Emarginate, having a notch in the end.

Ensiform, sword shaped, two edged.

Entire, even and whole at the edge.

Epidermis, see cuticle.

Eroded, appearing as if gnawed at the edge.

Esculent, eatable.

Evergreen, remaining fresh through the winter, not deciduous.

Exserted, projecting or extending out of the flower or sheath.

Falcate, sickle shaped, linear and crooked.

Fascicle, 70.

Fasciculare, or fasiculate, collected in bundles.

Fastigiate, flat topped.

Fawose, resembling a honey comb.

Fertile, containing perfect pistils and yielding fruit.

Fibrous, being composed of fibres.

Filiform, thread like, or very slender.
Fimbriate, finely divided at the edge like fringe.
Fistulous, or fistular, hollow or tubular.
Flabelliform, spreading like a fan.
Flagelliform, like a whip lash.
Flexuous, serpentine or zigzag.
Floral leaf, see bract.
Florlet, a little flower, one in an aggregate or compound flower.
Follicle, 150.
Frond, the leaf of cryptogamous plants.
Frutescent, or fruticose, shrubby.
Fugacious, that which lasts but for a short time.
Funicle, or funiculus, 166.
Fusiform, tubular at bottom and gradually expanding at top.

Galea, a helmet; the upper part of a ringent corol.
Geminate, doubled.
Gemmaceous, belonging to a bud, made of the scales of a bud, 49.
Geniculate, bent like a knee.
Germ or germen, the old name of the Ovary.
Germination, the sprouting of a seed.
Gibbous, swelled out, commonly on one side.
Glabrous, smooth, as it regards hairiness or pubescence.
Glandular pubescence, hairs tipped with little heads or glands.
Glaucus, sea-green, pale blueish-green.
Glomerate, gathered in a round head or head.
Glume, the scales, valves, or chaff, which make the calyx of grasses.
Glutinous, adhesive, viscid, covered with an adhesive fluid.
Gramineous, resembling grasses.
Granular, formed of grains, or covered with grains.
Gymnospermous, having naked seeds.
Gynandrous, having the stamens growing on the pistils.

Hamate, hooked, a bristle curved at the end.
Hastate, shaped like a halbert; it differs from arrow-shaped in having the barbs or lateral portions more distinct and divergent.
Head, 66.
Helmet, see galea.
Herbaceous, or herb, 31.
Hermaphrodite, 91.
Hilum, 167.
Hirsute, rough with soft hairs.
Hispid, rough with stiff hairs.
Hoary, covered with white down.
Hooded, see cucullate.
Horn, see spur.
Hybrid, a mongrel or partaking of the nature of two species.
Hypocrateriform, salver shaped, with a tube abruptly expanded into a flat border.
Hypogynous, 93.

Inbricate, lying over each other like scales, or the shingles of a roof.
Incised, cut, separated by incisions.
Included, wholly received or contained in a cavity, the opposite of exerted.
Incassated, thickened upward, larger toward the end.
Incumbent, lying against or across, 181.
Indehiscent, not opening.
Indusium, the involucle or veil which covers the fruit of ferns.
Inferior, lowermost.
Inflated, blown up like a bladder.
Inflexed, bending inwards.
Inflorescence, 59.
Infundibuliform, funnel shaped.
Inserted into, growing out of.
Internode, the space between joints; as in Grasses.
Interruptly pinnate, when smaller leaflets are interposed among the principal ones.
Involucel, a partial involucle, 53.
Involucre, or involucrum, 53; also the Indusium.
Involute, rolled inwards.
Irregular corol, 78.
Keel, 81.
Keeled, shaped like a keel.
Kidney-shaped, heart-shaped without the point, and broader than long.
GLOSSARY OF TERMS.

Labiate, 80.
Laciniate, cut or divided into segments.
Lactescent, yielding a white, or milky juice, when wounded; as in the Poppy.
Lacunose, covered with little pits or depressions.
Lamellated, in thin plates.
Lamina, 41.
Lanceolate, spear shaped, narrow, with both ends acute.
Lanuginous, woolly.
Lateral, at the side.
Lax, loose, not compact.
Leaflet, a partial leaf, a constituent of a compound leaf.
Legume, 151.
Leguminous, bearing legumes.
Ligneous, woody.
Ligulate, ribbon shaped, a kind of corol found in compound flowers, consisting of a tube at bottom, continued into a long flat portion at top.
Lyrate, pinnatifid, with a large roundish leaflet at the end.
Lilaceous, resembling the lily.
Limb, 82.
Linear, long and very narrow with parallel sides.
Lip, the front segment of an orchideous or other flower.
Lobe, a large division or distinct portion of a leaf or petal.
Loment, 151.
Lunate, or lunulate, shaped like a half-moon.
Laciniate, covered with sharp spines or prickles.
Lip, 82.
Lax, loose, not compact.
Leaflet, a partial leaf, a constituent of a compound leaf.
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Loment, 151.
Lunate, or lunulate, shaped like a half-moon.
Lyrate, pinnatifid, with a large roundish leaflet at the end.
Melliferous, honey bearing.
Membranous, or membranaceous, very thin and delicate.
Midrib, 43.
Monadelphous, 98.
Moniliform, arranged like the beads of a necklace.
Monocotyledonous, 178.
Monoeious, having barren and fertile flowers on the same plant.
Monopetalous, 77.
Monophyllous, 76.
Monosepalous, 76.
Mucronate, having a small point projecting from an obtuse end.
Multipartite, many cleft.
Multiparite, many parted.
Muricate, covered with sharp spines or prickles.
Nectariferous, bearing honey.
Nectary, 84, 89.
Nerves, parallel veins, 42.
Nodding, inclining to one side, partly drooping.
Nodi or nodes, 26.
Nodose, having many nodi or joints.
Nucamentaceous, producing nuts.
Ob, a particle, which when prefixed to any other term, denotes the inversion of the usual position; as obovate, obcordate, &c., i. e. inversely ovate, inversely cordate, &c.
Obconic, conic with the apex downward.
Obcordate, heart shaped with the point inward, or downward.
Oblong, longer than oval with the sides parallel.
Obovate, ovate, but inverted.
Obsolete, indistinct, appearing as if worn out.
Obtuse, blunt, rounded, not acute.
Ochroleucous, whitish yellow, cream-colour.
Opposite, standing directly against each other on opposite sides of the stem.
Orbicular, circular.
Oval, elliptical.
Ovarium or ovary, 110.
Ovate, egg shaped, oval with the lower end largest.
Ovoid, egg-like.
Ovule or ovulum, 122.
Palate, a large obtuse projection which closes the throat of a pedunculate flower.
Palea, a term applied to the parts of the corol in Grasses.
Paleaceous, chaffy.
Palmate, hand shaped, deeply divided into spreading and somewhat equal segments.
Panduriform, contracted in the middle like a violin.
Panicle, 68.
Papilionaceous, 81.
Papillose, producing small glandular excrescences like nipples.
Glossary of Terms.

Pappus, the crown of the fruit of Compositae and similar plants.

Parasitic, growing on another plant and drawing nourishment from it; as the Mistletoe.

Parietal, 117.

Parted, deeply divided, more than cleft.

Partial, a term applied to small or constituent parts in distinction from general.

Partition, the dividing wall or sepsipern in seed vessels.

Pectinate, like the teeth of a comb, intermediate between fimbriate and pinnatifid.

Pedicel, small footstalk of a flower, 57.

Peduncle, the common footstalk of flowers, 56.

Pellicle, a very thin stratum or coat.

Peltate, having the stalk attached to some part of the surface or disk, and not to the margin.

Pendulous, hanging down.

Pencilled, ending like a painter's pencil or brush.

Perenniflora, 30 c.

Perfect flower, 91.

Pernifoliate, surrounding the stem on all sides and perforated by it; it differs from connate, in not consisting of two leaves; Ex. Eupatorium perfoliatum.

Perianth, perianthium or perigonium, 74.

Pericarp, 133.

Perigynous, 94.

Permanent, see persistent.

Persistent, not falling off; those parts of a flower are persistent which remain till the fruit is ripe.

Personate, masked, having the mouth of the corolla closed by a prominent palate.

Petal, 77.

Petaloïd, like a petal.

Petiole, 40.

Phanomalous, applied to all plants which have visible flowers containing stamens and pistils.

Pilose, hairy, with a stiff pubescence.

Pinnae, the leaflets or divisions of a pinnate leaf.

Pinnate, a leaf is pinnate when the leaflets are arranged in two rows on the side of a common petiole.

Pinnatifid, cut in a pinnate manner; it differs from pinnate in consisting of a simple or continuous leaf, not compound.

Pistiform, formed like peas.

Pistil, 108.

Pistillate, having pistils, but no stamens.

Plane, flat.

Plicate, plaited, folded like a ruffle or fan.

Plumose, feathery, feather like.

Plumula, 174.

Pod, 154.

Polygamous, having some flowers which are perfect, and others which have stamens only, or pistils only.

Polymorphic, changeable, assuming a variety of forms.

Polypetalous, 77.

Polyphyllous, having many leaves, applied to the calyx.

Polyspermos, 76.

Polyspermous, having many seeds.

Pome, 158.

Porected, extended forward.

Pouch, 154.

Praemorse or abrupt, 11 d.

Prickle, 27.

Prismatic, having several parallel, flat sides.

Procumbent, lying on the ground.

Profloro, an umbel or flower is said to be profloro when it has smaller ones growing out of it.

Pseudopinnate, falsely or imperfectly pinnate, not resolving at any time into separate leaflets; as the Pea, Vetch, &c.

Pubescent, hairy or downy.

Pulp, the soft, juicy, cellular substance found in berries and similar fruits.

Pulverulent, dusty, composed of powder, or appearing as if covered with it.

Punctate, appearing as if pricked full of small holes, or dots.

Punctiform, resembling dots.

Pungent, sharp, acrid, prickling.

Putamen, a hard shell.

Pyrfiform, shaped like the fruit of a pear.
Quadrangular, four angled.
Quaternate, four together.
Quinate, five together.

Raceme, 62.
Racemose, flowering in racemes.
Racemis, that part of a culm which runs up through the ear of corn, and consequently the part that bears the flowers or fruit in other plants.
Radiant or radiate, often applied to a cluster or head of flowers when those of the circumference or ray are long and spreading, and unlike those of the disk.
Radical, growing immediately from the root.
Radiate, 175.
Ramose, branching.
Ray, the diverging florets or petals which form the outside of radiate flowers, cymes, and umbels.
Receptacle, 83.
Reclined, or reclinate, bending over, with the end inclining toward the ground.
Recurved, curved backwards.
Recessed, bent backward, more than recurved.
Reniform, kidney shaped, heart shaped without the point.
Repand, slightly wavy or serpentine at the edge.
Reupinate, turned upside down; as the corol of Trichostema.
Reticulate, net like, having veins distributed like net work.
Retuse, having a slight sinus, or superficial notch in the end, less than emarginate.
Revolute, rolled backward or outward.
Rhombooidal, having four sides with unequal angles.
Ribbed, marked with parallel ridges or veins.
Rigent, irregular, with an upper and under lip. See Labiate.
Rooting, sending out lateral roots.
Rostrate, furnished with a beak.
Rotate, wheel shaped, applied to a monopetalous corol, the limb of which is flat and tube very short.
Rudiment, a term applied to an organ that is imperfectly developed.

Rufescent, becoming reddish-orange or rusty.
Rugose, wrinkled, leaves of Sage. Rugulose, finely wrinkled.
Runcinate, having large teeth pointing backward; as the leaves of the Dandelion.
Saccate, bagged, having a bag or pouch; as in many petals.
Sagittate, arrow shaped, like the head of an arrow.
Salver shaped, see Hypocrateriform.
Samara, a seed vessel not opening by valves, having a winged or membranous appendage.
Sarmentose, running on the ground and striking roots from the joints; as the strawberry.
Scabrous, rough with little asperities.
Scale, any small processes resembling minute leaves; also the leaves of the involucr of Compositae.
Scaphe, 58.
Scarious, having a thin membranous margin; the calyx scales of Liatris scariosa.
Scions, lateral shoots or offsets from the root.
Scrobonulate, excavated into little pits or hollows.
Secund, arranged on one side only, the same as unilateral.
Segment, a part or principal division of a leaf, calyx, or corolla.
Semibiventricular, half divided into two-valves.
Sepals, 76.
Septa, the partitions that divide the interior of the fruit.
Septiferous, bearing septa.
Sericeous, silky.
Serrate, notched like the teeth of a saw, the points tending upward.
Serrulate, minutely serrate.
Sessile, placed immediately on the stem without the intervention of a stalk.
Setaceous, bristle like.
Seta, bristles.
Setiform, formed like a bristle.
Setose, covered with bristles.
Sheath, a tubular or folded leafy portion inclosing the stem; see the leaves of Grasses.

GLOSSARY OF TERMS.  xxvii
<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
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<tbody>
<tr>
<td>Silicle, 154</td>
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<td>Silique, 154</td>
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<tr>
<td>Siliquose, having siliques.</td>
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<td>Simple, not divided, branched, or compound</td>
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<td>Sinate, having sinuses at the edge.</td>
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<tr>
<td>Sinus, a large rounded indentation or cavity</td>
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<tr>
<td>Subbotiferous, producing young plants from the root</td>
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<tr>
<td>Sori, plural of sorus, small clusters of minute capsules on the back of the fronds of ferns</td>
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<td>Spadix, 64</td>
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<tr>
<td>Spathe, a sheathing calyx opening lengthwise on one side, and consisting of one or more valves</td>
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<tr>
<td>Spatulate or spathulate, obtuse or large at the end, and gradually tapering into a stalk at base</td>
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<tr>
<td>Spike, 63</td>
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<tr>
<td>Spikelet, a small spike; as in many of the Grasses</td>
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<tr>
<td>Spindle shaped, see Fusiform.</td>
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<tr>
<td>Spine, 27</td>
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<tr>
<td>Spinulose, covered with small spines.</td>
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<tr>
<td>Sporule, that part in cryptogamous plants which answers to the seed of other plants</td>
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<td>Spur, a sharp hollow projection from a flower, commonly the nectary</td>
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<tr>
<td>Squamiform, scale shaped.</td>
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<tr>
<td>Squamose, scaly.</td>
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<tr>
<td>Squarrose or squarros, ragged, having reflected or divergent scales</td>
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<tr>
<td>Stamineate, having stamens, but no pistil</td>
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<tr>
<td>Standard, see Banner.</td>
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<tr>
<td>Stellate, like a star.</td>
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<td>Stem, 13</td>
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<td>Stemless, 14</td>
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<tr>
<td>Sterile, barren.</td>
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<td>Stigma, 111</td>
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<tr>
<td>Stipe, the stem of a fern or fungus; also the stem of the down of seeds, as in Dandelion; also a particular stalk of germs, seeds, &amp;c., which is superadded to the pedicel</td>
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<tr>
<td>Stipitate, having a short stalk.</td>
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<tr>
<td>Stipular, belonging to stipules.</td>
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<tr>
<td>Stipule, 47</td>
<td></td>
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<tr>
<td>Stoloniferous, having scions or running shoots</td>
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<tr>
<td>Striate, marked with fine parallel lines.</td>
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<tr>
<td>Strigose, bristly.</td>
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<tr>
<td>Strobile, 161</td>
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<tr>
<td>Strophiolate, surrounded by protuberances.</td>
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<td>Style, 112</td>
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<tr>
<td>Sub, a particle prefixed to various terms, to imply the existence of a quality in a diminutive or inferior degree, as</td>
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<tr>
<td>Subacute, somewhat acute, less than acute, &amp;c.</td>
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<tr>
<td>Subserrate, slightly serrate, &amp;c.</td>
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<tr>
<td>Subsessile, nearly sessile.</td>
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<tr>
<td>Subulate, awl shaped, narrow, stiff and sharp pointed.</td>
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<tr>
<td>Succulent, juicy.</td>
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<tr>
<td>Sucker, a shoot from the root or lower part of the stem</td>
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<tr>
<td>Suffrutescent, somewhat shrubby, shrubby at base</td>
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<tr>
<td>Subulate, furrowed.</td>
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<tr>
<td>Suture, 137</td>
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<tr>
<td>Tendril, a filiform appendage of certain vines, which supports them by twining round other objects</td>
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<td>Terete, round, cylindrical.</td>
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<tr>
<td>Terminal, extreme, situated at the end.</td>
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<td>Ternate, three together; as the leaves of common Clover</td>
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<tr>
<td>Testa, 168</td>
<td></td>
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<tr>
<td>Thorn, see Spine.</td>
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<tr>
<td>Throat, the passage into the tube of a corolla</td>
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<tr>
<td>Thyrse, 69</td>
<td></td>
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<tr>
<td>Tomentose, downy, covered with fine matted pubescence</td>
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<tr>
<td>Toothed, divided so as to resemble teeth.</td>
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<tr>
<td>Torose, uneven; alternately elevated and depressed.</td>
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<tr>
<td>Torulose, slightly torose.</td>
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<tr>
<td>Torus, 83</td>
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<tr>
<td>Trifid, three cleft.</td>
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<tr>
<td>Trifoliate, three leaved, see Ternate.</td>
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<tr>
<td>Trilobate, three lobed.</td>
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<tr>
<td>Trilocular, three celled.</td>
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<tr>
<td>Tripartite, three parted.</td>
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<tr>
<td>Triquetrous, having three sides or angles.</td>
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<tr>
<td>Truncate, having a square termina- tion as if cut off.</td>
<td></td>
</tr>
</tbody>
</table>
GLOSSARY OF TERMS.

_Tuberculate_, covered with knobs or tubercles.

_Tuber_, a solid fleshy knob, 11, g.

_Tubercous_, 11, g.

_Tubular_, shaped like a tube; in a compound flower, the florets which are not ligulate, are called tubular.

_Tunicated_, coated with concentric layers; as the Onion.

_Valves_, the segments or parts of a seed vessel, into which it finally separates, 136; also the leaves which make up a glume or spathe.

_Vavular_, or valved, consisting of valves or seed cells.

_Vaulted_, arched over, with a concave covering.

_Veined_, having the divisions of the petiole irregularly branched on the under side of the leaf.

_Ventricose_, swelling, inflated.

_Verrucose_, warty, covered with little protuberances.

_Vertical_, perpendicular.

_Verticillate_, whorled, having leaves given off in a circle round the stem.

_Versatile_, swinging lightly on a stalk so as to be continually changing direction.

_Vesicular_, made of vesicles or little bladders.

_Vesiculose_, bladder like.

_Villos_, or _villose_, hairy, the hairs long and soft.

_Virgate_, long and slender, wand like.

_Virose_, poisonous, nauseous, and strong to the smell.

_Viscid_, or _viscous_, thick, glutinous, covered with adhesive juice.

_Viriparous_, producing a collateral offspring by means of bulbs.

_Umbel_, 66.

_Umbiliferous_, bearing umbels.

_Umbilicate_, marked with a central depression.

_Unarmed_, without prickles or thorns.

_Uncinate_, hooked, hook shaped.

_Undulate_, wavy, serpentine, gently rising and falling.

_Unguiculate_, inserted by a claw, 82.

_Unilatertal_, growing all on one side, or with the flowers leaning to one side.

_Urceolate_, pitcher shaped, swelling in the middle and slightly contracted at top.

_Utricle_, or _utriculus_, 145.

_Wedge shaped_, formed like a wedge, and commonly rounded at the largest end.

_Wheel shaped_, see _Rotate_.

_Winged_, having the sides extended into a leafy expansion.

_Wings_, the two lateral petals of a papilionaceous flower, 81.
TABLE OF LINNÆAN ARTIFICIAL CLASSES AND ORDERS.

DIV. i. Plants with conspicuous flowers. PHANEROGAMIA.

A. Stamens and Pistils in the same flower.

* Stamens free and equal.

<table>
<thead>
<tr>
<th>Cl.</th>
<th>Monandria, with 1 stamen.</th>
<th>6. Hexandria, 6 stamens.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Diandria, 2 stamens.</td>
<td>7. Pentalandria, 7 stamens.</td>
</tr>
<tr>
<td>3.</td>
<td>Triandria, 3 stamens.</td>
<td>8. Octandria, 8 stamens.</td>
</tr>
<tr>
<td>5.</td>
<td>Pentandria, 5 stamens.</td>
<td>10. Decandria, 10 stamens.</td>
</tr>
<tr>
<td>*11.</td>
<td>Dodecandria, 11 to 19 stamens.</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Icosandria, 20 or more stamens, perigynous or inserted on the calyx.</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Polyandria, 20 or more stamens, hypogynous or inserted on the receptacle.</td>
<td></td>
</tr>
</tbody>
</table>


** Stamens free, unequal.

14. Didynamia, 4 stamens, 2 longer than the others. Two orders. 1. Gymnospermia, the seeds naked. 2. Angiospermia, the seeds inclosed in pericarp.

15. Tetradynamia, 6 stamens, 4 longer than the others. Two orders. 1. Siliculosa, fruit a silicle or pouch. 2. Siliquosa, fruit a long pod or silique.

*** Filaments united.


17. Dimple description.

18. Polyadelphia, filaments forming more than 2 sets.

Orders depend upon the number of stamens, and have the same names as the first 13 classes.

**** Anthers united.

19. Sylleptic, 5 stamens, the anthers united (compound flowers.) Five orders. 1. Polygamia Aequalis, florets all perfect. 2. P. Superflua, disk florets perfect, rays pistiliferous. 3. P. Frustranea, disk perfect, rays neutral. 4. P. Necessaria, disk with stamens, rays with a pistil. 5. P. Segregata, with a perianth to each floret.

****** Anthers united to the pistil.

20. Gynandria.
Orders named according to the number of stamens, as Monandria, &c.

B. Stamens and Pistils in different flowers.

21. Monoecia, stamens and pistils on the same individual.

22. Dioecia, stamens and pistils on different individuals.

Orders named according to the number of stamens, except where there is a union of the filaments; then named Monadelphia, &c.

*23. Polygamy, perfect and unisexual flowers either on the same or different individuals.


DIV. ii. Plants with inconspicuous flowers. CRYPTOCHAMIA.

24. Cryptogamia; neither stamens nor pistils.

* The classes marked thus, * viz. Dodecandria, Polyadelphia, and Polygama, are generally discarded by the American botanists. They comprise, at least in our country, but few genera, and their characters are extremely variable. They are, however, retained by Muhlenberg and Bigelow, and very generally by the European authors.
SYNOPSIS OF GENERA, ACCORDING TO THE LINNÆAN SYSTEM.

MONANDRIA.


HIPPIPURIS. Cal. adnate to the ovary; limb minute entire. Cor. none. Style received into a groove of the anther. Nut 1-seeded. Haloragaceæ, p. 123.

DIGYNIA.

CALLITRICHÆ. Fl. perfect or imperfect. Bracts 2, opposite, petaloid. Cal. (corol of authors) inconspicuous. Cor. none. Caps. compressed, 2-celled, 4-seeded. Haloragaceæ, p. 123.

BLITUM. Perianth single, 3-cleft. Seed 1, covered by the calyx which becomes a berry. Chenopodaceæ, p. 299.

DIANDRIA.

MONOGYNIA.

* Flowers complete, inferior, 1-petalled, regular.

LIGUSTRIUM. Cal. minute, 4-toothed. Cor. with the tube short; the limb 4-cleft, spreading. Berry 1-celled 2—4-seeded. Oleaceæ, p. 231.

CHIONANTHUS. Cal. 4-parted; Cor. deeply 4-parted; segments long and linear. Drupe 1-seeded. Nut striate. Oleaceæ, p. 232.

** Flowers complete, inferior, 1-petalled, irregular.


LEPTANDRA. Cal. 5-parted; segments acuminate. Cor. tubular-campanulate; border 4-lobed, a little ringent. Stam. and at length the pistil much exserted. Caps. ovate, acuminate, 2-celled, many-seeded. Scrophulariaeæ, p. 262.

GRATIOLA. Cal. 5-parted, often with 2 bracts at the base. Cor. tubular, sub-bilabiate; upper lip emarginate; lower 3-lobed. Styg. 2-lobed. Caps. ovate, 2-celled, 2-valved. Scrophulariaeæ, p. 264.

LINDENIA. Cal. 5-parted. Cor. tubular, ringent; upper lip short, emarginate; lower one 3-cleft, unequal. Fil. 4; the two longer, forked and sterile. Caps. 2 celled, 2-valved; dissepiment parallel with the valves. Scrophulariaeæ, p. 265.

HEMIANTHUS. Cal. tubular, cleft on the under side; border 4-toothed. Cor. with the upper lip obsolete; lower 3-parted; intermediate segment ligulate and truncate, much longer, closely incurved. Stam. 2. Fil. bifid; lateral fork antheriferous. Caps. 1-celled, 2-valved, many-seeded. Scrophulariaeæ, p. 267.


JUSTICIA. Cal. 5-parted, often with 2 bracts. Cor. 2-lipped; upper
SYNOPSIS OF GENERA.

lip emarginate; lower 3-cleft. Anth. 1 or 2 on each filament. Caps. attenuated, 2-celled, 2-valved; dissepiment growing from the centre of each valve. Acanthaceae, p. 283.

Utricularia. Cal. 2-parted, nearly equal. Cor. personate, with the lower lip spurred at the base; Fil. incurved, bearing the anthers within the apex. Stig. 2-lipped. Caps. 1-celled. Lentibulariaceae, p. 286.


Obs. The remaining genera of this division have lipped corols, and 4 naked seeds. They form, with the plants of Didynamia Gymnospernia, (from which indeed they only differ in having two of the stamens abortive,) the Natural Order Labiatae, p. 270.

*** Flowers complete, superior.


**** Flowers incomplete.


Triandria.

Monogynia.

* Flowers superior, complete.

Valerianella. Cal. with the limb toothed and persistent. Cor. not calcarate, regular, 5-lobed. Fruit 3-celled, submembranaceous, indehiscent, crowned by the limb of the calyx; 1 or 2 of the cells only fertile. Valerianaceae, p. 164.

Valeriana. Cal. with the limb involute, at length evolved in a deciduous plumose pappus. Cor. with the tube obconic or cylindric, equal or gibbous at base; limb obtusely 5-cleft. Fruit indehiscent, 1-celled. 1-seeded. Valerianaceae, p. 164.

** Flowers superior, incomplete.

Iris. Perianth 6-cleft; 3 of the segments larger and reflexed, the others erect. Style short or none. Stig. 3, petaloid, covering the stamens. Irideae, p. 353.


*** Flowers inferior, complete.

Commelina. Cal. 3-leaved. Cor. 3-petalled. Stam. 6, 3—4 usually sterile and furnished with cruciform glands. Caps. 3-celled, 3-valved; one of the valves often abortive. Commelinaceae, p. 375.

Xyris. Fl. in an ovate cylindric head. Cal. glumaceous, cartilaginous, 3-valved. Cor. 3-petalled, equal. Stig. 3-cleft. Xyrideae, p. 370.
**** Flowers inferior, incomplete.


Heteranthera. Fl. in a spathe. Cor. tube long and slender; border 6-parted, equal. Anth. of 2 forms. Caps. 3-celled, many-seeded, opening at the angles; dissepiment contrary. Pontederea, p. 369.


**** Flowers glumaceous.

Obs. All the genera of this division belong to the subclass Glumaee, and all except Conchrus, Spartina and Oryzopsis, belong to the order Cyperaceæ, p. 420.

Digynia.

Obs. All the genera of this order are proper grasses.—Gramineæ, p. 356. The family is so entirely natural, that it is unnecessary to repeat the generic descriptions.

Trigynia.

Mollugo. Cal. 5-parted, coloured within. Cor. none. Caps. 3-celled, 3-valved, many-seeded. Caryophyllææ, p. 50.


Proserpinaca. Cal. superior, with the tube adhering to the triquetrovus ovary. Carp. 3, indehiscent, dry, concreted into a 3-sided fruit. Haloragææ, p. 121.

Tetrandra.

Monogynia.

* Flowers superior. Corol 1-petalled.


Hedyotis. Cal. 4-toothed or 4-parted. Cor. tubular, bearded at the throat, 4-parted. Caps. ovate, 2-celled, opening transversely at the top, many-seeded; dissepiment contrary to the valves. Rubiaceæ, p. 160.


** Flowers superior. Corol many-petalled, or none.**


*** Flowers inferior. Corol 1-petalled.***


**** Flowers inferior. Corol 4—5-petalled.****


SYNOPSIS OF GENERA.

*** Flowers inferior. Corol wanting.


Digenia.


Tetragynia.


Tillea. Cal. 3—4-parted. Cor. 3—4-petalled, equal. Carp. 3 or 4, two-seeded. Crassulaceae, p. 133.


Pentandria.

Monogynia.

* Flowers 1-petalled, inferior, with 4 naked seeds or nuts.

Obs. The genera of this division constitute the Nat. Ord. Boraginaceae, p. 251.

** Flowers 1-petalled, inferior. Seeds in a capsule.

(Capsule 1-celled.)


Menyanthes. Cal. 5-parted. Cor. funnel-form; limb spread-
SYNOPSIS OF GENERA.

ing, 5-lobed, equal, hairy within. Stig. capitate. Caps. with the axis of the valves seminiferous. Gentianaceae, p. 244.


Nemophila. Cal. 10-parted; alternate lobes reflexed. Cor. subcampanulate, 5-lobed; the lobes emarginate, with margined nectariferous cavities at base. Stam. shorter than the corol; fil. naked. Style 2-cleft. Caps. fleshy, 2-valved, 4-seeded. Hydrophyllaceae, p. 255.

(Capsules 2—3-celled.)


Convolvulus. Cal. 5-parted, naked or with 2 bracts at base. Cor. funnel-form or campanulate, plicate. Stig. capitate, lobed or divided. Caps. valved, 1—4-celled. Convolvulaceae, p. 248.

(Capsules 3—5 celled.)


Polemonium. Cal. campanulate, 5-cleft. Cor. rotate, 5-parted. Stam. inserted upon the five teeth or valves which close the orifice of corol. Polemoniaceae, p. 247.

Diapensia. Cal. 5-parted, subtended by 3 bracts. Cor. salver-form; border 5-cleft, flat. Stam. inserted into the tube and alternating with
the segments of the corol. Caps. 3-celled, 3-valved, many-seeded. *Hydrocolaceae*, p. 250.


*** Flowers 1-petalled, inferior. Fruit a berry.


**Nicandra.** Cal. 5-parted, 5-angled, the angles compressed, segments sagittate. Cor. campanulate. Stam. incurved. Ber. 3—5-celled, covered by the calyx. *Solanaceae*, p. 258.

**** Flowers 1-petalled, superior. Fruit a capsule.

**Campanula.** Cal. mostly 5-cleft. Cor. campanulate, the base closed with 5 staminiferous valves. Stig. 3—5-cleft. Caps. 3—5-celled, opening laterally. *Campanulaceae*, p. 213.

**Lobelia.** Cal. 5-cleft. Cor. 5-parted, irregular, cleft on the upper side to near the base. Stam. united into a tube. Stig. 2-lobed. Caps. 2—3-celled. *Lobeliaceae*, p. 214.


**** Flowers 1-petalled, superior. Fruit a berry.


**Symphoria.** Cal. minute, 4—5-toothed. Cor. funnel-form, sub-equally 4—5-lobed. Stig. subglobose. Ber. crowned by the calyx, 4-celled, 4-seeded; 2 cells sometimes abortive. *Caprifoliaceae*, p. 159.

**Triosteum.** Cal. 5-cleft; lobes linear-lanceolate, nearly as long as the corol. Cor. tubular, 5-lobed, gibbous at base. Stig. capitate. Ber. 3-celled, 3-seeded, crowned by the calyx. *Caprifoliaceae*, p. 157.

***** Flowers 4—6-petalled, inferior. Fruit a capsule.


**Impatiens.** Sep. 5, the lower one spurred. Cor. 4-petalled, irregular; the 2 inner petals unequally bilobed. Stig. 5, united. Caps. prismatic-terete, elongated, 5-valved. *Balsaminaceae*, p. 68.


**Solea.** Sep. not auricled at base, decurrent into a pedicel. Pet. nearly equal; the lower a little larger and somewhat gibbous at base. Fil. with short broadish claws at base. *Violaceae*, p. 41.

**Claytonia.** Cal. 2-leaved or 2-parted. Pet. 5, obcordate or obovate,


******** Flowers 4—5-petalled, inferior. Fruit a berry.


******** Flowers 5-petalled, superior.


******** Flowers incomplete.


*Digynia*.

* Flowers inferior. Corol 1-petalled.

*Apocynum*. Cal. very small, 5-cleft, persistent. Cor. campanulate; border with 5 short spreading or revolute lobes; the base furnished with 5 glandular teeth alternating with the stamens. Anth. sagittate, connivent, cohering to the stigma by the middle. Follicles long, distinct. *Apocynaceae*, p. 233.


*Gonolobus*. Cor. rotate, 5-parted. Stamineal crown, (nectary,)


Gentiana. Cal. 4—5-cleft. Cor. bell- or funnel-form, tubular at the base, with the orifice naked. Stam. 4—5, included. Stig. 2-lobed. Caps. 2-celled, opening transversely; cells 2-seeded. Convolvulaceae, p. 249.

** Flowers 5-petalled, inferior.


*** Flowers 5-petalled, superior.


**** Flowers incomplete.


Chenopodium. Perianth inferior, 5-cleft, persistent, partly covering the fruit. Chenopodiaceae, p. 295.

Salsola. Perianth inferior, 5-cleft, persistent, enveloping the fruit with its base and crowning it with its broad scariose limb. Embryos spiral. Chenopodiaceae, p. 298.

Ulmus. Perianth inferior, campanulate, 4—5-cleft. Fruit compressed, with a broad membranaceous border. Ulmaceae, p. 333.


***** Flowers 5-petalled, superior, 2-seeded.

Obs. The genera of this division form the Natural Order Umbelliferae, p. 139.

** Trigynia.

* Flowers superior.

Viburnum. Cal. with the limb small, 5-toothed and persistent. Cor. rotate subcampanulate or tubular, 5-lobed. Ber. ovate or globose, I-seeded, crowned by the teeth of the calyx. Caprifoliaceae, p. 155.

** Flowers inferior.


Staphylea. Cal. 5-parted, covered at base by an urceolate disk; lobes oblong, concave, coloured. Pet. 5, alternate with the sepals. Caps. 2—3-celled; cells membranaceous, inflated, united at base or throughout their whole length. Staphyleaceae, p. 73.
SYNOPSIS OF GENERA.

TETRYNIA.


PENTAGYNYIA.

**Aralia.** Cal. 5-toothed, or entire, superior. Pet. 5. Ber. 5—10, seeded. Fl. in umbels. Araliaceae, p. 151.


**Sibbaldia.** Cal. 10-cleft, with the alternate segments narrower. Pet. 5, minute. Styles proceeding laterally from the germ. Seeds 5, clustered in the bottom of the calyx. Rosaceae, p. 105.


POLYGYNIA.


HEXANDRIA.

**Monogynia.**

*Flowers complete, having a calyx and corol.*


**Berberis.** Cal. inferior, 6-sepalled. Pet. 6, with 2 glands upon their claws. Ber. 2—3-seeded. Berberidaceae, p. 17.

**Leontice.** Cal. 6-sepalled, naked without. Pet. 6, bearing a scale at the base. Caps. 2—4-seeded. Seeds globose, inserted into the bottom of the capsule. Berberidaceae, p. 17.

**Prinos.** Cal. minute, 6-cleft. Cor. 6-parted. Ber. 6-seeded. Ili- cineae, p. 230.


**Flowers issuing from a spathe.**

**Amaryllis.** Perianth superior, 6-parted, petaloid, irregular. Fil. arising from the orifice of the tube, declined or straight, unequal. Amaryllidaceae, p. 354.

**Allium.** Perianth inferior, 6-parted, generally spreading. Fl. in crowded umbels, arising from a 2-leaved spathe. Asphodelaceae, p. 363.

**Hypoxis.** Spathe 2-valved. Perianth superior, 6-parted, persistent.

Pontederia. Perianth inferior, 6-parted, 2-lipped; under side of the tube with 3 longitudinal perforations. Stem. unequally inserted; 3 of them upon the summit of the tube. Caps. mucicrate, 1-seeded. Pontederaceae, p. 362.

*** Flowers with a single corol-like perianth.


Erythronium. Perianth campanulate, 6-parted; segments reflexed; the 3 inner ones usually with a callous tooth on each side near the base, and a nectariferous pore. Caps. superior, roundish, somewhat stiped. Liliaceae, p. 365.


Uvularia. Perianth inferior, 6-parted, erect; segments with a nectariferous cavity at base. Fil. very short, growing to the anthers. Stig. reflexed. Caps. 3-sided, 3-celled, 3-valved. Seeds many, subglobose, arillate at the hilum. Smilacaceae, p. 361.


**** Flowers with a single calyx-like perianth, not spathid.


**Trigynia.**


**Tetragynia.**


**Polygynia.**


**Heptandria.**

**Monogynia.**


Octandria.

Monogynia.

* Flowers superior.


Oenothera. Cal. 4-sepalled; sepals united into a long 4-sided or 8-ribbed tube; limb and part of the tube caducous. Cor. 4-petalled. Stig. 4-cleft, or spherical. Caps. 4-celled, 4-valved, many-seeded. Onagrarieæ, p. 117.

Gaura. Cal. 3—4-sepalled; sepals united into a long ovate tube; limb caducous. Cor. 3—4-petalled. Seeds 1—4, not crowned with pappus. Onagrarieæ, p. 117.

Epilobium. Cal. 4-sepalled; sepals united into a long 4-sided tube; limb caducous. Pet. 4. Caps. elongated, 4-celled, 4-valved, many-seeded. Seeds crowned with pappus. Onagrarieæ, p. 116.


** Flowers inferior.


Trigynia.


Enneandria.

Monogynia.

Laurus. Perianth 4—5-cleft, equal. Stam. 8—12, in a double row; outer ones all fertile; alternate inner ones fertile and furnished at base with 2 appendices or glands, (nectary.) Drupe fleshy. Laurineææ, p. 305.

Decandria.

Monogynia.

* Flowers regular.

Vaccinium. Cal. superior, 4—5-toothed. Cor. urceolate or cam-
SYNOPSIS OF GENERA.

panulate, 4—5-cleft. Fil. inserted upon the germ. Ber. globose; 4—5-celled, many-seeded. Vaccinacea, p. 223.

Ox. The remaining genera of this division are included in the Natural Orders, Ericace, p. 215, and Pyrolaceae, p. 225.—(Leioxyllum, omitted in its proper place, is described in the Appendix, p. 463.)

** Flowers irregular.**

**Cassia.** Sep. 5, scarcely united at base, somewhat unequal. Pet. 5, subequal. Stam. unequal; 3 upper ones sterile; 3 lowest beaked, upon longer and incurved filaments. Legume membranaceous, 2-valved. Leguminose, p. 93.

**Baptisia.** Cal. half 4 or 5-cleft, bilabiate. Cor. papilionaceous. Pet. nearly equal in length. Stand. with the sides reflexed. Stam. deciduous. Leg. ventricose, pedicelled, many-seeded. Leguminose, p. 77.

**Cercis.** Cal. 5-toothed, gibbous at base. Pet. 5, with claws, sub-papilionaceous, all distinct; wings large. Leg. compressed; upper seminiferous suture margined. Seeds obovate. Leguminose, p. 94.

**Dyginia.**


**Scleranthus.** Cal. 5-cleft, with the stam. inserted upon it. Cor. none. Caps. 1-celled, covered with the calyx. Scleranthaceae, p. 132.

**Trigonia.**

**Silene.** Cal. tubular, 5-toothed, naked. Pet. 5, unguiculate, mostly crowned at the orifice; limb bifid. Caps. 3-celled at base, dehiscent at the top into 6 teeth. Caryophylleae, p. 47.


**Pentagynia.**

**Sedum.** Cal. 5-parted. Pet. 5. Caps. 5, with a nectariferous scale at their base. Crassulacea, p. 133.
**Synopsis of Genera.**


*Cerasium.* Cat. 5-parted. Pet. 5, bifid. Caps. 1-celled, dehiscent at the apex with 5 or 10 teeth. Caryophyllaceae, p. 53.


*Penthorum.* Cat. 5-parted. Pet. 5 or none. Caps. 5-pointed, 5-celled, 5-sided at the apex. Crassulaceae, p. 133.


**Di-Pentagynia.**

(From Order 2 to Order 5 inclusive.)


Obs. The remaining genera of this division belong to the Orders Rosaceae, (p. 98,) and Pomaceae, (p. 110.)

**Polygynia.**

*Calycanthus.* Lobes of the cal. in many rows, imbricate, lanceolate, somewhat coriaceous, coloured. Cor. none. Stam. unequal. Acines many. Calycantheae, p. 115.

Obs. All the other genera of this order are included under Rosaceae, p. 98.
SYNOPSIS OF GENERA.

POLYANDRIA.

MONONYGIA.


Helenium. Cal. 5-leaved, 2 smaller than the rest. Cor. 5-petalled. Caps. 1-celled, 3-valved; valves septiferous in the middle. Cistineae, p. 35.


Sarracenia. Cal. double, persistent; outer one of 3 leaves; inner one of 5, much larger. Pet. 5. Stig. very large, peltate, covering the stamens. Caps. 5-celled. Sarracenia, p. 22.

Nymphea. Sep. at the base of the disk. Pet. and stam. connected with the whole of the disk, which covers the carpels. Nympheaeceae, p. 20.


Di-Pentagynia.


Obs. The other genera belong to Ranunculaceae, p. 3.

POLYGYRIA.


Liriodendron. Sep. 3. Pet. 6. Samara, (wing-like carpels,) 1 or

**Asimina.** Cal. 3-parted. Pet. 6, spreading, ovate-oblong; the inner smaller. Anth. sub sessile. Ber. several, ovate, sessile, many-seeded. *Annonaceae*, p. 16.


Obs. The remaining genera belong to the Order *Ranunculaceae*, p. 3.

**Didynamia.**


Obs. The genera of this class form a very natural group, having irregular or bilabiate flowers, with mostly 4 stamens (2 longer); but sometimes 2 are abortive, and hence such are arranged artificially in the class Diandria. The whole will be more easily, as well as correctly studied, by the natural orders. The genera belonging to the order Gymnospermia will be found among the *Labiatae*, p. 270; those belonging to Angiospermia among the *Orobancheeae*, p. 260, *Scrophularinaceae*, p. 261, and *Verbenaceae*, p. 283.

**Tetradynamia.**

Obs. This class is entirely natural; and it is therefore altogether unnecessary to repeat the generic descriptions. It is identical with the natural order *Cruciferae*, p. 24. I have chiefly for the sake of convenience, preserved the Linnean division into *Siliculoseae* and *Siliquoseae*.—*Gynandropsis* and *Polanisia* (*Cleome Linn.*) usually arranged under this class, form the order *Capparideae*, p. 34.

**Monadelphia.**

**Pentandria.**


**Decandria.**


**Polyandria.**

Obs. The genera of order from the Natural Order *Malvacceae*, p. 56.

**Diadelphia.**

**Hexandria.**

Obs. The succeeding genera belong to the Natural Order *Fumariaeae*, p. 22.
SYNOPSIS OF GENERA.

OCTANDRIA.

Polygala. Cal. 5-leaved, 2 of them wing-shaped and coloured. Caps. compressed, obovate or obcordate, 2-celled, 2-valved. Seeds pubescent. Polygalea, p. 44.

DECANDRIA.

Obs. The genera of this order, with a few usually arranged under the class Decandria, constitute the Leguminosae, p. 76.

SYNGENESIA.

Obs. 'The plants of this class, with a few exceptions, have 5 anthers united into a single tube. They are further characterized by the flowers, commonly called florets, being clustered together in heads and inserted upon a common receptacle which is surrounded by an involucre; being usually known as compound flowers. They form the Natural Order Compositae, p. 165.

GYNANDRIA.

Obs. The orders Monandria and Diandria of this class, constitute the Orchidæ, p. 342.

HEXANDRIA.

Aristolochia. Perianth tubular, ventricose at base, dilated at the apex and ligulate. Caps. inferior, 6-celled, many seeded. Aristolochiae, p. 305.

DODECANDRIA.


MONOECA.

MONANDRIA.


Euphorbia. Perianth mostly wanting, Invol. 1-leaved, campanulate, 8 to 10 toothed, the inner segments membranaceous and erect. Sterile Fl. 12 or more. Fil. articulated in the middle. Fertile Fl. solitary, stipulate, naked. Caps. 3-lobed. Euphorbiaceæ, p. 311.

DIANDRIA.


TRIANDRIA.


Carex. Fl. collected into an imbricated ament. Glume 1-flowered.
Cor. (nectary or perianth) ventricose, 1-valved, persistent, enclosing the coriaceous nut or Caryopsis. Cyperaceae, p. 430.


Tripsacum. Sterile Fl. Glume 2 flowered; outer one sterile; inner neutre. Cor. a membranous glume. Fertile Fl. Glume 1-flowered, surrounded by a 1-leaved involucre, perforated near the base. Cor. a 2-valved glume. Style 2. Seed 1. Gramineae, p. 399.


Tetrandria.


Pentandria.


SYNOPSIS OF GENERA.

**Hexandria.**


**Polyandria.**

(Stems not woody.)


*Arum.* Spathe 1-leaved, cuculate, convolute at the base. Spad. naked above, bearing sessile anthers below the middle and ovaries at the base. Ber. 1-celled, many-seeded. Aroidae, p. 381.


(Stems woody.)

Obs. The genera of this division are Forest Trees, and are included under the Nat. Ord. Amentaceae, p. 317.

**Monadelphia.**

(Stems not woody.)


*Sicyos.* Sterile Fl. Cal. 5-toothed; teeth subulate, 5-parted.
SYNOPSIS OF GENERA.

Fil. 3? Fertile Fl. Style 3-cleft. Fruit 1-seeded, often spiny. Cucurbitaceæ, p. 128.

(Stems woody.)

Obs. The genera of this division belong to Conifera, p. 337.

 Dioecia.

Diandria.


Triandria.


Tetrandra.


Pentandra.


Zanthoxylum. Cal. 3—9-lobed, often 4—5-parted. Pet. as many as the lobes of the calyx, rarely none. Stam. and carp. as many as the lobes of the calyx. Zanthoxyleæ, p. 70.


Hexandra.

Smilax. Perianth campanulate-spreading, 6-parted. Sterile Fl.
SYNOPSIS OF GENERA.


Octandria.


Enneandria.


Decandria.

Gymnocladus. Cal. tubular, 5-cleft. Cor. 5-petalled. Legume oblong, thick, pulpy within. Leguminosae, p. 93.

Polyandria.


Monadelphia.


Cryptogamia.

Filices.

Obs. This order forms the Filicoidae, or Fern-like plants, p. 445.
TABLE

OF THE

NATURAL ORDERS:

Showing the accordance of the Systems of Jussieu and De Candolle.
TABLE OF THE NATURAL ORDERS.
VASCULARES OR FLOWERING PLANTS.

**CLASS I. Exogene or Dicotyledonous Plants.**

**SUBCLASS I. Dichlamydea. Thalamiflora. D. C.**
Perianth double. Petals distinct and hypogynous.


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**SUBCLASS II. Dichlamydea. Calyciflora. D. C.**
Perianth double. Petals inserted on the calyx.


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67. Composite, | | | | | | |

(6 Pericorollae Juss. Corol perigynous.

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**Subclass III. Dichlamydeae Corolliflorae. D. C.**

Perianth double. Petals hypogynous and bearing the stamens.


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**Subclass IV. Monochlamydeae. D. C.**

Perianth or Perigonium single.

(8. Hypostamineæ Juss. Stamens hypogynous.)

| Class II. Endogene or Monocotyledonous Plants. |
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| 97     | Amaranthaceæ                                           |
| 98     | Chenopodacæ                                           |
| 99     | Phytolaccæ                                           |
| 100    | Polygonoæ                                           |

(10. Epistamineæ Juss. Stamens epigynous.)

| 104   | Santalaceæ                                           |
| 105   | Aristolochicæ                                        |

(11. Diclines Juss. Flowers unisexual, or without a perianth.)

| 106   | Empetreæ                                            |
| 107   | Euphorbiacæ                                         |
| 108   | Uticacæ                                             |
| 109   | Artocarpeæ                                          |
| 110   | Saururacæ                                           |

**Class II. Endogene or Monocotyledonous Plants.**

(12. Monoepipygnæ Juss. Stamens epigynous.)

| 115   | Hydrocharidæ                                        |
| 116   | Orchidæ                                             |
| 117   | Iridoæ                                              |
| 120   | Hamodoracæ                                          |

(13. Monoperipygnæ Juss. Stamens epigynous.)

| 121   | Smilacæ                                             |
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(14. Monohypogynæ Juss. Stamens hypogynous.)

| 131   | Commelincæ                                          |
| 132   | Alismacæ                                            |
| 133   | Juncaginæ                                           |
| 134   | Typhacæ                                             |
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**Cellulaires or Flowerless Plants.**

**Div. I. Filicoidæ, or Fern-like Plants.**

| 140   | Equisetacæ                                         |
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PLANTS

OF THE

NORTHERN AND MIDDLE STATES.

ARRANGED ACCORDING TO

THE NATURAL SYSTEM.
VASCULARES, or FLOWERING PLANTS.

Plants furnished with flowers, and spiral vessels—Phænogamous or Phanerogamous Plants of Authors.

Class I. EXOGENÆ or DICOTYLEDONOUS PLANTS.

Trunk more or less conical, consisting of three parts, one within the other, viz. bark, wood and pith, of which the wood is enclosed within the two others; increasing by an annual deposit of new wood and cortical matter, between the wood and bark. Leaves always articulated with the stem, their veins branching and reticulated. Embryo with two or more opposite cotyledons, which often become green and leaf-like after germination; radicle naked; i. e. elongating into a root without penetrating any external case.

Subclass I. THALAMIFLORÆ. De Cand.

Calyx many sepalled. Petals many, distinct, and with the stamens inserted into the receptacle.

Order I. RANUNCULACEÆ. De Cand. Lind.

Calyx with many definite sepals, or many-parted. Petals 5—15, (sometimes wanting,) in one or more rows, distinct. Stamens indefinite in number; anthers adnate, generally turned outwards. Pistils numerous. Fruit either consisting of dry nuts or carpels, or baccate with one or more seeds, or follicular with one or two valves. Seeds albuminous; when sol-
DICOTYLEDONOUS PLANTS.

itary, either erect or pendulous. *Embryo* minute. *Albumen* corneous, large.

**Herbs** or **Undershrubs.** *Leaves* simple, often variously lobed, with petioles, more or less dilated at their base.

1. **CLEMATIS.** *Linn.*


1. *C. virginiana* *Linn.*: stem climbing; *leaves* ternate; *leaflets* cordate-ovate, acute, coarsely toothed or lobed; *flowers* paniculate, dioecious. *Hab.* Can. to Flor. N. to lat. 55° W. to Columbia river. Aug. *Virgins Bower.*


3. *C. ochroleuca* *Ait.*: herbaceous, erect, simple, pubescent; *leaves* simple, ovate, very entire, the younger ones with the calyx silky; flower peduncled, terminal, solitary, nodding.—*C. sericea* *Mich.*

2. **THALICTRUM.** *Linn.*


1. *T. cornuti* *Hook.*: *leaves* decompound; *leaflets* roundish-ovate or oblong, 3-lobed, glaucous beneath, with the nerves scarcely prominent; *flowers* mostly dioecious; *filaments* sub-clavate; *anthers* elliptic or sub-linear; *stigmas* filiform, membranaceous on the margin: *carpels* ovate-oblong.—*T. cornuti* and *T. pubescens* *Pursh.*—*T. revolutum* *Ell.*
HAB. Wet grounds. From lat. 56° N. to Car. June, July. 2. Stem 3—4 feet high, branching. Leaves extremely variable in form, deep green above, paler glaucous smooth or pubescent beneath. Flowers in a compound leafy panicle, greenish. — I have quoted the above characters from Dr. Hooker, (Fl. Bor. Amer.) who though doubtful whether this is the T. cornutii of Linnæus, considers it the plant described under that name by Pursh. And he has retained this as a specific name, in preference to reducing it to a doubtful synonym as De Candolle has done. T. pubescens of Pursh only differs from the present plant in the shape of the anthers.

2. T. dioicum Linn.: very smooth; leaves decompound; leaflets roundish, cordate, obtusely lobed, glabrous; flowers dioecious, panicled; filaments filiform; fruit ovate, striate. — T. levisagum Mich.

HAB. Banks of streams. Can. to Car. and N. to lat. 67°. April. 2. Stem 1—2 feet high. Flowers white, in a terminal panicle.

3. T. rugosum Linn.: leaves decompound; leaflets ovate-lanceolate, rugose, veined, obtusely lobed; flowers dioecious, in panicles; filaments filiform.


4. T. purpurascens Linn.: leaves compound, shorter than the stem; leaflets roundish, 3-cleft, and incised, glaucous beneath; panicles nearly leafless, contracted; flowers monœcious or dioecious, cernuous; filaments coloured.

HAB. Dry hills. Can. to Virg. May, June. 2. Stem 6—8 inches high. Flowers white. This is perhaps only T. dioicum with purple flowers.

** Stamens shorter than the petaloid calyx.

5. T. anemonoides Mich.: root tuberous; radical leaves biternate; leaflets subcordate, 3-toothed; floral leaves petioled, resembling an involucre; flowers perfect, few, umbelled; petaloid calyx 8—10 leaved. — Anemone thalictroides Linn.

HAB. Woods. Common throughout the U. S. April, May. 2. Stem 6—8 inches high. Flowers white. The flowers of this species resembles those of Anemone, but the fruit that of Thalictrum. It is retained in this place by De Candolle and Hooker. Rue leaved Anemone.

3. ANEMONE. Linn.

Involucre remote from the flower, of 3 divided leaves. Calyx petaloid, with 5—15 sepals. Petals none

Polyandria. Polygynia.

1. *A. nemorosa, var. quinquefolia* De Cand.: leaves ternate; segments 5-parted, incisely dentate, lanceolate, acute; involucre similar, petiolated; stem 1-flowered; sepals 6, elliptic; capsules awnless. — *A. quinquefolia* Linn.
DICOTYLEDONOUS PLANTS.

HAB. Woods. Can. to Car. N. to lat. 53°, extending westward to the Rocky mountains. April, May. 2f.—Stem 6—8 inches high. Flowers white varying to purple. Leaves narrow, and more divided than in the European plant. Wood Anemone.

2. A. lancifolia Pursh: leaves petioled, ternate; leaflets lanceolate, crenate, dentate; sepals 5, ovate, acute; fruit ovate; style short, uncinate.

HAB. High mountains. Penn. and Virg. May, July. 2f.—Resembles the foregoing species, but the flowers are larger and clear white. Pursh.—De Candolle who has examined Pursh’s plant in the herbarium of Lambert, thinks it scarcely distinct from the Linnaean A. trifolia, while Dr. Hooker refers it with a mark of doubt to A. nemorosa.

3. A. pennsylvanica Linn.: leaves 3-parted; segments 3-cleft; lobes oblong, incisely toothed, acuminate; involucre similar, sessile, bearing several pedicels, one naked and 1-flowered, the others involucellate; sepals 5, elliptic; fruit pubescent, compressed, crowned with a long style.—A. aconitifolia Mich.

HAB. Meadows. Throughout the U. S. N. to Hudson’s Bay. June, July. 2f.—Stem a foot high. Flowers white, large. By some botanists A. dichotoma of Linnaeus, is considered distinct from the above, but it is most probably identical with it.

4. A. virginiana Linn.: leaves ternate; segments ovate-lanceolate, 3-cleft, acuminate, incisely toothed; involucre similar, petiolate; sepals 5, elliptic, acuminate, silky without; peduncles elongated; fruit oblong, woolly.


4. HEPATICA. Willd.


H. triloba Willd.: leaves cordate, 3-lobed; lobes entire; scape and petioles hairy.—Anemone Hepatica Linn.

a. lobes of the leaves somewhat acute.—H. triloba De Cand.

b. segments of the leaves acute.—H. acutiloba De Cand.

d. lobes of the leaves obtuse.—H. americana De Cand.

HAB. In woods. Common throughout the U. S. and N. to lat. 52°. April, May. 2f.—There appears to be no doubt that these supposed distinct species are nothing more than varieties. They grow indiscriminately, and the lobes of the leaves assume almost every variety of form. Liverwort.—Early Anemone.
5. HYDRASTIS. Linn.


Polyandria. Polygynia.

H. canadensis Linn.


Stem 6—8 inches high, with 2 nearly opposite leaves above. Leaves petiolute, emarginate at base, incisely serrate. Flower solitary, pedunculate, reddish white. Fruit fleshy, red, like that of a Rubus. The root affords a juice of a fine yellow colour, which is used by the Indians for staining skins and clothing.

Yellow Pucoon.

6. RANUNCULUS. Linn.

Sepals 5, not deciduous. Petals 5, rarely 10, with a honey scale at the base on the inside. Stamens and ovaries numerous. Carpels ovate, somewhat compressed, terminating in a point or horn, smooth, striated, or tuberculated, arranged in a globose or cylindrical head, Polyandria. Polygynia.

* Carpels transversely rugose-striate. Petals white.

1. R. aquatilis, var. capillaceus De Cand. : stem filiform, floating; leaves all submerged, divided into capillary diverging segments; petals obovate, longer than the calyx.—R. fluviatilis Wild. Pursh.

Hab. In streams. Throughout the U. S. and British America, N. to lat. 63°. July, Aug. 21.—Stem long. Leaves petiolate. Flowers small, white. There are several varieties of R. aquatilis, which have been described as distinct species.

Water Crowfoot.

** Carpels smooth, ovate, collected into a roundish head. Flowers yellow.

† Leaves undivided.

2. R. lingua Linn. : leaves lanceolate, sub serrate, semiamplexicaul; stem erect, smooth, succulent, many-flowered.

Hab. Banks of streams. N. S. July, Aug. 21.—Stem 2—3 feet high, with erect branches. Leaves very long, linear-lanceolate. Flowers large.

Great Spearwort.

3. R. flammula Linn. : leaves glabrous, linear-lanceolate or sub-ovate, subentire, the lower ones petiolate; stem more or less decumbent, rooting; peduncles opposite to the leaves.—R. flammula, var. major Hook.


DICOTYLEDONOUS PLANTS.

Hab. River banks. N. S. and N. to Labrador. July, Aug. 24. — A very delicate species. — Stem 6—12 inches long. Flowers small. Fruit very smooth. Although coming from such high authority, I cannot yet adopt the opinion of Dr. Hooker that this plant is a mere variety of R. flammula. From a comparison of specimens, I am satisfied that our plant is identical with the foreign R. reptans. Filiform Crowfoot.

5. R. pusillus Pursh: leaves petiolo; lower ones ovate, subdentate; upper ones linear-lanceolate; stems many, erect; pedicels opposite to the leaves, solitary, 1-flowered.


6. R. cymbalaria Pursh: stems sarmentose filiform; leaves petiolo, smooth, somewhat fleshy, cordate, reniform or ovate, coarsely crenate; scapes naked, elongated, 3-flowered; petals linear, as long as the calyx; carpels striate. — R. cymbalariae, var. americanus De Cand.


†† Leaves divided.

7. R. avricomus Linn.: leaves smooth; radical ones petiolo, cordate, mostly 3-parted or lobed; cauline ones sessile, divided into linear, entire or subdentate lobes; calyx pubescent, shorter than the petals, spreading.

Hab. Woods and meadows. Penn. Pursh. May, June. 24. — Stem a foot or more high. Flowers middle sized. Pursh, I believe, is the only authority for this as an American species. Wood Crowfoot.

8. R. aborticus Linn.: leaves smooth; radical ones petiolo, cordate-orbiculate, crenate, sometimes 3-parted; stem leaves ternate and 3—5 cleft, with linear segments; upper ones sessile; calyx a little longer than the petals, reflexed.

Hab. Wet grounds. Throughout the U.S. and Can. July, Aug. 24. — Stem a foot high. Leaves very variously dissected, mostly smooth, sometimes pubescent. Flowers small, yellow, the petals being sometimes twice as long as the calyx. Carpels compressed, forming an ovate or nearly globose head. R. nitidus of Walter, is a variety of this species, differing only in size, being nearly twice as large.

9. R. sceleratus Linn.: leaves smooth; radical ones petiolo, 3-parted, the segments lobed; cauline ones 3-lobed, lobes oblong, linear, entire; calyx smooth; carpels small, numerous, forming an oblong head.

10. *R. lacustris* Beck and Tracy: stem elongated; emersed leaves reniform, 3—many parted; submersed ones cleft into numerous capillary segments; petals 5—8, obovate, twice as long as the sepals; nectary concave; fruit subglobose.—*R. multifidus* Pursh.—*R. Purshii* Hook.

**Hab.** Stagnant waters. N. S. N. to near the Arctic Sea. W. to the Rocky mountains. May, June. 2f.—Stem 3—4 feet long. *Flowers* large, shining, bright yellow. When the plant grows in water the leaves are divided into capillary segments, but when found on muddy banks they are often rounded or reniform, and divided into only 3—5 blunt segments. Hence the reason why this plant has been made the basis of several distinct species. I should observe that the more common state of it was for a long time mistaken by our botanists for *R. fluviatilis*; as was first shown by Mr. James G. Tracy and myself, in 1822. (N. Y. Med. & Phys. Jour.) The name *R. multifidus*, applied to it by Pursh, had previously been appropriated by Sir J. E. Smith to a totally distinct species from Egypt. De Candolle gives a new name to the Egyptian plant, retaining Pursh’s name for the present one; while Dr. Hooker unites several supposed distinct species under the name of *R. Purshii*. On the whole I have thought best to retain the name imposed by us: though an attentive examination has satisfied me that the plant is much more variable than I had formerly supposed.

11. *R. acris* Linn.: leaves mostly pubescent, 3-parted; lobes incisely toothed, acute; upper ones linear; stem erect, many-flowered, subpubescent; peduncles terete, not furrowed; calyx spreading, sub-villlose; carpels terminated by nearly a straight point.

**Hab.** Meadows. N. S. May—Aug. 2f.—Stem varying much in height, mostly hairy. *Flowers* bright yellow, shining. A specimen in the herbarium of Dr. T. R. Beck, labelled by Muhlenberg *R. saniculoformis*, is identical with the present species. *Meadow Crowfoot.*

12. *R. repens* Linn.: leaves ternate; leaflets wedgeform, 3-lobed, incisely dentate; central one petiolate; main stems prostrate; flowering ones erect; peduncles furrowed; calyx pilose, spreading; carpels with a straight point.

**Hab.** Wet meadows. Can. to Car. June—Sept. 2f.—Plant increasing by runners. *Flowering stems* erect, 1—2 feet high. *Flowers* middle sized. I am disposed to unite with this species *R. nitidus* of Muhlenberg and Hooker.

13. *R. clintonii* Beck: somewhat hairy; stems creeping and rooting at each of the joints; lower leaves on long petioles, ternate; leaflets toothed and incised, cuneate, terminal one petioled; floral leaves incised or linear; peduncle 1—3 flowered; petals rounded; calyx spreading; carpels margined, with a short uncinate style.—*R. prostratus* Eat.

**Hab.** Banks of the canal near Rome, Oneida co. N. Y. June, July. 2f.—Much smaller than *R. repens*, at least of American botanists, in all its parts except the flower, which is of a bright yellow and about as large as that of *R. acris*. *Leaves* seldom
more than 1 1-2 inches in length, and about the same in breadth. Stems distinctly creeping like that of R. reptans; flowering ones 6—8 inches high. Style short and hooked. Whole plant somewhat hairy. I have named this species, which I must believe to be quite distinct, in token of my friendship for G. W. Clinton, Esq. It is undoubtedly the same plant which is described by Prof. Eaton in his Manual of Botany, (5th ed.) under the name of R. prostratus of Lamark. But that species, if indeed it exists, is a very obscure one, and has heretofore been found only in the neighborhood of Paris. De Candolle does not mention it in his Prodomus, and Sprengel places it as a synonym under R. repens. Syst. Veg. ii. 556. The only description of it that I have met with is in the elaborate article Ranunculus, in Rees' Cyclopædia, from the pen of the late Sir James Edward Smith.

14. R. hispidus Mich.: erect, branched; stem and petioles with stiff spreading hairs; leaves ternate or 3-parted; leaflets or segments acutely lobed; pubescence of the pedicels appressed; calyx hairy, at length reflexed; carpels in a globose head, margined, compressed, smooth; style very short and straight.

Hab. Wet grounds. Can. to Car. N. to lat. 67° and from Hudson's Bay to the Pacific. June—Aug. 2f. —Stem 18 inches high, very hairy; Lower leaves on long petioles; upper ones nearly sessile; leaflets nearly all petioled, 3-cleft or 3-parted, attenuate at base. Flowers about the size of R. acris.

Hairy Crowfoot.

15. R. pennsylvanicus Linn.: stem erect and with the petioles covered with stiff spreading hairs; leaves ternate, villous; segments subpetiolate, acutely 3-lobed, incisely serrate; calyx reflexed; carpels with a short straight style, collected in an oblong head.

Hab. Wet meadows. From the Arctic regions to Geor. July, Aug. 2f. —Stem 18 inches high. Flowers large. Distinguished from R. hispidus, to which it is most nearly allied, by its oblong head of fruit, and by its still shorter style.

16. R. recurvatus Pursh: stem erect and with the petioles covered with spreading hairs; leaves 3-parted, hairy; segments oval, subincised; the lateral ones 2-lobed; calyx reflexed; petals lanceolate; carpels uncinate.


17. R. fascicularis Muhl.: stem erect, branched; leaves on long petioles, pubescent, ternate; the middle segment deeply 3-cleft; lateral remotely 3-lobed; calyx spreading, shorter than the petals, villous; nectary flat, wedgeform; pericarps rounded, compressed, collected into a globose head.

of its leaves, which are however always much more compound than is usual in this genus.

18. *R. marylandicus* Poir.: stem erect, somewhat branched and with the petioles soft hairy; leaves smoothish, ternate; leaflets 3-lobed; lobes oblong, acute, incisely toothed; calyx smooth, spreading, shorter than the petals; pericarps compressed, with a straight acuminate style.

_Hab._ Woods. Penn. to Virg. May—July. 2 fl. — Flowers pale yellow. _Pursh._

19. *R. bulbosus* Linn.: hairy; radical leaves ternate, on long petioles; leaflets petiolate, 3-cleft, the segments narrow, incisely toothed; stem erect, bulbous at the base; calyx reflexed, hairy; petals obcordate, shorter than the sepals.


*** Carpels aculeate or tuberculate.***

20. *R. hirsutus* Curt.: leaves ternate or 3-lobed; lobes obtuse, incisely-toothed, middle one pedunculate; calyx reflexed; stem not bulbous at the base; carpels with a single row of small tubercles on their margins.—_R. philonotis* _Pursh._

_Hab._ Wet fields. Conn. and Penn. June—Oct. 2 fl. — This has probably been confounded with some other species; but it differs from all our northern ones, by its tuberculate carpels.

7. **CALTHA.** _Linn._

_Calyx_ coloured, with 5 roundish sepals resembling petals. _Petals_ none. _Stamens_ numerous. _Capsules_ 5—10, compressed, spreading, 1-celled, many-seeded.

**Polyandria, Polygynia.**

1. *C. palustris* _Linn._: stem succulent, erect; leaves cordate, suborbicular, obtusely crenate, petiolate; flowers large, pedunculate; sepals ovate.

_Hab._ In bogs. N. S. and Can. Labrador to the Columbia river. April, May. 2 fl. — Stem a foot high, dichotomous. _Leaves_ large and shining. _Flowers_ peduncled, large yellow.

_Marsh Marigold._

2. *C. integerrima* _Pursh_ : stem erect, corymbose; leaves orbicular-cordate, very entire, with the sinus closed; floral ones sessile, reniform, obsoletely crenate at the base; sepals oval, obtuse.

_Hab._ Boggy meadows. N. S. May—July. 2 fl. — _Flowers_ corymbose, smaller than No. 1. _Sepals_ very obtuse.

3. *C. parnassifolia* _Raf._: stem erect, 1-flowered, 1-leaved; radical leaves petiolate, lanceolate-cordate, obtuse, many-nerved; sepals elliptical.—_C. ficaroides_ _Pursh._—_Ranunculus ficaria_ _Walt._
DICOTYLEDONOUS PLANTS.

HAB. Cedar swamps. N. J. to Car. June, July. 4.—Flowers deep yellow, middle sized.

4. C. flabellifolia Pursh: stem procumbent, many-flowered; leaves dilated-reniform; lobes widely spreading, coarsely and acutely toothed; peduncles axillary, solitary, 1-flowered; sepals obovate; capsules uncinate.


8. TROLLIUS. Linn.


T. americanus Muhl.: leaves palmate; sepals 5—10, spreading; petals 5—10, shorter than the stamens.—T. laxus Pursh.

HAB. Wet grounds. Western part of N. Y. Penn. W. to the Rocky mountains. May—July. 4.—Stem a foot or more high. Flowers terminal, large, yellow. Probably often mistaken for a species of Ranunculus.

9. COPTIS. Salisb.


C. trifolia Salisb.: leaves on long petioles, ternate; leaflets obovate, obtuse, toothed or obscurely 3-lobed; scape 1-flowered.—Helleborus trifolius Linn.


10. AQUILEGIA. Linn.

Sepals 5, deciduous, petaloid. Petals 5, bilabiate above, drawn out into a spur at base. Capsules 5, distinct, many seeded, with acuminate styles. Polyandria. Pentagynia.

A. canadensis Linn.: spurs straight; styles and stamens exserted; sepals somewhat acute, a little longer than the petals; segments of the leaves 3-parted, rather obtuse, incisely toothed.

HAB. Rocks. Throughout the U. S. and Can. April, May. 4.—Stem 1—2 feet high, branched above. Leaves glaucous; radical ones biternate, the upper ones becoming gradually more simple. Flowers yellow and scarlet. Wild Columbine.
11. DELPHINIUM. Linn.

*Calyx deciduous, petaloid, irregular, the upper sepal produced downward into a spur. Petals 4; 2 upper ones horned behind. Capsules 1—5.*

Polyandria. Di-Pentagynia.

*Capsules 3—5. Petals free. Perennial.*

1. D. azureum Mich.: petioles a little dilated at the base; leaves 3—5 parted, many-cleft, lobes linear; raceme erect; petals densely bearded at the apex; flowers on short pedicels.


2. D. exaltatum Ait.: petioles not dilated at the base; leaves flat, 3—7 cleft beyond the middle; lobes wedgeform. 3-cleft at the apex, acuminate; lateral ones often 2-lobed; raceme erect; spur straight, as long as the calyx; capsules 3.—D. tridactylum Mich.


**Capsule 1. Petals united. Annual.**

3. D. consolida Linn.: stem erect, somewhat glabrous, divaricately branched; flowers few, in lax racemes; pedicels longer than the bracts; capsule smooth.


12. ACONITUM. Linn.

*Calyx petaloid, irregular, deciduous, or marcescent; upper sepal concave, helmet-form. Petals (nectaries) 2, with long claws, (on peduncles) hooded, recurved. Capsules 3—5.*

Polyandria. Di-Pentagynia.

A. uncinatum Linn.: panicle rather loose, with divergent branches; galea exactly conical; spur inclined, somewhat spiral; styles 3—5; leaves 3-lobed; lobes equal.

Hab. Mountains. Penn. to Car. Sept. 2 ft.—Stem twining, branching. Leaves coriaceous, deeply 3-lobed. Flowers 3—4, near the summit of each branch, large, purple. De Candolle notices two American varieties of this species.

13. ACTÉA. Linn.

*Calyx deciduous, 4 sepalled. Petals 4. Carpels many seeded.*

Polyandria. Di-Pentagynia.

*Carpels dry, dehiscent.*

1. A. racemosa Linn.: leaves ternately decompound; leaflets ovate-oblong, dentate and incised; racemes panicled, very long; flowers
with 1-style.—A. monogyna Walt.—Cimicifuga serpentina Pursh.—C. racemosa Nutt. and Torr.—Macrotys serpentina Raf. and Eut.


** Carpel 1, not dehiscent.

2. A. rubra Willd.: leaves twice and thrice ternate; raceme hemispherical; petals shorter than the stamens, acute; pedicels of the fruit smaller than the peduncle; berries shining, red, many seeded.—A. spicata Mich.—A. brachypetala De Cand.—A. americana, var. rubra Pursh.


3. A. alba Big.: leaves twice and thrice ternate; raceme oblong; petals equal to the stamens; pedicels of the fruit as large as the peduncle; berries white, few-seeded.—A. spicata, var. alba Mich.—A. americana, var. alba Pursh.—A. pachypoda Ell.


14. ZANTHORIZA. Linn.


Z. apiifolia L'Herit.


Order II. MAGNOLIACEÆ. De Cand. Lind.

Sepals 3—6, deciduous. Petals 3—27, hypogynous, in several rows. Stamens indefinite, distinct, hypogynous. Anthers adnate, long. Ovaries numerous, simple, arranged upon the torus above the stamens, 1-celled. Style short. Stigma simple. Fruit either dry or succulent, consisting of numerous carpels, which are arranged upon an elongated axis. Seeds solitary or several, attached to the inner edge of the carpels. Embryo minute, at the base of a fleshy albumen.

Trees or Shrubs. Leaves alternate, coriaceous. Flowers large, solitary, often odoriferous.

1. MAGNOLIA. Linn.

1. *M. glauca* Linn.: leaves perennial, elliptical, obtuse, petiolate, glaucous beneath; flowers 9—12 petalled; petals obovate, concave.

_Hab._ Swamps. N. J. to Car. May, June.—A shrub or small tree with whitish bark. _Flowers_ solitary, terminal, white, odorous. _Sweet Bay._

2. *M. acuminata* Linn.: leaves deciduous, oval, acuminate, pubescent beneath; flowers 6—9 petalled; petals obovate, somewhat obtuse.

_Hab._ Mountains. Penn. to Car. June, July. A middle sized tree, sometimes, however, attaining the height of 70 feet. _Flowers_ of a dull yellow colour, about the size of those of *M. glauca_. _Cucumber Tree._

3. *M. tripetala* Linn.: leaves deciduous, cuneate-lanceolate, acute, silky when young; petals 9, oval-lanceolate, acute, the outer ones reflected.—*M. umbra* Lam.

_Hab._ Mountain woods. Penn. to Geor. June.—A small tree with irregular branches and very large leaves and flowers. _Umbrella Tree._

2. **LIRIODENDRON.** Linn.


*L. tulipifera* Linn.

_Hab._ Woods. Throughout the U. S. July. One of the largest trees of our forest. _Leaves_ alternate, 3-lobed; the middle lobe truncate. _Flowers_ solitary, large, of a dull yellow colour. According to Dr. Darlington there are two varieties of this species, differing chiefly in the colour and texture of the wood; the one being yellow and the other white. The yellow is the most valuable, but both are employed extensively by cabinet makers. The bark is a valuable tonic, &c. See Big. & Bart. Med. Bot. Dr. P. K. Roger’s Inaugural Thesis, Philad. 1802. Dr. Emmet has found its virtues to reside in a principle which he denominates _liriodendrine_. See Jour. Phil. Coll. of Phar. _Tulip Tree. White Wood._

Order III. **ANONACEÆ.** De Cand. _Linne._

_Sepals_ 3—4, persistent, usually partly cohering. Petals 6, hypogynous, in two rows, coriaceous. _Stamens_ indefinite, covering a large hypogynous torus, packed closely together, very rarely definite. _Filaments_ short, more or less angular. _Anthers_ adnate, turned outwards, with an enlarged 4-cornered connectivum. _Ovaries_ mostly numerous. _Styles_ short. _Stigmas_ simple. _Fruit_ consisting of a number of carpels. _Seeds_ attached to the suture in one or two rows; _embryo_ minute, in the base of a hard, fleshy _albumen._
Trees or Shrubs. Leaves alternate, simple, almost always entire, without stipules. Flowers usually green or brown.

1. ASIMINA. De Cand.

Calyx 3-parted. Petals 6, spreading, ovate-oblong; inner ones smallest. Anthers many, sub sessile. Berries usually 3, ovate or oblong, sessile. Seeds many.

Polyandria. Polygynia.

A. triloba De Cand.: leaves oblong, crenate, acuminate, and with the branches smoothish; flowers on short peduncles; outer petals roundish ovate, 4 times as long as the calyx.—Anona triloba Linn.—Orchidocarpum arietinum Mich.—Porcelia triloba Pursh.


Order IV. MENISPERMACÉÆ. De Cand. Lind.

Flowers diclinous, usually dioecious and very small. Sepals and petals confounded in one or several rows, each of which is composed of 3 or 4 parts, hypogynous, deciduous. Stamens monadelphous or occasionally distinct, sometimes opposite the petals and equal to them in number, sometimes 3 or 4 times as many. Anthers adnate. Ovaries sometimes numerous, each with one style, cohering slightly at base, sometimes completely soldered together into a many celled body. Drupes mostly berried, 1-seeded, compressed. Seed same shape as the fruit; embryo curved; albumen wanting or small; cotyledons flat.

Shrubs, with a flexible tough tissue and sarmentaceous habit. Leaves alternate. Flowers small, usually racemose.

1. MENISPERMUM. Linn.


Dioecia. Monadelphia.

M. Canadense Linn.: leaves peltate, somewhat glabrous, cordate, obtusely angled, mucronate; racemes solitary, compound; petals 8.

Order V. BERBERIDEÆ. De Cand. Lind.

Sepals 3—4—6, deciduous, in a double row, surrounded externally by petaloid scales. Petals hypogynous, either equal to the sepals in number and opposite to them, or twice as many, generally with an appendage at the base in the inside. Stamens equal in number to the petals, and opposite to them; anthers generally with two separated cells, opening elastically with a valve from the bottom to the top. Ovary solitary, I-celled; style rather lateral; stigma orbicular. Fruit a berry or capsule. Seeds 1, 2 or 3, attached to the bottom of the cell on one side; cotyledons flat.

Shrubs or herbs. Leaves alternate, compound, without stipules.

1. BERBERIS. Linn.

Sepals 6. Petals 6, with 2 glands upon their claws, Stamens without teeth, or with 2—3 teeth. Berry 2—3 seeded. Seeds 2, rarely 3, inserted laterally at the base of the cell.

Hexandria. Monogynia.

B. vulgaris Linn.: spines 3-parted; leaves simple, obovate, attenuate at base, ciliate-serrate; racemes many flowered, pendulous; petals entire.—B. canadensis Pursh. Nutt.


2. LEONTICE. Linn.

Sepals 6, naked without. Petals 6, bearing a scale at the base. Capsule 2—4 seeded. Seeds globose, inserted into the bottom of the capsule.

Hexandria. Monogynia.

L. thalicroides Linn.: cauline leaf solitary, bi-tritenate; leaflets 2—3 lobed; flowers paniculate from the centre of the leaves.—Caulophyllum thalicroides Mich.


Order VI. PODOPHYLLEÆ. Lind.

Sepals 3—4, deciduous or persistent. Petals in two, three or more rows, each of which is equal in number to the sepals.
Stamens hypogynous, 12—18, arranged in two, three or more rows; anthers linear, oval, turned inwards. Stigma somewhat peltate. Fruit succulent or capsular, 1-celled. Seeds indefinite; embryo small.

Herbs. Leaves broad lobed. Flowers radicals, solitary, white.

1. PODOPHYLLUM. Linn.


2. JEFFERSONIA. Bart.


**Order VII. HYDROPELTIDEÆ. Lind.**

Sepals 3 or 4, coloured inside. Petals 3 or 4, alternate with the sepals. Stamens definite or indefinite, hypogynous, arising from an obscure torus; anthers linear, turned inwards, continuous with the filament. Ovaries 2 or more. Fruit indehiscent, tipped by the indurated style. Seeds definite, pendulous; embryo seated at the base of a fleshy albumen. Aquatics, with floating leaves. Flowers axillary, solitary, yellow or purple.

1. HYDROPELTIS. Mich.

NYMPHÆACEÆ.

H. purpurea Mich.—Brasenia peltata Pursh.—B. hydropeltis Torr.

Hab. Lakes and ponds. Can. to Geor. July, Aug. 2£.—
Whole plant covered with a viscid gelatine. Stem floating, long, terete, branched. Leaves oval, peltate, coriaceous, very entire and tinged with purple. Peduncles solitary, long, each springing from the side of a petiole. Flowers purple.

Water-Target.

2. FLÆRÆKIA. Willd.


Hexandria. Monogynia.

F. uliginosa Muhl.—F. palustris Nutt.—Nectris pinnata Pursh.

Hab. Marshes. Ver. to Virg. April, May. 3.—Stem decumbent, terete, slender, smooth. Leaves somewhat succulent, alternate, trifid and pinnatifid, with a long petiole. Peduncles axillary, gradually lengthening. Flowers small, white. Dr. Torrey, in his valuable catalogue of North American plants, appended to the American edition of Lindley’s Introduction to the Natural System of Botany, places this genus with a mark of doubt, under the present order. I have followed his suggestion, although it is by no means certain that this is its true place. Further examination may prove that it belongs to some other order, or what is more probable, that it should be the type of a new one.

False Mermaid.

ORDER VIII. NYMPHÆACEÆ. De Cand.

Sepals and petals numerous, imbricated, passing gradually into each other. Stamens numerous, sometimes forming with the combined petals, a superior monopetalous corol; filaments petaloid; anthers turned inwards, adnate. Fruit many-celled, indehiscent. Seeds very numerous. Embryo small, on the outside of the base of the albumen.

Herbs, with peltate or cordate fleshy leaves arising from a prostrate trunk, growing in quiet waters.

1. NELUMBIDIUM. Juss.

Calyx petaloid, of 4—6 sepals. Petals numerous. Carpels numerous, deeply immersed in the upper surface of a turbinate receptacle or torus, 1-seeded. Seed large, round, solitary.

Polyandria. Polygynia.

N. luteum Willd.: corol, many petalled; anthers produced into a linear appendage at the extremity; leaves peltate, orbicular, very entire. —Cyamus flavicomus Salisb. Pursh.—C. lutens Nutt.

Hab. Lakes. N. Y. to S. Car. W. to Miss. July. 2£.—Leaves alternate, peltate. Peduncles very long, more or less scabrous.
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DICOTYLEDONOUS PLANTS.

Flowers yellowish-white and larger than that produced by any other plant in North America, except Magnolia macrophylla.  
Water Chinquepin.

2. NYMPHAEA. Linn.

Sepals at the base of the disk. Petals and stamens connected with the whole of the disk, which covers the carpels.  
Polyandria. Monogynia.

N. odorata Ait.: leaves floating, orbicular-cordate, very entire; nerves and veins prominent; calyx 4-leaved, equal to the petals; stigma 16—20 rayed; rays erect, inflexed at the apex.—N. alba Walt. Mich.

Hab. Ponds. Can. to Car. June, July. 2f.—Leaves on very long petioles. Flowers large, white, odorous. N. minor of De Candolle is probably only a variety of this species. Pond Lily.

3. NUPHAR. Smith.

Sepals, petals and stamens inserted at the base of the disk.  
Polyandria. Monogynia.

1. N. lutea Smith: calyx with 5 sepals; stigma entire, 16—20 rayed, deeply umbilicate; leaves cordate, oval, lobes approximate; petioles 3-sided, acute-angled.—Nymphaea lutea Linn.

Hab. In water. N. S. and N. to lat. 64°. June. 2f.—Sepals very obtuse. Petals much smaller, truncate. Confounded by some of our botanists with the next species, from which it is quite distinct.

2. N. advena Ait.: calyx 6-leaved; petals numerous, small; leaves cordate, with divaricate lobes; petioles semicylindrical; fruit sulcate. —Nymphaea advena Mich.

Hab. In water. Can. to Car. June, July. 2f.—Leaves upright or floating. Flowers large, yellow. Yellow Water Lily.

3. N. kalmiana Ait.: calyx 5-leaved; stigmas incised, 8—12 rayed; leaves cordate, submersed, with approximate lobes; petioles terete.—Nymphaea lutea, var. kalmiana Mich.


Order IX. PAPAVERACEÆ. De Cand. Lind.

Sepals 2, deciduous. Petals hypogynous, either 4, or some multiple of that number placed in a cruciate manner. Stamens either 8, or some multiple of 4, generally very numerous. Ovary 1. Style short or none. Stigmas 2 or many. Fruit 1-celled, either pod-shaped, with 2 parietal placentae, or capsular, with several placentae. Seeds numerous. Embryo minute, in the base of a fleshy albumen.
Herbs or shrubs, with a milky juice. Leaves alternate, more or less divided. Peduncles long, 1-flowered.

1. ARGEMONE. Linn.


A. mexicana Linn.

Hab. Banks of streams. Penn. to Flor. W. to Miss. July. —Stem 2—3 feet high, branching, armed with prickles. Leaves sessile, pinnatifid, repand-sinuate, margins and veins beneath armed with spines. Flowers axillary and terminal, large, yellow or white.

2. SANGUINARIA. Linn.


S. canadensis Linn.


3. MECONOPSIS. De Cand.


M. diphylla De Cand.: leaves 2, sessile, hairy; lobes rounded and obtuse; capsules 4-valved, echinate.—Chelidonium diphyllum Mich. Pursh.—Stylophorum diphyllum Nutt.


4. CHELIDONIUM. Linn.


C. majus Linn.: leaves pinnate, glaucous; leaflets roundish, dentate-lobed; umbels axillary, pedunculate; petals elliptic, entire.
DICOTYLEDONOUS PLANTS.


Celadine.

ORDER X. SARRACENIÆ. Hook. Lind.

Sepals 5, persistent, often having a 3-leaved involucre on the outside; estivation imbricate. Petals 5, hypogynous; unguiculate, concave. Stamens indefinite, hypogynous; anthers oblong, adnate, 2-celled, bursting internally and longitudinally. Ovary superior, 5-celled; style single; stigma much dilated, peltate, with 5 angles. Capsule crowned by the persistent stigma, with 5 cells and 5 loculicidal valves. Seeds very numerous, minute, slightly warty, covering 5 large placenta, which project from the axis into the cavity of the cells; albumen abundant; embryo cylindrical, lying near the base of the seed, with the radicle turned to the hilum.

Herbs found in bogs. Roots fibrous. Leaves radical with a hollow urn-shaped petiole, at the apex of which is articulated the lamina, which covers the petiole like a lid. Scapes having each one large flower.

1. SARRACENIA. Linn.

Sepals 5, with a 3-leaved involucre. Petals 5. Capsule 5-celled. Style with a clypeate stigma.

Polyandria. Monogynia.

S. purpurea Linn.: leaves much shorter than the scape, inflated, contracted at the mouth, having a broad arched lateral wing; appendix erect, broad-cordate, undulate, not mucronate.

Hab. Sphagnous swamps. Can. to Car. June, July. 2L.—Scape 1—2 feet high, with a solitary terminal purple flower.

Side-saddle Flower.

ORDER XI. FUMARIACEÆ. De Cand. Lind.

Sepals 2, deciduous. Petals 4, cruciate, parallel; the two outer, either one or both, saccate at the base; the 2 inner calalous and coloured at the apex, where they cohere and enclose the anthers and stigma. Stamens 6, in two parcels opposite the outer petals, very seldom all separate; anthers membranous. Ovary superior, 1-celled; style filiform; stigma with two or more points. Fruit either an indehiscent 1 or 2 seed-
ed nut, or a 2-valved many seeded pod. Seeds horizontal. Albumen fleshy. Embryo minute.

Herbs with brittle stems and a watery juice. Leaves usually alternate, many-cleft, often with tendrils. Flowers purple, white or yellow.

1. **FUMARIA.** Linn.

*Calyx* of 2 sepals. *Petals* 4, one gibbous or spurred at the base. *Pouch* ovate or globose, 1-seeded, indehiscent, not pointed with a style. — *Diadelphia. Hexandria.*

*F. officinalis* Linn.: stem suberect; leaves bipinnate and cleft, with linear segments; racemes rather loose; fruit-bearing pedicels erect, twice as long as the bracts; pouch globose, smooth, somewhat retuse. 


2. **DICLYTRA.** De Cand.

*Petals* 4, 2 outer ones equally spurred or gibbous at base. *Pod* 2-valved, many-seeded. — *Diadelphia. Hexandria.*

1. *D. cucullaria* De Cand.: scape naked; raceme simple, 1-sided; spurs straight, divaricate, acute; leaves 2, decompound. — *Fumaria cucullaria* Linn. — *Corydalis cucullaria* Pers. 

**Hab.** Shady hills. Throughout Can. and N. S. W. to Miss. May. 

2*/ — Root bulbous. Scape 6—8 inches high. Flowers large, yellowish-white. The spurs are frequently much divaricated. *Dutchman’s Breeches.*

2. *D. formosa* De Cand.: scape naked; raceme somewhat compound, many-flowered, nodding; segments of the leaves oblong, incisely-pinnatifid; spurs slightly curved, obtuse; stigmas 2-angled. — *Corydalis formosa* Pursh. 

**Hab.** Hills. Can. and N. S. May. 

3. *D. eximia* De Cand.: scape naked, simple, few-flowered; leaves bipinnate; segments linear, glaucous-beneath; spurs 2, short, obtuse; stigma 4-angled. — *D. formosa* Ell.? — *D. Canadensis* De Cand. — *Corydalis canadensis* Goldie. 

**Hab.** Can. to Car. May. 

3. **CORYDALIS.** De Cand.

*Petals* 4, one spurred at base. *Pod* 2-valved, compressed, many-seeded. — *Diadelphia. Hexandria.*
DICOTYLEDONOUS PLANTS.

1. C. glauca Pursh: stem erect, branched; leaves glaucous, compound; segments cuneate, trifid; bracts oblanceolate, shorter than the pedicels; pod linear, flat, scarcely torulose.—Fumaria glauca Curtis.


2. C. aurca Willd.: stem branched, diffuse; leaves glaucous, doubly pinnate, lobes oblanceolate, acuminate, toothed, longer than the pedicels; pod terete, torulose.—Fumaria aurca Muhl.


4. ADLUMIA. Raf.


ORDER XII. CRUCIFERÆ. De Cand. Lind.

Sepals 4, deciduous, cruciate. Petals 4, cruciate, alternate with the sepals. Stamens 6, of which two are shorter, solitary and opposite the lateral sepals, and four longer, in pairs, opposite the anterior, and posterior sepals. Disk with various green glands between the petals and the stamens and ovary. Ovary superior, 1-celled. Stigmas 2. Fruit a silicule or siliqae (pouch or pod,) rarely 1-celled and valveless, generally 2-celled and 2-valved, 1 or many-seeded, indehiscent or opening by the two valves. Seeds attached in a single row by a cord to each of the placentae, generally pendulous. Albumen none. Embryo with the radical folded upon the cotyledons.

Herbs. Leaves alternate. Flowers usually yellow or white, rarely purple.
Div. I. SILICULOSÆ.

1. CAKILE. Linn.

**Pouch** 2-jointed, compressed; the upper joint ensiform or ovate. **Seed** solitary in the cells; upper erect, lower pendulous. **Tetradynamia. Siliculosa.**

*C. americana Nutt.*: leaves fleshy, oblong, obtuse, with the margins toothed; joints of the pouch 1-seeded; the uppermost one ovate, acute.—*C. maritima*, var. *americana* Torr.—*Bunias maritima* Pursh—*B. edentula* Big.


2. THLASPI. Linn.

**Pouch** emarginate at the apex; **valves** boat-form, winged on the back; **cells** 2—many seeded. **Petals** equal. **Calyx** equal at base. **Tetradynamia: Siliculosa.**

1. *T. arvense* Linn.: leaves oblong-sagittate, coarsely toothed, smooth; pouch suborbicular, shorter than the pedicel; its wings dilated longitudinally.

**Hab.** Stony fields. Can. and N. S. W. to Miss. June. ☿.—**Stem** a foot high, erect, somewhat branched. **Leaves** smooth. **Flowers** small, white, in a raceme. **Pouch** very large, with dilated wings. *Penny-cress.*

2. *T. tuberosum* Nutt.: leaves rhombic-ovate, obsoletely toothed, smooth, sessile; radical ones upon long petioles; stem pubescent, very short and simple; root tuberous; pouch orbicular.

**Hab.** Penn. *Nutt.* April, May. ☿.—**Stem** 4—5 inches high. **Flowers** large, rosaceous.

3. CAPSELLA. De Cand.

**Pouch** triangular, wedgeform at base; **valves** boat-form, not winged; **cells** many-seeded. **Tetradynamia. Siliculosa.**

*C. pursa-pastoris* De Cand.: radical leaves pinnatifid.

**Hab.** Cultivated grounds. Throughout the U. S. April—Oct. ☿.—**Stem** 6—12 inches high. **Radical leaves** pinnatifid, hairy; cauline ones oblong, toothed, sagittate at base. **Flowers** white, in terminal spiked racemes. *Shepherd’s Purse.*

4. ALYSSUM. De Cand.

**Pouch** orbicular or elliptic; **valves** flat, or convex in the centre. **Seeds** 2—4 in each cell, compressed, sometimes sur-
DICOTYLEDONOUS PLANTS.

rounded by a membranous wing. **Calyx** equal at base. **Petals** entire. **Stamens** somewhat toothed.  

_Tetradynamia._ **Siliculosa.**

*A? dentatum Nutt.*: stem erect and herbaceous; radical leaves subruncinately toothed and somewhat scabrous; cauline ones linear-lanceolate, sessile, nearly smooth; racemes paniculate; pouch elliptical, compressed, pubescent, contorted, terminating in a style near its own length, shorter than the pedicel.—**Draba arabisans** Pursh, not of Mich. (Nutt.).

_Hab._ Rocks. N. S. 1 May. _—Stem 6 inches high. This plant is probably not a native of the northern section of the U. S._

5. **DRABA.** Linn.

**Pouch** sessile, oval or oblong; **valves** flat or convex. **Seeds** many, not margined. **Calyx** equal. **Petals** entire. **Stamens** without teeth.  

_Tetradynamia._ **Siliculosa.**

1. _D. caroliniana_ Walt.: stem leafy at the base, hispid, naked and smooth at the top; leaves ovate-roundish, entire, hispid; pouch linear, smooth, longer than the pedicels.—_D. hispidula_ Mich.

_Hab._ Fields. Penn. to Geor. W. to Miss. April. _—Stem 2—4 inches high. **Leaves** clustered on the lower part of the stem, very hairy. **Pouch** 1—2 an inch long, linear-lanceolate. **Flowers** white.

2. _D. arabizans_ Mich.: stem leafy, somewhat branched, subpubescent; leaves lanceolate, acute, toothed; pouch linear, smooth, longer than the pedicel.

_Hab._ Rocks. Can. to Virg. W. to Miss. May, June. _—Pouch 5—6 lines long, erect, acuminate, twisted. **Flowers** white._

6. **EROPHILA.** De Cand.

**Pouch** oval or oblong; **valves** flat. **Seeds** many, not margined. **Calyx** equal. **Petals** 2-parted. **Stamens** without teeth.  

_Tetradynamia._ **Siliculosa.**

_E. vulgaris_ De Cand.: pouch elliptic, shorter than the pedicel; scape 5—15 flowered.—_E. americana_ De Cand.?—_D. verna_ Pursh. Nutt.

_Hab._ Fields. Can. to Virg. March—May. _—Scape 2—6 inches high. **Leaves** lanceolate, subincised, hairy. **Flowers** white. Specimens of this plant obtained from my friend, Dr. Matthew Stevenson, of Washington co. N. Y. agree in all respects with the foreign _E. vulgaris_, as do also those which I have collected elsewhere. Whether _E. americana_ of De Candolle is a mere variety of this, I have no means of determining; but I think there can be no doubt that _Draba caroliniana_ ( _D. hispidula_ Mich.) is entirely distinct from the present plant.

_Whitlow Grass._
7. COCHLEARIA. Linn.

**Pouch** sessile, ovate, globose or oblong; **valves** ventricose. **Seeds** many, not margined. **Calyx** equal, spreading. **Petals** entire. **Stamens** without teeth. **Tetraxyembia. Siliculosa.**

*C. armoracea Linn.*: root large, fleshy; radical leaves oblong-crenate; cauleine ones long-lanceolate, toothed or incised; pouch elliptical.

**Hab.** Waste grounds. June. 2d.—Root large and very pungent to the taste. **Stem** 2 feet high, **Flowers** white, in elongated racemes. Introduced. **Horse Radish.**

8. LEPIDIIUM. Linn.

**Pouch** ovate or somewhat cordate; **valves** keeled or rarely ventricose, dehiscent; **cells** 1-seeded. **Seeds** somewhat triquetrous or compressed. **Tetraxyembia. Siliculosa.**

1. *L. virginicum Linn.*: stem branched; radical leaves pinnatifid; stem leaves linear-lanceolate, serrate, smooth; flowers with 4 petals and 2—4 stamens; pouch orbicular, flat, emarginate, shorter than the pedicel.—**Thlaspi virginianum Poir.**

**Hab.** Sandy fields. Can. to Geor. W. to Miss. June—Oct. 3d.—**Stem** a foot high, panicled above. **Flowers** minute, white. Closely resembles *L. ruderale*, but the cotyledons are accumbent. **Hooker. Wild Pepper-grass.**

2. *L. campestre Brown*: cauleine leaves sagittate, toothed; pouch ovate, winged, emarginate, scaly-punctate.—**Thlaspi campestre Linn.**

**Hab.** Hills. N. S. May. 3d.—**Stem** a foot high, erect. **Leaves** pubescent. **Flowers** white. **Field Pepper-grass.**


**Hab.** Fields, near New-Brunswick, N. J. June. 3d.—**Stem** 12—18 inches high, very leafy. **Lower leaves** petiolated, and somewhat pinnatifid; stem leaves sub-clasping, sagittate, toothed, covered with a whitish pubescence. **Flowers** in dense hairy racemes. **Pouch,** in my specimens, scabrous, emarginate, with a style about half its length.—Perhaps introduced. **Hairy Field Pepper-grass.**

9. CAMELINA. Crantz.

**Pouch** obovate or subglobose; **valves** ventricose, dehiscent with part of the style; **cells** many seeded. **Style** filiform. **Seeds** oblong, not margined. **Tetraxyembia. Siliculosa.**

*C. sativa De Cand.*: pouch obovate-pyriform, margined, tipped with the pointed style; leaves roughish, subentire, lanceolate, sagitate; flowers numerous, in corymbs.—**Myagrum sativum Linn.**

10. SUBULARIA. Linn.


S. aquatica Linn.


11. LUNARIA. Linn.


L. biennis De Cand.: pouch elliptical, obtuse at each end.


DIV. II. SILICIQUOSÆ.

12. DENTARIA. Linn.

Pod lanceolate; valves flat, nerveless, often opening elastically. Seeds ovate, not margined, in one row. Tetradynamia. Siliquosa.

1. D. laciniata Muhl.: leaves in threes, verticillate, on short petioles, ternate; leaflets 3-parted; segments linear, entire, or coarsely toothed; root moniliform.—D. concatenata Mich.

HAB. Woods. Throughout the U. S. but rather rare. April, May. $\mathcal{L}$.—Stem 8 inches high. Flowers in terminal racemes, pale rose coloured or nearly white. Petals oblong.

2. D. diphylla Mich.: leaves mostly 2, on short petioles, ternate; leaflets ovate-oblong, unequally and coarsely serrate or laciniate.


3. D. heterophylla Nutt.: stem 2-leaved; leaves ternate, petiolate; leaflets linear, sub-lanceolate, acute, entire, margin rough ciliate; radial leaflets ovate-oblong, incisely and coarsely toothed.

4. *D. maxima* Nutt.: leaves many, alternate, on long petioles, terminal; leaflets sub-oval, incisely and acutely toothed, lateral ones lobed; axils naked; racemes lateral and terminal.

**Hab.** Woods. N. Y. and Penn. June. 21.—**Stem** 18—20 inches high. **Leaves** 5—7; leaflets broad. **Flowers** in racemes, purple.

13. **BARBAREA.** Brown.

**Pod** 4-sided, 2-edged; **valves** awnless at the apex, concave-carinate. **Calyx** equal at base.

*Tetradsymia. Siliquosa.*

*B. vulgaris* Brown: lower leaves lyrate, the terminal lobes roundish; upper ones sessile, obovate, toothed; pod 4-sided, tapering into a slender style.—*Erysimum barbarea* Linn.

**Hab.** Fields. N. S. and N. to the Arctic regions. June. 22.—**Stem** 12—18 inches high, smooth. **Flowers** small, yellow, corymbed.—According to Dr. Hooker the best character between this species and *B. precox* is in the pod, which is here scarcely more than an inch long and tapers into a long slender style.

*Bitter Winter-cress.*

14. **ARABIS.** Linn.

**Pod** linear; **valves** flat, 1-nerved in the middle. **Seeds** in one row in each cell, oval or orbicular, compressed. **Cotyledons** flat, accumbent. *Tetradsymia. Siliquosa.*

1. *A. sagittata* De Cand.; leaves subdentate, rough, with the pubescence often branched; radical ones obovate or oblong, attenuated into a petiole; those of the stem lanceolate, sagittate-cordate; pedicels of the length of the calyx; pods stiffly erect.

*c. ovata* De Cand.: leaves rough; radical ones obovate, toothed; cauline ones clasping.—*A. ovata* Poir.—*Turritis ovata* Pursh.

*d. oblongata* De Cand.: leaves rough; radical ones obovate-oblong, toothed; cauline ones sagittate-amplexicaul.—*Turritis oblongata* Raf.

**Hab.** Rocks. N. S. N. to Arctic America. 3. —**Stem** 12—18 inches high, simple. **Flowers** small, white. A very variable plant.

2. *A. hirsuta* De Cand.: leaves dentate, pubescent or scabrous; radical ones obovate-oblong, tapering into a petiole; cauline ones ovate-lanceolate; pedicels as long as the calyx; pod erect.—*Turritis hirsuta* Jacq.

**Hab.** Conn. June. 3.—**Stem** 6—12 inches high, hairy. **Flowers** small, white. A specimen of this plant, gathered in Connecticut by Dr. Robbins, agrees very well with the foreign one, from which it seems to me our *A. sagittata* is quite distinct.

*Hairy Tower Mustard.*

3. *A. thaliana* Linn.: stem branched; leaves subdentate, pilose; the radical ones petiolate, obovate-oblong; cauline ones few, sessile;
stamens as long as the petals; pod suberect, on longish pedicels, slen-
der.

HAB. Dry hills. N. S. April, May. Ø.—Stem 2—8 inches high. Flowers in a corymb, white. Common Wall-cress.

4. A. lyrata Linn.: stem somewhat branched, hairy at base; radical leaves lyrate-pinnatifid, often pilose; those of the stem linear and smooth; pedicels somewhat spreading; pod erect.

HAB. Fields and hills. Throughout the N. S. and Can. and W. to Rocky mountains. April, June. γ.—Stem 8—12 inches high. Flowers large, white. Dr. Hooker supposes this plant to be identical with the European A. petraea.

5. A. laevigata De Cand.: erect, glabrous and glaucous; radical leaves, obovate, petioled, sinuate-dentate; stem leaves linear, sessile, very entire; pod erect; seeds margined.—Turritis laevigata Willd.

HAB. Rocky places. N. S. May. ♂.—Stem a foot to 18 inches high. Flowers few, small, in corymbbed racemes. Pod 2 inches long, quite erect, tapering at the extremity into a very short style.

6. A. canadensis Linn.: stem leaves sessile, oblong-lanceolate, acuminate, somewhat toothed; pedicels thrice as long as the calyx, pubescent, reflexed in the fruit; pod pendulous, subfalcate, nerved; seeds with a broad wing.—A. falcata Mich. Pursh.—A. mollis Raf.


15. CARDAMINE. Linn.

Pod linear; valves flat, nerveless, often opening elastically. Seeds ovate, not margined; funicle of the hilum slender. Tetradydynamia. Siliquosa.

* Leaves undivided.


HAB. Low grounds. From Hudson's Bay to S. Car. and W. to the Rocky mountains. May, June. ♂.—Stem 6—12 inches high, erect, smooth, simple. Flowers in terminal racemes, large. White.

2. C. rotundifolia Mich.: root fibrous; leaves suborbicular, subdenticulate, smooth, petioled; stem weak, procumbent; pod spreading, slender, with a long style.

HAB. Wet grounds. N. S. July. ♂.—Stem 12—15 inches high. Flowers small, white. Dr. Hooker considers the two preceding plants identical; but Dr. Darlington, who has examined this point with much care, has designated the characters by which they are distinguished. The roots of C. rotundifolia are constantly fibrous, while those of C. rhomboidea are tuberous; the flowers of the former are not more than half the size of the...
latter; the stigma is simple and very small, on a tapering style, nearly a line in length; neither is the plant so acrid, being rather bitter to the taste. See Darlington’s Florula Cestrica, and his paper in Sill. Amer. Jour. xvii. 356.

3. C. bellidifolia Linn.: leaves glabrous, somewhat fleshy; radical ones petiolated, ovate, entire; cauline ones few, entire, or somewhat 3-lobed; pod erect; stigma sub sessile.—C. rotundifolia? Big.

HAB. Highest summit of the White mountains, Rocky mountains, and throughout Arctic America. July. 2L.—I received a specimen of this plant from my friend Dr. Charles Pickering of Philadelphia, who obtained it from the first named locality. The stem is simple and apparently procumbent, 4—5 inches long. Lower leaves 1-2—3-4 of an inch in length, ovate or suborbicular, on long slender petioles. Pod an inch long, surmounted by a short style. It is very near C. alpina.

** Leaves divided.

4. C. pratensis Linn.: leaves pinnate; leaflets of the radical ones roundish, of the cauline ones linear or lanceolate, entire; flowers large, in a terminal corymb; style very short, nearly as thick as the pod; stigma capitate.

HAB. Woods. N. S. and throughout Arctic America. June. 2L.—Stem 10—12 inches high. Flowers purplish, large. Pod linear, nearly an inch long. This species can be readily distinguished by its large flowers and thick style.

5. C. hirsuta Linn.: leaves pinnate; leaflets of the radical ones petiolated, mostly rounded; of the cauline ones lanceolate, subpetiolated, dentate or very entire; petals small, oblong-cuneate; stigma minute, sub sessile.—C. pennsylvanica Muhl. De Cand.—C. virginiana Linn.

HAB. Wet grounds. Throughout the U. S. and Can. July. O. —I adopt the views of Dr. Hooker concerning this species. I have never been able to ascertain the specific line between the C. pennsylvanica and C. virginica of American botanists; having seen every variety in the size, form of the leaves, and direction of the stem, of these supposed distinct plants. The present species is very extensively distributed. American Water-eros.

6. C. teres Mich.: leaves sublyrate-pinnatifid, segments oval-oblong, the terminal one somewhat 3-lobed; pod short, erect, terete.

HAB. Low grounds. N. Eng. to N. J. Pursh. June, July. 2L.—De Candolle thinks this may belong to his genus Nasturtium.

16. NASTURTUM. Brown.

Pod rounded (sometimes short.) Stigma sub-2-lobed. Values concave, nerveless, not keeled. Cotyledons subcordate, sinuate-dentate; upper ones pinnatifid.—Sisymbrium Nasturtium Linn.

Water-cress.

2. *N. palustre* De Cand.: leaves lyrate-pinnatifid; lobes confluent, unequally toothed, smooth; petals as long as the calyx; pod obtuse at both ends, turgid; root fusiform.—*Sisymbrium palustre* Willd. Pursh.

HAB. Wet places. Throughout the U. S. and to the shores of the Arctic sea. July. 2L.—Stem 18 inches high, mostly erect. Leaves glabrous, all more or less pinnatifid. Flowers numerous, minute, yellow. Pod short.

3. *N. amphibium* Brown: leaves oblong-lanceolate, lyrate-pinnatifid or serrate; root fibrous; petals longer than the calyx; pod elliptical, tipped with the mucronate style.—*Sisymbrium amphibium* Linn.


4. *N. natans* De Cand.: emerged leaves lanceolate, entire, serrate; immersed ones doubly tripinnatifid; segments capillaceous; pouch obovate-globose, with a style equal in length.

HAB. In water. Near Montreal. Hook. Oneida Lake. Dr. Asa Gray. July. 2L.—Stems long, submerged. Lower leaves finely divided; middle ones often pinnatifid; emerged ones lanceolate, undivided, serrate. Flowers very pale yellow, smaller than in the preceding.

17. HESPERIS. Linn.


1. *H. matronalis* Linn.: pedicels of the length of the calyx; petals obovate; pod erect, torose, glabrous, not thickened on the margin; leaves ovate-lanceolate, toothed; stem erect; nearly simple.

HAB. Shores of Lake Huron. Hook. Dame’s Violet.

2. *H.? pinnatifida* Mich.: lower leaves lyrate-pinnatifid; upper ones lanceolate, unequally serrate; border of the petals obovate, entire; pedicels at length longer than the calyx.


18. SISYMBRIUM. All.

Pod roundish, sessile upon the torus. Stigmas 2, somewhat distinct, or connate in a head. Calyx equal at base. Seeds ovate or oblong. Cotyledons flat, incumbent, sometimes oblique. Stamens without teeth.

Tetradynamia. Siliquosa.
1. *S. officinale De Cand.*: leaves runcinate and with the stem hairy; flowers in a long raceme; pod subulate, pressed to the rachis. _Erysimum officinale_ Linn.


2. *S. sophia Linn.*: leaves bipinnate, smooth or pubescent; segments oblong-linear, cut; petals shorter than the calyx; calyx thrice as short as the pedicel; pod linear, erect.

**Hab.** Sandy places. Can. June, July. 😄.—*Stem 8—12* inches high. *Flowers* yellow, numerous. *Fruit-bearing-raceme* very long. I have received a specimen of what I think must be the true *S. sophia* from Dr. Holmes of Montreal. The pods are very narrow-linear, 1-2 to 3-4 of an inch, longer and narrower than in *S. canescens* of Nuttall, and not clavate as in the latter. In other respects I cannot observe any difference between these two plants.

19. **ERYSIMUM.** Linn.


1. *E. cheiranthoides Linn.*: leaves lanceolate, somewhat toothed and scabrous; pod erect-spreading, twice as long as the pedicel; stigma small, nearly sessile.

**Hab.** Fields. Near Fairfield, N. Y. Can. and on all the plains westward of the Rocky mountains. July. 😄.—*Stem 1—2* feet high, erect, and with the leaves scabrous. *Flowers* yellow, in long terminal racemes. *Pods* linear, somewhat spreading, 1-2 to 3-4 of an inch long.

20. **SINAPIS.** Linn.

*Pod* roundish; *valves* bearing nerves; *style* small, short, acute. *Seeds* in one series, subglobose. *Calyx* spreading. _Tetradynamia. Siliquosa._

1. *S. nigra Linn.*: lower leaves lyrate; upper ones lanceolate, entire, petiolate; pod smooth and even, somewhat 4-sided, appressed to the peduncle.

**Hab.** Fields. N. S. June, July. 😄.—*Stem 2—4* feet high. *Flowers* yellow. _Common Mustard._

2. *S. alba Linn.*: leaves lyrate, nearly smooth, the terminal lobe large; pod mostly hispid, spreading, shorter than the broad sword-form beak; seeds large, pale.

**Hab.** Waste places. N. S. July. 😄.—*Stem 1—2* feet high. *Flowers* yellow, rather large, corymbose. _Introduced. White Mustard._
21. RAPHANUS. Linn.

Pod transversely many-celled or dividing into several joints. Seeds in one row, globose, pendulous.

Tetradynamia. Siliquosa.

R. raphanistrum Linn.: leaves simply lyrate; pod jointed, 1-celled, striate, 3—8 seeded, longer than the style.

Hab. Fields. N. S. July. ©.—Stem 1—2 feet high, hispid. Flowers yellow, large.

ORDER XIII. CAPPARIDEÆ. De Cand. Lind.

Sepals 4. Petals 4, cruciate, usually unguiculate and unequal. Stamens 4, 6, or indefinite, but usually some high multiple of four. Disk hemispherical or elongated. Fruit either pod-shaped and dehiscent, or fleshy and indehiscent, rarely 1-seeded, most frequently with 2-polyspermous placentæ. Seeds generally reniform; albumen none; embryo incurved; cotyledons foliaceous.

Herbs, without true stipules, but sometimes with spines in their places. Leaves alternate, petioled, undivided or palmate.

1. GYNANDROPSIS. De Cand.


Tetradynamia. Siliquosa.

G. pentaphylla De Cand.: smoothish; leaves quinate; the lower and floral ones ternate; leaflets entire and subserrulate.—Cleome pentaphylla Linn.


2. POLANISIA. Raf.


Tetradynamia. Siliquosa.

P. graveolens Raf.: viscidly pubescent; leaves ternate; leaflets elliptical-oblong; stamens 8—12; pod oblong, attenuate at base, mucrinate with a glandular pubescence.—Cleome dodecandra, var canadensis Linn.
HAB. Sandy places. N. S. and Can. W. to Miss. June. 2ft.—
Stem 8–12 inches high. Flowers purple and yellow. Whole plant more or less viscid and fetid.

ORDER XIV. CISTINEÆ. De Cand. Lind.

Sepals 5, persistent, unequal, the three inner with a twisted aestivation. Petals 5, hypogynous, very fugitive, crumpled in aestivation and twisted in a direction contrary to that of the sepals. Stamens indefinite, hypogynous, free; anthers innate; stigma simple. Ovary distinct, 1 or many celled; style single. Fruit capsular, usually 3-5-10-valved, either 1-celled with parietal placentae in the axis of the valves, or imperfectly 5 or 10-celled with dissepiments proceeding from the middle of the valves, and touching each other in the centre. Seeds indefinite in number. Embryo inverted, either spiral or curved in the midst of mealy albumen.

Shrubs or herbs. Leaves usually entire, opposite or alternate. Flowers very fugacious.

1. HELIANTHEMUM. Tourn.

Calyx with 3 equal sepals, or 5 disposed in two rows, the two outer ones often smaller, rarely larger. Petals 5, often irregularly denticulate at the apex. Stigma capitate. Ovary triquetrois. Capsule 3-valved, with the dissepiment in the middle of the valves. Seeds angled, smooth.

Polyandria. Monogynia.

* Peduncles one-flowered.

1. H. canadense Mich.: stem ascending; branches erect, hirsute; leaves oblong-lanceolate, acute, hirsute, paler beneath; peduncles solitary, 1-flowered; sepals broad-ovate, acuminate; capsule shorter than the calyx.


2. H. ramuliflorum Mich.: stem erect, pulverulent-pilose, branching, subdichotomous at the apex; branches virgate, flower-bearing; leaves lanceolate-elliptic or oblong, acute, margin scarcely revolute, white tomentose beneath; flowers peduncled, solitary; sepals broad-ovate, acuminate; capsule globose, of the length of the calyx.

** Peduncles many flowered.

3. *H. corymbosum* Mich.: stem suffruticose, branching, erect; branches dichotomous, subpubescent; leaves alternate, lanceolate-oblong, somewhat obtuse, white, tomentose beneath; upper ones revolute on the margin; flowers in crowded, fastigate corymb; sepals tomentose and whitish hisrute, outer ones linear-obtuse; inner ovate, acute, scarcely as long as the capsule.

*Hab.* Sandy fields. N. J. to Geor. June—Aug. 24. —This plant is said by Pursh to have the flowers very small and sometimes without petals. On the other hand, Elliott remarks that although the flowers are much smaller than those of *H. carolinianum*, they are nearly equal in size to those of our other species. Perhaps the assertion of Pursh that this and the foregoing species have been mistaken for *Lechea major* will apply to himself.

2. **LECHEA.** Linn.

*Calyx* 3-sepalled, with two outer bracts or sepals. *Petals* 3, lanceolate. *Stamens* 3—12, and often thrice the number. *Ovary* 1, 3-sided. *Stigmas* 3, scarcely distinct. *Capsule* 3-valved, with as many inner valves opposite the others. *Seeds* affixed to the dissepiment or nerve, very few, often 8.

*Triandria.* *Trigynia.*


2. *L. minor* Pursh.: nearly smooth; stem assurgent; leaves linear-lanceolate, acute; panicule leafy; branches elongated; flowers on short pedicels.


3. *L. racemulosa* Mich.: whole plant covered with appressed pubescence; stem erect; leaves linear, acute, ciliate; panicule slender and very branching; raceme naked; flowers small, alternate, pedicellate.


4. *L. thymifolia* Pursh.: whole plant whitish-villose; stem erect; leaves linear, acute; panicule leafy, elongated; branches very short; flowers minute, in lateral and terminal fascicles; pedicels very short.


3. **HUDSONIA.** Linn.


Polyandria. Monogynia.

1. *H. cricoides* Linn.: pubescent; stem suffruticose, sub-erect; branches elongated; leaves filiform, subulate, subimbricate; peduncles numerous, lateral, elongated; calyx cylindrical, obtuse; capsule pubescent, 1-seeded; valves oblong.


2. *H. tomentosa* Nutt.: cespitose, hoary-pubescent; leaves minute, closely imbricate, ovate, acute; flowers aggregated, subsessile; calyx sub-cylindric, with obtuse segments; capsule 1-seeded; valves ovate, smooth.


**Order XV. VIOLACEÆ. De Cand. Lind.**

Sepals 5, persistent, with an imbricate aestivation. Petals 5, hypogynous, equal or unequal, usually withering, and with an obliquely convolute aestivation. Stamens 5, alternate with the petals, occasionally opposite to them, inserted in a hypogynous disk, often unequal; anthers bilocular, bursting inward, either separate or cohering, and lying close upon the ovary; filaments dilated, elongated beyond the anthers; two of them, in the irregular flowers, generally furnished with an appendage or gland at the base. Ovary 1-celled, many-seeded, or rarely 1-seeded, with 3 parietal placenta opposite the 3 outer sepals; style single, usually declinate, with an oblique hooded stigma. Capsules of 3-valves, bearing the placenta in their axis. Seeds often with a tumour at their base. Embryo straight, erect, in the axis of fleshy albumen.

**Herbs or Shrubs.** Leaves simple, usually alternate, stipulate, with an involute vernation. Inflorescence various.

1. **VIOLA.** Tourn.

Sepals 5, auricled at their base. Petals unequal, the lower one spurred. Stamens 5, approximated; filaments distinct; anthers connate, the two lower ones with processes at their back. Capsule 1-celled, 3-valved, opening elastically.

**Pentandria. Monogynia.**

**Obs.** The North American species of this interesting genus have been studied with much care by the Rev. L. de Schweinitz and by Capt.
Le Conte, and those of the Northern and Middle States have been no less faithfully examined by Dr. Torrey.—See Stil. Jour. vol. v. Ann. of the New York Lyc. vol. ii. Torrey’s Flora, vol. i.

* Stemless.
† Flowers blue.

1. V. pedata Linn. : leaves pedate, often nearly smooth, from 5—7 parted; segments linear-lanceolate, entire or somewhat toothed; stipules radical, pectinately lacerate; petals beardless, entire, rounded at the extremity; stigma large, compressed, obliquely truncate and perforate at the apex.—V. digitata Pursh.
   
   Hab. Rocky hills. From lat. 53 N. to Geor. W. to Miss. May. 2f.—Scapes 3—5 inches high, several from the same root. Flowers large, pale blue.

2. V. palmata Linn. : leaves more or less pubescent, reniform-cordate, palmate, or hasteate-lobed; lobes very various, the intermediate one always larger; stipules lanceolate, subciliate; lateral petals densely bearded towards the base; stigma capitulate, recurved, margin-ed, rostrate.
   
   Hab. Swamps and low grounds. Can. to Car. May. 2f.—Scapes about as long as the leaves. Flowers middle-sized. This species varies greatly in the form of its leaves, and in some specimens they are so slightly divided, as to induce me to concur in the opinion expressed by Dr. Bigelow that it is only a variety of V. cucullata.

3. V. cucullata Ait. : smoothish; leaves cordate, cucullate at base, dentate-serrate, veined; stipules small, linear, ciliate; flower oblique; lower and lateral petals rigidly bearded; upper one smooth; spur very short, rounded.—V. papilionacea Pursh.—V. affinis Le Conte.—V. obliqua Ait. Pursh. Torr. V. sororia Pursh.
   
   Hab. Wet meadows. Common throughout Can. and the U. S. April, May. 2f.—This species varies considerably in the form of its leaves, and in the degree of pubescence. The same individual, indeed, undergoes changes during the season. A specimen in the herbarium of my brother, Dr. T. R. Beck, labelled by the late Dr. Muhlenburg V. obliqua ? is certainly identical with this species.

4. V. sagittata Ait. : leaves pubescent on the upper surface, oblong, acute, cordate, sagittate, often hasteate at base, serrate or crenate-dentate; petals oblong, ovate, all except the lower one bearded. V. dentata Pursh.
   
   b. emarginata Nutt. : leaves almost triangular, lacerately toothed at the base; petals emarginate or bi-dentate.—V. emarginata Le Conte.
   
   Hab. Fields. Can. to Car. May. 2f.—Leaves quite variable. Flowers middle-sized, purple.—Var. b. is found in the sandy fields of New-Jersey.
5. *P. ovata* Nutt.: leaves oblong-ovate, rather acute, subcordate, crenate, often lacerately toothed at base, recurved on the petiole, pubescent on both sides; stipules broad-lanceolate, ciliate; sepals oblong-lanceolate; petals obovate, entire; lateral ones densely bearded. *V. primulifolia* Pursh.—*V. ciliata* Muhl.

**Hab.** Dry hills. Can. and N. S. April, May. 2f.—Whole plant pubescent. **Leaves** much narrower and more downy than in *C. cucullata*. **Flowers** larger than those of *V. primulifolia*.

6. *V. villosa* Walt.: leaves reniform-cordate or reniform, obtuse, crenate, flat, very pubescent; sepals oblong, auriculate at base; lateral and lower petals bearded; stigma deflexed; capsule smoothish.—*V. barbata* Muhl.

b. *cordifolia* Nutt.: leaves smooth beneath, rather acute; sepals narrow, short, smooth and scarcely produced at base.—*V. cordifolia* Schur.

**Hab.** Rocky hills. Penn. to Car. May. 2f.—Leaves rather thick, mostly incumbent on the ground, often purplish on the under side. **Scape** longer than the leaves.

†† Flowers yellow.

7. *V. rotundifolia* Mich.: leaves broad-ovate or orbicular, cordate, with the sinus at length closed, slightly crenate, smooth beneath; stipules lanceolate-subulate; sepals oblong, narrow, obtuse; lateral petals bearded; lower ones smaller, smooth; spur very short; stigma recurved.  

**Hab.** Rocky woods. Can. to Car. May. 2f.—**Flowers** yellow, middle-sized. Distinct from *V. clandestina* of Pursh.

††† Flowers somewhat regular, small, white.

8. *V. lanceolata* Linn.: leaves very smooth, narrow lanceolate, attenuated at each end, sub-serrate; sepals lanceolate, acute, smooth; petals beardless, nearly equal; spur very short; stigma recurved, rostrate.

**Hab.** Swamps. Can. to Car. W. to Lake Huron. April, May. 2f.—**Scape** nearly as long as the leaves. **Flowers** small, white, inodorous. The long narrow leaves will sufficiently distinguish this species.—One of the finest localities that I have met with, is a swamp about a mile west of Albany.

9. *V. acuta* Big.: leaves ovate, smooth, crenate, rather obtuse; stipules linear-subulate; scape angular; bracts nearly as long as the petals; sepals lanceolate, acute, smooth; petals ovate, acute, mostly smooth, lower ones veined; stigma capitate, rostrate.

**Hab.** Moist grounds. Cambridge, Mass. Big. 2f.—A small species. Distinguished by its even and always acute petals and by its long linear bracts.

10. *V. primulifolia* Linn.: leaves smooth, oblong ovate or lanceolate, subcordate, rather obtuse, sparingly crenate; nerves beneath and scape somewhat pubescent; sepals lanceolate; petals obtuse; the two lateral ones a little bearded and striate; stigma capitate, rostrate.
**Dicotyledonous Plants.**

**Hab.** Wet grounds. N. Y. to Car. April, May. 2L.—*Flowers white, odorous, about the size of those of V. lanceolata. Bracts long.* This species varies in the form of its leaves from the broad-cordate to the lanceolate. Near New-Brunswick, where what I consider the *V. primulafolia* is very abundant, it certainly passes into *V. lanceolata*, with which species I think it will eventually prove identical. Dr. Bigelow suggests that *V. blandula* and *V. lanceolata* may be the same; but so far as my observation extends, the former is much more constant in its characters than *V. primulafolia*.

11. *V. blandula* Willd.: leaves broad-cordate, remotely serrate or crenate, nearly smooth; sinus rounded; sepals ovate, acuminate; petals ovate, obtuse, nearly beardless; stigma depressed, acutely margined.

**Hab.** Wet meadows. From lat. 66° N. to Car. April, May. 2L.—*Flowers small, white, streaked with purple, odorous. This species very closely resembles the foreign *V. palustris*."

12. *V. clandestina* Pursh: cespitose; leaves large, suborbicular, obtuse, thin, nearly smooth, crenate, serrate; sinus closed, cordate; stipules ovate, short; stolons floriferous; petals narrow, ovate, beardless, scarcely longer than the calyx; flowers often apetalous; stigma straight, capitate.

**Hab.** Shady woods on mountains. Can. and N. S. June—Sept. 2L.—*Flowers often apetalous, generally concealed in the earth. More nearly allied to *V. rotundifolia* than to *V. blandula*, but distinct from both.*

**Caulescent.**

13. *V. canadensis* Linn.: stem erect; leaves broad-cordate, acuminate, serrate, slightly pubescent on the nerves, lower ones on long petioles; stipules broad-lanceolate, membranaceous, entire; sepals subulate, lanceolate; spur very short; stigma short, pubescent; capsule oblong, 3-sided, very obtuse.

**Hab.** Fields. Throughout Can. and the U. S. May—July. 2L.—*Stem 12—18 inches high. Flowers large, blue without, pale within.*

14. *V. ochroleuca* Schwe.: stem assurgent; leaves alternate, lower ones round-cordate, crenate-serrate, obtuse, upper ones acuminate; stipules large, oblong-lanceolate, dentate-ciliate; sepals subulate-lanceolate; petals obtuse; the lateral ones and often the lowest profusely bearded; spur produced, obtuse; stigma recurved, subpubescent.—*V. striata* Ait. Le Conte.

**Hab.** Swamps. N. S. May. 2L.—*Stem 6—10 inches. Flowers yellowish-white, large.*

15. *V. muhlenbergiana* De Cand.: stem weak, subprostrate, branched, smooth; lower leaves reniform-cordate; upper ones a little acuminate, crenate-serrate, nearly smooth; stipules large, oblong-lanceolate, serrate-ciliate; sepals linear-lanceolate; petals obovate, obtuse, the lateral ones bearded; spur nearly one third the length of the corol;

Hab. Swamps. Labrador, Can. and N. S. May. 24. — Stem 6—10 inches high. Flowers middle-sized, blue. My specimens of this plant agree in every respect with those of V. canina of Linnaeus from Scotland and Switzerland.

16. V. rostrata Muhl.: stem diffuse, erect; leaves smooth, cordate, acute, serrate; sinus open; stipules large, lanceolate, serrate-ciliate; peduncles filiform, longer than the leaves; petals obovate, all beardless; spur longer than the corol.

Hab. Rocky hills. Can. and N. S. April, May. 24. — Stem 6—8 inches high, smooth. Flowers large, pale blue, with a very long horn or spur, by which this species can be easily recognized.

17. V. pubescens Ait.: villous-pubescent; stem elongated, erect, naked below; leaves broad-ovate, cordate, dentate, more or less acuminate; stipules large, ovate, somewhat toothed; lateral petals bearded; spur short, acuminate. — V. pennsylvanica Mich.

b. eriocarpa Nutt.: capsule densely villous. — V. eriocarpa Schv.


18. V. hastata Mich.: smooth; stem erect, simple, leafy above; leaves on long petioles, cordate-lanceolate or hastate, acuminate; lobes obtuse, dentate; stipules minute, ciliate-dentate; lower petal dilated, sub-3-lobed; lateral ones slightly bearded; spur short; stigma truncate, hairy on the sides.


19. V. tenella Muhl.: stem 3-sided, erect, mostly simple; lower leaves round, spatulate; upper ones lanceolate; stipules large, run- 
cinate-pinnatifid; sepals ovate-lanceolate, nearly as long as the petals; lateral petals bearded; spur obtuse, not extended; nectaries short. — V. bicolor Pursh. — V. arvensis Ell.

Hab. Sandy hills. N. Y. to Car. W. to Miss. May. 24. — Stem 2—4 inches high. Flowers small, bluish-white. De Candolle and Hooker consider this a variety of V. tricolor, while Torrey thinks it is nearer to V. arvensis. I still think it distinct.

2. SOLEA. Ging. De Cand.

Sepals scarcely equal, carinate? not auricled at base, de-
current into a pedicel, at length reflexed. Petals nearly equal; lower one a little larger than the rest, and somewhat gibbous at base. Stamina approximate; filaments with short broadish claws at base.

Pentandria. Monogynia.
**DICOTYLEDONOUS PLANTS.**


**Hab.** Rocks. N. Y. to Car. W. to Miss.; rare. April, May.

—Stem 2—4 feet high, simple, erect. Leaves cuneate-lanceolate, sessile, irregularly toothed above. Peduncles short, 2—3 flowered. Flowers small, greenish. Calyx nearly as long as the petals. Spur none. I possess fine specimens of this plant which were gathered near Lebanon, N. Y.

**Order XVI. DROSERACEÆ. De Cand. Lind.**

Sepals 5, persistent, equal, with an imbricate aestivation. Petals 5, hypogynous. Stamens distinct, withering, either equal in number to the petals and alternate with them, or 2 or 3 or 4 times as many. Ovary single. Styles 3—5, either wholly distinct or slightly connected at the base, bifid or branched. Capsule of 1 or 3-cells, and 3 or 5-valves, which bear the placenta either in the middle or at the base. Seeds either naked or furnished with an arillus; embryo straight, erect, in the axis of fleshy or cartilaginous albumen; cotyledons rather thick.

Delicate herbs, often covered with glands. Leaves alternate, with stipulary ciliæ and a circinate vernation.

1. **DROSELA. Linn.**


1. *D. rotundifolia* Linn.: leaves all radical, orbicular, petiolate, spreading, covered above and on the margin with crimson hairs; petioles long, hairy; scape bearing a simple terminal raceme; seeds arillate.

**Hab.** Sphagnous swamps. From Arctic America to Car. July, Aug. 24.—Scape 4—8 inches high. Flowers small, whitish. **Sundew.**

2. *longifolia* Linn.: leaves crenate-obovate, tapering below into a long petiole, erect-spreading; scape deflected at the base; stipules many-cleft, capillaceous; segments of the calyx ovate-oblong, obtuse.

—*D. americana* Muhl.—*D. foliosa* Ell.


3. *D. filiformis* Raf.: leaves filiform, very long, glandulous the whole length; scape longer than the leaves, simple or bifid.—*D. t-jifolia* Willd.
POLYGALÆ.


2. PARNASSIA. Linn.


Pentandria. Tetragynia.

1. P. caroliniana Mich.: radical leaves cordate, orbicular-ovate, on long petioles; stem leaf sessile; flowers solitary, terminal; scales 3-bristled.—P. americana and P. ovata Muhl. 2


2. P. palustris Linn.: leaves all cordate; cauline one sessile; scales smooth, many-bristled.

Hab. Bog meadows. N. S. Can. and as far north as the Arctic circle. Flowers white, veins of green or purple. Distinguished by the numerous, slender, white, pellucid hairs of its scale from all the other species of the genus.

Order XVII. POLYGALÆ. De Cand, Linn.

Sepals 5, very irregular, distinct, 3 exterior, of which 1 is superior and 2 inferior; 2 inner ones (the wings) often petaloid. Petals 3—4, hypogynous, one inferior (the keel) the others alternating with the upper and lateral sepals; sometimes 5, and then the 2 additional ones minute and between the lateral and lower sepals. Keel sometimes entire, and then naked or crested; sometimes 3-lobed without a crest. Stamens 8, unequal, ascending, combined into a tube, which is split opposite to the upper sepal; anthers 1-celled, opening by a terminal pore, or very rarely by a longitudinal cleft. Ovary superior, 2-celled, with placentae in the axis; the cells anterior and posterior, the latter often abortive; ovules 1, rarely 2, pendulous; style simple, curved; stigma simple. Fruit dehiscent or indehiscent. Seeds pendulous, with a copious fleshy albumen and a straight embryo.

Shrubs or herbs. Leaves generally alternate, mostly simple and always destitute of stipules. Flowers usually racemose, often small. Pedicels with 3 bracts.
1. POLYGALA. Tourn.

*Sepals of the calyx persistent; two inner ones wing-shaped and coloured. Petals 3—5, united to the stamens, lower one keel-form. Capsule compressed, elliptic, obovate or obcordate. Seeds pubescent. Diadelphia. Octandria.*

*Flowers in racemes or spikes.*

1. *P. vulgaris* Linn.: stem herbaceous, procumbent; leaves linear-lanceolate, rather obtuse; flowers in a terminal spike, erect; wings of the calyx obtuse, longer than the corol.

Hab. Banks of the Mohawk, N. Y. Nutt. June. 24.—Stems numerous. Flowers blue, cristate. According to De Candolle there are 7 varieties of this species.

2. *P. incarnata* Linn.: glaucous; stem erect, slender, nearly simple; leaves scattered, few, subulate; racemes spiked, oblong, without glands; corol with a long tube.

Hab. N. J. to Car. Near Niagara Falls. Hooker. June, July, Oct.—Stems 12—18 inches high, somewhat angled, with few remote subulate leaves. Flowers flesh-coloured, in a somewhat loose terminal spike; petals united into a long slender tube. A specimen of this plant, received from Dr. Charles Pickering, and gathered by him in New-Jersey, has only 4 or 5 subulate leaves on the stem, which is more than a foot high. *Milk Wort.*

3. *P. cruciata* Nutt.: stem fastigiate, winged at the angles; leaves whorled in fours, linear-lanceolate, punctate; spikes dense, sessile; flowers subcristate; wings of the calyx cordate, acuminate, mucronate.


4. *P. brevifolia* Nutt.: stem erect, branched, winged at the angles; leaves whorled in fours, oblong-linear, short, sprinkled with resinous dots; spikes pedunculate, partly capitate; flowers subcristate; wings of the calyx cordate-ovate, acute, scarcely longer than the capsule.

Hab. Sandy swamps. N. J. to Ohio. July, Aug. ©.—Stem slender. Flowers brightish red. Resembles the former, but is quite distinct. Dr. Hooker thinks this may be the true *P. cruciata* of Linnaeus, while the *P. cruciata* of Nuttall is distinct. But there is still some doubt with regard to the correctness of this opinion.

5. *P. fastigiata* Nutt.: stem slender and fastigiately branched; leaves alternate, linear, acute; spikes subcapitate, pedunculate; flowers subcristate; wings of the calyx spreading, ovate, acute, scarcely longer than the capsule.—*P. setacea* Muhl.

Hab. N. J. ©. Nutt.—Nearly allied to *P. cruciata.*

6. *P. purpurea* Nutt.: stem fastigiately branched; leaves alternate, oblong-linear; flowers beardless, imbricated in obote cylindrical
spikes; rachis squarrose; wings of the calyx cordate-ovate, erect, twice as long as the capsule.—*P. sanguinea* Mich. Pursh.


7. *P. sanguinea* Linn.: stem fastigiately branched; leaves alternate, narrow-linear; flowers beardless, in long and crowded spikes; rachis squarrose; wings of the calyx obovate, as long as the capsule.

**Hab.** Dry soils. N. J. to Car. July—Oct. ©.—Stem 8—12 inches high. *Flowers* dark red. Allied to the former, but a much smaller plant, the leaves shorter and narrower, and with a longer and more loose spike; the rachis also is much more squarrose.

8. *P. ambigu'a* Nutt.: stem erect, virgately branched; leaves linear; the lower ones whorled; the rest scattered; spikes acute, on very long peduncles; flowers cristate; wings of the calyx round and veined, as long as the fruit; bracts deciduous.

**Hab.** Wet woods. N. J. and Virg. ©.—*Flowers* purple, distinctly pedicellate, larger than those of the next species.

9. *P. verticillata* Linn.: stem erect, branched; leaves whorled, linear and remote; racemes spiked, acute, pedunculate; bracts deciduous; flowers cristate; wings of the calyx roundish, shorter than the capsule.


**Dwarf Snake-root.**

10. *P. senega* Linn.: stems numerous, erect, smooth, simple; leaves alternate, ovate-lanceolate; upper ones acuminate; racemes naked, spiked; wings of the calyx orbicular; capsule elliptical, emarginate.


11. *P. polygama* Walt.: stems numerous, simple, erect and procumbent; leaves linear-lanceolate, attenuate downwards; racemes filiform, terminal and lateral, elongated; lower ones procumbent, without petals; flowers sessile.—*P. rubella* Willd. Pursh.


**Flowers capitata, (yellow.)**

12. *P. lutea* Linn.: stem simple or branched; lower leaves spathulate; upper ones lanceolate; flowers in globular heads, yellow; wings of the calyx ovate, mucronate; bracts shorter than the flowers.


**Yellow Polygala.**
*** Flowers in corymbs.

13. *P. ramosa* Ell.: stem erect, branching, angular, corymbose at the summit, many-headed; radical leaves spathulate-obovate; cauline ones subequal, linear; wings of the calyx oblong-ovate, cuspidate.—

*P. corymbosa* Nutt. not of Mich.

**Hab.** Sphagnous swamps. Del. to Flor. July, Aug. 2f.—

*Stem* a foot high, sometimes branching from near the base. *Flowers* in small loose heads forming a very irregular corymb, yellow, dark green when dry. According to Elliott, *P. corymbosa* of Michaux is a distinct species, identical with *P. attenuata* of Nuttall.

**** Flowers axillary, (large.)

14. *P. parviflora* Wild.: stem simple, erect, naked below; leaves ovate, acute, smooth; flowers mostly terminal and by threes, large, cristate, sometimes axillary.

b. *alba* Eights: flower solitary, smaller, white; stem somewhat leafy at base.


*Stem* 3—4 inches high. *Flowers* large, purple, with the summit of the keel densely crested. **Var. alba** was found by Dr. James Eights in the sand plains near Albany. It has the stem rather lower and more leafy than in the former; the flower also is solitary, smaller, white, and the keel less densely crested. *Flowering* Wintergreen.

15. *P. uniflora* Mich.: herbaceous, small; leaves broad, oval, attenuated into a petiole; flowers not crested, solitary, scattered, pedicillate.

**Hab.** Borders of Can. Mich. This plant, which is probably a native of the Northern States, has been confounded with the former; but if Michaux has described it correctly, it must be distinct, as he says that the keel is not crested, and that the flowers are solitary and scattered.

**Order XVIII. CARYOPHYLLÆ. De Cand. Lind.**

**Sepals** 4—5, continuous with the peduncle; either distinct or cohering in a tube, persistent. **Petals** 4—5, hypogynous, unguiculate, inserted upon the pedicel of the ovary; occasionally wanting. **Stamens** twice as many as the petals, inserted upon the pedicel of the ovary along with the petals; **filaments** subulate, sometimes monadelphous; **anthers** innate. **Ovary** stipitate on the apex of a pedicel (called the gynophorus); **stigmas** 2—5, sessile, filiform, papillose on the inner surface. **Capsule** 2—5 valved, either 1-celled or 2—5 celled, in the latter case with a loculicidal dehiscence. **Placenta** in the axis of the fruit. **Seeds** indefinite in number, rarely definite; **albumen** mealy; **embryo** curved round the albumen: **radicle** pointing to the hilum.
Herbs, occasionally becoming suffrutescent. Stems tumid at the articulations. Leaves always opposite and entire, often connate at the base.

1. DIANTHUS, Linn.

D. armeria Linn.: flowers in terminal crowded clusters; scales of the calyx lanceolate, villous, as long as the tube.


2. SILENE. Linn.

* Caulescent. Flowers solitary or panicled. Calyx inflated.

1. S. stellata Ait.: stem erect, branching, pubescent; leaves verticillate in fours, lanceolate, long-acuminate, smooth; flowers in panicles; calyx vesiculose, pubescent; limb of the petals fringed.—Cucubalus stellatus Linn.


2. S. inflata Smith: stem branching, smooth and glaucous, decumbent; leaves oblong-oval, acute, nerveless; flowers paniculate; calyx vesiculate-ovate; petals bifid, naked; claws wedge-form; styles larger than the stamens.—Cucubalus bechen Linn.


3. S. nivea Muhl.: stem divaricate and dichotomous above; leaves oblong-lanceolate, minutely and puberulently pubescent, the uppermost ovate; calyx obtuse, bell-shaped, inflated, subpilose; petals small, reflexed, bifid at the extremity; claws exserted beyond the calyx, nearly naked; flowers solitary, dichotomous, terminal.—Cucubalus niveus Nutt.

Hab. "Upon an Island in the Susquehannah near to Columbia. Penn. Muhlenberg." Nutt. June, July. 2ft.—Stem smooth and slender. Leaves opposite, 2 inches long, and 1½ an inch wide. Flowers white, remote, solitary, dichotomous and terminal. Nuttall quotes the above name from Muhlenberg as a synonym for his Cucubalus niveus, but I cannot find it in his catalogue. It may be the S. alba of Muhlenberg, and is perhaps only a variety of S. inflata.
**Caulescent.** Flowers in axillary spikes, alternate. Calyx 10-striate.

4. *S. nocturna* Linn.: stem branched, pilose below; leaves pubescent, long ciliate at base; lower ones spathulate, upper ones linear-lanceolate; spike secund, dense; flowers sessile, alternate; calyx cylindrical, nearly smooth; petals 2-parted, narrow.


***Caulescent.*** Stem rigidly erect. Peduncles filiform. Calyx bell-form or cylindrical.

5. *S. antirrhina* Linn.: almost smooth; stem erect, branching, somewhat leafy; leaves lanceolate, acute, subciliate, upper ones linear; flowers small, panicled; calyx ovate, glabrous; petals obcordate, crowned; stamens included.


6. *S. catesbœi* Walt.: branching; leaves broad-lanceolate; flowers in panicles; calyx clavate, coloured; petals with long claws; limb bifid, with two lateral teeth; lobes acute.—*S. virginica* Mich. Pursh, not of Linn.

Hab. Penn to Miss. Mühl. June. 🍺—Stem a foot high; Flowers crimson. Both De Candolle and Hooker concur in supposing the present plant distinct from *S. virginica*, though it is confounded by the authors above mentioned and also by Dr. Torrey and Mr. Elliott.

7. *S. virginica* Linn.: viscid-pubescent; stem procumbent, assurgent, branching; leaves lanceolate; lower ones on long petioles, with long cilia at base; flowers large, in panicles; petals with long claws, broad, bifid, crowned.


8. *S. pennsylvanica* Mich.: viscidly-pubescent; radical leaves somewhat cuneate; those of the stem long-linear; flowers in panicles, somewhat trichotomous; calyx long, tubular; petals slightly emarginate, subcrenate.—*S. caroliniana* Walt.


*****Cespitose.*** Stems almost wanting. Calyx subinflated. Peduncles 1-flowered.

9. *S. acaulis* Linn.: stems very densely cespitose, low; leaves linear, ciliate at base; peduncles solitary, short, 1-flowered; calyx campanulate; petals obcordate, crowned.
Hab. White mountains, N. H. and throughout the whole of Arctic America, N. of lat. 54° W. to Rocky mountains.—Nearly stemless, depressed. Flowers rose-coloured.

3. SAPONARIA. Linn.

_Calyx_ tubular, 5-toothed, naked at base. _Petals_ unguiculatè; claw equaling the calyx. _Stamens_ 10. _Styles_ 2. _Capsule_ 1-celled. _Decandria._ _Digynia._

1. _S. vaccaria_ Linn.: leaves ovate-lanceolate, sessile; flowers in panicles; calyx pyramidal, 5-angled, smooth; bracts membranaceous, acute.

_Hab._ Fields. Williamstown, Mass. _Decay._ July. @.—Flowers rose-coloured.—Probably introduced, but completely naturalized at the above locality. _Field Soap-wort._

2. _S. officinalis_ Linn.: leaves ovate-lanceolate, ribbed, acute or obtuse; flowers large, in a fasciculate panicle; calyx cylindrical; appendages of the petals linear.

_Hab._ Road sides. June—Sept. _H._—Stem 12—18 inches high. _Leaves_ opposite and connate. _Flowers_ large, rose-coloured.—It is said to make a lather with water, and hence its common name. Introduced. _Soap-wort._

4. AGROSTEMMA. Linn.

_Calyx_ tubular, 5-sided, coriaceous. _Petals_ 5, unguiculate, not crowned; limb entire. _Capsule_ 1-celled, opening with 5 teeth. _Decandria._ _Pentagynia._

1. _A. githago_ Linn.: hairy; leaves opposite, linear-lanceolate; segments of the calyx much longer than the corol; flower solitary, terminal, large; petals entire, destitute of a crown.—_Lychnis githago_ De Candl.

_Hab._ In corn fields. June, July. @.—Stem 18—20 inches high. _Flowers_ large, purple. Introduced. _Corn Cockle._

5. SAGINA. Linn.

_Calyx_ 4—5 parted. _Petals_ 4—5, or none. _Stamens_ 4—5. _Capsule_ 4—5 valved, 1-celled, many seeded. _Tetrandria._ _Tetragynia._

1. _S. procumbens_ Linn.: perennial; stems procumbent, smooth, branched; leaves linear-mucronate; petals very short.

_Hab._ Borders of streams. N. Y. to Car. and W. to the banks of the Columbia river. July. _H._—Stems 2—4 inches high. _Peduncles_ solitary, larger than the leaves. _Flowers_ small, white. _Pearl-wort._

2. _S. apetala_ Linn.: annual; stems erect or procumbent only at base, subpubescent; leaves linear-mucronate; flowers alternate; petals very minute or none.
50

DICOTYLEDONOUS PLANTS.

Hab. Sandy fields. N. J. and Penn. May, June. 2.—Stems numerous, erect, filiform. Flowers on long slender peduncles. Petals nearly obsolete, more slender and of a paler green than in the former. *Annual Pearlwort.*  

6. MOLLUGO. Linn.


*M. verticillata* Linn.: stems decumbent, dichotomous; leaves verticillate, obovate-lanceolate, acute; peduncles 1-flowered, verticillate.  

7. SPERGULA. Linn.


1. *S. arvensis* Linn.: leaves whorled, with stipules at the base; paniicle dichotomous; flowers decandrous; peduncles of the fruit reflexed; seeds spherical, somewhat hispid, black, with a narrow margin.  

2. *S. saginoides* Linn.: stem creeping; leaves opposite, linear, smooth, awnless; peduncles solitary, very long; petals oblong, obtuse, as long as the calyx; seeds kidney-form, punctate.—*S. decumbens* Ell. —*S. nodosa* Walt.  

8. STELLARIA. Linn.


1. *S. media* Smith: stem procumbent, with an alternate pubescent, lateral line; leaves ovate or lanceolate, very smooth; upper ones sessile; capsule deeply 6-valved, scarcely longer than the calyx; seeds subreniform, rugose.—*Alsine media* Linn.
CARYOPHYLLEAE.

HAB. Road sides, &c. Can. and N. S. March—Nov. 6.


2. S. pubera Mich. : pubescent; stem decumbent; leaves ovate-oblong, sessile, acute, ciliate; pedicels filiform dichotomous, recurved or deflexed; petals longer than the calyx.

HAB. Rocky banks. Penn. to Geor. May, June. 2f. — Stem 6–12 inches high, diffuse and dichotomous. Flowers large, axillary and terminal, on filiform pedicels.

3. S. longifolia Muhl. : smooth; stem erect, square, weak; leaves linear-acute, spreading, with the margins often scabrous; panicle terminal, divaricate, very long, bracteate; petals broad-ovate, 2-parted, about as long as the 3-nerved calyx.—Spargulastrum gramineum Mich. — Micropetalum gramineum Pers.

HAB. Moist woods. N. S. and N. to lat. 64°. June. 2f. — Stem 12–15 inches high. Petals white, becoming longer than the calyx. — There appears to be no just ground for the separation of the genus Micropetalum from Stellaria. It is, however, countenanced by De Candolle.

4. S. lanceolata Torr. : very smooth, procumbent or ascending; leaves lanceolate, acute at each end; petals about as long as the calyx; stigmas mostly 4, or wanting.— Micropetalum lanceolatum Pers.

HAB. Alpine swamps. N. S. June. 2f. — Stem 6–8 inches. Flowers solitary, axillary and terminal, on long slender pedicels. By some botanists this plant is considered identical with the former, while Dr. Hooker considers Dr. Torrey’s plant as a variety of his S. borealis.

5. S. borealis Big. : stem spreading, angular, dichotomous; leaves oval-lanceolate; peduncles axillary, elongated, 1-flowered; petals deeply cleft, about equal to the calyx.—S. borealis, var. Hooker.


6. S. longipes Goldie : weak, very smooth, glaucous; leaves linear, subulate, spreading; peduncles terminal, dichotomously branched; bracts membranaceous; pedicels much elongated; petals broad-ovate, deeply bifid, a little longer than the obtuse and obscurely 3-nerved calyx.— Goldie. Hooker.

HAB. Woods near Lake Ontario.—Flowers large, white, in a terminal leafless panicle. A very minute description of this plant, and many interesting observations upon the Canadian species of this genus, will be found in Hooker’s Fl. Bor. Amer.

9. ARENARIA. Linn.

**Leaves linear, with scariosi stipules at base.**

1. *A. rubra* Linn.: stem prostrate, pilose; leaves filiform, acute, flat, somewhat fleshy, mucronate, shorter than the internodes; sepals lanceolate, somewhat obtuse, scarios on the margin; peduncles axillary, at length deflexed; seeds compressed, angular, roughish, not margined.

   **Hab.** Sandy fields. Mass. June. **—Stem spreading. Flowers** small, red. **Common Sand-wort.**

2. *A. canadensis* Pers.: somewhat hispid; leaves filiform, longer than the internodes; sepals lanceolate, obtuse, with the margin broad and scarios; stamens 5; pedicels at length deflexed; seeds somewhat cordate, compressed; radicle somewhat prominent.—*A. rubra*, var. *marina* Linn. Torr.—*A. marina* Smith. Big.

   **Hab.** Salt marshes. Along the whole coast of North America.—
   **Stem** 3—8 inches long, procumbent, succulent. **Flowers** axillary, solitary, on short peduncles, reddish. **Capsule** subglobose, longer than the calyx. This plant has been confounded with *A. marina* of Smith; but the latter is characterized by the seeds having a broad membranaceous border, and is considered by De Candolle identical with *A. media* of Linnaeus. De Candolle, who appears to have seen specimens of the above plant, considers it distinct from *A. rubra*, though this opinion is opposed by the authorities above cited. It varies much in the number of its stamens, being frequently di-tri and pentandrous.

   **Sea Sand-wort.**

**Leaves linear, lanceolate, or rounded, without stipules.**

3. *A. squarrosa* Mich.: cespite; inferior leaves squarrose, imbricate, channelled, smooth; stem simple, few-leaved; flowers in dichotomous panicles, erect; sepals roundish-ovate, smooth; petals obovate, much longer than the calyx; capsules oval, 3-valved, exceeding the calyx; valves obtuse.—*A. caroliniana* Walt.

   **Hab.** Pine barrens. N. J. to Car. May—Aug. **2L.—Stem** 6—8 inches high, much divided near the base. **Flowers** white, in a small terminal panicle. **Squarrose Sand-wort.**

4. *A. stricta* Mich.: stems numerous, erect, smooth, filiform; leaves subulate-linear, erect, subfasciculate, spreading; panicle few-flowered; sepals ovate-lanceolate, conspicuously striate, half as long as the petals.

   **Hab.** Mountains. Can. to Car. May, June. **2L.—Stems** 6—12 inches high. **Leaves** more linear than in the preceding, and not so much crowded near the base.

5. *A. glabra* Mich.: very smooth; stems numerous, erect, filiform; leaves subulate-linear, flat, spreading; pedicels 1-flowered, elongated, divaricate; sepals oval, obtuse, shorter than the petals.—*S. uniflora* Walt.

   **Hab.** Mountains. N. H. N. Y. to Car. June. **2L.—Stems** 4—6 inches high, erect, slender. **Flowers** white, large.

6. *A. serpyllifolia* Linn.: stem dichotomous, diffuse; leaves ovate, acute, sessile, somewhat rugose, smooth, ciliate; sepals lanceolate,
acute, 3-nerved, larger than the corol; capsule ovate, 6-valved, equaling the calyx; seeds exactly reniform, rugose.

**Hab.** Sandy fields. N. Y. to Car. May—July. **5.**—Stem mostly decumbent, 3—8 inches long. *Flowers* axillary and terminal, solitary.

7. *A. lateriflora* Linn.: stem filiform, branched; leaves obtuse, ciliate, nervet; peduncles lateral, solitary, elongated, 1—2 flowered; one of the pedicels with 2 opposite bracts near the middle; sepals ovate, obtuse, shorter than the petals; capsule ovate, obtuse, longer than the calyx.

**Hab.** Meadows. N. S. North to Hudson’s bay. June. 24.

—*Stem* 5—10 inches high, erect, filiform. *Peduncles* axillary, very slender, forked. *Flowers* white.

8. *A. peploides* Linn.: stem dichotomous; leaves ovate, acute, fleshy, approximate; flowers solitary, on short peduncles; sepals oblong, acutish, about as long as the corol; capsule globose, depressed, 3-valved; seeds numerous, black.


10. **CERASTIUM**, Linn.


1. *C. vulgarum* Linn.: viscidly pubescent, pale green; stems numerous, cespitose, suberect; leaves ovate, obtuse, hirsute; flowers dichotomous, subumbellated, longer than the peduncles; petals oblong, emarginate, scarcely longer than the calyx; capsule oblong, tapering, as long again as the calyx.


2. *C. viscosum* Linn.: hairy and viscid, deep green; stems numerous, erect; leaves lanceolate-oblong; flowers in dichotomous umbels, shorter than their pedicels; capsule somewhat incurved, terete, as long again as the calyx.


3. *C. semidecandrum* Linn.: hirsute and viscid; stems numerous, erect; leaves ovate-lanceolate; flowers pentandrous, somewhat umbel- led, shorter than their pedicels; petals slightly notched; capsule terete, deflexed, as long again as the calyx.

**Hab.** Dry hills. N. S. May—Aug. **5.**—Perhaps only a variety of the preceding. De Candolle places the *C. semidecandrum* of American authors, as a variety under *C. vulgarum.*
4. *C. arcense* Linn.: stems ascending; leaves linear-lanceolate, obtuse, more or less hairy, especially at base; flowers few, terminal; peduncles deflexed, pubescent; petals twice as long as the calyx; capsule oblong-cylindrical, scarcely longer than the calyx.

**Hab.** Fields and rocky hills. N. S. May—Aug. 2f.—Root creeping. **Stems** 4—8 inches long, ascending, slender, somewhat cespitose. **Leaves** crowded at the base of the stem, short, ciliate at base. **Flowers** large, white, 2 or 3 on terminal pedicels. **Petal** deeply cleft, white, twice as long as the calyx. This is undoubtedly a native near Albany, as it would seem to be also, according to Dr. Barton, on the banks of the Schuykill and Delaware. *Fl. Phil.* i. 216. Dr. Bigelow credits it to the vicinity of Boston, but thinks it merely naturalized. *Field Chickweed.*

5. *C. tenifolium* Pursh.: pubescent-cespitose; leaves narrow-linear, longer than the internodes; flowers on long peduncles, mostly 3, from the top of each stem; petals obovate, emarginate, thrice as long as the acute calyx.—*C. dichotomum* Muhl. ?

**Hab.** Rocky places. N. S. June. 2f.—**Stems** numerous, erect. **Flowers** on long peduncles, 3 from the summit of each stem. Resembles the preceding, but has longer and narrower leaves, and longer and less deeply cleft petals. But it may, after all, be a mere variety. Sprengel considers *C. pennsylvanicum* of Hornemann identical with it.

6. *C. pubescens* Goldie: pubescent-hirsute; stem deflexed-pilose; leaves linear-lanceolate, longer than the internodes; panicle terminal, about 3—6-flowered; petals acutely emarginate, twice as long as the calyx.

**Hab.** Kingston, U. Can. Bellows' Falls, N. H. June. 2f.—This species was first described by Mr. Goldie. *Edin. Phil. Jour.* vi. 327. I have specimens of the same plant collected at Bellows' Falls, by Mr. G. W. Clinton. They resemble those of the preceding species, but the stems are much longer and more slender, and are branched from below in a dichotomous manner; the peduncles also, are much longer, and the flowers more numerous: the sepals have a white shining and scarious margin.

7. *C. nutans* Raf.: viscid and pubescent; stems erect, straight, deeply striate; leaves elongated, distant, lanceolate-linear; flowers subumbellated, on long petioles; petals oblong, bifid at the tip, longer than the calyx; capsule nodding, twice as long as the calyx.—*C. glutinosum* Nutt.—*C. longe pedunculatum* Muhl.

**Hab.** Rocky hills. N. S. June. Ø.—**Stems** numerous, 8—12 inches high, very viscid. **Lower leaves** subspathulate. **Flowers** terminal, in a loose dichotomous panicle.

8. *C. oblongifolium* Torr.: cespitose, pubescent; stems erect, terete, even; leaves lanceolate-oblong, rather acute, shorter than the joints; flowers terminal, shorter than their pedicels; petals obovate, bifid at the tip, twice the length of the calyx.—*C. bracteatum* Raf. ?

**Hab.** Mountains, Mass. June. 2f.—**Stems** 8—10 inches high. **Flowers** terminal, few, in a dichotomous panicle.
9. *C. connatum* Beck: very hairy, diffuse; leaves somewhat obovate, connate; flowers in dense clusters; petals 2-cleft, a little longer than the acute calyx; capsule cylindrical, straight, twice as long as the calyx.—*C. hirsutum* Muhl. Ell. Torr.—*C. semidecandrum* Walt.

**Hab.** N. Y. Del. S. to Car. May, June. @.—Stem procumbent. Flowers white, in terminal clusters. I have changed the name given to this plant by the authors above quoted, in consequence of finding a foreign *C. hirsutum*, in De Candolle’s *Prodromus*, which appears to be quite distinct from this species.

**Order XIX. ELATINEÆ. Lind.**

Sepals 3—5, distinct, or slightly connate at the base. Petals hypogynous, alternate with the sepals. Stamens equal in number to or twice as many as the petals. Ovary 3—5-celled; styles 3—5; stigmas capitate. Capsule 3—5 celled, 3—5 valved. Seeds numerous, with a straight embryo, whose radicle is next the hilum; albumen none.

**Annuals,** found in marshes. Stems fistulous, rooting. Leaves opposite.

1. **CRYPTA. Nutt.**


**Diandria. Monygynia.**

*C. minima* Nutt: stems prostrate, creeping and rooting; leaves cu-neate-obovate, opposite, entire, obtuse, 1-nerved; flowers very minute, axillary, sessile, alternate.—*Peplis americana* Pursh.

**Hab.** Banks of streams. Throughout the U. S. Aug. @.?—Stems prostrate, with assurgent branches. Leaves opposite, obovate or oval. Flowers sessile, with 2—3 stamens. Petals roundish, white.—For a very minute description of this little plant by Mr. Nuttall, see *Jour. Phil. Acad.* i. 117. According to Mr. Arnott, it belongs to the genus *Elatine*, and is a congener, and indeed very closely allied, to *E. triandra*. *Edin. Jour. Nat. & Geog. Science*, i. 430.

**Order XX. LINEÆ. De Cand. Lind.**

Sepals 3—4—5, persistent, with an imbricated aestivation. Petals equal in number to the sepals, hypogynous, unguiculate, with a twisted aestivation. Stamens as many as the petals, and alternate with them (with intermediate teeth or abortive stamens) arising from an annular torus; anthers ovate, erect. Ovary with as many (rarely fewer) cells and styles as
stamens; stigmas capitate. Capsules generally pointed with the hardened base of the styles, many-celled; each cell partially divided in two by an imperfect spurious dissepiment, and opening by two valves at the apex. Seeds solitary, in each spurious cell, compressed, pendulous. Albumen thin, fleshy; embryo straight, with the radicle next the hilum; cotyledons flat.

Herbs or small shrubs. Leaves entire, usually alternate. Flowers terminal, with the petals fugitive.

1. LINUM. Linn.


1. L. virginianum Linn.: stem erect, slender, smooth; radical leaves ovate and spatulate; those of the stem linear-lanceolate, alternate; panicle lax, corymbose; sepals acute; capsule globose, awnless.


2. L. usitatissimum Linn.: stem mostly solitary, round, smooth, simple, branched above; leaves lanceolate, alternate; flowers large, on peduncles; segments of the calyx ovate, acute; petals crenate; capsule roundish, acuminate.


Common Flax.

Order XXI. MALVACEÆ. De Cand. Lind.

Sepals 5, very seldom 3 or 4, more or less united at the base, with a valvate aestivation, often bearing external bracts forming an involucrem. Petals equal in number to the sepals, hypogynous. Stamens indefinite; filaments monadelphous, often bearing the petals on their base. Anthers 1-celled, reniform. Ovary formed by the union of several carpels round a common axis, either distinct or cohering; styles as many as the carpels, united or free; stigmas variable. Fruit capsular or berried; its carpels being either one or many-seeded, sometimes united in one, sometimes separate or separable. Seeds sometimes hairy. Albumen none, or small; embryo curved with twisted and doubled cotyledons.
MALVACEÆ.

Herbs, trees or shrubs. Leaves alternate, more or less divided, stipulate.

1. MALVA. Linn.


1. M. sylvestris Linn.: stem erect, herbaceous, branched, hairy; leaves large, roundish, with 7 somewhat acute lobes; flowers large, axillary, on short pedicels; pedicels and petioles hairy; petals obcordate, thrice as long as the calyx.


2. M. rotundifolia Linn.: stem somewhat prostrate; leaves roundish, cordate, obtusely 5—7 lobed; peduncles bent downwards, and with the petioles pubescent; flowers axillary; corol twice the length of the calyx.


2. ALTHEA. Linn.

Calyx surrounded by a 6—9 cleft involucre. Capsules numerous, 1-seeded, arranged circularly.

Monadelphia. Polyandria.

A. officinalis Linn.: leaves soft tomentose on both sides, cordate and ovate, dentate, entire or 3 lobed; peduncles axillary, many flowered, much shorter than the leaves.


3. HIBISCUS. Linn.

Calyx surrounded by an involucre which is often many-leaved. Stigmas 5. Capsule 5-celled; cells many seeded, or rarely 1-seeded.

Monadelphia. Polyandria.

1. H. virginicus Linn.: leaves acuminate, unequally toothed, subvillose; lower ones undivided, cordate; upper ones ovate-cordate, 3-lobed; pedicels longer than the petiole; flowers cernuous; pistils nodding; capsule hispid.—H. clypeatus Walt.


2. H. moscheutos Linn.: leaves ovate, acuminate, serrate, tomentose beneath; petioles bearing the pedicules; calyx tomentose; capsule smooth.—H. palustris Walt.
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3. *H. palustris* Linn.: leaves ovate, toothed, somewhat 3-lobed, white-tomentose beneath; pedicels axillary, distinct from the petioles, auriculate above the middle.


5. *H. trionum* Linn.: leaves toothed; lower ones scarcely divided; upper ones 3-parted; lobes lanceolate, middle one very long; calyx inflated, membranaceous, nerved.

Hab. Apparently naturalized near Albany, N. Y. July. 24. — Stem 2 feet high. Flowers yellowish-white, with the lower part purple.

4. SIDA. Linn.

_Calyx_ naked, 5-cleft, often angled. _Style_ many cleft at the top. _Capsules_ numerous, arranged circularly, 1-celled, 1—3 seeded. _Monadelphia._ *Polyandria._

1. *S. spinosa* Linn.: leaves ovate-lanceolate, toothed, with the tubercles at the base spiny; pedicels axillary, solitary, shorter than the stipules and petioles; capsules 5, bi-rostrate.


2. *S. napaea* Willd.: leaves palmately 5-lobed, smooth; lobes oblong, acuminate, toothed; peduncles many-flowered; capsules 10, awnless, acuminate.—*Napaea lavis* Linn.


3. *S. dioica* Willd.: leaves palmately 7-lobed, rough; lobes lanceolate, incisely toothed; peduncles many-flowered, bracteate, subcorysted; flowers dioecious; capsules 10, awnless.—*Napaea dioica* and *N. scabra* Linn.


4. *S. abutilon* Linn.: leaves roundish-cordate, acuminate, toothed, tomentose; peduncles shorter than the petioles; capsules 15, truncate, bi-rostrate, hairy.

Order XXII. TILIACEÆ. De Cand. Lind.

Sepals 4—5, with the aestivation valvate and rarely imbricate. Petals 4—5, entire, usually with a little pit at their base, rarely wanting. Stamens generally indefinite, hypogynous, distinct; anthers 2-celled, dehiscing longitudivally. Torus with 4—5 glands at the base of the petals. Ovary single, composed of from 4—10 carpels; style 1; stigmas as many as the carpels. Fruit dry, of several cells. Seeds numerous; embryo erect in the axis of fleshy albumen, with flat foliaceous cotyledons.

Trees or shrubs, with simple stipulate alternate leaves and axillary flowers.

1. TILIA. Linn.

Calyx 5-parted, deciduous. Petals 5, naked, or with a small scale within. Stamens many; filaments free, or somewhat in sets. Ovary globose, villous, 5-celled; cells 2-seeded, (Nutt.) coriaceous, by abortion 1-celled, 1—2 seeded.

Polyandria. Monogynia.

1. T. glabra Vent.: leaves deeply cordate, abruptly acuminate, acutely serrate, subcoriaceous, smooth; flowers in cymes; petals truncate at the apex, crenate; style as long as the petals; fruit ovate, somewhat ribbed.—T. americana Linn. Mich. f. T. canadensis Mich.


Linn, or Linden. Bass Wood.

2. T. laxiflora Mich.: leaves cordate, gradually acuminate, serrate, membranaceous, smooth; flowers in loose panicles; petals emarginate; styles longer than the petals; fruit globose.


3. T. pubescens Ait.: leaves truncate at the base, subcordate, oblique, denticulate-serrate, pubescent beneath; petals emarginate; styles longer than the petals; fruit globose, smooth.—T. americana Walt.

Order XXIII. Hypericinæ. De Cand. Lind.

Sepals 4—5, distinct or cohering, persistent, unequal, with glandular dots. Petals 4—5, hypogynous, with a twisted aestivation and oblique veins, often having black dots. Stamens indefinite, hypogynous, in three or more parcels; anthers versatile. Ovary single, superior; styles several, rarely connate; stigmas simple, occasionally capitate. Fruit a capsule or berry, of many valves and many cells; the edges of the former being curved inwards. Seeds minute, indefinite, usually tapering; embryo straight; albumen none; radicle next to the hilum, inferior.

Herbs or shrubs, with a resinous juice. Leaves opposite, entire, dotted, occasionally alternate and crenate. Flowers generally yellow.

1. Hypericum. Linn.

Capsule membranaceous. Styles 3—5. Stamens many, polydelphous at base, rarely indefinite. Petals 5. Sepals 5, unequal, more or less united at base.

Polyandria. Di-Pentagynia.

* Stamens numerous. Styles 5. Flowers mostly terminal, large, yellow.

1. H. ascyroides Willd. : smooth; stem simple, square, winged at the base; leaves sessile, oblong-lanceolate, acute; calyx ovate-lanceolate; styles free, as long as the stamens.—H. macrocarpum Mich.  

2. H. kalmianum Willd. : frutescent, much branched; branches square, leaves linear-lanceolate; flowers few, in a terminal corymb; calyx lanceolate, somewhat obtuse.  
Hab. Wet rocks. N. Y. to Virg. July, Aug. 5.—Stem 3—5 feet high. Flowers large. This species has been found near Niagara Falls by Dr. Asa Gray.

** Stamens numerous, somewhat definite (9—15—18) polydelphous. Styles 3. Flowers reddish.

3. H. virginicum Linn. : stem suffruticose, terete; leaves oblong, obtuse, subclasping, punctate, very obtuse; flowers peduncled, axillary and terminal; calyx lanceolate; stamens 9—12, slightly united at base.—Elodea campanulata Pursh.  
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*** Stamens numerous, indefinite. Styles mostly 3. Flowers yellow.

4. **H. angulosum** Mich.: stem herbaceous, square, erect; leaves distant, elongated, ovate, subclasping, sinuate on the margin, acute, not punctate; flowers axillary, solitary, in a dichotomous panicle; calyx lanceolate, acute, somewhat keeled.—**H. denticulatum** Walt.

**Hab.** Cedar swamps. N. J. to Car. June, July. 2f.—Stem 12—18 inches high, branched towards the summit. Flowers scattered in the panicle and alternate, orange-coloured. Styles 3, often united.

5. **H. cistifolium** Lam.: stem angular; leaves ovate-oblong, somewhat acute, black-punctate beneath, subclasping, revolute on the margin; flowers in dichotomous corymbs; calyx ovate; styles united.—**H. adpressum** Bart. ?

**Hab.** Western part of N. Y. **Dr. Asa Gray.** July. 2f.

6. **H. punctatum** Linn.: stem terete, black-punctate; leaves ovate-lanceolate, obtuse, subclasping; flowers in dense corymbs; calyx lanceolate, acute.—**H. corymbosum** Willd. Pursh.—**H. maculatum** Walt.

**Hab.** Shady woods. Can. to Car. June. 2f.—Stem 2 feet high. Flowers in a compact panicle or corymb. Styles 3, longer than the stamens. Whole plant, except the filaments and styles, spotted with black dots.

7. **H. perforatum** Linn.: stem ancipital; leaves obtuse, ovate-elliptic, and with the lanceolate calyx pellucid-punctate; flowers panicled; anthers with black punctures; styles diverging.

**Hab.** Fields. N. S. June—Aug. 2f.—Stem a foot high, branched. Flowers yellow. A pernicious weed, producing, according to Dr. Darlington, troublesome sores upon horses and horned cattle, where it comes in contact with them. It would seem that the dew which collects on the plant, becomes active in this way.—**Fl. Cestrica.** Introduced. **St. John's Wort.**

8. **H. parviflorum** Willd.: stem erect, much branched, smooth, square; leaves ovate, subcordate, obtuse, sessile, obscurely 5-nerved, pellucid-punctate; flowers in a dichotomous corymb; calyx linear-lanceolate, longer than the petals.—**H. quinquevermium** Walt. Mich.

**Hab.** Overflowed grounds. Throughout Can. and the U. S. June—Aug. 2f.—Stem 6—12 inches high. Flowers very small, yellow, solitary in the divisions of the stems.

9. **H. canadense** Linn.: stem erect and straight, 4-winged; leaves linear, attenuate at the base, rather obtuse; panicle elongated, dichotomous; calyx lanceolate; styles very short; capsule long, conical, coloured.

**Hab.** Gravelly soil. Can. to Car. June—Aug. 2f.—Stem 6—12 inches high. Flowers small, yellow. Capsule much longer than the calyx and of a reddish colour, by which, together with its linear leaves, it can be readily distinguished from the preceding.

10. **H. sarothra** Mich.: erect, much branched above; branches setaceous; leaves minute, subulate, appressed; flowers terminal, subsoli-
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tary; stamens 5—10; capsules oblong, 1-celled.—H. nudicaule Walt.

—Sarothra gentianoides Walt.


Stem 3—6 inches high. Leaves and flowers minute. Stamens very variable in number.

11. H. prolificum Linn.: stem shrubby, terete; branches angled;
leaves linear-lanceolate, revolute on the margin, pellucid-punctate;
corymbs axillary and terminal, few-flowered; calyx ovate-lanceolate;
stamens very numerous.

Hab. N. Y. to S. Car. July. 21.—Shrub 2—3 feet high, with
much compressed branches. Leaves 2 inches long. Peduncles generally 3-flowered, the intermediate one nearly sessile.

12. H. galoides Linn.: stem terete, straight, somewhat shrubby;
branches square; leaves linear-sessile, revolute on the margin, acute,
punctate; panicles terminal, dichotomous and divaricate; calyx linear,
at length reflexed; styles often united.

Hab. Sandy moist places. N. J. to Car. July. 21.—Stem 2
feet high. Leaves fasciculate.—Scarcely differing from H. fasci-
culatum of Michaux.

2. ASCYRUM. Linn.

Calyx 4-sepalled; 2 outer sepals smaller. Petals 4. Sta-
mens many, scarcely united at base. Styles 1—3.

Polyandria. Di-Pentagynia.

1. A. crux-andreae Linn.: stems numerous, suffruticose, terete, with
erect branches; leaves ovate-linear, obtuse; inner sepals suborbicu-
lar; pedicels with 2 bracts; flowers sessile; styles 1—2.—A. multi-
caule Mich.

Hab. Sandy fields. N. J. to Car. July. 21.—Stems 1—2 feet
high. Flowers solitary and axillary, nearly sessile, pale yellow.
Mr. Elliott remarks that this plant varies so much in the size
and number of its leaves, in its peduncles, and in the number of
its styles, that it merits culture to determine whether more than
one species are not included under this name. St. Peter’s Wort.

2. A. stans Mich.: stem fruticose, winged, straight; leaves ovate-
elliptical, obtuse, glaucous; inner sepals cordate, orbicular; stamens
united at the base; styles 2.—A. hypericoides Pursh, not of Linn.

Hab. Overflowed sandy soil. N. J. to Car, July, Aug. 21.—
Stem 1—2 feet high. Flowers larger than the last, yellow.

ORDER XXIV. ACERINEÆ. De Cand. Lind.

Calyx 5, or rarely 4—9-parted, with an imbricate aestiva-
tion. Petals equal in number to the lobes of the calyx, with
which they alternate, rarely wanting. Stamens definite, usually 8, rarely 5 or 12; anthers oblong. Torus discoid.
Ovary 2-lobed, 2-celled; style 1; stigmas 2. Fruit of two indehiscent winged carpels (samara,) each 1-celled, with 1 or 2 seeds. Seeds erect; albumen none; embryo curved or convolute, with foliaceous wrinkled cotyledons and an inferior radicle.

Trees, with opposite, simple, rarely pinnate leaves. Flowers often polygamous, sometimes apetalous.

1. ACER. Linn.


Octandria. Monogynia.

* Flowers in corymbs or fascicles.

1. A. rubrum Linn.: leaves generally 5-lobed, cordate at the base, unequally and incisely toothed, glaucous beneath; the sinuses acute; flowers aggregated in about fives, on rather long pedicels; germs glabrous.


2. A. eriocarpum Mich.: leaves palmately 5-lobed, truncate at the base, smooth and whitish-glaucous beneath; sinuses obtuse; lobes acuminate, incisely toothed; flowers aggregated, on short pedicels; germs tomentose.—A. dasycarpum Willd.


3. A. barbatum Mich.: leaves ovate-cordate, with 3 short lobes, unequally serrate, glaucous beneath and pubescent on the nerves; corymbs sessile; peduncles hairy; those of the sterile flowers branched; of the fertile simple; calyx bearded within; fruit smooth; wings erect.—A. carolinianum Walt.


4. A. saccharinum Linn.: leaves palmately 5-lobed, subcordate at base, petioled, glaucous beneath; lobes acuminate; peduncles corymbose, loose, nodding, hairy; fruit glabrous; wings divergent.

Hab. In woods. Can. to Geor. W. to Miss. April.—A large tree. Flowers yellowish, on long filiform peduncles. Petioles smooth.—Valuable for its timber and for the sugar obtained from its sap. Sugar Maple.

5. A. nigrum Mich.: leaves palmately 5-lobed, cordate, with the sinus closed, pubescent beneath; lobes divaricate, sinuate-dentate;
flowers on long slender peduncles, corymbed; fruit glabrous, turgid at base; wings diverging.

**Flowers in racemes.**

6. *A. striatum* Mich.: leaves with 3 acuminate lobes, rounded at the base, acutely dentate, smooth; racemes simple pendulous; petals oval; fruit smooth; wings somewhat diverging.—*A. pennsylvanicum* Linn.

Hab. Shady rocks. N. S. May. 11.—Shrub 10 or 12 feet high; trunk beautifully striate. Leaves rarely undivided. Flowers greenish-yellow, 10—12 in a raceme.

Striped Maple. Moose Wood.

7. *A. spicatum* Linn.: leaves small, 3—5-lobed, acute, dentate, cordate, pubescent beneath; racemes spikeform, erect; petals linear; fruit smooth; wings somewhat diverging.—*A. montanum* Ait. Pursh. Torr.


2. NEGUNDO. De Cand.


Octandria. Monogynia.

*N. fraxinifolium* Nutt.: leaves ternate and pinnate; leaflets unequally and coarsely dentate; odd one often 3-lobed; flowers in simple pendulous racemes.—*Acer negundo* Linn. Mich.


Ash-leaved Maple. Box Elder.

Order XXV. HIPPOCASTANEÆ. De Cand. Lind.

Calyx campanulate, 5-lobed. Petals 5, or 4 by the abortion of one of them, unequal, hypogynous. Stamens 7—8, distinct, unequal, inserted upon a hypogynous disk; anthers somewhat incumbent. Ovary roundish, 3-cornered, 3-celled; style 1, filiform, conical, acute; ovules 2 in each cell. Fruit coriaceous, 1—2 or 3-valved, 1—2 or 3-celled, 1, 2 or 3-seeded. Seeds large, roundish, with a smooth shining coat, and a broad pale hilum; albumen none; embryo curved, inverted, with fleshy, very thick, gibbous, cohering cotyledons, germinating under ground; plumula unusually large, 2-leaved; radicle conical, curved, turned towards the hilum.
Trees or shrubs: Leaves opposite, compound. Flowers in terminal racemes.

1. *ESCULUS*. Linn.


*E. glabra* Willd.: leaves quinate, very smooth; leaflets ovate acuminate; corol 4-petalled, spreading, with the claws as long as the calyx; stamens longer than the corol; capsules echinate.—*E. echinata* Muhl.?—*Paxia Ohiensis* Mich. f.


**Buck-eye.**

**Order XXVI. AMPELIDEÆ. De Cand.**

Calyx small, nearly entire. Petals 4 or 5, sometimes cohering above, and calyptriform, with a valvate aestivation. Stamens equal in number to the petals, inserted upon the disk, sometimes sterile by abortion; filaments distinct, or slightly cohering at the base; anthers ovate, versatile; ovary superior, 2-celled; style 1, very short; stigma simple; ovules erect, definite. Berry globose, pulpy, 2- (or often by abortion 1-) celled. Seeds 4 or 5, or fewer by abortion, bony, erect; albumen hard; embryo erect, about one half the length of the albumen; radicle slender; cotyledons lanceolate.

Climbing shrubs with tumid separable joints. Leaves simple or compound.


**Pentandria. Monogynia.**

1. *A. cordata* Mich.: stem climbing, with slender branches; leaves cordate, acuminate, toothed and angular; nerves beneath pubescent; racemes dichotomous, few-flowered.—*Cissus ampelopsis* Pers. Pursh.

Hab. Banks of streams. Penn. to Car. W. to Arkansa. June, July. 5.—Leaves cordate, often straight at base as if truncate. Panicles opposite the leaves. Berries pale red.

2. *A. hederacea* Mich.: stem climbing and rooting; leaves digitate, by fives, on long petioles, glabrous; leaflets connected at base, lance.

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DICOTYLEDONOUS PLANTS.

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olate, acuminate, dentate towards the apex; panicle compound, dichotomous, opposite the leaves; nectary none. — *Cissus hederacea* Pers. *Vitis hederacea* Willd.

**Hab.** Woods. Penn. to Car. W. to Arkansa. June, July. /welcome

3. *A. hirsuta* Muhl.: leaves pubescent on both sides; leaflets ovate, acuminate, coarsely toothed. — *Cissus hederacea*, var. *hirsuta* Pursh.

**Hab.** Alleghany mountains. *Pursh.* Still a doubtful species.

2. **VITIS.** Linn.


1. *V. labrusca* Linn.: leaves very large, broad-cordate, sub-3-lobed, acutely toothed, glabrous above, and with the peduncles tomentose beneath; racemes small, panicked; berries large.


2. *V. aestivalis* Mich.: stem long and slender; leaves broad-cordate, 3—5-lobed, younger ones ferruginous-tomentose beneath, when old nearly smooth; sinuses rounded; racemes opposite the leaves, rather crowded, oblong; berries small. — *V. intermedia* Muhl.

b. *sinuata* Pursh.: leaves sinuate-palmate, coarsely dentate; sinuses rhomboidal.


**Hab.** River banks. Can. to Flor. /welcome — *Berries* amber-coloured; ripen in November, and have a tart taste. *Winter Grape.*


**Hab.** Gravelly shores of rivers. Penn. to Car. May—July. /welcome — "*Flowers* of an exquisitely fine smell, resembling *Reseda odorata.*** Pursh.

**Order XXVII.** GERANIACEÆ. *De Cand. Lind.*

*Sepals* 5, persistent, more or less unequal, with an imbricated aestivation; 1 sometimes saccate or spurred at the base.
Petals 5, (or by abortion 4, rarely none,) unguiculate. Stamens usually monadelphous, hypogynous, twice or thrice as many as the petals. Ovary composed of 5 pieces, placed round an elevated axis, each 1-celled, 1-seeded; ovules pendulous; styles 5, cohering round the axis. Fruit formed of 5 carpels cohering round the axis, having a membranous pericarp and terminated by an indurated style, which finally twists and carries the pericarp along with it. Seeds solitary, pendulous; albumen none. Embryo curved; radicle pointing to the base of the cell; cotyledons foliaceous, convolute and plaited.

Herbs or shrubs. Stems tumid and separate at the joints. Leaves either opposite or alternate.

1. GERANIUM. Linn.

Sepals 5, equal. Petals 5, equal. Stamens 10; alternate fertile ones larger, and with nectariferous scales at the base. Carpels with long awns, at length separating elastically from the summit to the base; awns smooth internally.

Monadelphia. Decandria.

* Perennial. Peduncles 2-flowered.

1. G. maculatum Linn.: stem somewhat angular, erect, dichotomous, retrorsely pubescent; leaves 3—5-parted, incised; radical ones on long petioles; upper ones opposite, sessile; petals entire; filaments scarcely ciliate at the base.


Spotted Geranium. Crane's-bill.

** Annual. Peduncles 2-flowered.

2. G. pusillum Linn.: leaves subreniform, 7-lobed; lobes 3-cleft; peduncles short, 2-flowered; petals emarginate, scarcely longer than the awnless calyx; carpels keeled, pubescent; seeds smooth.—G. malvifolium Lam.

Hab. Penn. May. ☪. Muhl.—Is not Muhlenberg's G. pusillum the next species?

3. G. dissectum Linn.: leaves 5-parted; lobes opposite, petiolate 3-cleft, linear; peduncles short, 2-flowered; petals emarginate, rather shorter than the awned calyx; carpels hairy, not rugose; seeds reticulate.

Hab. Fields. N. S. July. ☪.—Stem 12 inches high, pubescent. Flowers small, pale red.

Wood Geranium.
4. *G. columbinum* Linn.: leaves 5-parted; lobes deeply cleft into linear, acute, segments; peduncles very long, 2-flowered; petals entire, as long as the awned calyx; carpels glabrous, not rugose; seeds dotted.


5. *G. carolinianum* Linn.: diffuse, pubescent; leaves 5-lobed beyond the middle; lobes incised, 3–5-cleft; peduncles crowded towards the top; petals notched, as long as the awned calyx; carpels hairy; seeds smooth.

**Hab.** Hills. From Arctic Amer. to Geor. W. to Miss. May, June. ©.—Stem 12–18 inches long, branched. *Flowers* small, white.

6. *G. robertianum* Linn.: leaves ternate or quinate; leaflets somewhat pinnatifid; segments mucronate; peduncles long, 2-flowered; calyx angular, hairy, with longish awns, shorter than the entire petals; carpels small, wrinkled; seeds smooth.


**Order XXVIII. BALSAMINEÆ. De Cand. Lind.**

*Sepals* 5, irregular, deciduous, the two inner and upper of which are connate, the lower spurred. *Petals* 4, hypogynous, united in pairs, so that apparently there are only 2 petals; the fifth wanting. *Stamens* 5, hypogynous; *filaments* subulate; *anthers* 2-celled, bursting lengthwise. *Ovary* single, 5-celled; *stigma* sessile, more or less 5-lobed. *Fruit* capsular, with 5 elastic valves and 5 cells. *Seeds* numerous, suspended; *albumen* none; *embryo* straight, with a superior *radicle* and plano-convex cotyledons.

*Succulent herbs.* Leaves simple, opposite or alternate, without stipules. *Peduncles* axillary.

1. IMPATIENS. Linn.

*Sepals* 5, the lower one spurred. *Corol* 4 petalled, irregular; the two inner petals unequally bilobed. *Stigmas* 5, united. *Capsule* prismatic-terete, elongated, 5-valved, opening elastically.

**Pentandria. Monogynia.**

1. *I. pallida* Nutt.: peduncles solitary, 3–4-flowered; leaves rhombic-ovate, sub-acute, mucronate-dentate; calcarate petal dilated, shorter than the rest; spur recurved, very short; flowers sparingly punctate.—*I. noli-tangere* Pursh.—*I. aurea* Muhl.

2. *O. fulva* Nutt.: peduncles solitary, 2—4-flowered; leaves rhombic-ovate, obtuse, mucronate-dentate; calcarate petal longer than the rest; spur emarginate, resupinate; flowers with crowded spots.—*I. bifora* Pursh.—*I. noli-tangere*, var. Mich.—*I. maculata* Muhl.

Hab. Wet grounds. Can. to Car. Aug. — Flowers deep yellow, spotted, smaller and less numerous than in the former.

Order XXIX. OXALIDÆ. De Cand. Lind.

Sepals 5, sometimes slightly cohering at the base, persistent, equal. Petals 5, hypogynous, equal, unguiculate, with a spirally twisted aestivation. Stamens 10, usually more or less monadelphous, those opposite the petals forming an inner series and longer than the others; anthers 2-celled, innate. Ovary 5-angled, 5-celled; styles 5, filiform; stigmas capitate or somewhat bifid. Fruit capsular, membranous, with 5 cells, and from 5 to 10 valves. Seeds few, enclosed within a fleshy integument, which bursts elastically. Albumen between cartilaginous and fleshy; embryo straight, as long as the albumen, with a long radicle pointing to the hilum, and foliaceous cotyledons.

Herbs, undershrubs or trees. Leaves alternate, mostly compound.

1. **OXALIS** Linn.

Sepals 5, free or united at base. Petals 5. Stamens 10; filaments monadelphous at base, 5 outer ones shorter. Styles 5. Capsule pentangular, oblong or cylindric.

**Decandria. Pentagynia.**

* Stemless.

1. *O. acetosella* Linn.: stemless; root dentate, creeping; scape 1-flowered, longer than the leaves, with two small bracts above the middle; leaves ternate, dilated-obcordate, pilose; petals oval, obtuse; styles as long as the inner stamens.


2. *O. violacea* Linn.: stemless; root squamous; scape unbelliferous, 3—9-flowered; flowers nodding; leaves ternate, obcordate, smooth; styles shorter than the outer stamens.
DICOTYLEDONOUS PLANTS.

Hab. Rocky woods. N. Y. to Car. W. to Miss. May, June.
2f.—Scape 4—6 inches high. Flowers violet, umbelled, with the petals obovate and sometimes slightly emarginate.

Violet Wood Sorrel.

** Caulescent.

3. O. corniculata Linn.: pubescent; stem rooting, decumbent, branched; umbels shorter than the petioles; leaves ternate, obcordate; petals obovate, emarginate; styles as long as the inner stamens.—O. corniculata, var. Mich.


4. O. stricta Linn.: hairy; stem erect, sometimes procumbent, branched; umbels about as long as the leaves; leaves ternate, obcordate; petals obovate, entire; styles as long as the inner stamens.


Upright Wood Sorrel.

Order XXX. ZANTHOXYLEÆ. Lind.

Flowers díclinous, regular. Calyx 3—4—5-divided, with an imbricate aëstivation. Petals equal in number (rarely none) to the sepals; aëstivation usually twisted-convolute. Stamens as many or twice as many as the petals. Ovaries as many (or fewer) as petals, either altogether combined, or more or less distinct; oválès 2 in each cell, or rarely 4; styles more or less combined. Fruit either baccate or membranous, of 2—5 cells, or of several drupes or 2-valved capsules, of which the sarcocarp is fleshy and partly separable from the endocarp. Seeds solitary or in pairs; embryo lying within fleshy albumen; radicle superior; cotyledons ovate, flat.

Trees or shrubs. Leaves without stipules, alternate or opposite, with pellucid dots.

1. ZANTHOXYLUM. Linn.

Dioecious. Calyx 3—9-lobed, often 4—5-parted. Petals as many as the lobes of the calyx, rarely none. Stamens and carpels as many as the lobes of the calyx, 1—3-seeded.

Dioecia. Pentandria.

Z. fraxineum Willd.: prickly; leaves pinnate; leaflets in 4—5 pairs, ovate, obsoletely serrate, equal at base; petioles terete, unarmed; prickles stipular; umbels axillary.—Z. ramiflorum Mich.—Z. clava-herculis Linn. Ell.
HAB. Rocky woods. Can. to Car. W. to Ken. April. If. —

Shrub 3—5 feet high, covered with sharp strong prickles. Leaves pinnate, sometimes prickly on the back. Flowers in umbels, small, greenish — The bark of this shrub is pungent, and is employed medicinally. — Big. Med. Bot. iii. 156. Prickly Ash.

2. PTELEA. Linn.


Tetandria. Monogygynia.

Pt. trifoliata Linn.: leaves on long petioles, ternate; leaflets sessile, ovate, acuminate, odd one much attenuated at base; flowers in panicles, polygamous, often tetandrous.


Subclass II. CALYCIFLORÆ. De Cand.

Calyx with the sepals more or less united at base, (gamosepalous, De Cand. — monophyllous, Linn.) Petals and stamens inserted into the calyx.

Order XXXI. CELASTRINEÆ. De Cand. Lind.

Sepals 4 or 5, imbricated, inserted into the margin of a large expanded torus. Petals 4—5, with a broad base; aestivation imbricated. Stamens alternate with the petals, inserted into the disk, either at the margin or within it; anthers innate. Ovary superior, free, surrounded by the somewhat fleshy disk; with 2, 3 or 4 cells; cells 1, or many-seeded; style 1 or none; stigma 2—4-cleft. Fruit superior; either a 3 or 4-celled capsule, with 3 or 4 septiferous valves; or a dry drupe with a 1 or 2-celled nut, the cells of which are one or many-seeded. Seeds ascending; albumen fleshy; embryo straight; cotyledons flat and thick.

Shrubs with simple alternate or opposite leaves. Flowers in axillary cymes.

1. EVONYMUS. Linn.

Calyx 4—6-lobed, flat, covered at base by a peltate disk. Petals 4—6, spreading, inserted into the disk. Stamens 4—6,
alternating with the petals. **Style 1. Capsule 3—5-celled, 3—5-angled; cells 1—4-seeded. Pentandria. Monogynia.**

1. *E. americanus* Linn.: branches opposite, smooth, square; leaves opposite, subsessile, elliptic-lanceolate, smooth, acute, serrate; peduncles mostly 3-flowered, terete; calyx small, with acute segments; corol 5-petalled; fruit roughened, warty.

**Hab.** Shady woods. N. Y. to Car. June. 6.—Shrub 4—6 feet high, with opposite branches. Flowers reddish-yellow. Fruit scarlet. **Burning Bush. Spindle Tree.**

2. *E. atropurpureus* Jacq.: stem with smooth, opposite, square branches; leaves petiolate, oblong-lanceolate, acuminate, serrate, pubescent beneath; peduncles divaricate, many-flowered; flowers 4-cleft; fruit smooth.


3. *E. obovatus* Nutt.: stem prostrate, rooting, nearly simple; surculi erect, obtusely quadrangular, with 4 elevated lines; leaves broadly ovate, obtuse, acute at base, subsessile, acutely serrulate; peduncles 3-flowered; petals 4 and 5, roundish.

**Hab.** Fir swamps. Penn. June. 6.—Shrub a foot high. Flowers green, with a purple tinge.

2. **CELASTRUS.** Linn.

Calyx minute, 5-lobed. Petals 5, unguiculate. **Stamens 5.** Ovary small, with 10 striae, immersed in the disk. **Style 1. Stigmas 2—3. Capsule 2—3-valved; valves septiferous in the centre. Seed 1, covered with a large fleshy aril. Pentandria. Monogynia.**

*C. scandens* Linn.: stem climbing, unarmed; leaves petioled, oval, acuminate, serrate; stipules minute; racemes terminal.

**Hab.** Rocky woods. Can. to Virg. May, June. 6.—A woody vine or low shrub. Leaves alternate. Flowers greenish-yellow, in small terminal racemes. Fruit scarlet. **Climbing Staff Tree.**

**Order XXXII. STAPHYLEACEÆ.** Lind.

Sepals 5, connected at base, coloured, with an imbricated aestivation. Petals 5, alternate, with an imbricated aestivation. **Stamens 5,** alternate with the petals, perigynous. **Disk large, urceolate. Ovary 2—3-celled, superior; ovules erect; styles 2—3,** cohering at the base. **Fruit membranous or fleshy, indehiscent or opening internally, partly abortive. Seeds ascending, roundish, with a long testa; hilum large truncate; albumen none; cotyledons thick.**
Shrubs, with opposite, pinnate leaves. Flowers in terminal racemes.

1. **STAPHYLEA.** Linn.

Calyx 5-parted, covered at base by an urceolate disk; lobes oblong, concave, coloured. Petals 5, alternating with the sepals. Stamens 5, alternating with the petals. Ovary 2—3-lobed. Styles 2—3, sometimes united. Capsule 2—3-celled; cells membranaceous, inflated, united at base or throughout their whole length. Pentandria. Trigynia.

*S. trifolia* Linn.: leaves ternate, on long petioles; leaflets ovate, acuminate, serrulate, pubescent, the terminal one petioled; styles glabrous; capsule bladder-like.


**Order XXXIII. RHAMNINAE.** De Cand. Lind.

Calyx 4—5-cleft, with a valvate aestivation. Petals distinct, cucullate or convolute, inserted into the orifice of the calyx, occasionally wanting. Stamens definite, opposite the petals. Disk fleshy. Ovary superior or half superior, 2—3—4-celled; ovules solitary, erect. Fruit fleshy and indehiscent, or dry and separating in 3 parts. Seeds erect; albumen fleshy, seldom wanting; embryo almost as long as the seed, with large flat cotyledons, and a short inferior radicle.

Trees or shrubs, often spiny. Leaves simple, alternate, rarely opposite, with minute stipules. Flowers axillary or terminal.

1. **RHAMNUS.** Linn.

Calyx 4—5-cleft, urceolate, persistent with and adhering to the fruit at base. Petals alternating with the lobes of the calyx, or none. Stamens 4—5, inserted above the petals. Style 2—4-cleft. Berry 2—4-celled; cells 1, rarely 2-seeded. Pentandria. Monogynia.

1. *R. alnifolius* L’Herit: unarmed; leaves alternate, oval, acuminate, serrulate, pubescent on the nerves beneath; flowers dioecious; peduncles 1-flowered, aggregate; calyx acute; fruit turbinate.—*R. franguloides* Mich.

Hab. Rocky hills. Can. to Vir. rare. May, June. $\gamma$.—Flowers small, greenish, in axillary fascicles. Berries black.—
R. alnifolius of Pursh is described by De Candolle as a distinct species, under the name of R. purshianus.

2. R. catharticus Linn.: branches spiny; leaves opposite, ovate, erosely denticulate; flowers mostly 4-cleft, polygamo-dioecious; berries 4-seeded, subglobose.


2. Ceanothus. Linn.

Calyx 5-cleft, campanulate, persistent and somewhat adhering with the fruit. Petals 5, small, saccate and arched, with long claws. Stamens exsert. Styles 2—3, united to the middle. Berry dry, (a capsule?) 3-celled, 3-seeded, 3-parted, opening on the inner side. Pentandria. Monogynia.

1. C. americanus Linn.: stem shrubby; branches terete and somewhat pubescent; leaves ovate-oblong, alternate, serrate, 3-nerved, tomentose, pubescent beneath, sometimes subcordate; panicles axillary, on long peduncles.


2. C. herbaceous Raf.: leaves oval, slightly serrulate, smooth; panicles thyrsoid, axillary and terminal.—P. perennis Pursh.

Hab. Rocky places. Penn. to Car. Suffruticose. Leaves nearly as large as in the former, but smooth.

3. C. oralis Big.: leaves oval, glandular-serrate, 3-nerved, the veins pubescent underneath; panicle corymbose, abbreviated.

Hab. Shores of Lake Champlain. Dr. Boott.—Leaves 1—3 inches long, petioled, elliptical, obtuse or subacute. Peduncles shorter than in C. americana and the flowers larger. Fruit blackish.

Order XXXIV. Anacardiaceæ. Lind.

Flowers usually diclinious. Calyx usually small, persistent, 5-(sometimes 3—4—7) divided. Petals equal in number to the segments of the calyx, (sometimes wanting) perigynous, imbricated in aestivation. Stamens equal in number to the petals, and alternate, or twice as many or more; filaments distinct or cohering at the base. Disk fleshy, annular or cup-shaped, hypogynous, occasionally wanting. Ovary single (or rarely 5—6) free or rarely adhering to the calyx, 1-celled; styles 1—3, sometimes 4; stigmas as many. Fruit
ANACARDIACEÆ.

indehiscent, usually drupaceous. _Seed_ without albumen; _radicle_ superior or inferior, next the hilum; _cotyledons_ thick and fleshy or leafy.

_Trees_ or _shrubs_, with a resinous, gummy, caustic, or even milky juice. _Leaves_ alternate, not-dotted.

1. **RHUS.** Linn.

_Calyx_ small, 5-parted, persistent. _Petals_ 5, ovate, spreading. _Stamens_ 5. _Styles_ 3, short, or 3 sessile stigmas. _Drupe_ nearly dry, with one bony seed. *Pentandria. Trigynia.*

* Leaves ternate.

1. _R. toxicodendron_ Linn.: stem erect, pubescent near the summit; leaves ternate; leaflets broad, oval, entire, sinuate or lobed, subpubescent beneath; flowers dioecious, in sessile axillary racemes.—_R. toxicodendron_, var. _quercifolium_ Mich.

_Hab._ Moist woods. Can. to Car. W. to Rocky mountains. **June.** ½.—_Shrub_ 2—5 feet high. _Flowers_ greenish.

2. _R. radicans_ Linn.: stem climbing; leaves ternate; leaflets petiolate, ovate, acuminate, smooth, generally entire; flowers in axillary racemes, towards the top of the stem, dioecious; fruit smooth.—_R. toxicodendron_, var. _vulgare_ Mich. Pursh.—_R. toxicodendron_, var. _radicans_ Torr.


3. _R. aromatic a_ Ait.: branches slender, nearly smooth; leaves ternate; leaflets sessile, ovate-rhomboid, deeply toothed, tomentose beneath; flowers in dense axillary racemes or catkins, dioecious; fruit pilose.—_Lobadium aromaticum_ Raf.

_Hab._ Mountains. N. Y. to Geor. W. to Miss. May, June. ½.—_Shrub_ 2—6 feet high. _Flowers_ yellowish. _Fruit_ red. **Leaves pinnate, smooth.**

4. _R. glabra_ Linn.: stem and branches smooth; leaflets in many pairs, sessile, lanceolate, acuminate, sharply serrate, smooth, whitish beneath; flowers all perfect, in terminal compound panicles.


5. _R. copallina_ Linn.: branches terete, downy; leaflets 4—7 pairs, with an odd one, oval-lanceolate, very entire, shining on the upper
surface; petiole winged, appearing as if jointed; flowers in sessile panicles, dioecious.


6. R. venenata De Cand.: branches, leaves and petioles very smooth; leaflets in 5—6 pairs, oblong-oval, abruptly acuminate, nearly entire; petioles without joints or wings; flowers in loose slender panicles, dioecious; fruit smooth, white.—R. vernix Linn.


*** Leaves pinnate, pubescent.

7. R. typhina Linn.: branches and petioles very villous; leaflets in many pairs, lanceolate-oblong, acuminate, acutely serrate, pubescent beneath; flowers in oblong dense panicles, dioecious.


Order XXXV. LeguminosÆ. De Cand. Lind.

Calyx 5-parted, toothed or cleft, inferior, with the odd segment anterior; the segments often unequal and variously combined. Petals 5, or by abortion 4, 3, 2, 1, or none, inserted into the base of the calyx, either papilionaceous or regularly spreading; the odd petal posterior. Stamens definite or indefinite, perigynous, either distinct or monadelphous, or diadelphous; very seldom triadelphous; anthers versatile. Ovary simple, superior, 1-celled, 1 or many-seeded; style simple, proceeding from the upper margin; stigma simple. Fruit either a legume or a drupe. Seeds attached to the upper suture, solitary or several, occasionally with an arillus; embryo destitute of albumen, either straight, or with a radicle bent upon the cotyledons; cotyledons either remaining under ground in germination, or elevated above the ground and becoming green like the leaves.

Herbs, shrubs or trees. Leaves with usually 2 stipules at the base.

Suborder I. Papilionaceæ.

Calyx with distinct lobes. Stamens perigynous. Corol papilionaceous.
1. BAPTISIA. Vent.


Decandria. Monogynia.

B. tinctoria Brown: very smooth, much branched; leaves ternate, petioled, upper ones subsessile; leaflets round-obovate; stipules setaceous; racemes terminal; legume on a long stipe.—Sophora tinctoria Linn.—Podalyria tinctoria Willd.


2. CROTALARIA. Linn.

Calyx 5-lobed, subbilabiate; upper lip 2, lower one 3-cleft. Standard large, cordate. Keel falcate, acuminate. Filaments all united, with the sheath often divided above. Legume turgid, inflated, with ventricose valves, often many-seeded, pedicelled. Diadelphia. Decandria.

1. C. sagittalis Linn.: hairy, erect, branched; leaves simple, oblong-lanceolate; stipules lanceolate, acuminate, decurrent; racemes opposite the leaves, about 3-flowered; corol smaller than the calyx.—C. sagittalis, var. oblonga Mich.


2. C. parviflora Willd.: hirsute, erect, branched; leaves simple, linear-lanceolate, hirsute; upper stipules decurrent, with two very short teeth; racemes opposite the leaves; corol smaller than the calyx.—C. sagittalis, var. linearis Mich.


3. GENISTA. Lam.

Calyx bilabiate, upper lip bipartite; lower one 3-toothed, or 5-lobed; 3 lower lobes united almost to the summit. Standard oblong-oval. Keel oblong, straight. Stamens monadelphous. Legume flat-compressed or rarely somewhat turgid, many-seeded, rarely few-seeded.

Diadelphia. Decandria.

G. tinctoria Linn.: root creeping; stem suberect, suffruticose; branches terete, striate, erect; leaves lanceolate, smooth; flowers in spiked-racemes and with the legumes smooth.
DICOTYLEDONOUS PLANTS.


4. MEDICAGO. Linn.

Calyx subcylindric, 5 cleft. Keel somewhat remote from the standard. Stamens diadelphous. Legume many-seeded, varying in form, always falcate or twisted into a spiral. Leaves ternate.

Diadelphia. Decandria.

1. M. lupulina Linn. : stem procumbent; leaflets obovate-cuneate, denticulate at the apex; stipule lanceolate, acute, somewhat entire; peduncles in racemed-spikes; flowers sessile; legumes reniform, 1-seeded, veined and rugose; seeds ovate, somewhat reniform.


2. M. intertexta Willd. : stem procumbent; leaflets ovate, toothed; stipules ciliate-toothed; peduncles somewhat 2-flowered; legume pilose, cochleate, membranaceous, obliquely reticulate; spines straight, thick, rigid and acute.


5. MELILOTUS. Tourn.

Calyx tubular, 5-toothed. Keel simple; wings shorter than the standard. Legume as long as the calyx, coriaceous, one or few-seeded, scarcely dehiscent, varying in form. Leaves ternate.

Diadelphia. Decandria.

1. M. officinalis Willd. : stem erect, branching; leaflets lanceolate-oblong, obtuse, remotely serrate; spikes axillary, paniculate; legume 2-seeded, rugose; style filiform, as long as the legume; seeds unequally cordate.—Trifolium officinale, var. a. Linn.


2. M. leucantha De Cand. : stem erect, branched; leaflets ovate-oblong, truncate and mucronate at the apex, remotely serrate; stipules setaceous; teeth of the calyx unequal, as long as the tube; standard longer than the keel and wings; legume 1-seeded, ovate, lacunose-rugose, green; seeds exactly ovate.—M. vulgaris Willd. Enum. Trifolium officinale, var. b. Linn.

**LEGUMINOSÆ.** 79

6. **TRIFOLIUM. Tourn.**

_Calyx_ tubular, persistent, without glands, 5-cleft; segments subulate. _Keel_ shorter than the _wings and standard_. _Stamens_ diadelphous. _Legume_ small, scarcely dehiscent, often ovate, 1—2-seeded, as long as the _calyx_ and covered by it, rarely oblong, 3—4-seeded, and a little exceeding the _calyx._ — _Leaves_ ternate. _Diadelphia._ Decandria.

* _Legume_ 1-seeded. _Standard of the corol deciduous. Flowers not yellow._

1. _T. arcense Linn._: stem erect, simple or branched, pubescent; leaves on short petioles; leaflets linear-obovate, hairy, somewhat 3-toothed at the apex; stipules narrow, membranaceous, with very long nerves, subulate, pilose; spikes oblong, villous, cylindrical; _calyx_ very pilose; segments equal, longer than the many petalled _corol._


2. _T. pratense Linn._: stem suberect, branched; leaves on long petioles; leaflets oval, nearly entire; stipules broad, nervé, smooth, shortly acuminate, inflexed; heads of flowers ovate, obtuse, sub sessile; _calyx_ hairy; lower tooth shorter than the tube of the _monopetalous_ unequal _corol_; seeds reniform, compressed.

_Hab._ Meadows. May—Oct. **Stem** 1—2 feet high. _Flowers_ rose-coloured. _Seeds_ yellowish. Introduced. _Red Clover._

3. _T. pennsylvanicum Willd._: stem ascending, much branched, flexuous; leaflets ovate-elliptic, obtuse, very entire; stipules awned; heads of flowers ovate-cylindrical, solitary, dense; lower tooth of the _calyx_ shorter than the _monopetalous_ corol.


**_Legume_ 1-seeded. **_Standard of the corol persistent, scariosa. Flowers yellow._

4. _T. procumbens Linn._: stems procumbent; leaves on short petioles; leaflets obovate or obcordate, denticulate, terminal one petioled; stipules ovate, ciliate, shorter than the petiole; heads axillary, ovate; peduncles equal to or longer than the leaves; segments of the _calyx_ unequal, the 2 upper ones very short; seeds elliptic.

_Hab._ Dry fields. Mass. to Virg. June. **Stem** spreading, 3—6 inches long. _Flowers_ numerous and with the _seeds_ yellow. Introduced. ? According to De Candolle _T. campestris_ is a mere var. with erect branching stems. _Yellow Clover._

5. _T. agrarium Linn._: stem ascending, with erect branches; leaves nearly sessile; leaflets oblong-ovate, sessile, denticulate; stipules leafy, lanceolate, acute, longer than the petiole; heads on long pe-
duncles, oval; standard obcordate; calyx campanulate, short; segments unequal, smooth, elongated, the upper one smaller; legume oval, compressed; seeds cordate.


*** Legume 3—8-seeded.

6. *T. repens Linn.*: stem creeping and somewhat rooting, leaflets obovate-roundish, somewhat retuse, denticulate; stipules scarioso, narrow-lanceolate, with a long mucronate point; heads axillary, on very long peduncles; flowers pedicelled and at length reflexed; segments of the calyx unequal, shorter than the corol; legume 4-seeded.


*White Clover.*

7. *T. reflexum Linn.*: pilose; stem ascending; leaflets ovate or obovate, serrulate; stipules leafy, lanceolate-acuminate; heads globose, axillary; flowers on long pedicels, at length reflexed; segments of the calyx hairy, nearly equal, very narrow, one-nerved, nearly twice as long as the tube but shorter than the standard; legume 4-seeded.

**Hab.** Dry hills. Penn. to Geor. June, July. 2f.—Whole plant very pubescent. Flowers in large heads, red. In my specimens the stipules are obliquely cordate, as stated by Mr. Elliott. Known at the south by the name of *Buffalo Clover.*

8. *T. stoloniferum Muhl.*: stoloniferous, smooth; lower leaves on long petioles; leaflets obovate or wedge-form, serrulate, retuse or emarginate at the apex; stipules membranaceous, broad-lanceolate; flowers in globose heads, pedicelled, erect, at length reflexed; segments of the calyx nearly equal, narrow, smooth, longer than the tube.

**Hab.** N. Y. Penn.'W. to the Miss. June. 2f.—Stem 4—8 inches long. Flowers in middle sized heads.—I suspect this is not specifically distinct from the preceding. The specimens collected by myself on the Mississippi, as well as that received by my brother from Dr. Muhlenberg, agree very well with that plant, except in the absence of pubescence, and in the smaller size of the heads of flowers. 

*Running Buffalo Clover.*

7. **CLITORIA. Linn.**

*Calyx* surrounded at base by 2 larger bracts, 5-cleft. Corol resupinate. **Standard** large, covering the wings. Stamens diadelphous. **Style** somewhat dilated at the apex. **Legume** linear, compressed, straight, 2-valved, 1-celled, many-seeded. 

*Diadelphia. Decandria.*

1. *C. mariana Linn.*: stem climbing, glabrous; leaves ternate; leaflets ovate-lanceolate; peduncles solitary, 1—3-flowered; calyx tubu-
lar-campanulate, glabrous, much longer than the lanceolate bracts; teeth nearly equal; legume torulose.


2. *C. virginiana Linn.*: stem twining, and with the ovate leaflets glabrous or subpubescent; peduncle 1—4-flowered; calyx 5-parted, about as long as the lanceolate bracts; legume linear, compressed.

Hab. Hedges. Penn. to Car. Aug. 27.—Flowers’ purple or violet, larger than that of any of our North American Papilionaceae. De Candolle describes three varieties of this species, which differ only in the shape of the leaves. Butterfly Weed.

8. **GALACTIA.** Mich.


**Diadelphia. Decandria.**

1. *G. mollis Mich.*: stem twining, softly-villous; leaves ternate: leaflets ovate-oblong, obtuse, pale beneath; racemes axillary, a little longer than the leaves, pedunculate; flowers pedicelled; calyx acuminate, villous; legume compressed, villous.—*Hedysarum volubile Linn.*


2. *G. glabella Mich.*: stem prostrate, somewhat twining, smooth; leaves ternate; leaflets eliptic-oblong, obtuse, shining above; racemes axillary, simple, few-flowered, on peduncles as long as the leaves; calyx smooth; legumes pubescent, (smooth, *Nutt.*) —*Errum volubile Walt.*


9. **TEPHROSIA.** Pers.


*T. virginiana Pers.*: erect; leaflets 8—12 pairs, oval-oblong, mucronate, white villous beneath; raceme terminal, subsessile; legumes falcate villous.—*Galega virginiana Linn.*

10. AMORPHA. Linn.

Calyx 5-toothed, obconic-campanulate. Standard of the corol ovate, concave; wings and keel none. Style filiform, straight, glabrous. Stamens exserted, monadelphous at base. Legume compressed, ovate or lunulate, 1-celled, 1—2-seeded.

Diadelphia. Decandria.

A. fruticosa Linn.: subarborescent, smooth; leaves pinnate, petiolate; leaflets elliptic-oblong; spikes aggregated, long; calyx hoary, 4 teeth, obtuse, the other one acuminate; legume few-seeded.


11. ROBINIA. De Cand.


Diadelphia. Decandria.

R. pseudacacia Linn.: leaves pinnate, with an odd leaflet; stipules prickly; racemes pendulous, and with the legume smooth; teeth of the calyx unarmed.

Hab. Near cultivated grounds, but apparently native. N. Y. to Car. W. to Miss. May.—A large tree, the wood of which is much esteemed in ship building. Flowers white, odorous, in long racemes.

Locust Tree.

12. ASTRAGALUS. Linn.

Calyx 5-toothed. Corol with the keel obtuse. Stamens diadelphous. Legume 2, or half 2-celled; lower suture inflexed.

Diadelphia. Decandria.

1. A. canadensis Linn.: erectish, subpubescent; leaflets 10—12 pairs with an odd one, elliptic-oblong, rather obtuse, smooth on both sides; stipules lanceolate, acuminate; peduncles about as long as the leaves; flowers spiked; bracts shorter than the calyx; legume erect, ovate, terete, smooth.


2. A. carolinianus Linn.: erect, smooth; leaflets 20 pairs, with an odd one, oblong, pubescent beneath; stipules ovate, acuminate; peduncles longer than the leaves; flowers spiked; bracts as long as the pedicels; legume erect, ovate, tumid, rostrate.

Hab. Mountains. Penn. to Car. June, July. 2f.—Spikes dense. Flowers yellow. Perhaps only a variety of the former.
13. STYLOSANTHES. Swartz.

_Tube_ of the _calyx_ very long, slender; limb 5-parted, lobes unequal. _Corol_ inserted into the _calyx_. _Keel_ minute, bifid at the apex. _Stamens_ monadelphous. _Style_ filiform, very long, straight. _Stigma_ capitate, hispid. _Legume_ with two joints; joints 1-seeded; upper one subuncinate, acuminate into the base of the style.

_Diadelphia. Decandria._

_S. elatior_ Swartz.: stem erect, herbaceous, pubescent on one side; leaves ternate; leaflets lanceolate, smooth, acute; bracts lanceolate, ciliate; spikes few-flowered; legume indurated, 1-seeded.—_S. hispida_ Mich.—_Arachis aprica_ Walt.

_Hab._ Sandy woods. Penn. to Car. July, Aug. 21.—_Stem_ a foot high, branched. _Flowers_ yellow, in terminal compact heads.

_Pencil Flower._

14. ÆSCHYNOMENE. Linn.

_Calyx_ 5-cleft, bilabiate; upper lip 2-cleft or 2-toothed; lower one 3-cleft, or 3-toothed. _Corol_ papilionaceous. _Stamens_ 10, in two equal sets. _Legume_ compressed, transversely jointed, erect, exsert; joints 1-seeded.

_Diadelphia. Decandria._

Æ. _hispida_ Willd.: stem herbaceous, erect, and with the petioles and peduncles hispid; leaves in many pairs; leaflets linear, obtuse; racemes simples, 3—5-flowered, legumes distinctly stipitate, with 6—9 hispid joints.—_Hedysarum virginicum_ Linn. ?


15. DESMODIUM. De Cand.

_Calyx_ with 2 bracts at base, obscurely bilabiate to the middle; upper lip bifid; lower one 3-parted. _Corol_ papilionaceous. _Standard_ roundish; _keel_ obtuse, not truncate; _wings_ longer than the keel. _Stamens_ diadelphous (9 and 1); filaments subpersistent. _Legume_ with many joints; joints compressed, 1-seeded, membranaceous or coriaceous; scarcely dehiscent.

_Diadelphia. Decandria._

1. _D. canadense_ De Cand.: leaves ternate; leaflets oblong-lanceolate, somewhat glabrous; stipules filiform; racemes terminal; legumes jointed; joints 4—5, oval, obtuse, triangular, hispid.—_Hedysarum canadense_ Linn.

_Hab._ Dry woods. Can. to Car. W. to Miss. July. 21.—_Stem_ 3 or 4 feet high, erect. _Leafets_ 3 inches long. _Flowers_ purple.

_Bush Trefoil._
2. *D. canescens* De Cand.: stem erect, hairy, with the angles hispid; leaves ternate; leaflets ovate, roundish, with whitish appressed hairs beneath; stipules ovate; racemes panicled; bracts cordate; legumes jointed; joints triangular, hispid.—Hedysarum canescens Linn.—H. scaberrimum Ell.?


3. *D. marylandicum* De Cand.: stem erect, pilose, branching; leaves ternate; leaflets oblong, villous beneath; stipules subulate; racemes paniculate; legumes 3-jointed; joints rhomboidal, reticulate, somewhat hairy.—H. marylandicum Linn.

**Hab.** Dry fields and woods. N. Y. to Car. July, Aug. 2f.—Stem hairy above. *Flowers* purple, in a somewhat loose and slender panicle.

4. *D. obtusum* De Cand.: stem erect or ascending, pubescent; leaves ternate; leaflets ovate, obtuse, scabrous on the upper surface, villous and very soft beneath; panicle terminal, very long, naked; joints of the legume triangular.—Hedysarum obtusum Muhl. in Willd.


5. *D. viridiflorum* Beck: stem erect; leaves ternate; leaflets ovate, obtuse, scabrous on the upper surface, villous and very soft beneath; panicle terminal, very long, naked; joints of the legume triangular.—Hedysarum viridiflorum Linn. Ell. Torr. not of Pursh.

**Hab.** Woods. N. Y. to Car. July. 2f.—Stem 3—4 feet high, very scabrous towards the summit. *Leaves* very scabrous on the upper surface, clothed with a velvet-likeomentum on the under. *Flowers* purple within, greenish without. This is undoubtedly the true *H. viridiflorum* of Linneus; a plant which seems to be quite distinct from the last. See Ell. Sk. ii. 217.

6. *D. aikiniannum* Beck: stem erect, branching, pubescent; leaves ternate; leaflets ovate-oblong and sub-deltoid, acute, mucronate, scabrous beneath; stipules lanceolate-cuspidate; racemes paniculate, bracted; legumes with scabrous oval joints.—*D. viridiflorum* De Cand.?—Hedysarum viridiflorum Pursh.—*H. aikini* Eat.

**Hab.** Woods and old fields. N. Y. Penn. July, Aug. 2f.—Stem 3 feet high. *Flowers* reddish-purple, becoming green when dry. This plant differs from the true *H. viridiflorum* in the leaves being very scabrous beneath, and was very properly separated by Prof. Eaton in the last edition of his Manual of Botany.

7. *D. ciliare* De Cand.: stem erect, branching, pubescent; leaves ternate, on short petioles; leaflets small, oval-obtuse, pubescent underneath, fringed along the margin; racemes axillary and terminal, paniculate; joints of the legume (2—3) oval, hispid.—Hedysarum ciliare Nutt.

8. D. leavigatum De Cand.: stem simple, erect, smooth, somewhat glaucous; leaves ternate, on long petioles; leaflets ovate, acute; panicle terminal; flowers in pairs, on long pedicles; bracts ovate, acute, shorter than the flower buds; lower segment of the calyx elongated; joints of the legume triangular.—Hedysarum leavigatum Nutt.


9. D. bracteosum De Cand.: stem erect, smooth; leaves ternate; leaflets oblong-oval, acuminate, smooth; stipules subulate; racemes terminal, few-flowered; bracts ovate, acuminate, striate, glabrous; legume with suboval joints.—Hedysarum bracteosum Mich.

b. cuspidatum De Cand.: leaflets scabrous on the margin; stipules ovate-lanceolate; joints of the legume reticulate, glabrous, pubescent on their margins.—Hedysarum cuspidatum Wild.


10. D. paniculatum De Cand.: stem erect, smooth, leaves ternate; leaflets oblong-lanceolate, or elliptical, smooth; stipules subulate; panicle terminal; legumes with 4 rhomboidal pubescent joints.—Hedysarum paniculatum Linn.


11. D. strictum De Cand.: stem stiffly erect, simple, subpubescent; leaves ternate; leaflets sublinear, smooth, reticulate, glaucous beneath; stipules subulate; panicles terminal, pedunculate, few-flowered; legume incurved, with sublunate-triangular hispid joints.—Hedysarum hirtum Pursh.


12. D. acuminatum De Cand.: stem erect, simple, pubescent; leaves ternate, on very long petioles; leaflets ovate, conspicuously acuminate, somewhat hairy, the odd one roundish-rhomboidal; panicle terminal, on a very long peduncle; petioles somewhat pilose; joints of the legume roundish, glabrous.—Hedysarum acuminatum Mich.


13. D. nudiflorum De Cand.: stem erect, simple, somewhat glabrous; leaves ternate; leaflets broad-ovate, acuminate; scape paniculate, smooth, radical; joints of the legume obtusely-triangular, somewhat glabrous.—Hedysarum nudiflorum Linn.

14. *D. rotundifolium De Cand.*: stem prostrate, hirsute; leaves ternate; leaflets suborbicular, hairy; stipules roundish-cordate, reflexed; racemes axillary, paniculate; joints of the legume subrhomboidal, reticulate, scabrous.—*Hedysarum rotundifolium.* Mich.—*H. canescens.* Wild.  
*Hab.* Rocky woods. N. Y. to Car. Aug. 24.—Racemes few-flowered. Flowers purple.—The southern plant seems to differ from the northern, and may prove distinct.

15. *D. humifusum Beck:* stem prostrate, smooth; leaves ternate; leaflets ovate, slightly hairy; racemes terminal, elongated; joints of the legume subrhomboidal.—*Hedysarum humifusum.* Muhl. Torr. Big.  
*Hab.* Woods. Mass. Penn. to Car. Aug. 24.—Resembles the last, but is smoother and has the leaflets oval or ovate and subacute.—Perhaps only a variety.

16. **HEDYSARUM.** De Cand.  
*Calyx* 5-cleft; segments linear-subulate, nearly equal. *Standard* large. *Keel* obliquely truncate; *wings* much shorter than the keel. *Stamens* diadelphous (9 and 1.) *Legume* with many joints; *joints* compressed, roundish, 1-seeded.  
*Diadelphia.* Decandria.

*H. boreale* Nutt.: stem subdecumbent; leaves pinnate; leaflets (7 or 8 pairs) oblong-ovate, partly villose; stipules sheathing, subulate; racemes on long peduncles; legumes with smooth, rugose, roundish joints.—*H. alpinum* Mich.?  

17. **LESPEDEZA.** Mich.  
*Calyx* with bracts at base, 5-parted; segments nearly equal. *Corol* papilionaceous. *Keel* transversely obtuse. *Stamens* diadelphous (9 and 1.) *Legume* lenticular, compressed, flat, not opening, 1-seeded, unarmed.—Leaves ternate.  
*Diadelphia.* Decandria.

1. *L. reticulata* Pers.: stem erect, simple, nearly smooth; leaflets oblong-linear, obtuse, mucronate, hairy beneath; fascicles of flowers subsessile, numerous; axillary ones subracemose; legume ovate, reticulate, acute, longer than the calyx.—*L. sessiliflora*, var. Mich.—*L. angustifolia.* Raf.—*Hedysarum reticulatum.* Muhl. in Willd.  

2. *L. sessiliflora* Nutt.: stem erect, somewhat branched; leaves on short petioles; leaflets oblong-oval, obtuse; fascicles of flowers subsessile; axillary ones partly racemose; legume naked, acute.—*Hedysarum sessiliflorum* Lam.
3. *L. sturci Nutt.*: stem simple, erect, softly and sericeously villous; leaves on very short petioles; leaflets elliptic-oval, mucronate; racemes pedunculate, scarcely longer than the leaves; legumes pubescent, naked, longer than the calyx.


4. *L. frutescens Ell.*: stem erect; leaves on short petioles; leaflets elliptical, obtuse, silky-pubescent beneath; racemes axillary, subsessile, shorter than the leaves; calyx shorter than the corol; legume pilose, shorter than the calyx.—*L. fruticosa Pers.—Hedysarum frutescens Linn.*

**Hab.** Dry woods. Penn. to Car. Sept. 2L.—*Stem 2—3 feet high. Flowers white and red.*

5. *L. capitata Mich.*: stem erect, simple; leaves on very short petioles; leaflets elliptic, with close pressed hairs beneath; spikes capitate, on short peduncles, axillary and conglobate-terminal; calyx villous, as long as the corol, with the legume much longer.—*Hedysarum conglomeratum Lam.*

**Hab.** Borders of woods. Can. to Car. W. to Miss. July, Aug. 2L.—*Stem 2—3 feet high. Flowers purple.—This may be only a variety of the last, although it is not so considered by De Candolle.*

6. *L. angustifolia Ell.*: stem erect, pubescent; leaves on very short petioles; leaflets oblanceolate or lanceolate, white pubescent beneath; racemes capitate, longer than the leaves; corol longer than the calyx.—*L. capitata, var. angustifolia Pursh.*

**Hab.** Sandy woods. N. Y. to Car. Sept. 2L.—*Stem 3—4 feet high. Leaflets very narrow, villous beneath. Flowers white and purple, in small heads.*

7. *L. polystachya Mich.*: stem erect, branched, very villous; leaves on very short petioles; leaflets round-oval, obtuse; spikes oblong, axillary, pedunculate, twice as long as the leaves; corol and legume about as long as the calyx.—*L. hirta Ell. Torr.—Hedysarum hirtum Linn.*

**Hab.** Dry woods. N. Y. to Car. Aug., Sept. 2L.—*Stem 2—4 feet high. Flowers reddish-white, in dense racemes on peduncles which are longer than the leaves.*

8. *L. violacea Pers.*: diffuse, much branched, somewhat pubescent; leaves on long petioles; leaflets elliptic-obtuse, somewhat hairy; racemes subumbelled, about as long as the leaves; flowers in pairs, distinctly pedicellate; legume rhomboidal, reticulate and smooth.—*Hedysarum violaceum Linn.*

**Hab.** Dry woods. Can to Car. W. to Miss. July. 2L.—*Stem fong, slender. Flowers violet.—Lespedeza divergens of Pursh, is probably only a variety of the above, although Mr. Elliott con-
siders it very distinct. "It is," he says, "distinguished by much larger leaves on much longer petioles, its stem is much more diffusely branched, the peduncles long with the flowers scattered and distinctly racemose."

9. *L. procumbens* Mich: slender, procumbent, every where pubescent; leaves on long petioles; leaflets oval, obtuse, mucronate; peduncles very long, setaceous; racemes short, subumbellate; flowers in pairs, distinct; legume oval, nearly smooth. — *Hedysarum lespedezia Lam.*


10. *L. prostrata* Pursh: smooth, prostrate; leaves on very short petioles; leaflets obovate-elliptic, obtuse; racemes axillary and terminal, subpaniculate; peduncles very long; legumes oval, subpubescent. — *Hedysarum prostration Muhl.* in Willd.

*Hab.* Sandy soils. N. J. to Car. Aug. 21.—Very similar to the preceding species. *Flowers* violet.

11. *L. repens* Bart.: leaves ternate; leaflets roundish-elliptical; emarginate; racemes axillary; legume repand. — *Hedysarum repens Willd.*

*Hab.* Woods. Penn. and Virg. Muhl. July. 21.—This may be identical with the last.

18. VICIA. Linn.


*Diadelphia. Decandria.*

*Flowers* on peduncles.

1. *V. caroliniana* Walt.: smoothish; leaflets 8—10, elliptical-lanceolate, subalternate, obtuse, mucronate; stipules ovate-lanceolate, entire; peduncles many-flowered, as long as or longer than the leaves; flowers distant; teeth of the calyx short; style villous at the top; legume lanceolate, smooth, obliquely veined. — *V. parviflora* Mich.

*Hab.* Mountains. Penn. to Car. May, June. 21.—*Stem* long and climbing. *Flowers* small, white. *Standard* black at the tip.

2. *V. americana* Muhl.: leaflets 8—12, elliptical-lanceolate, obtuse, smooth, mucronate; stipules semisagittate, deeply toothed; peduncles 4—10-flowered, shorter than the leaves.


3. *V. cracca* Linn.: stem branching; leaflets numerous, oblong, alternate and opposite, mucronate, pubescent; stipules semisagittate-linear; peduncles many-flowered, as long as or longer than the leaves;
racemes crowded, secund; teeth of the calyx unequal; upper ones very short; lower ones shorter than the tube; styles hairy at the top; legume oblong, coriaceous, compressed.


** Flowers nearly sessile.

4. V. sativa Linn.: leaflets 10—12, obovate-retuse or oblong-retuse, mucronate, smooth or hairy; stipules semisagittate, toothed, with a dark spot beneath; flowers mostly in pairs, sessile; calyx cylindric; segments linear-lanceolate, nearly equal; style bearded at the top; legume compressed.

DICOTYLEDONOUS PLANTS.

P. maritimum Linn.: stem square, compressed; petioles flat above; leaflets 5–8, ovate or rounded, often alternate, somewhat pubescent; stipules ovate-semisagittate; peduncles many-flowered, shorter than the leaves; legumes oblong, obliquely reticulate, small; seeds small, numerous, roundish.—Lathyrus maritimus Big.?

HAB. Shores of the great lakes. Nutt. Salt marshes, Boston. Big.? May, July. 2L.—Plant pale green. Flowers blue and purple, large, 6–8 in a raceme.—I insert this plant upon the authority of Pursh, Nuttall and other authors, but have no means of determining whether it is truly a Pisum. Dr. Bigelow’s plant, of which I have specimens from Dr. C. Pickering, seems to me to be a Lathyrus; but until the question of the identity of these plants is more satisfactorily determined, I have thought proper to leave them as above.

Beach Pea.

21. LATHYRUS. Linn.

Calyx campanulate, 5-cleft; two upper lobes shorter. Cor- rol papilionaceous. Stamens diadelphous. Style flat, dilat- ed at the summit, villous or pubescent on the upper side. Legume oblong, many seeded, 2-valved, 1-celled. Seeds globose or angled.

Diadelphia. Decandria.

1. L. venosus Muhl.: stem square, naked; leaves pinnate; leaflets numerous, (about 5 pairs) ovate, obtuse, subopposite, mucronate, smooth, veined; stipules semisagittate, ovate; peduncles many-flow- ered, shorter than the leaves.


2. L. palustris Linn.: stem smooth, winged, weak; leaflets in 3-pairs, ovate, mucronate; stipules semisagittate, acute; peduncles 3–5-flowered, a little longer than the leaves; segments of the calyx unequal, sublinear, as long as the tube; legume compressed.


3. L. myrtifolius Muhl.: stem weak, flexuous, square; leaflets 4, oblong-lanceolate, somewhat obtuse, mucronate, rigid, smooth, veined; stipules semisagittate, lanceolate, acuminate, scabrous on the margin; peduncles 3–4-flowered, longer than the leaves.


4. L. glaucifolius Beck: stem nearly erect, acute-angled; leaflets in 3-pairs, ovate, obtuse, mucronate, glaucous and reticulate beneath; stipules large, semisagittate, broad-ovate, acuminate; peduncles 4–10-flowered, shorter than the leaves; legume compressed, glabrous.

HAB. Rocky banks of the Raritan river near New-Brunswick, N. J. May, June. 2L.—This plant appears to me to be decid- edly distinct. The leaflets are uniformly broader and larger than
in any American species, being from 1 1/2—2 inches long and 1 broad, and very strikingly glaucous on the under side. The flowers also are large and pale yellow. It was first noticed by my lamented friend, the late Rev. John De Witt, D.D. of Rutgers College, who was adding to his other attainments, a knowledge of the botanical productions of the interesting region around New-Brunswick.

22. AMPHICARPA. De Cand.


Diadelphia. Decandria.

A. monoica Ell.: stem hairy; leaves ternate; leaflets ovate, smooth; racemes of the stem pendulous, bearing petals, sterile; radical peduncles bearing apetalous fertile flowers.—Glycine monoica Linn.


23. APIOS. Pursh.


Diadelphia. Decandria.

A. tuberosa Moench.—Glycine apios Linn.


24. PHASEOLUS. Linn.

Calyx campanulate, bilabiulate; upper lip 2-toothed; lower one 3-parted. Corol papilionaceous. Keel, stamens and style spirally twisted or rarely incurved. Legume compressed or cylindrical, 2-valved, many-seeded.—Leaves ternate.

Diadelphia. Decandria.

1. P. perennis Walt.: twining, pubescent; leaflets ovate, acuminate, 3-nerved; racemes 1—3, axillary, paniculate, longer than the leaves; bracts minute; legumes pendulous, broad, falcate, mucronate.—P. pinnatulatus Mich.—Dolichos polystachyus Linn.

2. *P. diversifolius* Pers.: stem prostrate; leaflets ovate, angular, 2—3-lobed; peduncles angled, longer than the leaves; flowers in heads; bracts ovate; legumes linear, terete, subpendulous, pubescent.—*P. trifolius* Mich.—*Strophostyles angulosa* Ell. Torr.—*Glycine angulosa* Muhl. in Wild.


3. *P. helvolus* Linn.: climbing or prostrate; leaflets deltoid-oblong, subsinuate; peduncles longer than the leaves, 3-flowered at the top; wings expanding, very large; legume erect.—*Strophostyles helvolus* Ell, Torr.


*P. vexillatus* Linn.: stem prostrate, twining, somewhat hairy; leaflets oblong-ovate; peduncles very long; flowers 5—7 in a head; standard large, emarginate; wings small; legume terete, hairy; seeds woolly.—*Strophostyles peduncularis* Ell.—*Glycine peduncularis* Muhl.

**Hab.** Woods. N. J. to Car. July. 2f.—Stem prostrate or climbing. Flowers 5—7 on a common peduncle 6—7 inches long, large, pink and purple.—This species is credited to New-Jersey by Prof W. P. C. Barton and to Pennsylvania by Muhlenberg. It seems to me to be distinct from the preceding.

25. **LUPINUS.** Linn.


**Diadelphia. Decandria.**

*L. perennis* Linn.: herbaceous, "perennial; root creeping; stem and leaves smoothish; leaves digitate; leaflets 8—9, oblong, mucronate, villous beneath; flowers alternate, on pedicels; calyx without appendages; upper lip emarginate, the lower entire.

**Hab.** Sandy woods. Can. to Flor. W. to Miss. May, June. 2f.—Stem a foot high, ascending, somewhat hairy. Flowers blue, in a terminal spike or raceme. Common Lupine.


**Diadelphia. Decandria.**
C. bracteata Raf. De Cand.

Hab. Banks of the Susquehannah. Penn. Raf.—Plant twining. Leaves unequally pinnate; leaflets sessile, oblong, mucronate. Peduncles longer than the leaves, somewhat spiked; bracts scariose, subulate, persistent, ciliate; flowers white.—This genus is said by De Candolle to be allied to Galega and Colutea, but differs from them as well as from Teprosia, by its 2-seeded legume.

Suborder II. Cæsalpinœæ.

Petals imbricated in aestivation. Stamens perigonious, mostly free.

27. GLEDITSCHIA. Linn.

Flowers by abortion imperfect or perfect. Sepals 3-4-5, equal. Petals as many as the sepals, arising from the tube of the calyx. Stamens as many as the sepals and opposite to them, or by abortion fewer. Style short. Stigma pubescent above. Legume compressed, 1 or many-seeded. Seeds compressed.

G. triacanthos Linn. : branches spiny; spines thick, simple or triple and compound, leaves equally pinnate; leaflets linear-oblong; legume compressed-flat, falcate, many-seeded.—G. triacanthos and brachycarpa Pursh.

Hab. Woods. N. J. to Car. W. to Miss. A tree sometimes attaining the height of 40 or 50 feet, with very long spines. Flowers in axillary racemes. Legume 10-12 inches long, many-seeded, the intervals between the cells of the seeds filled with a saccharine pulp. The tree is sometimes unarmed, when it forms the var. inermis of De Candolle. Honey Locust.

23. GYMNOCLADUS. Lam.

Flowers by abortion dioecious. Calyx tubular, 5-cleft. Petals 5, equal, oblong, exserted from the tube. Stamens 10, included. Legume oblong, thick, pulpy within.

Dioecia. Decandria.

G. canadensis Mich.


29. CASSIA. Linn.

Sepals 5, scarcely united at base, somewhat unequal. Petals 5, unequal. Stamens 10, free, unequal; 3 lower ones longer; 4 middle ones short and straight; 3 upper ones with abortive anthers. Anthers dehiscent at the apex.

Decandria. Monogynia.
1. *C. marylandica* Linn.: nearly smooth; leaflets in 8 or 9 pairs, ovate-oblong, mucronate, equal; gland at the base of the petiole ovate; racemes axillary, many-flowered, shorter than the leaves; legume compressed, linear, hispid, at length smooth.


2. *C. fasciculata* Mich.: nearly smooth; leaflets in 8 or 9 pairs, oblong-linear, mucronate; gland near the middle of the petiole, sessile; fascicles lateral, many-flowered; petals and stamens of the same colour; legume smooth, curved, ascending.

**Hab.** Dry fields. N.Y. to Car. June—Aug.

3. *C. nictitans* Linn.: stem erect or pubescent, branched; leaflets in 16—20 pairs, oblong-linear, obtuse, mucronate; gland on the petiole cup-shaped, on a slender foot-stalk; peduncles subaxillary, short, few-flowered; flowers pentandrous; legume pubescent.

**Hab.** Sandy banks of streams. N.Y. to Car. June, July.

4. *C. chamcecrista* Linn.: smoothish; leaflets in 10—15 pairs, oblong-linear, mucronate; gland sessile on the petiole; peduncles 2—3-flowered, above the axils, shorter than the petiole; 2 of the petals spotted; legume pubescent.


30. CERCIS. Linn.

**Calyx** 5-toothed, gibbous at base. **Petals** 5, with claws, subpapilionaceous, all distinct; **wings** large. **Stamens** 10, free, unequal. **Legume** oblong, compressed, 1-celled, many-seeded; upper seminiferous suture margined. **Seeds** obovate.

**C. canadensis** Linn.: leaves roundish-cordate, acuminate, villous at the axils of the nerves; legumes on short foot-stalks; flowers in small fascicles.

**Hab.** Woods. Can. to Car. W. to Miss. April. A small tree with greyish bark. **Flowers** appearing before the leaves, of a dark rose colour.

**Order XXXVI. AMYGDALÆ.** Lind.

**Calyx** 5-toothed, deciduous, the odd lobe superior. **Petals** 5. **Stamens** about 20, in aestivation curved inwards; **anthers**
erect, 2-celled. **Torus** lining the tube of the calyx. Ovary superior, solitary, simple, one-celled; **styles** terminal, with a groove on each side; **stigma** reniform. **Fruit** a drupe. **Seeds** usually solitary, suspended from the funiculus, which arises from the base of the cavity, but coheres with its sides. **Embryo** straight, with the radicle next to the hilum; **albumen** none; **cotyledons** thick.

**Trees or shrubs.** Leaves simple, alternate, stipulate. **Hydrocyanic acid** present in the leaves and kernel.

1. **PRUNUS.** Linn.

**Drupe** ovate or oblong, fleshy, very smooth, covered with greyish dust; **putamen** compressed, acute at both ends, sub-sulcate at the margin, elsewhere smooth.—(Plum.)

_**Icosandria.** Monogynia._

1. **P. maritima** Willd.: peduncles solitary; leaves ovate-oblong, acuminate, doubly serrate; fruit dark purple.—**P. acuminata** Mich.

_Hab._ Sea coast. N. J. to Car. May. ½.—**Fruit** about the size of the common garden plum, dark purple. **Beach Plum.**

2. **P. Americana** Marsh.: leaves oblong-oval, acuminate, sharply serrate, veined; umbel 2–4 flowered.—**P. nigra** Muhl. not of Ait.

_Hab._ Penn. Aug. ½.—A tree 8–15 feet high. **Flowers** white. **Fruit** reddish-yellow. By cultivation the fruit becomes large and luscious. Dr. Darlington, who notices this species in his Florula Cestrica, thinks it has not been described by any one except Marshall.—**Abustrum Americanum** p. iii.—He remarks, "I certainly should not have expected to find it under the specific name *nigra*, if Dr. Muhlenberg's catalogue had not directed my attention to that species, by the subjoined English name 'Yellow Plum.' I think it cannot be the *P. nigra* of Aiton, Willdenow, Persoon,-&c. for they seem evidently to refer to a species of cherry, properly so called. This species, though clearly distinct, approaches nearer to the Chicasaw plum than to any other which I have seen." **Yellow Plum.** Brandyeine Plum.

3. **P. mollis** Torr.: younger branches—leaves and peduncles pubescent; umbels sessile, 2–3 flowered; leaves ovate, long-acuminate, doubly dentate-serrate; stipules setaceous, denticulate; calyx nearly smooth; segments linear-lanceolate, serrate.

_Hab._ Mass.—A small tree. **Flowers** large. **Fruit** oval, nearly black when ripe.

4. **P. spinosa** Linn.: branches spiny; peduncles solitary, calyx campanulate; lobes obtuse, longer than the tube; leaves obovate-elliptic or ovate, pubescent beneath, coarsely and doubly dentate; fruit globose.

_Hab._ Hedge rows. Penn. ½.—Introduced. **Pursh.**

**Black Thorn or Sloe.**
DICOTYLEDONOUS PLANTS.

2. CERASSUS. Juss.

_Drupe_ globose or umbilicate at base, fleshy, very smooth, destitute of grey powder; nucleus subglobose, smooth.—*Prunus pumila* Linn.

*Flowers umbellate; pedicels 1-flowered, arising from the buds.

1. *C. pumila* Mich.: striate; branches virgate; flowers subumbellate, peduncled; calyx short, campanulate; leaves obovate-oblong, erect, glaucous beneath, serrulate, smooth; fruit ovate.—*Prunus pumila* Lam.

_Hab._ Banks of streams. Mass. to Virg. May. 6.—Shrub 2—3 feet high. Fruit small, ovate, red, acid.

2. *C. pygmaea* De Cand.: unarmed; umbels sessile, few-flowered; leaves ovate-elliptic, somewhat acute, smooth on both sides, sharply serrate, attenuate, with two glands at the base.—*Prunus pygmaea* Wild.

_Hab._ New-England, N. Y. and Penn. May. 6.—Shrub 3—4 feet high. Fruit black, of an indifferent taste, and about the size of a large pea.

3. *C. pubescens* De Cand.: umbels sessile, few-flowered; peduncles and calyx pubescent; leaves short-oval, serrulate, mostly with two glands at base; fruit globose.—*Prunus pubescens* Pursh.—*P. sphaerocarpa* Mich. —*P. littoralis* Big.

_Hab._ Sandy shores. N. Eng. Penn. May. 6.—Shrub 2—4 feet high. Fruit shortly pedunculate, purplish, sour and astringent.—The description of Dr. Bigelow's *P. littoralis*, does not differ materially from the above, except in the fruit, which is large, (sometimes an inch in diameter) globular, eatable, with the flavor of the common plum. It may be distinct.

_Sand Cherrys._

4. *C. nigra* De Cand.: unarmed; umbels solitary, sessile, few-flowered; leaves deciduous, ovate, acuminate, unequally and acutely serrate, smooth on both sides; petals with two glands; segments of the calyx obtuse, glandular on the margin; petals obovate.—*Prunus nigra* Ait.


5. *hyemalis* Mich.: flowers umbellate, smooth; segments of the calyx lanceolate; leaves oblong-oval or oboval, abruptly acuminate; fruit subovate.

_Hab._ Can. Virg. and Car. May, 6.—Fruit small, black, extremely astringent, but eatable in winter. *Pursh.*

_Black Choke Cherry._

6. *C. depressa* De Cand.: branches angular, depressed, prostrate; umbels few-flowered, sessile, aggregated; leaves cuneate-lanceolate, remotely serrate, smooth, glaucous beneath; fruit ovate.—*C. pumila* Mich. not *Prunus pumila* Linn.—*P. depressa* Pursh.
HAB. Banks of streams. Can. to Virg. May. ♀.—A low shrub with spreading branches. Fruit black, small and agreeably tasted.

7. *C. borealis* Mich.: flowers sub-corymbed; pedicels elongated; leaves oval-oblong, acuminate, membranaceous, glabrous, erose-denticulate, smooth; fruit subovate. — *Prunus borealis* Pursh.

HAB. Mountains. Can and N. S. May. ♀.—A small tree with delicate leaves, and hard and fine grained wood. Fruit small, red, agreeable to the taste, but astringent. *Pursh.*

*Choke Cherries.*

"**Flowers racemose, arising from the branches.**"

8. *C. pennsylvanica* De Cand.: umbels subsessile, aggregated, at length becoming paniculate; leaves oblong-lanceolate, acuminate, smooth, with two glands at the base; branches punctate. — *Prunus lanceolata* Willd. — *P. pennsylvanica* Ait.

HAB. Woods. N. S. N. to Subarctic America. April, May. ♀.

— A sizeable tree, resembling *Prunus cerasus*. Fruit small, red and astringent. — Muhlengberg and Torrey have, I think without reason, confounded this species with *P. borealis*. Both are retained by De Candolle, and they are even arranged by him under different sections of his genus Cerasus.

9. *C. virginiana* Mich.: racemes erect, elongated; petals orbicular; leaves oblong, acuminate, dentate, smooth on both sides; petioles with 2—4 glands; fruit dark red. — *Prunus virginiana* Linn.

HAB. Woods. Can. to Flor. W. to Miss. N. to Arc. Amer. May. ♀.— A large tree with blackish rough bark and very dense wood, resembling mahogany, which is much used by cabinet makers. Flowers white, in long simple racemes. Fruit purplish-black.

10. *C. serotina* De Cand.: racemes loose, at length pendulous; leaves deciduous, oval or obovate, with a short acumination, opaque, doubly and very sharply serrate; midrib bearded on each side towards the base; petiole with two glands. — *Prunus serotina* Willd.

HAB. In woods. N. S. June. ♀.— A large tree, resembling the preceding in its bark and wood. The fruit is dark red and astringent. According to Dr. Torrey, this species has been confounded with the preceding by Michaux and other botanists, and both are incorrectly described by Willdenow and Pursh.

11. *C. obovata* Beck: racemes spreading; leaves obovate, acute, mostly obtuse at base and sometimes cordate, sharply serrate, smooth, except the axils of the lower veins beneath; petioles mostly with two glands. — *Prunus obovata* Big. — *P. serotina* Pursh not of Willd. ♀

HAB. Margins of woods. Can. to Car.? May. ♀.— A shrub 3—4 feet high, rarely rising to the height of a small tree. Fruit small, red and bitter. — I have long been acquainted with this shrub which is certainly distinct from *C. serotina* as above described. It may be identical with *Prunus hirsutus* of Elliott.

12. *C. canadensis* De Cand.: flowers in racemes; leaves deciduous,
DICOTYLEDONOUS PLANTS.

without glands, broad-lanceolate, acutely serrate, rugose, pubescent on both sides.—Prunus canadensis Willd.

Hab. In Penn. Muhl. This is supposed by Pursh to be a mere variety of P. hiemalis of Mich.

Order XXXVII. ROSACEÆ. Lind.

Calyx 4 or 5-lobed, with a disk either lining the tube or surrounding the orifice; the fifth lobe next the axis. Petals 5. Stamens indefinite; anthers 2-celled. Torus thick, lining the tube of the calyx, bearing at its margin the stamens and petals, and on its surface the carpels. Ovaries superior, solitary or several, 1-celled; ovules 2 or more, suspended; styles persistent, lateral; stigmas usually simple and emarginate on one side. Fruit either 1-seeded nuts, or acines, or follicles containing several seeds. Seeds suspended, rarely ascending. Embryo straight, with a taper short radicle next to the hilum, and flat cotyledons; albumen, if present, fleshy.

Hab. or shrubs. Leaves simple or compound, with 2 stipules at base.

1. SPIRÆA. Linn.


Icosandria. Di-Pentagynia.

* Shrubby. Leaves lobed and toothed.

1. S. opulifolia var. tomentella De Cand.: leaves ovate, 3-lobed, doubly toothed and crenate, petioled, smooth; corymbs terminal, hemispherical, peduncled; flowers numerous (30—40) trigynous; pedicels pubescent; lobes of the calyx ovate, obtuse, pubescent; capsules large, inflated, compressed; seeds obovate, shining, yellow.—S. opulifolia Pursh. Mich. Torr. 


** Shrubby. Leaves entire or toothed.

2. S. hypericifolia De Cand.: leaves obovate-oblong, 3—4 nerved, entire or dentate, glabrous or slightly pubescent; nerves pinnate; flowers in peduncled corymbs or sessile umbels; pedicels smooth or pubescent; segment of the calyx ascending.

b. plukenetiana De Cand.: leaves entire, smooth, corymbs sessile.

d. crenata De Cand.: leaves obovate, crenulate at the apex, somewhat pubescent; corymb-sessile; pedicels slightly pubescent.—S. crenata Linn. Muhl.

Hab. var. b. Dry swamps. Can. and N. Y. May. ampionship var. d. N. Y. Muhl.—This species according to De Candolle is very variable, and includes several which have heretofore been considered distinct. It is sometimes cultivated in our gardens, and was formerly known by the name of Hypericum frutex, but I believe, it has not been found native; and the only authorities for the varieties here mentioned as American plants, are those above given.

3. S. corymbosa Ref.: leaves oblong-oboVate, incisely toothed, pubescent beneath; corymb terminal, pedunculate, compound, fastigate, somewhat leafy; flowers pentagynous.—S. corymbosa Muhl.? S. chamadrifolia Pursh.?  

Hab. Alleghany mountains. Ref. May, June. ampionship.—Stem 18 inches high, slightly pubescent. Leaves nearly smooth above, pale beneath. Flowers pale rose-colour, in a compound pedunculate-corymb.—I adopt the above description, &c. from Torrey's Flora; though De Candolle still retains Pursh's plant as a variety of the Linnæan S. chamadrifolia.

4. S. salicifolia Linn.: stem and peduncles glabrous; leaves lanceolate, acutely serrate, smooth; racemes in dense terminal compound panicles; flowers pentagynous; segments of the calyx ovate, spreading.—S. alba Ehrh.

Hab. Meadows. Can. to Car. N. to Arc. Amer. July. championship.—Stem 2—4 feet high. Flowers white.—This species varies somewhat in the form of the leaves.

5. S. tomentosa Linn.: stem and peduncles reddish tomentose; leaves ovate-lanceolate, unequally serrate, densely tomentose beneath; racemes terminal, compound, crowded; flowers pentagynous; segments of the calyx tomentose on the outer side, reflexed; capsules 5, distinct.


*** Herbaceous. Leaves pinnate.

6. S. aruncus var. americana Pursh: leaves twice or thrice pinnate, shining; leaflets acuminate, lateral ones lanceolate, terminal one ovate; spikes slender, in an oblong panicle; flowers very numerous, trigynous, perfect.—S. aruncus Ell.


7. S. lobata Jacq.: leaves palmate-pinnate, smooth, lower ones bipinnate; terminal leaflet much larger and 7-lobed; lateral leaflets 3-lobed;
stipules reniform; corymbs proliferous; flowers with 3—5 short styles; sepals reflexed.—*S. palmata* Linn.

Hab. Penn. to Car. June. 2f.—Flowers rose-colour, in a compound cyme.

2. GILLENIA. *Munch. Nutt.*


1. *G. trifoliata* *Munch.*: leaves ternate; leaflets lanceolate, subequal; stipules small, linear, entire; flowers in loose terminal panicles, large.—*Spirea trifoliata* Linn.


*Indian Physic. Ipecac.*

2. *G. stipulacea* *Nutt.*: radical leaves pinnatifid; stem leaves ternate; leaflets incisely serrate; stipules foliaceous, ovate, incisely toothed and clasping; flowers in loose terminal panicles, large.—*Spirea stipulata* Muhl.

Hab. Western part of N. Y. W. to Miss. S. to Car. June. 2f.—It resembles the former, but can readily be distinguished by its large clasping stipules. I have fine specimens gathered in the western part of N. Y. by David Thomas, Esq.

3. DRYAS. *Linn.*


*D. integrifolia* *Vahl.*: leaves very entire, acute at base.—*D. tenella* Pursh.

Hab. On the white hills of N. H. July. 2f.—*Peduncles* 1-flowered.—Scarcely differs from *D. octopetala* found in the north western part of Canada.

4. GEUM. *Linn.*

*Calyx* with the tube concave; 10-cleft; the alternate segments smaller (or limb 5-cleft and 5-bracted.) *Petals* 5. *Stamens* many. *Carpels* in a head, awned; awn naked or bearded, mostly jointed. *Icosandria. Polygynia.*
1. *G. strictum* Ait.: hairy; leaves all interruptedly pinnate; the terminal leaflet larger; leaflets ovate, dentate; stipules ovate, incised; calyx with 5 alternate segments, linear and short; flowers erect; petals roundish, a little longer than the segments; awns naked, uncinate.

_Hab._ Swamps. Can. and N. S. Aug. 2 ft. _—Stem 2 feet high. Flowers large, yellow._

2. *G. virginianum* Linn.: pubescent; radical lower stem leaves ternate; the upper lanceolate; stipules ovate, nearly entire; flowers erect; petals shorter than the calyx; awns uncinate, naked, hairy and twisted at the summit.

_Hab._ Shady woods. Can. to Car. W. to Miss. June, July. 2 ft. _—Stem 2 feet high. Lower leaves large, sometimes quinate. Flowers yellowish-white, on long peduncles._

3. *G. album* Willd.: pubescent; radical leaves pinnate; stem leaves ternate; the upper one simple, 3-cleft; lower stipules incised; flowers erect; petals as long as the calyx; awns uncinate, naked, hairy at the summit. _—G. canadense* Jacq.

_Hab._ Banks of streams. Can. to Car. June, July. 2 ft. _—Stem 2 feet high. Flowers white, on short peduncles._

4. *G. rivale* Linn.: pubescent; stem simple, 1—4 flowered; radical leaves interruptedly pinnate; lobes obovate, doubly-serrate; stem leaves 3-lobed; lobes acute; flowers nodding; petals as long as the calyx; awns plumose, nearly naked at the summit, minutely uncinate.

_Hab._ Moist places. Can. and N. S. May, June. 2 ft. _—Stem 18 inches high. Flowers large, terminal, several on each branch, dark purple._

5. *G. peckii* Pursh.: somewhat hairy; stem few-flowered; radical leaves reniform, incisely toothed and somewhat lobed; petioles elongated, with minute leaflets; petals roundish, longer than the calyx.

_Hab._ White hills, N. H. July, Aug. 2 ft. _—Stem 8—10 inches high. Radical leaves on long petioles. Flowers yellow, middle sized._

6. *G. geniculatum* Mich.: stem branched above; stem leaves sessile, 3-parted; stipules entire; flowers somewhat panicled; petals obcordate-cuneate; awns hairy, geniculate in the middle.


5. **COMAROPSIS. Rich.**

_Calyx_ with the tube turbinate, the limb 5-cleft, not bracted. _Petals 5_, without claws. _Stamens numerous. Carpels small._
with an elongated filiform style at the apex. Acines dry, not united at base.

*C. fragarioides De Cand.:* carpels smoothish; peduncles branched, 3-flowered; petals thrice as large as the calyx; leaves ternate; leaflets wedge-form, sessile.—*Dalibarda fragarioides* Mich. Pursh. Torr.


6. **RUBUS.** Linn.

Calyx flat at base, naked, 5-cleft. Petals 5. Stamens many, inserted into the calyx. Berry composed of many cohering fleshy carpels or acines. Receptacle nearly dry.

*Leaves pinnate or ternate, white-downy beneath.*

1. **R. strigosus** Mich.: stem terete, strongly hispid; leaflets in threes, or pinnate in fives, oval, obtuse at the base, marked with lines and whitish-downy beneath, the terminal one often subcordate; peduncles somewhat 3-flowered and with the calyx hispid; flowers in terminal racemes; petals obovate, longer than the calyx.—**R. pennsylvanicus** Lam.


2. **R. occidentalis** Linn.: somewhat smooth; stem terete, glaucous, armed with strong recurved prickles; leaves of the sterile branches pinnate, of the fertile ones ternate; leaflets ovate, coarsely serrate, hoary-tomentose beneath; petioles terete; flowers in terminal racemes; lobes of the calyx lanceolate-linear, tomentose at the apex; petals obovate-wedgeform, 2-lobed, shorter than the calyx.


3. **R. idaeus** Linn.: villose; stem terete, with slender recurved prickles; leaves of the sterile branches pinnate, of the fertile ones ternate; leaflets rhombic-ovate, acuminate, white and very downy beneath; petioles channelled; flowers somewhat corymbed; lobes of the calyx ovate-lanceolate, white-tomentose, submucronate; petals obovate-wedgeform, entire, shorter than the calyx.

**Hab.** Hedges and woods. Can. to Penn. Pursh. June. —Stem 2—4 feet high. Flowers white, panicled. Fruit red. It is said to have several varieties.
** Leaves palmate, with 3—5 leaflets.

† Fruitescent.

4. *R. setosus* Big. : stem strongly hispid; branches setose at the apex; leaves ternate or quinate, on long petioles; leaflets obovate-wedgeform, simply serrate, smooth, of the same colour on both sides; flowers in racemes, with bristly pedicels; petals obovate-wedgeform, longer than the calyx.


5. *R. cuneifolius* Pursh : stem petioles and peduncles tomentose; prickles few, recurved; leaves ternate and quinate, palmate; leaflets wedgeform, ovate, entire at the base, subuplicate, tomentose beneath; flowers in terminal panicles; pedicels divaricate, naked, 1-flowered.—*R. parviflorus* Walt.

_Hab._ Sandy fields. N. J. to Car. June. _‡._—*Stem 2—3 feet high. Flowers white. Fruit black, ovate, juicy, eatable._

6. *R. frondosus* Big. : stem prickly, erect; leaves ternate or quinate; pubescence simple; racemes leafy, about ten-flowered; petals orbicular.

_Hab._ Road sides, near Boston. *Big._ May, June. _‡._—*Flowers white, large. Fruit black, agreeable.—Approaches *R. villosus,* and has probably been confounded with it, but differs, according to Dr. Bigelow, in habit, and in having the pubescence simple, the flowers in leafy racemes, and the petals orbicular-ovate._ Leafy Raspberry.

7. *R. villosus* Ait. : pubescent, hispid and prickly; leaves ternate, rarely quinate-palmate, villose; leaflets ovate, doubly serrate; flowers in lax panicles; lobes of the calyx short-acuminate; pedicels solitary.

_Hab._ Fields and hedges. Can. to Car. June. _‡._—*Stem 4—6 feet high. Flowers white, 20 or more in a raceme. Fruit large, black._

High Blackberry.

8. *R. hispidus* Linn. : stem sarmentose-procumbent, and with the petioles and peduncles strongly hispid; prickles few, recurved; leaves in threes or fives, palmate; leaflets unequally dentate, smoothish, wedgeform at base; pedicels solitary, elongated; petals obovate.—*R. trivialis* Mich.—*R. procumbens* Muhl.—*R. flagellaris* Willd. (According to Sprengel.)—*R. sempereirens* Big. ?

_Hab._ Barren grounds. Can. to Car. May, June. _‡._—*Flowers white. Berries large, black and well flavoured.—Sprengel’s views concerning the identity of the above supposed distinct species, appear to me to be entirely correct._ Love Blackberry. Dewberry.

9. *R. canadensis* Linn. : stem purple, smoothish; leaves in threes and fives, palmate; leaflets lanceolate, acutely serrate, naked on both sides; stipules linear, subaculate; pedicels elongated, 1—3-flowered; calyx 5—7-cleft.—*Cylactis montana* Raf.

†† Herbaceous.

10. R. saxatilis var. canadensis Mich.: herbaceous, pubescent; stems creeping; leaves ternate; leaflets rhombic, acute, incisely dentate, naked, the terminal one petioled; flowers somewhat in threes; pedicels elongated.

Hab. Mountains. Can. to Vir. N. to the sources of the Mississippi. June, July. ½.—Flowers white. Fruit small, black.

11. R. acaulis Mich.: stem herbaceous, very short, unarmed, 1-flowered; leaves ternate-palmate; leaflets ovate, rhomboïdal, coarsely serrate; peduncle somewhat pubescent; lobes of the calyx lanceolate-linear, somewhat acute, with the oblong petals much shorter; filaments dilated; styles subclavate, approximate.—R. pistillatus Smith.


12. R. agopodioides De Cand.: stem herbaceous, somewhat pubescent, unarmed; leaves ternate and quinate, palmate, very smooth; leaflets lanceolate, acutely and doubly serrate, ciliate, many-nerved; flowers terminal, in pairs, peduncles elongated, pubescent; lobes of the calyx lanceolate, acute, shorter than the corol.—R. saxatilis Big. sec. De Cand.

Hab. White mountains, N. H. June. 0.—Stem a foot high. Flowers white.

13. R. obovalis Mich.: stem becoming a little woody, hispid with stiff hairs; leaves ternate; leaflets obovate-roundish, serrate, naked; racemes subcorymbed, few-flowered; bracts ovate; pedicels elongated.

Hab. Mountain swamps. N. Y. to Car. June, July. ½.—Berries with only a few large grains, black and sweet.—Allied to R. saxatilis.

*** Leaves simple, lobed, but neither pinnate nor palmate.

14. R. parviflorus Nutt.: stem suffrutiçose, unarmed; leaves simple-palmate lobed; peduncles about 3-flowered; lobes of the calyx ovate, acuminate, villose; petals ovate-oblong, shorter than the calyx.

Hab. Island of Michilimackinac. Nutt.—Flowers small, white.

15. R. chamæmorus Linn.: root creeping; stem simple, 1-flowered, somewhat pubescent, unarmed; leaves somewhat kidney-form, plicate, denticulate, lobes rounded; flowers monoecious; lobes of the calyx lanceolate subentire, longer than the corol; petals obovate.

Hab. High mountains. Can. and N. Eng. N. to Arctic Amer. May, June. ½.—Flowers white. Fruit yellow or amber coloured.

16. R. odoratus Linn.: stem fruticose, erect; petioles, peduncles and calyx glandular-pilose; leaves 5-lobed, unequally dentate; flowers sub-
corymbed; lobes of the calyx ovate, long acuminate, shorter than the corol; petals nearly round.


7. **DALIBARDA.** Linn.

Calyx with the tube short concave; limb 5—6-cleft, naked without; lobes dentate. Petals 5. Stamens many, deciduous. Ovaries 5—10, with short terminal styles. Acines few, dry, adhering to the calyx.

**D. repens** Linn.: stem creeping; leaves simple, cordate, crenate; stipules linear-setaceous; peduncles 1-flowered; calyx smooth without, reflexed.—*F. violoides* Mich.—Rubus dalibarada Linn.

**Hab.** Mountains. Can. and N. S. June. ½.—Stems herbaceous, rooting and creeping. Leaves on long petioles. Flowers solitary, white, on long nearly radical peduncles.

8. **FRAGARIA.** Tourn.

Calyx with the tube concave, 5-cleft, and with 5 bracts without, (or 10-cleft.) Petals 5. Stamens many. Carpels naked, fixed on a long pulpy deciduous receptacle. Style lateral.

**Icosandria. Polygynia.**

1. *F. virginiana* Linn.: leaflets broad-oval, smoothish above, the lateral ones distinctly petioled; hairs of the petioles spreading, of the peduncles appressed; peduncles and petioles of the length of the leaves; receptacle pendulous; styles long.

**Hab.** Fields. From Arctic America to Florida, and W. to the Miss. May. ½.—Stem short. Flowers white. Wild Strawberry.

2. *F. canadensis* Mich.: larger; leaflets broad-oval, lateral ones manifestly petioled; pedicels long, recurved-pendulous; receptacle of the seeds globose, favose-scrobiculate, villous.

**Hab.** Sandy woods. Can. and N. S. N. to Hudson’s Bay. April, May. ½.—Much larger than the former and apparently distinct, although generally considered identical. I have fine specimens from the vicinity of Little Falls, N. Y.

Mountain Strawberry.

3. *F. vesca* Linn.: stoloniferous; lobes of the leaves plicate, thin, pilose beneath; fruit pendulous; sepals reflexed after flowering; peduncles with appressed hairs.

**Hab.** Fields. N. S. April, May. ½.—Introduced. There are a great many cultivated varieties of this species. Common Strawberry.
DICOTYLEDONOUS PLANTS.

9. POTENTILLA. Linn.

_Calyx_ with the _tube_ concave; _limb_ 4—5 _cleft_, 4—5-bracted without (or 8—10-cleft.) _Petals_ 4—5. _Stamens_ many. _Carpels_ many, roundish, rugose, naked, fixed to a small dry receptacle.

*Leaves ternate-palmate.*

1. _P. norvegica_ Linn.: _hirsute_; stem erect, dichotomous above; leaves ternate-palmate; leaflets lanceolate or obovate, simply and doubly serrate; stipules lanceolate; flowers numerous, subcoryymb and axillary; petals obcordate, shorter than the _calyx_; lobes of the _calyx_ lanceolate, acute.


2. _P. hirsuta_ Mich.: stem erect, _hirsute_, dichotomous above; leaves ternate, _petiolate_; leaflets obovate-wedgeform, _deeply dentate_; _stipules_ lanceolate, _subentire_; _flowers_ axillary, subcoryymb; petals oblong-linear, shorter than the _calyx_; carpels rugulous._—P. morisoni_ De Cand. _Hab._ Western part of N. Y. N. to Subarc. Amer. July. S. _Stem_ very hairy. _Flowers_ few, in a terminal dichotomous _panicle_, yellowish-white. —Perhaps only a variety of the former.

3. _P. tridentata_ Ait.: smoothish; stem ascending, dichotomous; leaves ternate-palmate; leaflets obovate-wedgeform, _coriaceous_, 3-toothed at the summit, pubescent beneath; stipules lanceolate, acuminate; _corymb_ loose, _few-flowered_; petals oblong-obovate, longer than the _calyx_.


**Leaves digitate**.

4. _P. canadensis_ Linn.: _silkly villous_; stem procumbent and ascending, somewhat branched; leaves quinate-palmate; leaflets obovate-wedgeform, _acutely dentate_; stipules lanceolate, somewhat obtuse; _peduncles_ solitary, elongated; _lobes_ of the _calyx_ linear-lanceolate, acute, nearly equaling the _corol_; petals obovate, entire.

_Hab._ Fields and woods. Can. to Car. April, May. 2f._—Stem_ 3—8 inches high. _Flowers_ yellow. _Receptacle_ hairy. _Five-finger._

5. _P. simplex_ Mich.: stem sarmentose, _simple_, hairy; leaves _quinate_, _petioled_; leaflets ovate-lanceolate, _acutely toothed_, a little hairy beneath; stipules lanceolate, entire; _peduncles_ lateral, solitary, elongated, 1-flowered; _lobes_ of the _calyx_ lanceolate-linear, _mucronate_, a little shorter than the roundish obcordate petals._—P. sarmentosa_ Willd. _—P. caroliniana_ Poir.
ROSACEÆ.

HAB. Fields and woods. Can. to Car. May—Aug. ½.—**Flowers yellow. Is not this a mere variety of the last?**

6. P. argentea Linn.: stem ascending or erect, tomentose; leaves quinate-palmate; leaflets obovate-wedgeform, incised, revolute on the margin, white and tomentose beneath; flowers numerous, corymbed; lobes of the calyx lanceolate, shorter than the corol.

*b. dentata De Cand.:* leaflets subentire, 3–4 toothed at the apex, tomentose beneath.—*P. cinerea Raf.*


***Leaves pinnate.***

7. P. fruticosa Linn.: stem fruticose; leaves pinnate, hirsute; leaflets oblong-lanceolate, very entire, approximate; stipules lanceolate, membraneous, acute; flowers in corymbs, large; petals longer than the calyx.—*P. fruticosa* and *P. floribunda* Pursh.

HAB. Margins of swamps. N. S. N. to Arc. Amer. W. to Rocky mountains. June. ½.—A shrub 2 feet high, much branched and hairy. **Flowers** large, yellow.—*P. floribunda* of Pursh, differs only in having the leaves and flowers more numerous.

8. P. supina Linn.: stem decumbent, herbaceous, dichotomous; leaves pinnate; leaflets obovate or oblong, somewhat glabrous, more or less toothed; peduncles axillary, solitary, 1-flowered; segments of the calyx triangular-lanceolate; petals as long as the calyx.


9. P. anserina Linn.: stem filiform, rooting; leaves interruptedly pinnate; leaflets ovate-oblong, incisely and acutely serrate, smooth above, silky beneath; stipules many-cleft; peduncles as long as the leaves, axillary, solitary; lobes of the calyx lanceolate, entire; petals obovate, longer than the calyx.


10. P. pennsylvaniaica Linn.: whole plant white tomentose; stem herbaceous erect; leaves interruptedly pinnate; cauline ones 3-lobed, lobes oblong-ovate, deeply dentate; stipules lanceolate, somewhat laciniate; flowers in corymbose panicles; inner lobes of the calyx triangular-lanceolate, outer ones oblong-lanceolate, as long as the corol; petals obovate; receptacle pilose; carpels rugous.—*P. arguta* Lehm. not of Pursh.

HAB. N. S. N. to Arctic Amer. June. ½.—**Stem** 1–2 feet high. **Flowers** pale yellow.

11. *P. arguta* Pursh: erect, simple, pubescent; leaves pinnate; leaflets ovate, sharply dentate, outer ones larger; stipules rhomboidal,
incised; flowers terminal, in a crowded corymb.—P. confertiflora Torr. Fl. Lehm.—P. pennsylvanica Torr. in Ann. N. Y. Lyc. ii. 197.—Geum agrimonoides Pursh.—Booitia sylvestris Big.

**Hab.** N. S. N. to Arc. Amer. June, July. 24.—Stems many, 3 feet high, erect, nearly simple, branched above and with the pedioles, peduncles and calyx covered with a whitish and glandular pubescence. **Leaves** unequally pinnate, with the leaflets unequally and doubly serrate, and sometimes lobed. **Flowers** erect, at first in dense corymbss, at length paniculate. **Calyx** with the five alternate segments smaller. **Petals** pale yellow. **Styles** lanceolate, naked.—Richardson’s Appendix to Franklin’s Jour. p. 20.

12. P. comarum De Cand.: root creeping; stem ascending, leaves pinnate; upper ones ternate; leafets lanceolate, acutely serrate; petals lanceolate, acuminate, much shorter than the calyx.—P. palustre Lehman. Torr.—Comarum palustre Linn.

**Hab.** In swamps. N. S. N. to Arctic America. June. 24.—Stem 18 inches high. **Flowers** large, purple, on the upper part of the stem.

Marsh Cinquefoil.

10. **SIBBALDIA.** Linn.

**Calyx** 10-cleft, with the alternate segments narrower. **Petals** minute. **Stamens** and **carpels** often 5. **Styles** 5, proceeding laterally from the germ. **Seeds** 5, clustered in the bottom of the calyx.

**Pentandria.** **Pentagynia.**

**S. procumbens** Linn.: leaves ternate; leafets cuneate, tridentate, smooth above, hairy beneath; flowers corymbed; petals lanceolate, acute, about as long as the calyx.

**Hab.** High mountains. Can. and Ver. 17.—A small procumbent plant with the habit of **Potentilla tridentata.** **Flowers** yellow.

11. **AGRIMONIA.** Linn.

**Calyx** inferior, 5-cleft, with a lobed calicite at its base. **Petals** 5. **Stamens** 15. **Acines** 2, in the bottom of the calyx.

**Icosandria.** **Di-Pentagynia.**

1. **A eupatoria** Linn.: hairy; leaves interruptedly pinnate; leafets oblong-ovate, crenate-dentate, the terminal one petioled; spike virgate, many-flowered, terminal, long and slender; tube of the calyx bell-shaped, with spreading bristles near the middle; petals twice as long as the calyx; fruit distant, turbinate, hispid, smooth at base.

**Hab.** Woods and hedges. Can. to Car. W. to Miss. July. 24.—**Stem** 2 feet high. **Flowers** yellow, in a long terminal spike or raceme.

Agrimony.

2. **A. parviflora** Ait.: somewhat hairy; leaves interruptedly pinnate; leafets numerous, linear-lanceolate, incisely serrate; spike virgate; flowers on very short pedicels; petals once and a half the length of the calyx; fruit roundish, divaricately hispid.
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12. ROSA. Linn.

Calyx urceolate, fleshy, contracted at the orifice, 5-cleft. Petals 5. Stamens numerous. Carpels numerous, bony, hispid, included in the fleshy tube of the calyx.

Icosandria. Polygynia.

* Styles cohering in a column. Fruit orate or subglobose.

1. R. rubifolia Brown: stem ascending; branches glabrous; prickles few falcate; leaves ternate, ovate-lanceolate, serrate, pubescent beneath; stipules narrow, entire; peduncles and calyx hispid; flowers subsolitary; lobes of the calyx ovate, short, simple; styles cohering in a tomentose club-shaped column, as long as the stamens; fruit pisi-form.

Hab. Shores of the Western lakes. W. to Miss. July. ½. — Flowers very numerous, changing white to different shades of red, sometimes in a corymb.

** Styles free mostly included. Fruit globose or globose-depressed. Stipular prickles usually in pairs.

2. R. lucida Ehrh.: prickles recurved or none; leaflets 5—9, lanceolate-elliptic, coriaceous, obtusely serrate, shining; stipules dilated, large, smooth, serrulate; peduncles somewhat hispid; segments of the calyx entire, appendaged, spreading but not deflexed; flowers mostly in pairs; fruit globose-depressed, hispid or smooth.


Scamp Rose.

3. R. nitida Willd.: arms crowded, slender subequal; leaflets 5—9, rigid, lanceolate, shining; stipules large, finely serrulate; lobes of the calyx spreading; fruit subglobose, shining, red.

Hab. In Penn. Muhl. ½.—A low shrub.—Perhaps a variety of the former.

4. R. parciflora Ehrh.: prickles straight, horizontal, needle-shaped or none; leaflets 5—9, lanceolate, smooth, coarsely serrate, flaccid; stipules large, subdenticulate; fruit depressed-globose and with the peduncle of the calyx very long, appendaged.—R. caroliniana Mich.

Hab. In woods. N. Y. to Car. W. to Lake Superior. June, July. ½.—Shrub 3 feet high. Flowers in pairs. Petals large, red, broadly obovate, emarginate.—There are a number of varieties of this species.

5. R. carolina Linn.: prickles recurved, often wanting; leaflets 5—9, coriaceous, lanceolate or obovate, serrulate, approximate, glaucous beneath; stipules long, with an involute margin; flowers mostly in
corymb, rarely solitary; lobes of the calyx very long, apppendaged, spreading; fruit depressed-globose, hispid, rarely smooth.—R. corymbosa Ehrh.—R. pennsylvanica Mich.—R. florida Don.

Hab. Swamps. Can. to Car. W. to Miss. June, July. 7.—Shrub 3—8 feet high. Flowers 5—7 in terminal corymb. Petals large, red, obovate, emarginate. Petioles tomentose.—A very variable species, including the above and some others which have been described as distinct species. A variety of this species occurs on an Island near Troy, N. Y. with the stems uniformly and constantly smooth, except very near the root, where there are sometimes a few slender prickles. This, and a slight difference in the shape of the fruit, which is depressed-globose, led me to believe it a distinct species.

** Styles free. Fruit ovate, rarely globose. Prickles few, not stipular.

6. R. gemella Willd. : stipular prickles uncinate, in pairs; leaflets 5—7, oblong, acute, opaque, pubescent beneath; flowers mostly in pairs; fruit depressed-globose, and with the peduncles glabrous.

Hab. Dry hills. N. Eng. to Car. Pursh. July. 7.—Shrub low, with large red flowers.—This species is considered by De Candolle a variety of R. cinnamomea, differing from it only in being more slender and nearly unarmed, and in having the stipules narrower. But this, as well as several other points connected with our species, must remain doubtful until they have been more attentively studied.

7. R. stricta Muhl. : very branching; branches with numerous slender prickles below, naked at the apex; leaflets 7—9, ovate, obtuse, somewhat rigid; peduncles hispid; fruit small, elongated.

Hab. N. Eng. and Penn.—De Candolle, from whom the above description and locality are quoted, thinks it may be a variety of R. alpina.

8. R. rubiginosa Linn. : prickles strong, compressed, uncinate, rarely straight; leaflets 5—7, ovate or somewhat rounded, serrate, more or less, especially beneath glandular and ferruginous; fruit elliptical, short, and with the peduncles hispid.—R. suaveolens Pursh. Ell.

a. pubera De Cand. : flowers subsolitary; fruit ovate, smooth; peduncles glandular-hispid; leaflets roundish, glandular beneath, and with the petioles somewhat pubescent.—R. micrantha Smith. Big.

Hab. Hedges and hill sides. Can. to Car. July. 7.—Shrub tall and slender. Flowers solitary, or 2 or 3 together, pale red. Fruit orange red.—A very variable species. Var. a. is found near Boston.

Order XXXVIII. POMACEÆ. Lind.

Calyx 5-toothed, the odd segment superior. Petals 5, unguiculate. Stamens indefinite. Disk thin, lining the tube of the calyx, bearing the petals and stamens on its margin. Ova-
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ries 1—5, adhering to the side of the calyx; ovules ascending, 2, collateral, rarely solitary; styles 1—5; stigmas simple. Fruit an apple, 1—5-celled, or spuriously 10-celled; endocarp cartilaginous or bony. Seeds solitary, ascending; albumen none; embryo erect, with flat, rarely convolute cotyledons, and a short conical radicle.

Trees or shrubs. Leaves alternate, stipulate, simple or compound. Flowers in terminal cymes, white or pink.

1. CRATEAGUS. Linn.


Icosandria. Di-Pentagynia.

* Leaves dentate or subentire, not lobed.

1. C. crus-galli Ait.: thorny; leaves obovate-wedgeform, subsessile, shining, coriaceous; corymbs compound; lobes of the calyx lanceolate, sub serrate; flowers digynous; fruit small, mostly 1-seeded.—C. lucida Wangh. amcr.

Hab. Borders of woods. Can. to Car. W. to Miss. May, June 7.—A shrub or small tree much branched and with long spines. Flowers white in a corymb. Style often solitary. Fruit red.—There are several varieties of this species.

2. C. punctata Jacq.: thorny or unarmed; leaves obovate-cuneate, smooth, somewhat plaited, serrate, tapering at base into a petiole; calyx villous; lobes subulate, very entire; fruit subglobose, with the summit depressed.


Common Thorn-tree.

3. C. elliptica Ait.: thorny; leaves elliptical, unequally serrate, smooth; petioles and calyx glandular; fruit globose, 5-seeded.

Hab. Dry swamps. Can to Car. May. 7.—Calyx with the segments obtuse. Fruit small, red. Pursh.

4. C. parviflora Ait.: thorny; leaves obovate-wedgeform, subsessile, incisely serrate, pubescent; flowers subsolitary, pentagynous; lobes of the calyx laciniate, villous; fruit subturbinate, with 5 bony 1-seeded nuts.—C. tomentosa Linn.—Mespilus laciniata Walt.

Hab. Sandy woods. N. J. to Car. June. 7.—Shrub 4 feet high, with the younger branches and leaves tomentose. Fruit large yellow.
** Leaves often incised or lobed.

5. *C. pyrifolia* Ait.: thorny or unarmed; leaves ovate-elliptic, incisely serrate, somewhat plicate and hairy; calyx villous; segments linear-lanceolate, serrate; flowers trigynous.

*Leaves large, acute or acuminate at each end. Corymb many-flowered. Peduncles and calyx tomentose.*

6. *C. glandulosa* Willd.: thorny; leaves obovate-wedgeform, smooth and shining; petioles, stipules and calyx glandular; fruit oval, 5-seeded.

**Hab.** Can. and Alleghany mountains. May. 
*Leaves on long petioles, often subcordate. Corymb compound. Fruit middle sized, scarlet.*

7. *C. coccinea* Linn.: thorny; leaves on long petioles, ovate, subcordate, incisely lobed and serrate, glabrous; petioles and calyx pubescent and glandular; flowers pentagynous; petals orbicular.

**Hab.** Woods. Can. to Car. May. 
*Leaves with 3, 5 or 7 lobes. Corymb compound. Fruit red.*

8. *C. cordata* Ait.: thorny; leaves cordate-ovate, pinnatifid, lobed and angled, smooth; petioles and calyx without glands; flowers pentagynous; fruit small, globose, depressed.—*C. populifolia* Pursh.

**Hab.** Banks of streams. May, June. 
*Leaves with 3, 5 or 7 lobes. Corymb many-flowered. Fruit red.*

9. *C. oxycantha* Linn.: leaves obovate-wedgeform, nearly entire, trifid or laciniate, glabrous or shining; flowers in corymb, 1–3 gynous; calyx without glands, acute.

**Hab.** Road sides, &c. N. S. June. 
*Leaves with 3, 5 or 7 lobes. Flowers white. Fruit red, small.—This thorn is preferred in England for hedging. Introduced. Hawthorn. Quickset.*

2. **AMELANCHIER.** De Cand.


1. *A. botryapium* De Cand.: unarmed; leaves cordate, oval, conspicuously acuminate, pubescent when young, smooth when mature; flowers in loose racemes, appearing before the leaves; calyx pubescent; petals linear-lanceolate.—*Aronia botryapium* Pers.—*Pyrus botryapium* Linn. Pursh.—*Mespilus canadensis* var. *cordata* Mich.

**Hab.** Rocky woods. Can. to Car. May. 
*Flowers large, white. Fruit dark purple.*

*Service-berry. Shad-bush.*

2. *A. ovalis* De Cand.: leaves roundish-elliptical, acute, smooth when mature; flowers in compact racemes; petals obovate; germs
and segments of the calyx pubescent; fruit black.—Aronia ovalis Pers.
—Pyrus ovalis Linn. Pursh.—Mespilus canadensis var. obovalis Mich.

Hab. In swamps. Can. to Car. N. to lat. 62°. May. ½.—A small shrub. Supposed by some botanists to be a mere variety of the former, but certainly distinct. The fruit is about the size of a pea and eatable.

3. *A. sanguinea* De Cand.: leaves oval, obtuse at each end, mucronate, with very slender serratures, subcordate at base; racemes few-flowered; calyx smooth; petals linear-obtuse.—Pyrus sanguinea Pursh.
—Aronia sanguinea Nutt.

—A small tree with blood red branches. Berries red, eatable.

3. PYRUS. Linn. De Cand.


1. *P. coronaria* Linn.: leaves broadly-oval, round at the base, somewhat angular, serrate, smooth; corymbs terminal, few-flowered, on long peduncles; flowers large; fruit depressed.—Malus coronaria Mich.

Hab. In woods. N. J. to Geor. May. ½.—A tree 15—20 feet high. Flowers large, fragrant, pale rose-colour.

2. *P. angustifolia* Ait.: leaves lanceolate-oblong, acute at base, slightly crenate-dentate, shining; peduncles corymbose.—Malus angustifolia Mich.

Hab. Penn. May. ½. Muhl.—A tree 15—20 feet high. Leaves and fruit smaller than in the preceding.

** Styles 2—5. Leaves pinnate. Sorbus.

3. *P. americana* De Cand.: leaves pinnate; leaflets oblong-lanceolate, acuminate, somewhat equally serrate, and with the common petiole very smooth; flowers in terminal corymbs.—Sorbus americana Pursh.

Hab. Mountains. Can and N. S. May. ½.—A shrub or small tree with the younger branches pubescent. Flowers white. Stamens very numerous. Styles mostly 3. Fruit globose, fulvous, remaining on the tree all winter. Mountain Ash.

4. *P. microcarpa* De Cand.: leaves pinnate; leaflets acuminate, acutely and incisely serrate, and with the common petiole smooth; serratures setaceousy mucronate.—Sorbus microcarpa Pursh.

Hab. High mountains. N. J. to Car. Pursh. May. ½.—A large shrub, with the younger branches glossy. Flowers white. Fruit small, scarlet.
** Petals spreading, with claws. Styles 2—5. Leaves simple, glandular above near the rachis. Adenorachis.

5. *P. arbutifolia* Linn.: leaves obovate-lanceolate, acute, crenately serrulate, tomentose beneath (especially the younger ones); midrib glandular above; flowers in corymbs; calyx tomentose.—*Aronia pyrifolia* Pers.—*A. arbutifolia* Ell. Nutt. Torr.

Han. Low woods. Can. to Car. May, June. ½.—Shrub 2—5 feet high. Flowers reddish. Fruit about the size of a large wild-tomato, scarlet.


Han. Bogs. Can. to Car. May, June. ½.—A shrub about the size of the preceding and perhaps not distinct.

Order XXXIX. SANGUISORBEÆ. Lind.

Flowers often declinous. Calyx 3—4—5-lobed, with a thickened, afterwards indurated tube; aestivation valvate. Petals none. Stamens definite, alternating with the lobes of the calyx, (though sometimes fewer than them by abortion,) rarely indefinite; anthers erect, 2-celled and bursting longitudinally, or 1-celled and bursting transversely. Ovary solitary, simple, with a style proceeding from the apex or the base; ovule solitary, attached to the ovary close to the base of the style; stigma simple or compound. Nut solitary. Seeds solitary, suspended or ascending; embryo without albumen; radicle superior; cotyledons large, plano-convex. Herbs or under shrubs. Leaves alternate, simple, lobed or compound, with stipules. Flowers small, often in heads.

1. ALCHEMILLA. Linn.

Calyx tubular; tube somewhat contracted at the top; limb 8-parted, the alternate lobes smaller. Petals none. Stamens 1—4. Carpels 1—2, with a filiform capitulate style on the side, at length dry and 1-seeded. Tetrandria. Monogynia.

*A. alpina* Linn.: leaves digitate; leaflets 5—7, lanceolate-cuneate, obtuse, serrate at the apex, white and silky beneath.

Han. High mountains. N. Hamp. and Ver. June, July. ½.—Flowers white.

2. SANGUISORBA. Linn.

Flowers perfect. Calyx 4-cleft, with two scales at base externally. Petals none. Stamens 4. Carpels 2, included
within the calyx, crowned by a style with a fimbriate apex, converted into dry indehiscent 1-seeded acines.

Tetrandria. Monogynia.

1. *S. canadensis* Linn.: leaves pinnate; leaflets ovate-oblong subcordate, coarsely serrate; spikes cylindrical, very long; stamens longer than the corol.


2. *S. media* Linn.: leaves pinnate and with the bracts smooth; leaflets ovate, subcordate, toothed; spikes ovate-cylindric; stamens scarcely longer than the corol.


Order XL. Calycanthae. De Cand. Linn.

Sepals and petals confounded, indefinite, imbricated, combined in a fleshy tube. Stamens indefinite, inserted into a fleshy rim at the mouth of the tube, the inner sterile. Anthers adnate, turned outwards. Ovaries several, simple, 1-celled, with one terminal style adhering to the inside of the tube of the calyx. Nuts enclosed in the fleshy tube of the calyx, 1-seeded, indehiscent. Seed ascending; albumen none; cotyledons convolute.

Shrubs with square stems. Leaves opposite, simple. Flowers axillary, solitary.

1. Calycanthus. Linn.

Lobes of the calyx in many rows, imbricate, lanceolate, somewhat coriaceous, coloured. Stamens 12, unequal, deciduous; outer ones fertile. Acines many.

Icosandria. Polygynia.

*C. laxigatus* Willd.: lobes of the calyx lanceolate; leaves oblong or oval, gradually acuminate, somewhat rugose, smooth and green on both sides; branches straight, erect.—*C. ferox* Mich.


Order XLI. Onagraceae. De Cand. Lind.

Calyx superior, tubular, with the limb usually 4-lobed; the lobes cohering in various degrees, with a valvate aestivation.
Petals generally equal in number to the lobes of the calyx, into
the throat of which they are inserted, regular, with a twisted
aestivation. Stamens definite, inserted into the calyx; fila-
ments distinct; pollen triangular, usually cohering by threads.
Ovary of several cells, generally crowned by a disk; style fili-
form; stigma capitate or 4-lobed. Fruit a berry or capsule,
many-seeded, 1—2—4-celled. Seeds numerous, without al-
bumen; embryo straight; radicle long and taper; cotyledons
very short.

Herbs or shrubs. Leaves simple, alternate or opposite.
Flowers axillary or terminal, of various colours.

1. EPILOBIUM. Linn.

Calyx 4-sepalled; sepals united into a long 4-sided tube;
Capsule linear, obtusely 4-sided, 4-celled, 4-valved, many-
seeded, united with the calyx. Seeds crowned with pappus.

Octandria. Monogynia.

1. E. spicatum Lam.: stem tall, terete, smooth, branched above;
leaves scattered, linear-lanceolate, veined, smooth; flowers large, pe-
dicelled, in a terminal spike; petals irregular; stamens unequal, de-
clined.—E. angustifolium Linn.

Hab. Swamps and moist woods. Can. and N. S. W. to Miss.
July. 2 ft.—Stem 3—5 feet high. Flowers purple, in a terminal
leafless spike or raceme.

Willow Herb.

2. E. coloratum Muhl.: stem terete, pubescent; leaves mostly oppo-
site, lanceolate, serrulate, petiolate, smooth, with coloured veins; upper
ones alternate; flowers small, axillary, near the extremity of the
branches.

Hab. Wet meadows. N. S. July, Aug. 2 ft.—Stem 3—4 feet
high. Flowers small.—A very variable plant.

3. E. squamatum Nutt.: pubescent; root squamous, bulbous; stem
terete, branching above; stem leaves opposite; those of the branches
linear and entire, revolute on the margin; flowers pedunculate; petals
bifid; stamens unequal; stigma clavate, undivided.—E. rosmarinifo-
lium Pursh. Torr.—E. lineare Muhl. Big.?

Hab. Moist woods, &c. N. S. Aug. 2 ft.—Stem a foot high,
slender. Flowers small, terminal, white.—E. rosmarinifolium
was a name applied by Henke to a different species, which is
recognized by De Candolle.

4. E. palustre Linn.: stem terete, branched, somewhat hirsute;
leaves sessile, lanceolate, somewhat toothed, opposite and alternate,
smooth; stigma undivided; fruit pubescent.
Hab. Low grounds. Penn. N. to Arc. Amer. Aug., Sept. 2._
—Stem 2—3 feet high. Flowers pale red.

5. *E. leptophyllum* Raf.: stem branching, somewhat scabrous; leaves alternate, subsessile, narrow-linear, entire, smooth, 1-nerved, acute, narrowed at base; flowers axillary, solitary, pedunculate.

Hab. Moist woods. Penn. and Mar.—Raf. in *De Cand. Prod.*

6. *E. tetragonum* Linn.: stem 4-sided, nearly smooth; leaves sessile, lanceolate-oblong, denticulate, lower ones opposite; stigma undivided.

Hab. Low grounds. Can. to Car. July. 2.—Stem 2 feet high, branched, smooth. Flowers small, pale red, in terminal racemes.—Distinguished by its square stem.

7. *E. strictum* Muhl.: densely and softly pubescent; stem terete; leaves oblong-linear, sessile, very entire; the lower ones opposite; upper ones alternate; flowers pedicillate, subterminal, regular; petals 2-lobed; stigma entire.—*E. molle* Torr.

Hab. Sand plains. N. Y. Aug. 2.—Stem 18 inches high, branched above and covered with a white pubescence. Leaves narrow, numerous. Flowers small, pale purple.—The name given to this species by Dr. Torrey is objectionable, having been previously appropriated to another species found on the continent of Europe. My specimens agree very well with Sprengel’s description of *E. strictum* of Muhlenberg.

8. *E. alpinum* Linn.: stem simple, subterete, one or two flowered; leaves opposite, elliptical, entire; flowers sessile.

Hab. White mountains, N. H. N. to Arc. Amer.—Big. July. 2.—The smallest species,—not above two inches high. Flowers pale purple.

2. **GAURA.** Linn.


*G. biennis* Linn.: stem herbaceous erect, hairy, mostly purplish; leaves alternate, sessile, lanceolate, toothed; flowers numerous, sessile, in terminal spikes; fruit roundish, slightly 4-angled, pubescent.


3. **CENOTHERA.** Linn.

*Calyx* 4-sepalled; *sepals* united into a long 4-sided or 8-ribbed tube; *limb* and part of the tube caducous. *Petals* 4. *Stamens* 8, erect or declined; *pollen* triangular, viscous. *Stigma* 4-cleft, or spherical. *Capsule* oblong-linear, obtusely
4-sided or obovate-clavate, 4-celled, 4-valved, many-seeded, united with the base of the calyx. Octandria. Monogynia.

* Capsule elongated, 4-sided, sessile.

1. (E. biennis Linn.: stem villous and scabrous; leaves alternate, ovate-lanceolate, flat, toothed, very pubescent; lower ones on short petioles; upper sessile; flowers sessile, in a terminal spike; petals obcordate; stamens shorter than the corol. 


2. (E. muricata Linn.: stem purplish, muricate; leaves lanceolate, flat; petals obcordate; stamens as long as the corol. 

HAB. Old fields. N. Y. to Car. July, Aug. ♂.—Flowers yellow, smaller than in the preceding species.—According to De Candolle it resembles the next, but the margin of the capsule is not 8-cleft.

3. (E. parviflora Linn.: stem smooth, subvillous; leaves ovate-lanceolate, flat; stamens longer than the corol; capsule crowned with an 8-cleft margin. 

HAB. Fields and woods. Can. to Virg. rare. ♂.—Rursch.

4. (E. grandiflora Ait.: stem nearly smooth, branched; leaves ovate-lanceolate, mostly smooth; flowers axillary, sessile, large; petals deeply obcordate; stamens declining, shorter than the corol. 


5. (E. sinuata Linn.: stem diffuse, pubescent; leaves oval-oblong, dentate-sinuate or incised; flowers solitary, axillary, sessile, villous; capsule prismatic. 

b. minima Nutt.: stem low, simple 1-flowered; leaves entire.—(E. minima Pursh.


** Capsules obovate-clavate, angular, mostly pedicellate.

6. (E. fruticosa Linn.: pubescent; stem branching from the base, divaricate; leaves sessile, lanceolate, slightly toothed, acute, pilose; flowers in a terminal raceme; petals broad-obcordate; capsule oblong-clavate, pedicellate, angled. 


7. (E. ambigu Spreng.: more or less pilose; stem simple; leaves lanceolate or ovate-lanceolate, acute, subdenticulate; petals obcordate, longer than broad; points of the calyx very short; capsule subsessile,
says smooth, oblong and 4 winged; raceme naked below.—*E. fruticosa* var. *ambigua* Nutt.

**Hab.** Hills and dry woods. N. Y. Penn. Bart. July. 2f.—Stem a foot or more high, simple. Flowers pale yellow, smaller than in *E. fruticosa*.

8. *E. incana* Nutt.: stem slender, erect; leaves flat, hoary and tomentose, very entire, elliptic-ovate, acute; raceme few-flowered, naked; capsule subsessile, oblong and square.

**Hab.** Dry woods. N. Y. and Mar. Stem 6—8 inches high. Flowers bright yellow.—Dr. Torrey supposes it to be a variety of *E. fruticosa*.

9. *E. hybrida* Mich.: stem erect, villous; leaves pubescent on both sides, lanceolate, remotely toothed, undulate; capsules somewhat spiked, on short foot-stalks, ovate, 4-angled.

**Hab.** Old Fields. Penn.—*Darlington.* S. to Geor. July—Sept. 2f.—Stem 9—18 inches high. Flowers pale yellow. Tube of the calyx 3 or 4 times as long as the segments.

10. *E. pumila* Linn.: stem weak, smooth or slightly hairy; leaves oblong-lanceolate, very entire, obtuse, flat; flowers small, in a terminal raceme; segments of the calyx longer than the tube; capsule subsessile, 8-angled.—*E. chrysanthha* Mich.

**Hab.** Dry fields. N. S. to Car. July. 2f.—Stem 8—12 inches high. Flowers small, bright yellow.

11. *E. pusilla* Mich.: subpubescent; stem nearly simple; leaves lanceolate-oblong, somewhat obtuse, entire; flowers axillary at the summit; capsule sessile, clavate-turbinate, almost equally 8-angled.

**Hab.** High mountains. Penn. to Virg.—*Pursh.* July, Aug. 2f.—Stem 6—8 inches high, erect. Flowers small, yellow.

12. *E. chrysanthha* Mich.: stem slender, minutely pubescent: leaves lanceolate, rather obtuse, flat, entire; segments of the calyx as long again as the tube; capsule clavate-sessile, acute, angled.

**Hab.** Mountains. Can. and N. S. July. 2f.—Stem a foot high. Flowers small, bright yellow.—I am induced to believe that this is not distinct from the former, but that *E. chrysanthha. E. pusilla* and *E. canadensis* of Goldie, are all mere varieties of the same species, probably *E. pumila* of Linnæus.

### 4. ISNARDIA. Linn.

**Tube** of the calyx ovate or subcylindric, short, adhering to the ovary; limb 4-parted, persistent. **Petals** sometimes 4, alternating with the calyx; sometimes none. **Stamens** 4. **Style** filiform, deciduous. **Stigma** capitulate. **Capsule** obovate or nearly cylindrical, 4-sided, 4-valved, many-seeded.

**Tetrandria. Monogynia.**

* Petals 4. **Ludwigia.**

1. *I. alternifolia* De Cand.: stem erect, branched, nearly smooth; leaves alternate, lanceolate, somewhat scabrous on the margins and
under side; peduncles axillary, 1-flowered; capsules obovate-globose, 4-angled, winged; segments of the calyx large, ovate.—Ludwigia alternifolia Linn.—L. macrocarpa Mich.

Hab. Swamps. Can. to Flor. July. 1.—Stem 2 to 3 feet high. Flowers yellow, on short peduncles.

2. I. uniflora Beck: stem straight, simple; leaves alternate, lanceolate, acute, smooth; flower terminal; petals longer than the calyx.—Ludwigia uniflora Raf. Torr.

Hab. N. Jersey.—This seems to be sufficiently distinct.—Dr. Torrey, however, suggests that it is a variety of the former.

3 I. hirsuta R. & S.: stem erect, sparingly branched, hairy; leaves alternate, oblong, sessile, somewhat hirsute; peduncles 1-flowered, axillary; capsules globose, 4-angled, winged, hairy.—Ludwigia pilosa Walt.—L. hirsuta Lam.


** Petals none. Isnardia.**

4. I. palustris Linn.: stem prostrate, creeping, glabrous; leaves opposite, ovate-lanceolate, tapering at base, petioled, smooth; flowers axillary, solitary, sessile; capsule subovate, slightly angled.—Ludwigia nitida Mich. Pursh.—L. palustris Ell.—L. apetala Walt.


Order XLII. CIRCAEACEÆ. Lind.

Calyx superior, deciduous, tubular, with a two parted limb. Petals 2, alternate with the lobes of the calyx. Stamens 2, alternate with the petals, inserted into the calyx. Disk large, cup-shaped, filling up the whole of the tube of the calyx and projecting beyond it. Ovary 2-celled; style simple; stigma emarginate. Fruit 2-celled, 2-valved, 2-seeded. Seed solitary, erect; albumen none; embryo erect; radicle short.

Herbs with opposite toothed and petioled leaves. Flowers in terminal and lateral racemes, covered with uncinate hairs.

1. CIRCAEA. Linn.


1. C. lutetiana var. canadensis Linn.: stem erect; leaves petioled, ovate, remotely toothed, opaque, nearly smooth.—C. canadensis Muhl.

—C. lutetiana Big.
HALORAGEÆ.


2. **C. alpina** Linn.: stem branched, very smooth, often procumbent; leaves broad-cordate, membranaceous, acutely toothed, shining.

Hab. Moist shady places on mountains. Can. to Car. July. 2f. — Stem 6—8 inches high, somewhat diaphanous. **Leaves** very thin and delicate. *Race me filiform.*—Many botanists consider this a mere variety of the preceding.

**Order XLIII. HALORAGEÆ. De Cand. Lind.**

Calyx superior, with a minute limb. Petals minute, inserted into the summit of the calyx, or wanting. **Stamens** inserted into the same place, mostly equal in number to the petals. Ovary adhering inseparably to the calyx, with one or more cells; styles none; stigmas equal in number to the cells. Fruit dry, indehiscent, membranous or bony, with 1 or more cells. Seeds solitary; albumen fleshy; embryo straight, in the axis; radicle superior.

Herbs, growing in wet places, with alternate, opposite or whorled leaves. **Flowers** sessile, occasionally monoecious or dioecious.

1. **PROSERPINACA.** Linn.

**Tube** of the calyx adhering to the triquetrous ovary; limb 3-parted. **Petals** none. **Stamens** 3. **Stigmas** 3, sessile upon the top of the ovary. **Carpels** 3, indehiscent, dry, concreted into a 3-sided fruit. *Triandria. Trigynia.*

1. **P. palustris** Linn.: upper leaves linear-lanceolate, serrate; lower ones often pinnatifid; fruit angular, acute.—**P. palustris** var. a. Mich.


2. **P. pectinata** Lam.: leaves all pinnatifid-pectinate; nut large, angular, obtuse.—**P. palustris** var. b. Mich.

Hab. Wet grounds. N. J. to Geor. Aug. 2f. — Distinguished from the former, by having the leaves all finely pectinate and the fruit with rather obtuse angles.

2. **MYRIOPHYLLUM.** Linn.

**Flowers** monoecious or rarely perfect. **Sterile Fl. Calyx** 4-parted. **Petals** 4-lobed, alternating with the calyx, ovate, caducous. **Stamens** 4—6—8. **Perfect Fl. Calyx** 11
adhering to the ovary; limb 4-lobed. Petals none. Nuts 4, compressed or subglobose, 1-seeded.

Monoezia. Polyandria.

* Flowers octandrous.

1. **M. spicatum Linn.** leaves verticillate, pinnately divided; lobes capillary; spike terminal, nearly naked; floral leaves shorter than the flower; lower ones subserrate and mostly very entire.


**Water Milfoil.**

2. **M. verticillatum Linn.** leaves verticillate, pinnately divided; lobes capillary, opposite; spike terminal, leafy; floral leaves all pinnately divided, much longer than the flowers, and scarcely distinct from the leaves.

**Hab.** In water. Can. to Car. July. 24.—Upper flowers sometimes perfect.

**Flowers hexandrous.**

3. **M. heterophyllum Mich.** leaves verticillate, pinnately divided into capillary lobes; spike terminal, nearly naked; floral leaves opposite, ovate, acute, coarsely serrate, longer than the flowers.—**Potamogeton verticillatum Walt.**

**Hab.** In water. N. S. to Geor. July. 24.—Stem simple. Flowers purple.

**Flowers tetrandrous.**

4. **M. capillaceum Torr.** leaves all capillary-pinnate; flowers axillary, opposite and alternate, tetrandrous, mostly perfect; fruit quadrangular, formed of 4 cylindrical seeds.


5. **M. ambiguum Nutt.** leaves petiolate, pinnate, the lowest ones capillary; emerging ones pinnate; uppermost nearly entire, subserrate; anthers partly oblong; fruit quadrangular.

**b. limosum Nutt.** stem rooting, erect; leaves rigid, partly entire, or divided above, mostly trifid; segments setaceous and acute. —**Purshia humilis Raf.**

**Hab.** Ponds. N. J. July. 24.—Floating in extensive masses. Stem dichotomous. Leaves attenuated so as to appear petioled, pinnately pinnatifid. Flowers axillary, solitary, sessile.—**var. b. Miry shores of the Delaware, N. J. Stem erect, 2—4 inches high, decumbent and rooting. Leaves rigid and spreading, very narrow, setaceous and acute. Flowers as in the preceding, but the anthers are roundish.**

6. **M. tendilum Big.** stem simple, nearly leafless, erect, somewhat rooting at base; leaves in form of scales, alternate, entire; upper ones bearing flowers in the axils; spike terminal, interrupted; flowers alternate.
Flowers alternate, sessile. Petals white, 3 times as long as the calyx.

7. M. procumbens Big.: stem procumbent, round, rooting, branched; leaves pinnatifid with five or six narrow segments; flowers axillary, solitary, sessile. 

HAB. Ponds. Danvers, Mass.—Resembles M. scabratum of Michaux.

3. CALLITRICHE. Linn.
Flowers perfect or imperfect. Bracts 2, opposite, petaloid. Calyx (corol of authors) inconspicuous. Petals none. Sterile Fl. Stamen 1, (rarely 2) with the filament filiform and exserted; anthers reniform. Fertile Fl. Styles 2, filiform, glandular. Capsule compressed, 2-celled, 4-seeded.

Monandria. Digynia.

1. C. verna var. intermedia Willd.: upper leaves spatulate-obovate, lower ones linear, obtuse and emarginate; flowers polygamous; margins of the capsule obtuse.—C. heterophylla Pursh.—C. verna Mich.—C. aquatica Big.

HAB. In shallow streams. Throughout the U. S. May—Aug. Ø.—Stem floating, sometimes 2 or 3 feet long. Uppermost leaves crowded into a stellated tuft, and 3-nerved. Flowers solitary, axillary, white.

2. C. autumnalis Linn.: leaves all linear, 1-nerved, truncate or emarginate; capsule with acute margins; flowers perfect.—C. linearis Pursh.

HAB. Ponds, &c. N. S. May. Ø.—Sarcely differing from the former, except in having the leaves more generally linear.

3. C. terrestris Raf.: procumbent, diffused; leaves oblong, uniform, rather obtuse; capsule grooved on the margin.—C. brevifolia Pursh.


4. HIPPURIS. Linn.
Tube of the calyx adnate to the ovary; limb minute, entire. Petals none. Stamen 1, inserted into the margin of the calyx. Style filiform, received into a groove of the anther. Nut 1-seeded, crowned with the margined limb of the calyx.

Monandria. Monogynia.

H. vulgaris Linn.: leaves whorled, linear, acute.

HAB. Ponds and lakes. N. Y. and Penn. Aug. 24.—Stem 12—18 inches high, simple, erect. Leaves linear, mostly in whorls of eight. Flowers at the base of the upper whorls, one to each leaf, sessile, minute. 

Mare’s Tail.
**Order XLIV. PODOSTEMEÆ. Lind.**

*Flowers* naked, monochlinous, bursting through an irregularly lacerated spathe. *Stamens* hypogynous, varying from 2 to an indefinite number, monadelphous, alternately sterile and shorter. *Ovary*, free, spuriously 2-celled; *ovules* numerous; *styles* two or none; *stigmas* 2 or 3. *Fruit* slightly pedicillate, capsular, opening by two valves, which fall off from the dissepiment which is parallel with them. *Seeds* numerous, minute, their structure unknown, or according to Von Martius, entirely simple.

*Herbs* with floating stems. *Leaves* capillary or linear, or irregularly lacerated, or minute and imbricated. *Flowers* minute.

1. **PODOSTEMUM.** Mich.


*P. coratophyllum* Mich.


**Order XLV. CERATOPHYLLEÆ. De Cand. Lind.**

*Flowers* monoecious. *Calyx* inferior, many-parted. *Stamens* 12–20; *filaments* wanting; *anthers* 2-celled. *Ovary* superior, 1-celled; *ovule* solitary, pendulous; *stigma* filiform, oblique, sessile. *Nut* 1-celled, 1-seeded, indischiscent, terminated by the hardened stigma. *Seed* pendulous, solitary; *albumen* none; *embryo* with 4 cotyledons, alternately smaller; *plumula* many-leaved; *radicle* superior.

Floating *herbs* with multifid cellular leaves.

1. **CERATOPHYLLUM.** Linn.


*Monoecia.* Polyandria.

*C. demersum* Linn.: fruit armed with 3 spines.
SALICARIAE.


Order XLVI. SALICARIAE. Lind.

Calyx with one sepal, the lobes with a valvate or separate aestivation. Petals inserted between the lobes of the calyx, very deciduous, sometimes wanting. Stamens inserted into the tube of the calyx below the petals, to which they are sometimes equal in number; sometimes twice, thrice or four times the number; seldom four; anthers adnate, 2-celled; ovary superior, 2—4-celled; style filiform; stigma usually capitate. Capsule membranous, covered by the calyx, usually 1-celled. Seeds numerous, small, without albumen; embryo straight; radicle turned towards the hilum. Cotyledons flat and leafy.

Herbs rarely shrubs. Leaves opposite, seldom alternate, entire. Flowers axillary or in terminal spikes or racemes.

1. AMMANNIA. Linn.


Tetrandria. Monogynia.

1. A. ramosior Linn.: stem erect, somewhat 4-sided; leaves linear-lanceolate, dilated at the base; flowers axillary, sessile; the lower ones compactly whorled; the upper ones solitary; petals 4, obovate-roundish; stamens 4.


2. A. humilis Mich.: stem procumbent at the base, square, somewhat branched; leaves narrow-lanceolate, tapering at base; flowers sessile, solitary, axillary; petals 4, orbiculate; stamens 4.—A. ramosior Walt.


2. LYTHRUM. Linn.

Calyx cylindric, striate, 8—12 toothed. Petals 4—6, inserted into the calyx. Stamens as many or twice as many as the petals, sometimes fewer. Style filiform. Stigma capitate. Capsule oblong, 2-celled, many seeded.

Icosandria. Monogynia.

11*
1. **L. salicaria** var. **pubescens** Pursh: pubescent; leaves opposite and ternate, sessile, lanceolate, cordate at the base; flowers with 12 stamens, terminal, verticillate-spiked; capsule oblong.


2. **L. hyssopifolia** Linn.: stem sparingly branched, square; leaves alternate and opposite, linear-lanceolate, somewhat obtuse; flowers axillary, subsessile, shorter than the leaves; bracts acute, small; petals 4—6, oblong; stamens 5—8.

Hab. Low grounds. N. Y. Nutt. — Stem 12—18 inches high. *Flowers* pale purple. I have a specimen from Connecticut which agrees exactly with Elliott’s *L. lanceolatum* the *L. virgatum* of Walter, and I am inclined to believe that these two plants have been confounded.

3. **CUPHEA.** Jacq.


*C. viscosissima* Jacq.: viscous; leaves opposite, petioled, ovate-oblong, a little rough; flowers lateral, solitary, on short peduncles; calyx 6-toothed; petals 6; stamens 12.

Hab. Mountains. N. Y. to Geor. W. to Ken. Sept. 2. — Stem 12—18 inches high, erect, branching. *Flowers* purple.—Dr. Matthew Stevenson has found this plant on the wet grounds near Cambridge, N. Y.


*D. verticillatum* Ell.—*Lythrum verticillatum* Linn.


**Order XLVII. MELASTOMACEÆ.** De Cand. Lind.

*Calyx* with 4 or 5 teeth or divisions, which are more or less deep, or are sometimes united and separate from the tube like a lid. *Petals* equal to the segments of the calyx, perigynous.
Stamens usually twice as many as the petals, sometimes equal to them in number; anthers long, 2-celled. Ovary more or less coherent with the calyx, with several cells, and indefinite ovules; style 1; stigma simple, either capitate or minute. Pericarp either dry or distinct from the calyx, or succulent and combined with it, with several cells. Seeds innumerable, minute, without albumen; embryo straight or curved, with equal or unequal cotyledons.

Herbs, trees or shrubs. Leaves opposite, undivided, usually entire, with several ribs.

1. RHEXIA. Brown.

Calyx with the tube ventricose-ovate at base, narrowed at the apex; the limb 4-cleft. Petals 4, obovate. Anthers 8, attached to the filaments behind, naked at base. Capsule free in the calyx, 4-celled. Receptacle lanceolate, pedicellate. Seeds cochlæate.

Octandria. Monogynia.

1. R. mariana Linn.: very hairy; leaves lanceolate, acute at each end, 3-nerved, subpetiolate; calyx tubular, nearly smooth.


2. R. ciliosa Mich.: stem nearly square, smooth; leaves subpetiolate, oval, serrulate, ciliate, 3-nerved, smooth beneath, slightly hispid above; flowers with an involucre.—R. petiolaris Walt.

Hab. Del. to Car. July. 2 f. — Stem 12—18 inches high. Flowers in a loose dichotomous panicle, purple, with an involucre of leaves at the base of each.

3. R. virginica Linn.: stem with winged angles, somewhat hairy, square; leaves sessile, ovate-lanceolate, ciliate, serrate, 3—7 nerved, sprinkled with hairs on both sides; corymbs dichotomous.


Order XLVIII. CUCURBITACEÆ. De Cand. Lind.

Flowers usually declinous, sometimes monoclinous. Calyx 5-toothed, sometimes obsolete. Corol 5-parted, scarcely distinguishable from the calyx, very cellular, with strongly marked reticulated veins, sometimes fringed. Stamens 5, either distinct, or cohering in 3 parcels; anthers 2-celled, very long and sinuous. Ovary inferior, 1-celled, with 3 parietal placentæ; style short; stigmas very thick, velvety or
fringed. Fruit fleshy, more or less succulent, (a pepo.) Seeds flat, ovate, enveloped in an arillus, which is either juicy or dry and membranous; embryo flat, with no albumen; cotyledons foliaceous, veined; radicle next the hilum.

Stem succulent, climbing by means of tendrils formed by abortive leaves. Leaves palmated, or with palmate ribs.

1. SICYOS. Linn.


Monoecia. Monadelphia.

S. angulatus Linn.: leaves cordate, 5-angled, toothed, scabrous; lobes acuminate; tendrils umbellate; sterile flowers corymbose-capitate, with the common peduncle long; fertile ones sessile.


2. MOMORDICA. Linn.


Monoecia. Monadelphia.

M. ? echinata Muhl.: leaves cordate, angularly 5-lobed; lobes acuminate, very entire, glabrous, tendrils many-cleft; fruit roundish, setaceous-echinate, 4-seeded.—Sicyos lobata Mich.


3. MELOTHRIA. Linn.


Monoecia. Monadelphia.

M. pendula Linn.: leaves somewhat reniform, lobed and angled, slightly hispid; fruit oval, smooth, pendulous.

Hab. Banks of streams. Penn. to Car. June. —A slender vine running over small shrubs and herbs. Stem hairy. Leaves on petioles. Tendrils 5—6 inches long. Flowers axillary, yellow, the sterile in small racemes, the fertile solitary.

Small Creeping Cucumber.
Order XLIX. Passifloreæ. De Cand. Lind.

Sepals 5, sometimes irregular, combined in a tube of variable length, the sides and throat of which are lined by filamentous or annular processes, apparently metamorphosed petals. Petals 5, arising from the throat of the calyx, on the outside of the filamentous processes, occasionally wanting, sometimes irregular, imbricated in aestivation. Stamens 5, monadelphous, rarely indefinite, surrounding the stalk of the ovary; anthers turned outwards, linear, 2-celled, bursting longitudinally. Ovary seated on a long stalk, superior, 1-celled; styles 3, arising from the same point, clavate; stigmas dilated. Fruit surrounded by the calyx, stalked, 1-celled, with 3 parietal polyspermous placentae, sometimes 3-valved. Seeds attached in several rows to the placenta, with a bristle sculptured testa surrounded by a pulpy arillus; embryo straight, in the midst of fleshy thin albumen; radicle turned towards the hilum; cotyledons flat, leafy.

Herbs or shrubs usually climbing. Leaves alternate, with leafy stipules.


1. P. lutea Linn.: leaves cordate, 3-lobed, obtuse, nearly smooth; petioles without glands; peduncles axillary, in pairs; petals much longer than the calyx.


Yellow Passion-flower.

2. P. incarnata Linn.: leaves smooth, subcuneate at base, 5-nerved, deeply 3-cleft; lobes oblong, acute; petioles with 2 glands; involucrum 3-leaved; leaflets lanceolate, glandular-serrate; ovary villose.


Sepals 2, seldom 3 or 5, cohering by the base. Petals generally 5, occasionally 3, 4, or 6, either distinct, or cohering in a short tube, sometimes wanting. Stamens inserted along
with the petals irregularly into the base of the calyx, variable in number, all fertile, sometimes opposite the petals; *filaments* distinct; *anthers* versatile, with 2-cells, opening lengthwise. *Ovary* superior, 1-celled; *style* single, or none; *stigmas* several, much divided. *Capsule* 1-celled, dehiscing either transversely or by 3 valves, occasionally 1-seeded and indehiscent. *Seeds* numerous, if the fruit is dehiscent; attached to a central placenta; *albumen* farinaceous; *embryo* curved round the circumference of the albumen, with a long radicle.

Succulent *shrubs or herbs*. *Leaves* alternate, seldom opposite, entire, without stipules, or sometimes with membranaceous ones on each side at the base.

1. **PORTULACCA.** Linn.


*Polyandria. Monogynia.*

*P. oleracea* Linn.: leaves cuneiform, fleshy, smooth; axils geniculate, naked; flowers sessile.


*Purslane.*

2. **TALINUM.** Sims.


*Polyandria. Monogynia.*

*T. teretifolium* Pursh.: leaves terete, subulate, fleshy; cyme terminal, dichotomous corymbose; flowers pedunculate, polyandrous.


3. **CLAYTONIA.** Linn.


*Pentandria. Monogynia.*
C. virginica Linn.: leaves about 2, opposite, linear-lanceolate, thick; flowers in a loose simple raceme; sepals somewhat acute.

b. latifolia Torr. leaves ovate-lanceolate; sepals obtuse.—C. spa-thulafolia Nutt.?

HAB. Wet meadows. N. Y. to Car. W. to Miss. April, May.

2l.—Stem 6—10 inches high, erect or procumbent. Flowers rose-red, in a raceme. Varies much in the form of the leaves.

Var. b. often supersedes the common variety. Spring Beauty.

ORDER LI. ILLECEBREE.E. Lind.

Sepals 5, seldom 3 or 4, distinct or more or less cohering. Petals minute, inserted upon the calyx between the lobes, occasionally wanting. Stamens perigynous, exactly opposite the sepals, if equal to them in number, sometimes fewer by abortion; filaments distinct; anthers 2-celled. Ovary superior; styles 2 or 3, distinct or partially combined. Fruit small, dry, 1-celled, either indehiscent, or opening with 3-valves. Seeds either numerous, upon a free central placenta, or solitary and pendulous from a funiculus originating in the base of the cavity of the fruit; alburnum farinaceous; embryo lying on one side of the albumen, more or less curved, with the radicle always pointing to the hilum; cotyledons small.

Herbs or half shrubby plants. Leaves opposite or alternate, entire, with scarious stipules.

1. ANYCHIA. Mich.


Pentandria. Monogynia.

1. A. dichotoma Mich.: stem erect or spreading, dichotomously branched, pubescent; leaves opposite, lanceolate, smooth, acute; flowers solitary, terminal and axillary, very minute, on very short pedicels, about as long as the stipules.—A. canadensis Ell.—Queria canadensis Linn.


2. A. capillacea De Cand.: stem very smooth and slender; leaves ovate; stipules shorter than the flowers; flowers remote.—A. dichoto-ma b. Torr.—Queria capillacea Nutt.

HAB. Pine barrens. N. J. Aug. ©.—Probably only a variety of the former.
Order LII. SCLERANTHAE. Lind.

Flowers monoclinous. Calyx 4 or 5-toothed, with an urceolate tube. Stamens 1—10, inserted into the orifice of the tube. Ovary simple, superior, 1-seeded. Styles 1 or 2, emarginate at the apex. Fruit a membranous utricle, enclosed within the hardened calyx. Seed pendulous from the apex of a funiculus, which arises from the bottom of the cell; embryo cylindrical, curved round farinaceous albumen.

Small herbs. Leaves opposite, without stipules.

1. SCLERANTHUS. Linn.

Calyx 5-cleft, persistent; tube urceolate. Petals none. Stamens 10, rarely 5 or 2. Styles 2. Capsule very smooth, without valves, covered by the indurated tube of the calyx.

Decandria. Digynia.

*S. annuus* Linn.: stems spreading, slightly pubescent; flowers decandrous; calyx of the fruit spreading, acute.

Hab. Sandy fields. N. S. July. ©.—Stems numerous, procumbent. Flowers very small, green, in axillary fascicles.

Knaovel.

Order LIII. CRASSULACEÆ. De Cand. Lind.

Sepals 3—20, more or less united at the base. Petals inserted in the bottom of the calyx, distinct or cohering in a monopetalous corol. Stamens inserted with the petals, either equal to them in number and alternate with them, or twice as many; filaments distinct, subulate; anthers 2-celled, bursting lengthwise. Hypogynous scales several, 1 at the base of each ovary, sometimes obsolete. Ovaries as many as the petals, 1-celled, tapering into stigmas. Fruit consisting of several follicles, opening by the suture in their face. Seeds attached to the margins of the suture, variable in number; embryo straight in the axis of the albumen, with the radicle pointing to the hilum.

Succulent herbs or shrubs. Leaves entire or pinnatifid; stipules none. Flowers usually in cymes, sessile, often arranged unilaterally along the divisions of the cymes.
1. TILLÆA. Linn.


* Tetrandria. Tetragynia. 

*T. simplex* Nutt. : stem erect and simple; leaves connate, oblong-linear and somewhat acute; flowers alternate, sessile; petals erect, twice as long as the calyx.

HAB. Muddy banks of streams. N. S. July, Aug. 5.—Plant minute.—Mr. Nuttall has given a figure and detailed description of this plant in the Journal of the Philadelphia Acad. i. 114.

2. SEDUM. Linn.

Calyx 5-parted; sepals ovate, often turgid and leafy. Petals 5, often spreading. Stamens twice the number of the petals. Carpels 5, with a nectariferous scale at the base of each.

* Decandria. Pentagynia. 

1. *S. ternatum* Mich. : stem creeping, a little scabrous; leaves flat, rounded-spathulate, ternate; cymes mostly 3-spiked; terminal flowers decandrous; the rest octandrous.—*S. portulacoides* Muhl.

HAB. Rocks. Penn. to Car. May. 24.—Stem 4–6 inches long. Lower leaves rounded, the upper lanceolate. Flowers white, sessile.

2. *S. telephioïdes* Mich. : leaves ovate, flat, acute at each end, toothed; corymb fasciculate, many-flowered.


3. PENTHORUM. Linn.


* Decandria. Pentagynia. 

P. sedoides Linn. : stem branched, angular above; leaves alternate, lanceolate, subsessile, unequally serrate; flowers in terminal one-sided spikes or racemes; seeds numerous, elliptical.


Virginian Stone Crop.

ORDER LIV. FICOIDÆ. De Cand. Lind.

Sepals definite, usually 5, but varying from 4 to 8, more or less combined at the base, equal or unequal. Petals indefi-
nite, coloured, opening beneath bright sunshine, sometimes wanting. *Stamens* arising from the calyx, definite or indefinite, distinct; *anthers* oblong, incumbent. *Ovary* inferior, or nearly superior, many-celled; *stigmas* numerous, distinct. *Capsule* either surrounded by the fleshy calyx, or naked, many-celled, often 5-celled, opening in a stellate manner at the apex. *Seeds* definite or indefinite; *embryo* lying on the outside of mealy *albumen*, curved or spiral.

Shrubs or herbs. Leaves succulent, opposite, simple.

1. **SESUVIUM.** Linn.


*S. portulacastrum* Linn.: leaves linear or lanceolate-oblong, flat; flowers pedicelled or subsessile.


**Order LV. CACTÆÆ.** De Cand. Lind.

*Sepals* numerous, usually indefinite and confounded with the petals, either crowning the ovary or covering its whole surface. *Petals* numerous, usually indefinite. *Stamens* indefinite, more or less cohering with the petals and sepals; *filaments* longer, filiform; *anthers* ovate. *Ovary* fleshy, 1-celled; *style* filiform; *stigmas* numerous, collected in a cluster. *Fruit* succulent, 1-celled, many-seeded, smooth or covered with scales, scars or tubercles. *Seeds* without albumen; *embryo* straight, curved or spiral; *cotyledons* flat, thick, foliaceous.

Succulent *shrubs*, very variable in form. *Leaves* mostly wanting; when present fleshy, smooth, and entire or spine-like.

1. **OPUNTIA.** Tourn.

*Sepals* numerous, leafy, adnate to the ovary; outer ones flat, short; inner ones petal-like, obovate, rosaceous; tube

*O. vulgaris De Cand.*: stems erect or procumbent, destitute of proper leaves, articately proliferous; articulations compressed, ovate; spines setaceous; flowers large, sessile on the margin of the joints; fruit succulent, smooth.—*Cactus opuntia* Linn.


**Prickly Pear.**

**ORDER LVI. GROSSULACEÆ. Lind.**

*Calyx* 4—5-cleft, regular, coloured. *Petals* 4—5, minute, inserted in the throat of the calyx. *Stamens* 4—5, inserted alternately with the petals, very short. *Ovary* 1-celled; *style* 2—4-cleft. *Berry* crowned with the remains of the flower, 1-celled; the cell filled with pulp. *Seeds* numerous, suspended among the pulp by long filiform funiculi; *embryo* minute, with the *radicle* next the hilum; *albumen* corneous.

**Shrubs** either unarmed or spiny. *Leaves* alternate, lobed.

1. *RIBES. Linn.*


*Stem without thorns. RIBESIA.*

1. **R. albinervium Mich.**: unarmed; leaves short, acutely lobed, smoothish; nerves white; racemes recurved; berries smooth.

**Hab.** Catskill mountains. N. Y. April, May. 5.—:*Flowers* small, greenish-yellow. *Berries* red. *Pursh.*

2. **R. trifidum Mich.**: unarmed; leaves moderately lobed, smooth above, pubescent beneath; racemes loose, pubescent; flowers rather flat, with the segments of the calyx somewhat 3-cleft; petals spatulate, obtuse; berries hairy.


3. **R. rigens Mich.**: unarmed; branches straight; leaves on long petioles, acutely lobed and dentate, reticulate-rugose, pubescent beneath; racemes loose, many-flowered, becoming stiffly erect; segments of the calyx obovate, obtuse; berries hispid.

**Hab.** Mountains. N. S. May, June. 5.—:*Racemes* few-flowered, erect. *Calyx* and *corol* purple. *Berries* red, hispid. *Mountain Currant.*
4. *R. prostratum* L'Herit.: unarmed; branches smooth, reclining; leaves lobed, nearly smooth, with the margin ciliate; racemes somewhat erect, loose; calyx rather flat; petals deltoid; bracts minute; berries hispid.—*R. glandulosum* Ait.


5. *R. floridum* Willd.: unarmed; branches smooth, recurved; leaves on long petioles, punctate both sides, acutely 3-lobed, pubescent; racemes pendulous, many-flowered, white pubescent; calyx tubular; bracts longer than the pedicels; berries ovate-globose.—*R. recurvatum* Mich.—*R. pennsylvanicum* Lam.


*Wild Black Currant.*

**Stem thorny.** *Grossularia.*

6. *R. hirtellum* Mich.: spines subaxillary; branches somewhat hispid; leaves small, half 3-cleft; lobes subdeltate; peduncles 1-flowered; berries smooth.

**Hab.** Rocks on the Alleghanies, Can. to Vir. May, June. ½.—*Berries* red. *Pursh.*

7. *R. gracile* Mich.: spines subaxillary; leaves on slender petioles, pubescent on both sides; lobes acute, dentate, incised; peduncles slender, erect, about 2-flowered; calyx tubular, campanulate; berries often spiny.


8. *R. triflorum* Willd.: spines subaxillary, short, leaves smooth, 3—5-lobed, incisely toothed, on short petioles; peduncles about 3-flowered; pedicels elongated; bracts very short; petals spatulate, undulate; styles hairy, exserted, deeply 3-cleft; berries small, smooth.


9. *R. oxycanthoides* Linn.: larger spines subaxillary; smaller ones scattered over the stem; leaves smooth, somewhat 3-lobed; lobes dentate; peduncles short, about 2-flowered; berries globose, smooth.

**Hab.** Rocks. April, May. ½.—Shrub 3 feet high. *Flowers* pale yellow. *Berries* purplish-blue.


Order LVII. SAXIFRAGÆ. De Cand. Lind.

Saxifrages.

11. _R. cynosbati_ Jacq.: subaxillary spines in pairs; leaves with short lobes, incisely toothed, softly pubescent; racemes nodding, few-flowered; calyx erect-campanulate; berries prickly.

_Hab._ Mountains. N. H. and Penn. April, June. _p._—Racemes few-flowered. _Calyx_ white. _Petals_ very small. _Berry_ covered with long prickers._Prickly Gooseberry._

Saxifrages.

12.* — Racemes few-flowered. _Calyx_ white. _Petals_ very small. _Berry_ covered with long prickles._Prickly Gooseberry._

1. **HYDRANGEA.** Linn.

_Calyx_ hemispheric, adnate to the germ, 5-toothed. _Petals_ 5, or none, inserted between the lobes of the calyx. _Stamens_ 5—10, inserted either into the calyx, or beneath the ovary. _Disk_ either hypogynous or perigynous. _Ovary_ inferior, or nearly superior, usually consisting of two carpels, 1 or 2-celled, rarely 4 or 5-celled. _Styles_ none. _Stigmas_ sessile on the tips of the lobes of the ovary. _Fruit_ a capsule or berry, with numerous minute _seeds._ _Embryo_ taper in the axis of a fleshy _albumen._

_Herbs._ _Leaves_ simple, alternate, without stipules.

1. **HYDRANGEA.** Linn.

_Calyx_ hemispheric, adnate to the germ, 5-toothed. _Petals_ 5, regular. _Stamens_ 10. _Styles_ 2, distinct. _Capsule_ 2-celled, crowned by the styles and teeth of the calyx, opening by a foramen between the styles. (Placed under _Caprifoliaceæ_ by Lindley.) _Decandria._ _Digynia._

1. _H. vulgaris_ Mich.: leaves oblong-ovate, acuminate, dentate, obtuse at base, smooth beneath; flowers in terminal naked cymes._—_H._ arborescens Linn.


2. _H. radiata_ Walt.: leaves cordate, ovate, acuminate, serrate, tomentose and white beneath; cymes terminal, radiate._—_H._ nivea Mich._

_Hab._ Penn. to Geor. _Muhl._ July. _p._—Shrub 6 feet high. _Flowers_ white, very ornamental._Hydrangea._

2. **SAXIFRAGA.** Linn.

_Calyx_ 5-parted. _Petals_ 5, entire, with short claws. _Stamens_ 10. _Capsule_ with 2-beaks, 2-celled, many-seeded, opening between the beaks._Decandria._ _Digynia._

1. _S. virginensis_ Mich.: pubescent; stem nearly leafless, corymbose-paniculate; leaves oval, obtuse, crenate, narrowed at the base into a petiole; flowers subsessile; petals oval, much larger than the calyx; capsule half inferior._—_S._ vernalis Big._—_S._ nivalis _Muhl._

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DICOTYLEDONOUS PLANTS.

21. — Stem 4—12 inches high. Radicle leaves rather spatulate. Flowers crowded near the extremities of the branches, white.

*Early Saxifrage.*

2. *S. pennsylvanica* Linn. : pubescent; stem naked; leaves oblong-lanceolate, acute at each extremity, obsoletely denticulate; panicle oblong; flowers fasciculate; petals linear, longer than the calyx; capsule superior.


3. CHRYSOSELENUM. Linn.


*Decandria. Digynia.*

C. *oppositifolium* Linn.: leaves opposite, roundish, narrowed into a petiole, slightly crenate.


4. MITELLA. Linn.


*Decandria. Digynia.*

1. *M. diphylla* Linn.: radicle leaves cordate-lobed, toothed and cili-ate; cauline ones 2, opposite, smaller; flowers in a terminal raceme; petals toothed-pinnatifid; calyx and capsule at length membranaceous.

Hab. On wet rocks, &c. N. S. May. 21. — Stem 8—10 inches high. Flowers small, white, in a long terminal spike.

*False Sanicle.*

2. *M. cordifolia* Linn.: radicle leaves cordate, sub-3-lobed, doubly crenate; scape naked or with a single leaf, scaly at base; petals fimbriate-pinnatifid.—*M. nuda* Willd.—*M. reniformis* Lam. Pursh.


5. TIARELLA. Linn.

Calyx 5-parted, persistent, with the lobes obtuse. Petals 5, inserted into the calyx, unguiculate, entire. Stamens 10. Styles 2, distinct. Capsule 1-celled, 2-valved; valves unequal.  

*Decandria. Digynia.*
UMBELLIFERÆ.

T. cordifolia Linn.: leaves cordate, acutely lobed, dentate; teeth mucronate; scape racemed; petals with long claws.

Hab. Shady rocks. Can. and N. S. May. 2 stature—Scape 8—10 inches high. Flowers white, in a simple terminal raceme.

Mitre-wort.

6. HEUCHERA. Linn.

Calyx persistent, 5-cleft. Petals 5, inserted on the calyx. Stamens 5. Styles 2, distinct, as long as the stamens. Capsules with 2-beaks, 1-celled, many-seeded.

Pentandria. Digynia.

1. H. americana Linn.: vicidly pubescent; scape and leaves somewhat scabrous; leaves radical, on long pubescent petioles, with rounded and dentate lobes; flowers in a long terminal panicle or thyrse; calyx short, obtuse; petals lanceolate, as long as the calyx; stamens exserted.—H. cortusa Mich.—H. viscida Pursh.

Hab. Shady rocks, N. Y. to Geor. W. to Miss. June, July. 2 stature—Scape 2—3 feet high. Flowers small, red, in a long simple panicle.—This species has been found by Dr. Samuel B. Mead near North Salem, Westchester county, N. Y. Alum-root.

2. H. pubescens Pursh: pulverulent-pubescent; scape smooth below; leaves somewhat acutely lobed, smooth beneath, toothed; teeth rounded, mucronate; peduncles short, with crowded flowers; calyx large, bell-shaped; petals longer than the calyx; stamens scarcely exserted.

Hab. Mountains. Penn. and Virg. May, June. 2 stature—Scape 2 feet high. Flowers large, red with yellow.

7.? ITEA. Linn.

Calyx 5-cleft, campanulate. Petals 5, linear reflexed, inserted into the calyx. Stamens 5. Style 1. Stigma capitate, 2-lobed. Capsule 2-celled, 2-valved; valves bent inwards. (Placed by Dr. Torrey, with a mark of doubt, under this order; by other botanists under Ericaceae. Its true place does not appear to be fully settled.) Pentandria, Monogynia.

I. virginica Linn.


ORDER LVIII. UMBELLIFERÆ. De Cand. Lind.

Calyx superior, either entire or 5-toothed. Petals 5, inserted on the outside of a fleshy disk. Stamens 5, alternate
with the petals. Styles 2, distinct; stigmas simple. Fruit consisting of two carpels, which are attached to a common axis by their face (the commissure) from which they separate when ripe; each carpel traversed by ribs or ridges, of which 5 are primary, and 4 alternating with them, secondary. Seed solitary, pendulous; embryo minute, at the base of a horny albumen.

Herbs with fistular furrowed stems. Leaves mostly compound and sheathing at the base. Flowers in umbels.

Suborder 1. Orthospermae.

Albumen flat or flattish within.

* Umbels simple or imperfect.

1. HYDROCOTYLE. Linn.

Calyx with the tube subcompressed, and the margin of the limb obsolete. Petals ovate, entire, acute, with apex straight. Fruit laterally compressed; ribs 5, filiform, the middle and lateral ones often obsolete.—Umbel simple. Involucr few-leaved. Pentandria. Digynia.

1. H. interrupta Muhl.: stem filiform, creeping, rooting at the joints, smooth; leaves peltate, orbicular, doubly crenate; flowers 5—8 in axillary umbellate heads.—H. vulgaris Mich.

Hab. Wet places. Can. to Geor. Pursh. June—Aug. 2f.—Flowers minute, white, in small umbels or bunches, which are much shorter than the petioles. Marsh Pennywort.

2. H. umbellata Linn.: stem glabrous, rooting at the joints; leaves peltate-ornicular, doubly crenate; emarginate at the base; umbels 20—30-flowered; flowers distinct, pedicelled.

Hab. Swamps. N. Y. to Geor. June—Aug. 2f.—Umbels on peduncles longer than the leaves. Flowers white, minute.

3. H. americana Linn.: root tuberous; stem filiform, with long creeping suckers; leaves reniform, slightly 7-lobed, crenate; umbels few-flowered, axillary, nearly sessile.


4. H. cymbalarifolia Muhl.: creeping, glabrous; leaves reniform, 3-lobed, the intermediate one smaller, cordate, crenate; umbels few-flowered, on peduncles; flowers nearly sessile.—H. ranunculoides Linn. ? Torr.

Hab. Penn. to Geor. June. 2f.—Differs from the former in having the leaves smaller, more coriaceous in their texture, more
distinctly lobed, and in having the umbel pedunculate.—Sprngel considers this species identical with *H. nitidula* Mich.

2. CRANTZIA. Nutt.

*Calyx* with the tube subglobose; limb nearly wanting. *Petals* roundish, entire, obtuse. *Fruit* roundish; commissure excavated. *Carpels* (*Mericarpia* D. C.) unequal, with 3 margined dorsal ribs, and 4 obtuse-angled grooves.—*Umbel* simple. *Involucre* 5—6-leaved. *Flowers* white.


*Hab.* Muddy banks of streams. N. Y. to Geor. July. 24.—
*Stem* smooth, creeping. *Leaves* about 2 at each joint, 1-2 inch long, thick, sessile, linear, cuneate, with transverse lines. *Umbels* 8—10 flowered, on long peduncles. *Flowers* pedicellate, white.

3. ERIGENIA. Nutt.


*Hab.* Wet grounds. Lancaster, Penn. and W. to Miss. March, April. 24.—*Root* globose, tuberous. *Stem* simple, 4—5 inches high, 2-leaved. *Leaves* 3-parted; partitions subpinnate; segments rhomboidal, cleft. *Umbels* terminal, 3—5 flowered. *Flowers* white.—The habit of this plant is so decidedly different from *Hydrocotyle* as to warrant its separation.

4. SANICULA. Linn.

*Calyx* with the tube echinate and the lobes persistent. *Petals* erect connivent, obovate, deeply emarginate. *Fruit* subglobose, solid, not ribbed, armed with uncinate bristles.—*Umbels* few-rayed. *Leaflets* of the involucre few, often divided. *Flowers* polygamous.

*S. marilandica* Linn.: leaves digitate; leaflets oblong, incisely serrate; flowers in small head-form umbels; fertile ones sessile, sterile ones pedicellate.

b. *canadensis* Torr.: leaves subternate; leaflets ovate, coarsely toothed.—*S. canadensis* Linn.
DICOTYLEDONOUS PLANTS.

HAB. Woods. Throughout the U. S. June, Aug. 2L—Stem 2 feet high, erect, smooth. Flowers greenish-white.—Var. b. is found, according to Mr. Brace, at Litchfield, Conn.

5. ERYNGIUM. Linn.

Calyx 5-parted; tube rough with scales. Petals erect, connivent, oblong-obovate, deeply emarginate. Fruit scaly or tuberculose.—Flowers in a roundish or oblong head. Lower bracts often large and resembling an involucre; the rest (chaff) mixed with the flowers. Pentandria. Digynia.

1. E. aquaticum Linn.: leaves linear-lanceolate, nerved, remotely ciliate-spinose; lower ones subensiform; those of the flowers lanceolate, dentate; flowers in ovate heads, at the extremities of the branches; leaflets of the involucre 8—9, shorter than the head and with the chaff entire.—E. yuccafolium Mich.


2. E. virginianum Lam.: leaves long-lanceolate, serrate, tapering at each end; flowers in large terminal umbels or corymb; leaflets of the involucre 7—8, longer than the heads, laciniate, subulate, whitish beneath; chaff 3-cleft.—E. aquaticum Mich.


3. E. virgatum Lam.: leaves spatulate-ovate, irregularly toothed, short petioled, sometimes a little cordate; heads of flowers small, pedunculate, shorter than the linear leaflets of the involucre; chaff 3-cleft.


** Umbels compound or perfect.

6. CICUTA. Linn.

Calyx with the margin 5-toothed. Petals obcordate, reflexed. Fruit roundish, didymous, laterally contracted. Carpels with 5 equal flattish ribs; the lateral ribs margined.—General involucre none or few-leaved; partial one many leaved. Flowers white. Pentandria. Digynia.

1. C. maculata Linn.: stem spotted; lower leaves tr ternate and quinate; upper biternate; segments lanceolate or ovate-lanceolate, acuminate, mucronately serrate; umbels large, axillary and terminal; partial involucre of 5—6 setaceous leaves.
UMBELLIFERÆ.


2. C. bulbifera Linn.: leaves various, ternate and biternate; leaflets linear and linear-lanceolate, remotely toothed; umbels small; terminal, solitary; partial involucre of 3—5 subulate leaves; axils of the leaves bulbiferous.


7. ZIZIA. Koch. De Cand.

Calyx with the margin obsolete or very short, 5-toothed. Petals elliptic, attenuated into a long inflexed point. Fruit laterally contracted, subdidymous, roundish or oval. Carpels with 5 prominent equal ribs; the lateral ribs margined.—General involucre none; partial one few-leaved. Flowers yellow, rarely white or dark purple. Pentandria. Digynia.

1. Z. aurea Koch: leaves biternate, shining; segments oblong-lanceolate, attenuate at base, incisely serrate; partial involucre 3-leaved, unilateral.—Smyrnum aureum Linn.—Sison aureus Spreng. Torr.—Thaspium aureum Nutt.

HAB. Rocky hills. N. Y. to Car. W. to Miss. June, July. 2f.—Stem 1 1/2 to 2 feet high. Rays of the umbel short. Flowers bright yellow.

2. Z. cordata Koch: radical leaves undivided, cordate, crenate, petiolate; cauline ones subsessile, ternate; segments petiolate, ovate, cordate, serrate; partial involucre 1-leaved.—Smyrnum cordatum Walt.—S. trifoliatum Nutt.


3. Z. integrerrima De Cand.: leaves biternate, somewhat glaucous; segments ovate, very entire; partial involucre 1-leaved, very short.—Smyrnum integrerrimum Linn.—Sison integrerrimus Spreng. Torr.


8. DISCOPLEURA. De Cand.

Calyx with 5 subulate persistent teeth. Petals ovate, entire. Fruit ovate, subdidymous. Carpels with 5 ribs; 3 dorsal ribs filiform, exsert, subacute; 2 lateral ones with a thick margin.—Leaves much divided; the segments linear. Partial involucre a few linear setaceous leaflets. Flowers white. Pentandria. Digynia.
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DICOTYLEDONOUS PLANTS.

D. capillacea De Cand.: stem erect or procumbent; umbels 3–10-rayed; leaflets of the involucre 3–5, mostly 3-cleft. — Ammi majus Walt. — Ammi capillaceum Spreng.

Hab. Bogs. N. Y. to Geor. July—Sept. @. — Stem 1–2 feet long, geniculate, smooth. Leaves many-parted, with the segments all linear. Flowers white, on axillary umbels.

Bishop Weed.

9. CRYPTOTÆNIA. De Cand.


C. canadensis De Cand.: leaves ternate, smooth; leaflets rhomboid-ovate, acute, incisely toothed, acutely serrate; umbels numerous, lower ones rising from the axils of the upper leaves; fruit oblong, rostrate with the persistent styles.—Sison canadense Linn. — Chereophyllum canadense Pers. Pursh.—Myrrhis canadensis Nutt. Torr.


10. SIUM. Linn.

Calyx with the margin 5 toothed, often obsolete. Petals obovate, emarginate, inflexed. Styles divergent-reflexed, capitulate at the apex. Fruit compressed or contracted at the side, subdidymous, crowned with the styles. Carpels with equal filiform and somewhat obtuse ribs.—Mostly aquatics. Leaves pinnate. Umbels terminal. Involucre many-leaved, rarely wanting. Flowers white. Pentandria. Digynia.

1. S. latifolium Linn.: root creeping; stem erect, angular; leaves pinnate; leaflets ovate-lanceolate, unequal at base, sessile, smooth, equally serrate, sometimes pinnatifid; umbels terminal, large, many-rayed; involucres many-leaved.

Hab. Swamps. Can. to Car. July. 2L. — Stem 2–4 feet high. Flowers white.—When growing in water the lower leaves are bipinnatifid, or have the leaflets laciniate. Water Parsnip.

2. S. lineare Mich.: stem erect, smooth, angular and sulcate; lower leaves pinnate, upper ones ternate; leaflets linear-lanceolate, acutely and finely serrate; umbel terminal, with short rays; involucres many-leaved, linear.—S. tenuifolium Muhl.

Hab. Swamps. N. S. July. 2L. — Stem tall. Leaflets very long and narrow. Flowers white.
11. BUPLEURUM. Linn.

Calyx with the margin obsolete. Petals roundish, entire, involute. Fruit laterally compressed or subdidymous, crowned with the depressed style. Carpels with 5 winged acute, filiform or obsolete ribs; lateral ribs marginal.—Leaves mostly simple. Umbel compound. Involucre various. Flowers yellow.

Pentandria. Digynia.

B. rotundifolium Linn.: stem leaves perfoliate, roundish-ovate; umbel 5-rayed; general involucre none; partial one of 5-mucronate leaflets.—B. perfoliatum Lam.

Hab. Near cultivated grounds. 0.—Introduced, but apparently growing wild near North Salem, Westchester co. N. Y. Dr. Samuel B. Mead.

12. ÆTHUSA. Linn.

Calyx with the margin obsolete. Petals obovate, emarginate, inflexed. Fruit ovate-globose. Carpels with 5 elevated, thick and acutely keeled ribs; the lateral ribs margined and a little broader, and surrounded by a somewhat winged keel.—Leaves much divided. General involucre none or 1-leaved; partial one 1—3 or 5 leaves. Flowers white.

Pentandria. Digynia.

Æ. eymapium Linn.: leaves bi- and tri-pinnate, dark green; segments ovate-lanceolate; umbels terminal.

Hab. Road sides, &c. Boston, probably introduced. Big. July, Aug. 0.—Stem about a foot high, smooth. Flowers white, in many rayed umbels—Said to resemble Conium maculatum, but is smaller. Poisonous.

Fool's Parsley.


Calyx with the margin obsolete. Petals obovate, emarginate, reflexed. Fruit roundish in the transverse section. Carpels with 5 equal winged ribs; wings membranaceous; lateral ribs margined.—General involucre various; partial one many-leaved. Flowers white or reddish. Allied to Seseli, but differs, in the membranaceous-winged ribs of the fruit, and the obsolete margin of the calyx.

Pentandria. Digynia.

T. canadensis Spreng.: stem angular, flexuous; leaves bipinnate, shining; leaflets many-parted; segments lanceolate; involucres many-leaved.—Selinum canadense Mich. Pursh.—Apium bipinnatum Walt.

DICOTYLEDONOUS PLANTS.

14. THASPIUM. Nutt.

Calyx with the margin 5-toothed. Petals elliptic, attenuated into a long inflexed point. Fruit not contracted at the side, subelliptic. Carpels convex, with 5 winged ribs; wings subequal; intervals grooved.—General involucre none; partial one about 3-leaved. Differs from Cnidium in its 5-toothed calyx,—petals not emarginate,—involucels 3-leaved—and in its habit. Pentandria. Digynia.

* Umbels opposite. Flowers dark purple.

1. T. atropurpureum Nutt.: stem smooth, dichotomously branched; radical leaves subcordate, simple, serrate; cauline ones ternate; leaflets ovate, acute, subcordate.—Cnidium atropurpureum Spreng. Torr.

Hab. Moist grounds. N. S. June. 24.—Stem 2—3 feet high. Petals dark purple. Fruit small, with membranaceous wings.

** Umbels terminal. Flowers yellow.

2. T. actacifolium Nutt.: stem very tall, smooth and straight; lower leaves tri-ternate; upper ones bi-ternate; leaflets oval, coarsely toothed; umbels numerous, terminal, somewhat whorled; partial involucre setaceous.—Ligusticum actacifolium Mich. Torr.

Hab. Can. to Car. July. 24.—Stem 3—4 feet high. Fruit oblong-oval, with the ribs somewhat winged.

3. T. barbinode Nutt.: petioles and nodes of the stem pubescent; lower leaves tri-ternate; upper ones bi-ternate; segments cuneate-ovate, acute, unequally and incisely serrate, entire at the base; partial involucre 3-leaved, setaceous.—Ligusticum barbinode Mich.—Smyrnium barbinode Muhl.—Thapsia trifoliata Spreng. Torr.


15. LIGUSTICUM. Linn.

Calyx with the margin 5-toothed or obsolete. Petals obovate, acute, emarginate, inflexed; claw very short. Fruit roundish in the transverse section, or slightly laterally compressed. Carpels with 5 equal and somewhat winged ribs; the lateral ones margined.—Involucre various—partial one many-leaved. Flowers white. Pentandria. Digynia.

L. scoticum Linn.: stem erect, smooth and striate; lower leaves bi-ternate; upper ones ternate and nearly sessile; leaflets broadly ovate, coarsely serrate; umbels many-rayed; flowers equal; petals inflexed; involucres linear-lanceolate, 5—7-leaved.


—Stem 12—18 inches high. Flowers white. Identical with the foreign plant. Sea Lovage.
UMBELLIFERÆ. 147

16. ANGELICA. Linn.

_Calyx_ with the margin obsolete. _Petals_ lanceolate, entire acuminate, with a straight or incurved point. _Fruit_ compressed on the back, with the central raphe two-winged on each side. _Carpels_ with 3-dorsal filiform elevated ribs; the 2 lateral ribs dilated into a membranaceous wing.—Umbels terminal. General involucre none or few-leaved; partial one many-leaved. Flowers white.  _Pentandria. Digynia._

1. _A. triquinata_ Mich.: stem terete, pubescent above; leaves on long petioles, ternate, the partitions quinate; leaflets oblong-ovate, equally serrate, smooth; lower ones 2-lobed at the base; general involucre none; partial one of 6—8 subulate leaves, directed to one side.—_A. hirsuta_ Muhl.—_Ferula villosa_ Walt.

_Hab._ Dry grounds. N. Y. to Car. July, Aug. 2f.—Stem 2—3 feet high, erect and straight, white, villous below the umbel. _Leafets_ ovate or subrhomboidal. _Umbels_ mostly 3. _Flowers_ numerous, white.

2. _A. atropurpurea_ Linn.: stem large, smooth, coloured; leaves ternate, on large inflated sheathing petioles; partitions subquinate; leaflets large, oblong-ovate, coarsely serrate, sublobed; the three terminal ones often united at base; general involucre none; partial one of 8—10 subulate leaves.—_A. triquinata_ Big.

_Hab._ Wet meadows. June. 2f.—Stem 3—6 feet high, purplish. (Dr. Darlington says it is often nearly the size of a man's arm at base.) _Flowers_ white.—This, undoubtedly, is the _A. atropurpurea_ of most of our American botanists, except Dr. Bigelow; but whether it be the true Linnean plant I have no means of determining. Our _A. atropurpurea_ is much larger than _A. triquinata_, has its leaflets large and ovate-oblung, instead of small and ovate. Plant powerfully aromatic. Root poisonous.

_Common Angelica._

3. _A. lucida_ Linn.: stem erect, glabrous; leaves bi- and tri-pinnate; leaflets equal, ovate, cuneate at base, incisely serrate; general involucre about 5-leaved; partial one subulate.—_Imperatoria lucida_ Nutt.? _Hab._ Shady woods. Can. to Car. _Pursh._ June, July. 2f.—Stem 1—2 feet high. _Flowers_ white. Root aromatic.

17. ARCHEMORA. De Cand.

_Calyx_ with the margin 5-toothed. _Petals_ obcordate, inflexed. _Fruit_ dorsally compressed, flat, oval or obovate. _Carpels_ with 5 subcarinate equidistant filiform ribs; lateral ribs dilated into a membranaceous margin nearly as broad as the seed.—General involucre none or few-leaved; partial one many-leaved. Flowers white.—Has the habit of _Enanthe_ or _Sium_; the fruit of _Pastinaca_.  _Pentandria. Digynia._
1. *A. rigida* De Cand.: stem erect, rigid, striate; leaves pinnate, smooth; leaflets 4–5 pairs, large, oblong-lanceolate, entire or with several remote teeth; umbels terminal, on long peduncles; general involucre none; partial one of 6–8 subulate leaves; fruit much compressed.—*Sium rigidius* Linn.—*Sium marginatum* Mich.—*Pastinaca rigidius* Spreng. Torr.—*Enanthe rigida* Nutt.


2. *A. ambigua* Dc Cand.: stem erect, slightly angular; leaves pinnate, smooth; leaflets narrow-linear or linear-lanceolate, long, mostly entire, somewhat glaucous beneath; umbels terminal, subsolitary; general involucre none; partial one of 3–5 subulate leaves.—*Enanthe ambigua* Nutt.—*Pastinaca ambigua* Torr.—*Sium longifolium* Pursh.

*Hab.* Brackish swamps. N. J. Aug. 24.—Stem 3–5 feet high. *Flowers* white.—Dr. Torrey considers this plant identical with *Enanthe ambigua* of Nuttall; while according to the latter botanist it is undoubtedly *Sium lineare* of Linnaeus. The principal difference between the present plant as characterized by Torrey and *S. lineare*, consists in the absence of the general involucre. Dr. Asa Gray informs me that this species has been found in the sandy swamps of Michigan.

18. PASTINACA. Linn.


*P. sativa* Linn.: stem smooth, sulcate; leaves pinnate; leaflets sessile, subpubescent beneath, oblong, incised, terminal one 3-lobed; umbels large, terminal; fruit oval, much compressed.


19. HERACLEUM. Linn.

*Calyx* 5-toothed. *Petals* obovate, emarginate, inflexed; outer ones often rayed, bifid. *Fruit* dorsally and flatly compressed, surrounded by a membranaceous margin. *Carpels* with 3 equidistant ribs on the back; 2 lateral ribs with a dilated margin.—*Umbels* many-rayed. General involucre caducous, often few-leaved; partial one many-leaved. *Pentandria. Digynia.*
**UMBELLIFERÆ.**

H. _lanatum_ Mich.: stem sulcate, pubescent; leaflets ternate, petiolated, tomentose beneath; leaflets petiolated, round-cordate, lobed; partial involucre 5—6 leaved; fruit orbicular.

_Hab._ Meadows. June. 2L.—Stem 3—5 feet high. _Petioles_ very broad and membranous. _Flowers_ white, in very large terminal umbels.—One of our largest umbelliferous plants. _Sprengel_ considers it identical with the foreign _H. parnaces_ Linn.

_Cow Parsnip._

20. **DAUCUS.** Linn.

_Calyx_ with the margin 5-toothed. _Petals_ obovate, emarginate, inflexed; outer ones often rayed and deeply bifid. _Fruit_ somewhat laterally compressed, ovate or oblong. _Carpels_ with 5 primary filiform ribs; 3 intermediate dorsal ones, 2 lateral flat, placed on the commissure; 4 secondary ones equal, with prominent wings, parted into a simple aculate series.—General involucre with many pinnate or pinnatifid leaves; partial one with many entire or trifid leaflets. _Flowers_ white or yellow.

_D. carota_ Linn.; stem erect, hispid; leaves tripinnate; leaflets incised, linear-lanceolate, acute; umbel at length concave; fruit bristly.

_Hab._ Old fields. June—Aug. ♀.—Stem 2 feet. _Flowers_ white. _Introduced._

_Wild Carrot._

### Suborder II. CAMPYLOSPERMAE.

**Albumen involute.**

21. **CHÆROPHYLLUM.** Linn.

_Calyx_ with the margin obsolete. _Petals_ obovate, emarginate, inflexed. _Fruit_ not beaked, laterally contracted or compressed. _Carpels_ with 5 obtuse equal ribs; lateral ribs margined.—General involucre none or few-leaved; partial one many-leaved. _Flowers_ white, sometimes reddish.

_Pentandria. Digynia._

_C. procumbens_ Lam.: stem procumbent, somewhat hairy; leaves bipinnate; segments lanceolate, rather obtuse; umbels terminal, 3-rayed; partial involucre of 4—5 ovate ciliate leaves; fruit prismatic, smooth, crowned with the persistent styles.—_Scandix procumbens_ Linn. —_Myrrhis procumbens_ and _M. bifida_ _Spreng._

_Hab._ In shady situations. N. Y. to S. Car. May. ♀.—Stem 6—8 inches high. _Umbel_ bifid, few-flowered. _Flowers_ small, white.

22. **OSMORHIZA.** Raf.

_Calyx_ with the margin obsolete. _Petals_ ovate, scarcely emarginate, with a very short inflexed point. _Fruit_ elongated, 13*
attenuated at base, solid, acute-angled, in the transverse section roundish. *Carpels* with hispid angles and 5 acute ribs; commissure sulcate.—General involucrc 2—3-leaved; partial one often 5-leaved. Flowers white; central ones sterile; outer ones fertile. *Pentandria. Digynia.*

1. *O. longistylis De Cand.*: stem smooth and striate; leaves biternate; the lower ones on short petioles; leaflets ovate, incisely lobed and dentate; umbel 3—4-rayed.—*Myrrhis longistylis Torr.—Uraspermum claytoni Nutt.—Scandix dulcis Muhl.*

**Hab.** Wet meadows. N. S. June. 21.—Stem 3 feet high.—Can be most easily distinguished by its long subulate styles.

2. *O. brevistylis De Cand.*: stem hairy (at first hoary-white); leaves biternate, pubescent; leaflets incisely lobed, dentate; styles very short.—*Myrrhis claytoni Torr.—Uraspermum hirsutum Big.?**

**Hab.** Shady rocks. Can. to Car. May, June. 21.—Stem 2 feet high. Flowers white. Whole plant sweet tasted. *Sweet Cicily.*

23. CONIUM. *Linn.*

*Calyx* with the margin obsolete. *Petals* obcordate, somewhat emarginate, very short and inflexed. *Fruit* ovate, laterally compressed. *Carpels* with 5 prominent equal, undulate ribs; the lateral ribs margined.—Involucres 3—5-leaved; partial one dimidiate. Flowers white, all fertile. *Pentandria. Digynia.*

*C. maculatum Linn.*: stem erect, branched, smooth and spotted; leaves large, tripinnate; leaflets lanceolate, pinnatifid; ultimate segments lanceolate, mostly entire; general and partial umbels many-rayed; general involure of several short lanceolate leaves; partial one few-leaved, setaceous, directed to one side.


**Order LIX. ARALIACEÆ. De Cand. Lind.**

*Calyx* superior, entire or toothed. *Petals* definite, 5 or 6, deciduous. *Stamens* definite, 5 or 6 or 10 or 12, arising from within the border of the calyx, and from without an epigynous disk. *Ovary* inferior, with many cells; *ovules* solitary, pendulous; *styles* equal in number to the cells; *stigmas* simple. *Fruit* succulent or dry, consisting of several 1-seeded cells. *Seeds* solitary, pendulous.
ARALIACEÆ.

Trees, shrubs or herbaceous plants with the habit of umbelliferæ.

1. ARALIA. Linn.

*Calyx* 5-toothed or entire. *Corol* 5-petalled. *Stamens* 5, often more. *Styles* 5, spreading. *Berry* 5—10-seeded, crowned with the styles.—Umbels often with small involucres.

*Pentandria, Pentagynia.*

1. *A. nudicaulis* Linn.: nearly stemless; leaf mostly solitary, triquinate; leaflets sessile, oblong-oval, acute, serrate, smooth; scape naked, shorter than the leaf, 3-cleft at the top; umbels few, small, on long peduncles, without involucres.


2. *A. racemosa* Linn.: stem herbaceous, branched; petioles 3-parted; divisions ternate and quinate; leaflets ovate, often cordate, acuminate, sharply serrate, mostly smooth; umbels numerous, compound, in large axillary panicles; involucre small, few-leaved.

**Hab.** Woods. Can. to Car. W. to Rocky mountains. June—Aug. 2. — *Stem* 3—4 feet high. *Flowers* white.—The root is highly aromatic, and is sometimes used for medicinal purposes. *Spikenard.*

3. *A. hispida* Mich.: low, suffruticose; stem and petioles hispid; leaves doubly pinnate; leaflets ovate, sharply serrate, unarmed; umbels axillary and terminal, on long peduncles.

**Hab.** Rocky woods. Can. to Virg. July. 2. — *Stem* a foot and a half high, with stiff and thick bristles at the base. *Flowers* greenish-white. *Wild Elder.*

4. *A. spinosa* Linn.: arborescent; stem and leaves spinous; leaves doubly pinnate; leaflets ovate-acuminate, sessile; umbels numerous, in compound panicles; involucre small, few-leaved.

**Hab.** Fertile woods. Penn. to Geor. W. to Miss. Aug., Sept. 2. — *Shrub* 8—12 feet high, with the leaves crowded at the summit. *Flowers* white, in very large terminal panicles.—A watery infusion of the bark is said to be both emetic and cathartic. *Ell. Sk.* i. 373. *Angelica Tree.*

2. PANAX. Linn.

*Calyx* with the margin very short and obsolesly 5-toothed. *Petals* 5. *Stamens* 5, inserted under the margin of the disk and alternating with the sepals. *Styles* 2—3, short. *Fruit* fleshy, compressed, orbiculate or didymous, 2-celled; cells 1-seeded.—Flowers in simple umbels, polygamous.

*Pentandria, Digynia.*
DICOTYLEDONOUS PLANTS.

1. *P. quinquefolium* Linn.: root fusiform; stem angular; leaves ternate-quinate; leaflets oval, acuminate, petiolar, serrate; peduncles shorter than the petioles; styles and seeds 2.


Ginseng.

2. *P. trifolium* Linn.: root tuberous, roundish; stem simple, smooth; leaves ternate; leaflets subsessile, oblong-lanceolate, serrate; styles often 3; berry 3-seeded.


Order LX. HAMAMELIDEÆ. De Cand. Lind.

Calyx superior, in 4 pieces. *Petals* 4, linear, with a valvular aestivation. *Stamens* 8, of which 4 are alternate with the petals, anthers turned inwards, 2-celled, each all opening by a valve which is finally deciduous, and 4 are sterile, and placed at the base of the petals. *Ovary* 2-celled, inferior. *Styles* 2. *Fruit* half inferior, capsular, usually opening with two septiferous valves. *Seeds* pendulous. *Embryo* in the midst of fleshy albumen.

Shrubs, with deciduous alternate leaves and small axillary flowers.

1. HAMAMELIS. Linn.

Calyx 4-lobed, with 2—3 scales (an involucre) externally at base. *Petals* 4, long, ligulate, alternating with the lobes of the calyx. *Stamens* 4, with very short filaments. *Capsule* coriaceous, 2-celled, 2-valved at the top; valves bifid. *Tetrandria. Digynia.*

*H. virginica* Linn.: leaves ovate, acute, toothed, cordate, with the sinus small; flowers in axillary clusters.

*b. parvifolia* Nutt.: leaves oblong-ovate; upper part undulate and coarsely crenate; under surface pubescent, somewhat hisute; segments of the calyx oblong; stamens and perigynous filaments often nearly equal.

Hab. Woods. Can. to Flor. Oct., Nov. 2ft.—Shrub 6—12 feet high. *Flowers* yellow and continue during a great part of the winter.—*Var. b.* is found on mountains in Penn. and is smaller than the common variety. *Nutt.* *Witch-hazel.*

Order LXI. CORNEÆ. De Cand.

Calyx 4-lobed. *Petals* 4, oblong, broad at the base, regular, inserted on the top of the tube of the calyx; aestivation
valvate. *Stamens* 4, alternate with the petals, inserted with them; *anthers* 2-celled. *Ovary* closely cohering with the tube of the calyx, 2-celled; *ovules* pendulous, solitary; *style* filiform; *stigma* simple. *Fruit* fleshy, crowned by the remains of the calyx, 2-celled, (or rarely 1-celled by abortion,) endocarp thick and bony. *Seeds* solitary, pendulous; *albumen* fleshy; *embryo* straight; *radicle* superior, shorter than the oblong cotyledons.

**Trées, shrubs or herbs.** *Leaves* opposite, rarely alternate.

1. **CORNEUS.** Linn.


* Flowers capitate, surrounded by an involucre.

1. **C. canadensis** Linn.: herbaceous; lower leaves opposite, small; upper ones verticillate, veined; leaves of the involucre ovate, acuminate, white; flowers numerous, very small, in a terminal head; drupe globose.


2. **C. florida** Linn.: arborescent; leaves opposite, ovate-acuminate, entire, ribbed; leaves of the involucre 4, large, obcordate, nerved, white; flowers in terminal heads.


**Dog Wood.**

**Flowers naked, in cymes.**

† *Leaves* opposite.

3. **C. circinata** L'Herit.: branches warty; leaves on short petioles, broad-oval, acuminate, white-downy beneath; cymes crowded, depressed; drupe globose.—*C. tomentulosa* Mich.—*C. rugosa* Lam.


4. **C. sericea** L'Herit.: branches expanded; leaves ovate, acuminate, the under surface clothed with a silky ferruginous down; cymes depressed, woolly.—*C. lanuginosa* Mich.—*C. alba* Walt.

5. *C. sanguinea* L’Herit.: branches straight; leaves ovate, green on both sides, pubescent beneath; cymes expanding.
   

6. *C. stricta* L’Herit.: branches stiff and straight, fastigiate; leaves ovate-lanceolate, acuminate, entire, green on both sides, somewhat naked; cymes panicled.—*C. fastigiata* Mich.—*C. sanguinea* Walt.
   

   

8. *C. paniculata* L’Herit.: branches erect; leaves ovate, acuminate, sometimes lanceolate-ovate, hoary beneath; cymes panicked.—*C. racemosa* Lam.
   
   **Hab.** Wet woods. July. **Shrub** 6–10 feet high. *Flowers* in compact panicles, white. *Drupe* white, nearly globose.

†† *Leaves alternate.*

9. *C. alternifolia* Linn.: branches warty; leaves alternate, ovate, acute, hoary beneath; cymes depressed, expanding.
   

**Order LXII. LORANTHACEÆ. De Cand.**

Calyx with 2 bracts at base. *Petals* 4–8, more or less united; aestivation valvate. *Stamens* as many as the petals, and opposite to them. *Ovary* 1-celled; *ovule* pendulous; *style* 1 or none; *stigma* simple. *Fruit* fleshy, 1-celled; endocarp membranaceous. *Seed* 1, pendulous; *embryo* straight in the axis of fleshy *albumen*; radicle superior, next to the hilum.

Shrubs, almost parasitical. *Leaves* fleshy, entire, opposite, rarely alternate or wanting.

1. *VISCUM* Linn.

*Flowers* monoecious or dioecious. *Calyx* with the margin entire or a little prominent. *Sterile Fl.* *Petals* 4, (rarely 3 or 5) united at base. *Anthers* 4, adnate with the petals.

Dioccia. Tetrandria.

*V. flavescens* Pursh: branches terete, opposite and verticillate; leaves cuneate-obovate, 3-nerved; spikes axillary, solitary, about as long as the leaves; sterile flowers mostly trifid.—*V. verticillatum* Nutt.


**Order LXIII. CAPRIFOLIACEÆ. De Cand.**

Calyx with its limb 5- (very rarely 4-) lobed. Corol monopetalous, lobed, sometimes irregular, the divisions alternate with those of the calyx. Stamens as many as the lobes of the corol, and (sometimes 1 abortive) alternating with them; filaments subulate; anthers ovate, 2 celled. Ovary cohering with the calyx, 3- rarely 4—5-celled; ovules few in each cell, pendulous; style 1, exserted. Stigmas as many as the cells. Fruit crowned by the limb of the calyx, fleshy, or rarely almost dry, 1 or many-celled. Seeds solitary, in pairs or several; embryo straight, in fleshy albumen; radicle superior.

Shrubs, with opposite leaves destitute of stipules. Flowers terminal, corymbose or axillary.

1. **SAMBUCUS. Linn.**


Pentandria. Trigynia.

1. *S. canadensis* Linn.: stem frutescent; leaves pinnate; leaflets 4 or 5 pairs, oblong-oval, acuminate, smooth and shining; nerves and petioles smooth; stipules wanting; cymes 5-parted, lax.


2. *S. pubens* Mich.: stem frutescent; leaves pinnate; leaflets in 2 or 3 pairs, oval-lanceolate and with the petioles pubescent beneath; cymes dense, panicked or racemose.—*S. pubescens* Pers.


2. **VIBURNUM. Linn.**

Calyx with the limb small, 5-toothed and persistent. Corol rotate subcampanulate or tubular, 5-lobed. Stamens 5,
equal. *Stigmas 3*, sessile. *Berry* ovate or globose, 1-seeded, crowned by the teeth of the calyx.

**Pentandria. Tryginia.**

1. *V. prunifolium Linn.*: branches spreading, smooth; leaves obovate, nearly round and oval, very smooth, acutely serrate; petioles winged; cymes large, lateral; corol large. 
   **Hab.** Woods. N. Y. to Car. June. *?-Shrub or small tree, 8—15 feet high. Flowers large, white. Fruit oval, dark blue.

2. *V. pyrifolium Lam.*: leaves ovate-oblong, somewhat acute, sub-serrate, smooth; petioles naked; cymes large, spreading, on angular peduncles; fruit ovate-oblong. 
   **Hab.** Mountains. N. S. May, June. *?-Shrub 5—10 feet high. Flowers white, on large spreading cymes. Fruit red.

3. *V. lentago Linn.*: smooth; leaves broad-ovate or oval, acuminate, sharply serrate; petioles with waved margins; cymes terminal, sessile; flowers small. 
   **Hab.** Rocky banks of streams. N. Y. to Geor. June. *?-Shrub 10—15 feet high. Flowers small, white. Fruit black.

4. *V. nudum Linn.*: leaves oval-oblong, slightly acuminate, smooth above, veins and margins pubescent beneath, obsoletely crenulate; petioles naked; cymes peduncled; flowers small, crowded; fruit oval, dark blue.—*V. squamatum R. & S.* 

5. *V. lantanooides Mich.*: branches flexuous and often procumbent; leaves orbicular-cordate, abruptly acuminate, unequally serrate; nerves and petioles purverulent-tomentose; cymes closely sessile; fruit ovate.—*V. lantana var. grandiflorum Ait.* 
   **Hab.** Mountains. Can. and N. S. May, June. *?-Shrub 4—8 feet high. Fruit red, black when ripe. **Hobble Bush.**

6. *V. dentatum Linn.*: nearly smooth; leaves on long petioles, orbicular-ovate, with coarse serratures, plaited; axils of the veins pubescent beneath; cymes large, terminal, peduncled; fruit nearly globose, small.—*V. dentatum var. glabellum Mich.* 
   **Hab.** Moist woods. Can. to Car. June. *?-Shrub 8 feet high. Flowers white, in a large expanding cyme. Fruit blue, small. **Arrow-wood.**

7. *V. pubescens Pursh* : pubescent; leaves on very short petioles, ovate, subcordate, acuminate, dentate-serrate, villous beneath; cymes pedunculate; fruit oblong.—*V. dentatum var. semitomentosum Mich.* 
   **Hab.** High grounds. N. Y. to Car. June. *?-Shrub 6 feet high. Flowers in a small cyme.

8. *V. acerifolium Linn.*: leaves subcordate, 3-lobed, acutely serrate, pubescent beneath; petioles without glands, hairy; cymes on long peduncles; fruit oval, compressed.

9. V. oxyccoccus Pursh: leaves 3-lobed; acute at the base, 3-nerved; lobes divaricate, acuminate, remotely and obtusely toothed; petioles glandular; cymes radiate; flowers of the ray large and abortive.—V. opulus var. americana Ait.—V. opuloides Muhl.

Hab. Woods. Can. and N. S. N. to Arc. Amer. May, June. 2l.—Shrub small, with spreading branches. Fruit large, subglobose, red, of an agreeable acid resembling that of cranberries.

Tree Cranberry.

10. V. edule Pursh: leaves 3-lobed, rather obtuse at the base, 3-nerved; lobes very short, with acuminate-dentate serratures; petioles glandular; cymes radiate.—V. opulus var. edule Mich.

Hab. Banks of rivers. Can. and N. Y. N. to Arc. Amer. July. 2l.—A smaller and more upright shrub than the preceding; berries of the same colour and size, but when completely ripe more agreeable to eat. Pursh.

3. TRIOSTEUM. Linn.

Calyx 5-cleft; lobes linear-lanceolate, as long as the corol. Corol tubular, subequally 5-lobed, gibbous at base. Stamens 5, included. Stigma capitate. Berry 3-celled, 3-seeded, crowned by the calyx.

Pentandria. Monogynia.

T. perfoliatum Linn. : leaves connate, spatulate, lanceolate, acuminate, pubescent beneath; margin undulate; flowers 1—3 in the axils of the leaves, sessile.—T. majus Mich.


Fever Root.

4. DIERVILLA. Tourn.


Pentandria. Monogynia.

D. tournefortii Mich. : peduncles axillary and terminal, dichotomous, 2—3-flowered; leaves opposite, ovate, on short petioles, serrate, acuminate, smooth.—D. lutea Pursh.—D. canadensis Muhl.—Lonicera diervilla Linn.

Hab. Rocky woods. Throughout the U. S. June. 8.—Shrub 2—3 feet high. Corol yellow.

5. LONICERA. De Cand.

Calyx 5-toothed. Corol tubular, campanulate or funnel-

Pentandria. Monogynia.

* Flowers capitate-verticillate. Berry solitary, 3-celled, crowned by the calyx. Lonicera.

1. L. flavum Sims: leaves ovate, glaucous beneath, with a cartilaginous margin; upper ones connate-perfoliate; spikes verticillate, terminal; corol ringent; segments oblong, obtuse.—Caprifolium flavum Ell.—C. fraseri Pursh.


2. L. hirsuta Eat.: leaves broad ovate and obovate, pubescent and ciliate, glaucous beneath; upper ones connate-perfoliate, nearly smooth; spikes verticillate, terminal, subcapitate, glandular-pubescent.—Caprifolium pubescens Goldie.


Rough Woodbine.

3. L. parviflora Lam.: leaves deciduous, glaucous beneath, all connate-perfoliate; spikes verticillate, in heads, subsessile; corol ringent; gibbons at base; filaments bearded.—Caprifolium parviflorum Pursh.—C. bracteosum Mich.


4. L. grata Ait.: leaves perennial, obovate, slightly mucronate, reticulate and paler beneath; upper ones connate-perfoliate; spikes verticillate, approximate; corol ringent, with the tube long.—Caprifolium gratum Pursh.


5. L. sempervirens Ait.: leaves oblong, glaucous beneath, shining above, the upper ones connate-perfoliate; spikes verticillate, somewhat naked, terminal; corol nearly equal, with the tube ventricose above.—Caprifolium sempervirens Mich.


** Pedicels axillary, in pairs. Berries in pairs, distinct or more or less connate, 2-celled, many-seeded. Xylosteum.

6. L. ciliata Muhl.: stem erect; leaves opposite, ovate and subcordate, ciliate on the margin, younger ones villous beneath; tube of the corol calcarate at base, ventricose above; segments short, acute; style exserted; berries distinct.—Xylosteum ciliatum Pursh. Torr.

7. *L. villosa* Muhl.: leaves oblong and oval, obtuse; the younger ones as well as the corol villous; peduncles much shorter than the flower; berries coadnate.—*Xylosteum villosum* Mich.—*X. solonis* Eat. —*X. oblongifolium* Goldie.

Hab. Mountains. Hudson’s bay to N. J. May. \( \text{B} \).—Shrub 2—4 feet high. Flowers axillary, yellow. Berries red or purple.

6. **SYMPHORIA.** Pers.

Calyx minute, 4—5-toothed. Corol funnel-form, subequally 4—5-lobed. Stamens 5, scarcely exserted. Stigma subglobose. Berry crowned by the calyx, 4-celled, 4-seeded; 2 of the cells sometimes abortive. Pentandria. Monogynia.

1. *S. glomerata* Pursh: racemes axillary, capitate, glomerate; leaves opposite, ovate, on short petioles; flowers small, numerous.—*S. vulgaris* Mich.—*Symphoricarpos vulgaris* De Cand.


2. *S. racemosa* Pursh: racemes terminal; corol bearded within; leaves elliptical ovate, opposite.—*Symphoricarpos racemosus* Mich.


7. **LINNÆA.** Gron.

Calyx with the tube ovate; limb 5-parted; segments lanceolate-subulate. Corol turbinate, subcampanulate, 5-lobed. Stamens 4, subdidynamous, included. Stigmas globose. Berry dry, small, ovate-globose, 3-celled, (one cell only bearing a perfect seed.) Tetrandra. Monogynia.

*L. borealis* Gron.


**ORDER LXIV. RUBIACEÆ.** De Cand.

Tube of the calyx adhering to the ovary; the limb variable, truncate or lobed, consisting of as many sepals as petals, rarely with accessory intermediate teeth. Petals 4—5, rarely 3—8, united, inserted on the top of the tube of the calyx. Stamens as many as the lobes of the corol and alternate with them; anthers oval, 2-celled, turned inwards. Ovary 2—many
celled, (by abortion 1-celled) crowned by a fleshy urceolate disk; style single, sometimes partly divided; stigmas usually 2, rarely several. Fruit splitting into 2 cocci, or capsular, or baccate, or drupaceous, 2 or many-celled. Seeds one or many in each cell. Albumen copious, horny or fleshy; embryo straight or slightly curved; radicle turned to the hilum; cotyledons leafy.

Trees, shrubs or herbs. Leaves simple, entire, opposite, rarely verticillate.

1. HEDYOTIS. Linn.

Calyx 4-toothed, or 4-parted. Corol tubular, bearded at the throat, 4-parted. Stamens 4, somewhat exserted. Capsule ovate, 2-celled, opening transversely at the top, many-seeded; dissepiment contrary to the valves.

Tetrandria. Monogynia.

H. glomerata Ell.: stem procumbent, assurgent, pubescent; leaves opposite, lanceolate, attenuate at base, pubescent; flowers in clusters, sessile, axillary and terminal.—H. auriculata Walt.—Oldenlandia glomerata Mich.

Hab. Damp grounds. N. J. to Car. Aug. @?

—Stem 1—3 inches high. Flowers white, minute, in clusters forming whorls.

2. MITCHELLA. Linn.

Flowers by pairs upon the same germ, superior. Calyx 4-toothed. Corol funnel-form; tube cylindric; limb 4-parted, spreading, villous on the inner side. Stamens 4, adnate to the tube, scarcely exserted. Stigma 4-cleft. Berry by the union of 2 germs, didymous, 4-seeded.

Tetrandria. Monogynia.

M. repens Linn.: stem branched, smooth, creeping; leaves opposite, petioled, round or ovate, cordate at the base, smooth, very entire; flowers terminal, in pairs on each germ; calyx minute.


3. CEPHALANTHUS. Linn.


Tetrandria. Monogynia.
C. occidentalis Linn.: leaves opposite or ternate, ovate or oval, acuminate; peduncles much larger than the head of flowers.


Button Bush.

4. DIODIA. Linn.

**Calyx** with the tube ovate or obovate, often 8-nerved; 2—4-toothed. **Corol** funnel-form, 4-lobed. **Stamens** 4, exerted or included. **Style** bident or undivided. **Fruit** crowned with the calyx, 2-celled, bipartite; carpels 1-seeded.

Tetrandria. Monogyinia.

1. *D. teres* Walt.: stem procumbent, diffuse, terete, hairy; leaves linear-lanceolate, nearly smooth, margin and keel serrulate; stipules with numerous long bristles; flowers axillary, solitary, alternate; corol bearded within; fruit ovate, pubescent, crowned by the 4-lobed calyx.—*Spermacoce diodina* Mich.

**Hab.** Sandy fields. N. J. to Car. Aug. 9.—**Stem** 6—8 inches long. **Flowers** opposite, often clustered, white or pale purple.

2. *D. virginica* Linn.: smooth; stem procumbent, nearly terete; leaves lanceolate, opposite, acute, scabrous on the margin; corol nearly smooth within; fruit oblong, smooth, crowned by the 2-lobed calyx,

**Hab.** Damp soils. Md. to Car. Sept. 24.—**Stem** smooth, slender, purple. **Flowers** white, solitary, opposite.

5. GALIUM. Linn.

**Calyx** with the tube ovate-globose or oblong; limb nearly wanting. **Corol** 4-parted, rotate, (very rarely 3-parted.) **Stamens** short. **Styles** 2, short. **Fruit** didymous, roundish, rarely oblong.

*Fruit* smooth. **Flowers** yellow.

1. *G. verum* Linn.: leaves about 8 in a whorl, linear, grooved, entire; flowers in dense panicles.

**Hab.** Pastures. N. S. June, July. 24.—**Stem** erect, 9—18 inches high, slender, branched. **Leaves** linear, deflexed, roundish. **Flowers** yellow. Introduced? Yellow Bedstraw.

**Fruit** smooth. **Flowers** white.

2. *G. trifidum* Linn.: stem procumbent, scabrous downward; leaves 4—6 in a whorl, linear, obtuse, scabrous on the margin and midrib; peduncles smooth, spreading, 3-cleft; corol 3—4-cleft.—*G. claytoni* Mich.

**Hab.** Swamps and wet fields. Can. to Car. N. to Arc. Amer. June, July. 24.—**Stems** procumbent and assurgent, much branch-
ed. Flowers in threes, white, very minute.—It varies with obovate-cuneate leaves.  

Small Cleavers.

3. G. tinctorium Linn. : stem diffuse, smoothish; leaves linear, somewhat acute; those of the stem in sixes; of the branches in fours; peduncles terminal, elongated, mostly 3-flowered.


Dyer's Cleavers.

4. G. obtusum Big. : stem smooth, procumbent; leaves in fours, oblong-lanceolate, obtuse, rough on the edge and midrib; peduncles slender, 3-flowered; lobes of the corol acute; fruit smooth, globose.


5. G. asprellum Mich. : stem diffuse, very branching, aculate backwards; leaves in fives and sixes, lanceolate, acuminate, their margins and nerves aculate; pedicels short.


*** Fruit hispid.

6. G. aparine Linn. : stem weak, branching, aculate backwards; leaves 6—8 in a whorl, linear-lanceolate, mucronate, with the keel and margin rough with reflexed prickles; fruit with hooked bristles.

Hab. Moist woods. N. S. June. 6. — Stem 3—4 feet long. Flowers white, numerous, on axillary and terminal peduncles.

7. G. micranthum Pursh: stem very branching, divaricate, with reflexed prickles; leaves short, lanceolate, mucronate, smooth, their margin and keel aculate; flowering branches divaricate; pedicels sub-2-flowered, hispid.


8. G. brachiatum Pursh: stem flaccid, elongated, brachiate-ramose; branches short; leaves in sixes, oblong-lanceolate, acuminate, smooth, their margin and keel setaceous-ciliate; flower bearing branches longer than the whorls, divaricate and dichotomous; pedicels 2-flowered; fruit with hooked bristles.


9. G. triflorum Mich. : stem procumbent, smoothish; leaves in fives and sixes, obovate-lanceolate, mucronate, glabrous, margin scarcely ciliate; flowering branches long, 3-flowered at the summit; flowers on short pedicels; fruit small, hispid.—G. cuspidatum Muhl. Ell.


10. G. puncticosum Mich. : stem erect, very branching, scarcely pubescent; leaves in fours, ovate, obtuse, smooth, with pellucid dots;
margin and nerves pubescent; flowering branches elongated; fruit with hooked bristles.—*G. hermuddianum* Pursh not of Linn.?

**Hab.** In wet places. Penn. to Car. June. 24.—Stem erect, nearly smooth. *Flowers* purple.

11. *G. pilosum* Ait.: stem nearly simple, elongated, ascending, with remote joints, hispid; leaves in fours, oval, mucronate, very hairy on every part, nerveless; flowering branches elongated, nearly simple, 3-flowered at the extremity; fruit hairy.—*G. puncticululosum var. pilosum* De Cand.

**Hab.** Woods. N. Y. to Car. July, Aug. 24.—Stem about a foot high, rough. *Flowers* purple.—Probably not distinct from the preceding.

12. *G. circinans* Nich.: stem erect, smooth or slightly pubescent on the angles; leaves in fours, oval, obtuse, smooth; margin and nerves ciliate; peduncles short, divaricate, few-flowered; flowers remote, subsessile, alternate; fruit nodding, with hooked bristles.—*G. boreale* Walt.—*G. brachiatum* Muhl.

**Hab.** Rocky woods. N. Y. to Car. June, July. 24.—Stem a foot high. *Flowers* purple.

13. *G. lanceolatum* Torr.: stem erect, very smooth, with remote joints; leaves in fours, lanceolate, generally acute, smooth, 3-nerved, margin subciliate; peduncles long, divaricate; fruit sessile, nodding, covered with hooked bristles.—*G. torreyi* Big.

**Hab.** Rocky woods. N. S. July. 24.—Stem 12—18 inches high. *Flowers* purple.—De Candolle considers this a variety of the former.

14. *G. septentrionale* R. & S.: stem erect, branched above, very smooth; leaves in fours, linear-acute or linear-lanceolate, 3-nerved, smooth, margin involute and scabrous; flowers in a divaricate terminal panicle; fruit with minute hooked hairs.—*G. boreale* Pursh. Torr.—*G. strictum* Eat.

**Hab.** Sandy woods. N. S. Aug. 24.—Stem 1 1-2—2 feet high. *Flowers* white, in a terminal crowded panicle.

**Order LXV. VALERIANAE.** De Cand. Lind.

*Calyx* with a limb of various kinds, either membranous or resembling pappus. *Corol* inserted into the top of the ovary, 3—5-lobed, regular or irregular, sometimes calcarate at the base. *Stamens* 1—5, inserted into the tube of the corol and alternate with its lobes. *Ovary* inferior, 1—3-celled; *ovule* solitary, pendulous; *style* filiform; *stigmas* 1—3. *Fruit* dry, indeliscent, with 1 fertile cell and 2 empty ones. *Seed* solitary, pendulous; *embryo* straight, destitute of albumen; *radicle* superior.

**Herbs.** *Leaves* opposite, without stipules.
1. VALERIANELLA. Mæch. De Cand.

_Calyx_ with the limb toothed and persistent. _Corol_ not calcareous, regular, 5-lobed. _Stamens_ 5. _Stigmas_ scarcely divided or trifid. _Fruit_ 3-celled, submembraneous, indehiscent, crowned by the limb of the _calyx_; 1 or 2 of the cells only fertile.


_Hab._ Fields. N. Y. to Car. W. to Miss. May. Ø.—Stem a foot high, dichotomous. _Leaves_ opposite. _Flowers_ small, pale blue, in fastigiate corymbs, with lanceolate bracts at base.

_Wild Lamb Lettuce._

2. VALERIANA. De Cand.

_Calyx_ with the limb involute, at length evolved in a deciduous plumose pappus. _Corol_ with the tube obconic or cylindric, equal or gibbous at base, limb obtusely, 5-cleft. _Stamens_ 3. _Fruit_ indehiscent, 1-celled, 1-seeded.

_Triandria. Monogynia._

_V. sylvestria_ Rich.? : flowers triandrous, perfect; cauline leaves pinnate, acute; radical ones oblong, entire.

_Hab._ Spagnous swamps, near Fairhaven, Ver. June, July. 24.—_Root_ consisting of numerous long fibres, having the odour and probably the medicinal properties of _V. officinalis_. _Stem_ 2—3 feet high, simple, smooth, erect. _Radical leaves_ on long petioles, usually simple, but sometimes lobed at base, varying from lanceolate, to ovate and subcordate; stem leaves pinnate; leaflets in 4—6 pairs with an odd one, ovate oval or somewhat rhomboidal, coarsely but sometimes very sparingly toothed. _Flowers_ numerous, reddish-white, perfect, in a large and dense dichotomous corymb. _Corol_ gibbous at base, 5-cleft. _Stamens_ and _pistil_ much exserted. _Capsule_ ribbed, as long as the narrow and hispid bracts.—This plant agrees very well with the short description given by Dr. Richardson (App. to Frank. Jour.) of _V. sylvestria_, a new species found in Arctic America and Newfoundland, but it may prove distinct. From _V. panciflora_ it appears to differ, although I have had no opportunity of comparing specimens. It was first discovered by Dr. Robbins at the above locality, where I have since found it growing abundantly.

Order LXVI. DIPSACEÆ. De Cand. Lind.

_Calyx_ with a limb short or elongated, entire or toothed, or pappose. _Corol_ tubular, inserted into the _calyx_; limb oblique, 4—5-lobed, with an imbricate _aestivation_. _Stamens_ usually 4 or 5, alternate with the lobes of the _corol_; _anthers_ distinct.
**COMPOSITÆ.**

Ovary inferior, 1-celled, with a single pendulous ovule; style 1; stigma simple. Fruit dry, indehiscent, 1-celled, crowned by the pappus-like calyx; embryo straight, in the axis of fleshy albumen; radicle superior.

Herbs or undershrubs. Leaves opposite or whorled. Flowers densely capitately or very rarely whorled.

1. **DIPSACUS.** Linn.

Flowers collected in an ovate or roundish head. Common calyx (involucre) foliaceous, many-leaved; proper superior, of one leaf. Corol tubular, 4-cleft. Stamens 4. Stigma longitudinal. Fruit crowned with the limb of the calyx.

Tetrandria. Monogynia.

* D. sylvestris Linn.: leaves opposite, rarely connate; the many-leaved involucre curved upwards; scales of the receptacle straight.


**Order LXVII. COMPOSITÆ.** *Adans. Lind.*

Calyx with the limb either wanting or membranous, and divided into bristles paleæ or hairs, and called pappus. Corol monopetalous, usually deciduous, either ligulate or tubular; in the latter case 4—5-toothed or lobed, with a valvate aestivation. Stamens 5, alternate with the teeth of the corol; filaments distinct; anthers cohering in a cylinder. Ovary inferior, 1-celled, with a single erect ovule; style single; stigmas 2, distinct or united. Fruit a small indehiscent dry pericarp, (acine) crowned with the limb of the calyx. Seed solitary, erect; embryo with a taper inferior radicle; albumen none.

Herbs or shrubs. Leaves alternate or opposite, usually simple, without stipules. Flowers (called florets) collected in dense heads upon a common receptacle, surrounded by an involucre.

**Suborder 1. CICHORACEÆ.**

Obs. In the arrangement of the genera of this suborder, I have adopted Mr. Don’s New Classification of the Cichoraceæ. *Edin. New Phil. Jour.* vi. 305. Wherever he has enumerated the species of his new genera, I have quoted him as the authority; although he has not in any case given specific descriptions.
1. HIERACIUM. Linn. Don.

Involucre imbricate. Receptacle subfavose. Acines simple at the apex. Pappus with the rays numerous, persistent, setaceous-pilose, arranged in one row.—Flowers yellow, solitary or corymbose. Syngenesia. Equalis.

* Stemless. Scape many-flowered.

1. H. venosum Linn.: scape hairy at base, smooth and branching above; branches 1-flowered; leaves obovate-oblong, entire, a little hairy above; margins ciliate; veins colored; involucre smooth.


** Stem leafy, many-flowered.

2. H. gronovii Linn.: radical leaves oblong, obtuse, very entire, ciliate; cauline ones ovate and clasping; flowers in loose racemes; pedicels glandular-pilose; involucre smooth.

Hab. Dry woods. Can. to Car. July, Aug. 24.—Stem 2 feet high, nearly naked. Flowers yellow, in a long terminal panicle or raceme.—Both Pursh and Elliott have probably taken this for the next.

3. H. marianum Willd.: stem erect, villous; leaves obovate-oblong, strigose-villous on the midrib; lower ones slightly toothed; pedicels and involucre hispid.—H. gronovii var. foliosum Pursh.—H. scabrum Mich.


4. H. paniculatum Willd.: stem erect, leafy, smooth above, whitish tomentose below; leaves lanceolate, oblong, few-toothed, membranaceous, naked; pedicels divaricate, capillary, 1-flowered; bracts setaceous.


5. H. kalmii Linn.: stem erect, simple, smoothish; leaves sessile, oblong-lanceolate, acuminate, acutely and divaricately toothed; pedicels tomentose, somewhat in the form of an umbel; involucre loose.—H. virgatum and H. fasciculatum Pursh.


2. HARPALYCE. Don.

Involucre cylindric, many-leaved, in a single row, with a few very short appressed scales at base. Receptacle slightly pit-

*Syngenesis. Æqualis.*

1. *H. altissima Don:* stem branching; leaves 3-lobed, petioled, angular, denticulate, scabrous on the margin; racemes axillary; flowers nodding; involucre about 5-flowered.—*Prenanthes altissima Linn.* Pursh.


2. *H. cordata Don:* stem paniculate above; leaves petiolate, cordate, toothed, ciliate; the floral ones sessile, oblong, very entire; panicle loose, with the flowers somewhat racemose and nodding; involucre 6-leaved, 6—8-flowered.—*Prenanthes cordata Pursh.*


3. *H. virgata Don:* smooth; stem simple; leaves all lyrate and sinuate, sessile; racemes generally secund; flowers pendulous; involucre 8-leaved, 10-flowered.—*Prenanthes virgata Mich.*


4. *H. alba Don:* radical leaves angular-hastate, toothed and somewhat lobed; stem-leaves roundish-ovate, toothed and petioled, the upper ones lanceolate; panicle loose; fascicles terminal, nodding; involucres 8-leaved, 9—12-flowered.—*Prenanthes alba Linn.*

b. *nana:* stem low; lower leaves 3-parted; middle ones hastate, upper ones ovate or lanceolate; sometimes all are entire.—*P. alba* var. *nana Big. Torr.*


5. *H. serpentaria Don:* leaves toothed, rough; those of the root pal-mate; of the stem on long petioles, sinuate-pinnatifid, somewhat 3-lobed, the middle segment 3-parted; upper leaves lanceolate; racemes terminal, paniculate, short, nodding; involucre 8-leaved, 12-flowered.—*Prenanthes serpentaria Pursh.*

Hab. Mountain woods. N. Y. to Car. Aug. 2f.—Stem 2—4 feet high, nearly glabrous. *Florets* in loose terminal panicles, purple. —Resembles *H. alba,* and by Dr. Torrey is placed as a variety of that species. The whole genus, indeed, is so liable to variation, that it may be doubted whether many of the species usually considered distinct, are more than mere varieties. But as
Pursh has apparently investigated it with more attention than any succeeding botanist, I have preferred adopting his views concerning the species. *H. serpentina* is said to be a cure for the bite of the rattle snake. *Pursh.*

6. *H. racemosa* Don: stem simple; leaves all undivided, smooth; radical ones oval-lanceolate; cauline ones subclasping; racemes oblong, very hairy, in nodding fascicles; involucre 8—9-leaved, 9—12-flowered.—*Prenanthes racemosa* Mich.


3. LEONTODON. Schreb.


*Syngenesia. Æqualis.*

*L. taraxacum* Linn.: outer scales of the involucre reflected; leaves runcinate, smooth, the segments lanceolate and toothed; scape 1-flowered.

Hab. Pastures, &c. Throughout the U. S. April—Nov. 2f.—Leaves all radical, smooth. *Scapes* often several from each root, with one terminal large yellow flower. Introduced. *Dandelion.*

4. OPORINIA. Don.


*Syngenesia. Æqualis.*

*O. autumnale* Don: scape branching; peduncles scaly; leaves lanceolate, toothed or pinnatifid, smoothish.—*Apargia autumnale* Willd.

Hab. Fields and road sides. N. S. July—Sept. 2f.—Scape spreading, branching into a few peduncles which are furnished with a few remote scales. *Flowers* bright yellow, resembling the *Dandelion*. Introduced.

5. CYNTHIA. Don.


*Syngenesia. Æqualis.*

1. *C. amplexicaule* Beck: smooth and glaucescent; scape somewhat fleshy, simple or bifid; branches 2—3-flowered; radical leaves sublyrate, spatulate; cauline ones clasping, lanceolate, entire, smooth.—
Krigia amplexicaulis Nutt.—Trozimon virginicum Pursh.—Hyoseris amplexicaulis Mich.

Hab. Wet woods. N. J. to Car. W. to Miss. June. 2t.—Stem a foot high, resembling a scape, and divided into long slender branches. Flowers solitary at the extremity of the branches, large, orange-yellow.

2. C. virginica Beck: glaucous; primary leaves roundish, entire, the rest lyrate, nearly smooth; scape 1-flowered, smooth, at length longer than the leaves.—Krigia virginica Linn.—Hyoseris virginica Mich.

Hab. Fields and arid soils. Can. to Flor. May—Aug. 2t.—Scape 2—8 inches high. Flowers small, orange-yellow.—This plant continues in flower for some time; during which it varies greatly in the length of the scape. Krigia dichotoma of Nuttall can be nothing more than a mere variety.

6. LACTUCA. Linn.


1. L. elongata Muhl.: leaves smooth beneath; the lower ones runcinate, amplexicaule; upper ones lanceolate, sessile; flowers in corymbose panicles.

Hab. Woods and road sides. Can. to Car. Aug. Sept. 2f.—Stem 3—6 feet high. Leaves long, spreading, runcinate, clasping. Panicle terminal, composed of small clusters of yellow flowers.—This plant appears on grounds newly burnt over and hence called Fire Weed.

2. L. hirsuta Nutt.: lower part of the stem and leaves hirsutely pilose; radical leaves lyrate, segments truncate; the upper ones partly runcinate-pinnatifid; flowers in racemes; scales subulate.


3. L. integrifolia Big.: leaves sagittate, entire, unarmed and clasping; flowers panicled.

Hab. Road sides. N. S. July. 2f.—Stem 3—4 feet high, round, smooth and striated. Leaves pale beneath. Flowers yellow, in a panicle which is more compact than that of L. elongata, from which Dr. Bigelow thinks it may be descended. It should not be confounded with the L. integrifolia of Nuttall, which is now removed to the genus Agathyrsus of Don.

4. L. sanguinea Big.: leaves clasping, runcinate, smooth beneath, with the midrib filamentous; flowers panicled.


6. *L. villosa* Jacq.: radical leaves slightly runcinate; those of the stem, ovate, acuminate, petiolate, toothed in the middle; flowers paniculate; peduncles somewhat scaly.—*Sonchus acuminatus* Willd.

**Hab.** Shady woods. Mass. to Car. Aug., Sept. 3.—Stem 3—4 feet high. *Leaves* attenuated at base into a winged petiole, hairy beneath. *Flowers* in a loose terminal panicle, purple. *Peduncles* with a few ovate ciliate scales. *Florets* about 15. *Pappus* stipitate.—Although this plant differs somewhat in its habit from the other species of *Lactuca*, it agrees more nearly with this genus, than with *Sonchus*.

7. **AGATHYRSUS.** Don.

*Involucre* many-leaved, terete, closely imbricate; the inner scales elongated and connivent. *Receptacle* very smooth. *Florets* indefinite. *Anthers* obtusely bidentate at base. *Acines* ancipital-compressed, 5-ribbed on each side, transversely rugulous, somewhat attenuated at the summit; *disk* epiginous, nearly flat, dilated. *Pappus* very slender, fugaceous, with the rays very numerous and arranged in a triple row—*Flowers* corymbose paniculate, blue.

**Syngenesia.** Æqualis.


**Hab.** Woods and road sides. N. S. July—Sept. 3.—Stem 2 feet high. *Flowers* bluish-white.


**Hab.** Woods and road sides. N. S. S. to Car. July—Sept. 3.—Stem erect, 3—5 feet high. *Leaves* narrow lanceolate, sometimes with runcinate segments. *Flowers* in a long slender panicle, small, blue.—Pursh states that this plant is used as a cure for the bite of the rattle snake, in the same manner as *Prenanthes serpentaria*, and is called—*Gall of the earth*.

3. *A. macrophyllus* Don: leaves lyrate, cordate at base, very hairy beneath; petioles winged; flowers paniculate; peduncles hairy, naked—*Sonchus macrophyllus* Willd. and the American authors.

8. **SONCHUS.** *Linnaeus Don.*

**Involucre** many-leaved, closely imbricate, dilated at base, connivent at the summit. **Receptacle** pitted, scabrous, with the elevated and torn margins of the pits slightly dotted. **Florets** indefinite, the mouth very villous without. **Anthers** acutely bidentate at base. **Stigma** hispid. **Acines** ancipital-compressed, sulcate, transversely rugose, simple at the summit, very soft, capillary, fugaceous; rays very copious, unequal, fasciculately connate at base.—**Flowers** yellow, corymbose, rarely solitary. **Syngenesia.** \( \varepsilon \)qualis.

1. **S. oleraceus** *Linnaeus.* : leaves oblong-lanceolate, clasping, slightly toothed and sinuate; involucre smooth; peduncles somewhat tomentose.

**Hab.** Waste grounds. Can. to Car. July—Sept. \( \varepsilon \).—**Stem** 2—4 feet high, hollow and succulent. **Peduncles** axillary and terminal, covered with a cotton-like down. **Flowers** yellow.—It differs from the generic character in its smooth receptacle. **Introducted.** *Sow Thistle.*

2. **S. arvensis** *Linnaeus.* : root creeping; leaves runcinate, denticulate, cordate at base; involucre hispid; peduncles hispid, somewhat umbellled.

**Hab.** Near cultivated grounds. N. S. \( \varepsilon \).—**Stem** 2 feet high. **Flowers** large, deep yellow. **Introducted.** *Succory.*

3. **S. spinulosus** *Big.* : leaves clasping, oblong, waved, prickly; flowers somewhat umbellled.

**Hab.** Salt marshes. Mass. Aug. \( \varepsilon \).—**Stem** 2 feet high, smooth or slightly hairy. **Leaflets** smooth, with teeth ending in short spines. **Flowers** somewhat umbellled, small, yellow. *Succory.*

9. **CICHORIUM.** *Linnaeus.*

**Involucre** surrounded with leafy scales. **Receptacle** somewhat chaffly. **Pappus** plumose, sessile, unequal, shorter than than the acines. **Syngenesia.** \( \varepsilon \)qualis.

*Ch. intybus* *Linnaeus.* : leaves runcinate; flowers axillary, sessile, in pairs.

**Hab.** Fields. N. S. July—Sept. \( \varepsilon \).—**Stem** 2—3 feet high, with rough branches. **Flowers** large, blue. **Introducted.** *Succory.*

**Suborder II. CARDUACEË.**

10. **ARCTIUM.** *Linnaeus.*

**Involucre** globose, each of its scales with an incurved hook at the extremity. **Receptacle** chaffy. **Pappus** simple, the rays short. **Syngenesia.** \( \varepsilon \)qualis.

*A. lappa* *Linnaeus.* : leaves cordate, petiolate, unarmed.
DICOTYLEDONOUS PLANTS.

Hab. Waste grounds. N. S. July, Aug. 2½.—Stem 3—4 feet high. Leaves very large, cordate and wavy. Flowers numerous, purple.—As Dr. Bigelow remarks, "this plant intrudes itself on every one's acquaintance by the sharp firm hooks at the end of the calyx scales, which attach themselves to the clothes, and serve as a remarkable mechanism for dispersing the seeds." Introduced.

11. CARDUUS. Linn.

Involucre ventricose, imbricate, with spinous scales. Receptacle hairy. Pappus pilose or plumose, deciduous.

Syngenesia. Equalis.

* Leaves decurrent.

1. C. lanceolatus Linn.: stem hairy; leaves decurrent, pinnatifid, hispid; the segments divaricate and spinous; scales of the involucre lanceolate, spreading.—Cnicus lanceolatus Willd.—Cirsium lanceolatum Spreng.

Hab. Road sides. N. S. July—Sept. 2½.—Stem 2—4 feet high. Leaves woolly beneath, the segments armed with long and acute spines. Flowers terminal, purple, middle-sized.

** Leaves sessile.

2. C. altissimus Linn.: leaves sessile, oblong-lanceolate, scabrous, tomentose beneath, dentate-ciliate; radical ones pinnatifid; involucre ovate, bracteate; scales ovate, lanceolate, spinous, appressed.—Cnicus altissimus Willd.

Hab. Old fields. Penn. to Car. June—Sept. 2½.—Stem 2—8 feet high, and on the Missouri, according to Mr. Nuttall, 12—18 feet. Flowers terminal, large, purple.

3. C. arvensis Linn.: stem paniculate; leaves sessile, pinnatifid, spinous; involucre ovate or globose; scales ovate-lanceolate, mucronate, appressed.—Cnicus arvensis Willd.


4. C. muticus Nutt.: leaves all pinnatifid, woolly beneath; segments spinulose, somewhat lanceolate, acute; branches naked, 1-flowered; involucre globose; scales unarmed.—Cnicus muticus Pursh.—Cirsium muticum Mich.

Hab. Mountains and low grounds. N. Y. to Car. Aug., Sept. 3.—Stem 2—4 feet high, branching above. Flowers purple, middle-sized. Lower scales of the involucre spinous; upper ones simple, acute.—C. glaber of Nuttall appears to be only a variety of this species.

5. C. virginianus Willd.: stem attenuated, mostly 1-flowered; leaves sessile, lanceolate, margin revolute, distantly and spinosely serrate,
smooth above, tomentose beneath; involucre ovate; scales appressed, shortly mucronate, carinate.—Cnicus virginianus Pursh.—Cirsium virginianum Mich.


6. C. discolor Nutt.: stem divaricately branched; leaves lanceolate, sessile or clasping, more or less deeply pinnatifid, smooth above, tomentose beneath; segments 2-lobed, ciliate and spinous; involucre sub-globose; scales ovate, spinous.—Cnicus discolor Muhl.


7. C. pumilus Nutt.: stem hairy, few-flowered; leaves clasping, green on both sides, oblong-lanceolate and pinnatifid; segments irregularly lobed, ciliate and spinous; involucre large, and somewhat globose, naked; scales appressed, lanceolate, acuminate, spinous.

Hab. Dry fields. N. S. 3.—Stem 1—2 feet high, erect or subdecumbent. Leaves large, the lowest often 12 inches long. Flowers few, very large, purple. Pappus more than an inch in length.—Nuttall describes a variety of this species with the stem simple, 1-flowered, and the leaves densely margined with spines. It occurs on the banks of the Hudson near the city of New-York, and is called var. hystrix.

8 C. spinosissimus Walt.: leaves sessile, pinnatifid, acutely incised, very spinous, woolly beneath; flowers crowded, bracteate; bracts very spinous, the spines generally in pairs; involucre unarmed.—Cnicus horridulus Pursh.

Hab. Fields. N. S. to Car. July—Sept. 2.—Stem 2—3 feet high, hollow. Flowers axillary and terminal, large, yellowish-white, (pale purple Elliott.) Bracts 20 or 30 round the base of each flower, on the outer ones spines in pairs. Scales of the involucre lanceolate, very acute, but scarcely spiny.

9. C. glutinosus Beck: leaves pinnatifid, with divaricate segments; involucre ovate, with unarmed glutinous scales.—Cnicus glutinosus Big.

Hab. Damp soils. Mass. Aug., Sept. 3.—Stem 4—6 feet high, branching. Leaves sessile, somewhat clasping. Flowers small, on slender stalks, deep purple.—Allied to C. muticus, but differs by its leaves and by the ovate glutinous scales of the involucre.

12. ONOPORDON. Linn.

Involucre ventricose, with the scales spreading and spinous. Receptacle pitted. Pappus deciduous, rough.

Syngenesia. Æqualis.

15*
O. acanthium Linn.: leaves ovate-oblong, sinuate and spinous, de-current, woolly on both sides; scales of the involucre subulate, spreading.


13. CENTAUREA. Linn.

Involucre scaly. Receptacle bristly. Corol of the ray infundibuliform, irregular, larger than those of the disk. Pappus simple.

Syngenesis. Frustranea.

1. C. jacca Linn.: leaves linear-lanceolate, the lower ones broader and toothed; scales of the involucre scariose and torn, the lower ones pinnatifid.

Hab. Penn. Muhl. July, Aug. 2£.—Scales of the involucre pale-brown and shining, the outer ones deeply pinnatifid, the inner or uppermost ones torn. Flowers purple. Introduced. Brown Knapweed.

2. C. nigra Linn.: lower leaves angular-lyrate, upper ones ovate; scales of the involucre ovate, ciliated with capillary teeth.

Hab. Mass. and Penn. July, Aug. 2£.—Stem 2—3 feet high. Leaves scabrous. Scales of the involucre almost black, the teeth brown. Flowers solitary, terminal, purple. Introduced.—Besides the above, C. cyanus, C. benedicticta and C. calcitrapa are naturalized in some parts of the United States. None of them are indigenous. Black Knapweed.

14. ELEPHANTOPUS. Linn.


Syngenesis. Segregata.

E. carolinianus Willd.: stem branched, leafy, hairy; leaves of the root and stem oblong, tapering at base, hairy.

Hab. Dry soils. Md. to Car. Sept. 2£.—Stem 2 feet high, villous, especially near the base, branching towards the summit. Heads of flowers composed of four clusters, each 4-flowered, with the involucre 9—10-leaved. Corol purple. Elephant’s-foot.

15. VERNONIA. Linn.

1. *V. novaboracensis* Willd.: leaves numerous, lanceolate, scabrous, serrulate; corymb fastigiate; scales of the involucrè filiform at the summit.

**Hab.** Wet grounds. Can. to Car. W. to Miss. Aug., Sept. 2f.—*Stem* 4—6 feet high, branching towards the top. *Flowers* in a very large terminal corym, purple.

2. *V. prealta* Willd.: stem very tall, angular, densely pubescent; leaves numerous, lanceolate, acutely serrate, pubescent beneath; corymb fastigiate; scales of the involucrè ovate, acute, unarmed.

**Hab.** Meadows. N. S. to Car. Aug.—Oct. 2f.—A very tall rough looking plant. *Flowers* purple.

16. **LIATRIS.** Linn.


2. *L. pilosa* Willd.: stem simple, pubescent; leaves linear, hairy, ciliate; flowers in loose racemose heads; scales of the involucrè oblong, obtuse; pedicels bracteate.


3. *L. scariosa* Willd.: stem erect, hairy; leaves lanceolate, pubescent, scabrous on the margin; raceme long; involucrè 14-flowered; scales obovate, nearly glabrous, with the margins scarious; the lower ones expanding.


4. *L. squarrosa* Willd.: stem simple, pubescent; leaves very long, linear, nerved, with the margins scabrous; racemes few-flowered, leafy; upper scales of the involucrè lanceolate, rigid and spreading; segments of the florets linear, villous internally.


17. **BACCHARIS.** Linn.

*Involucrè* imbricate, its scales ovate and somewhat coria-
ceous. **Receptacle** naked. **Florets** tubular, dioecious. **Sterile** with the anthers exserted, unawned at base, pappus slightly feathered. **Fertile** filiform, pappus capillary.

**Syngenesia. Superflua.**

*B. halimifolia* Linn.: leaves obovate and oval, incisely toothed near the summit; panicle compound, leafy; heads of flowers peduncled.

**Hab.** Sea coast. Md. to Geor. Sept., Oct. — A shrub 6—12 feet high, and with the leaves covered with a whitish powder or dust. **Flowers** in a large loose terminal panicle. **Pappus** of the fertile florets hairy, twice as long as the corol.

*Ploughman’s Spikenard.*

18. **CONYZA. Linn.**

**Involucre** imbricate, the scales appressed. **Receptacle** naked. **Marginal florets** fertile, 3-cleft. **Pappus** simple, capillary. **Acines** hairy. **Syngenesia. Superflua.**

*C. camphorata* Pursh: herbaceous, slightly pubescent; leaves on petioles, ovate-lanceolate, very acute, denticulate; corymbs terminal and axillary, shorter than the leaves; scales of the involucre acute, as long as the florets. — *Erigeron camphoratum* Linn.

**Hab.** Salt marshes. Mass. to Geor. Aug., Sept. — **Stem** 1—2 feet high, rather succulent. **Flowers** in axillary and terminal corymbs, purple.—When bruised, this plant gives out a strong spicy but somewhat disagreeable odour. *Big. Marsh Fleabane.*

19. **INULA. Linn.**

**Involucre** squarrose or imbricate. **Florets** of the ray very numerous, yellow. **Anthers** each with 2 bristles at the base. **Receptacle** naked. **Pappus** simple. **Nut.**  

**Syngenesia. Superflua.**

*I. helixium* Linn.: leaves clasping, somewhat toothed, ovate, rugose and tomentose beneath; scales of the involucre downy.

**Hab.** Road sides. N. S. July, Aug. — **Stem** 3—4 feet high, branching at the top. **Leaves** very large, those of the root petioled, of the stem clasping. **Flovers** large, solitary, terminal, yellow. *Elecampane.

20. **CHRYSOPSIS. Nutt.**

**Involucre** imbricate. **Anthers** naked at the base. **Receptacle** naked. **Pappus** double; the outer chaffy and minute; the inner hairy, scabrous and many rayed. **Acines** obovate, villous.—**Rays** of the corol mostly yellow.  

**Syngenesia. Superflua.**
1. *C. mariana* Nutt.: hairy; leaves oblong, lanceolate, serrate; the upper ones sessile, acute; the lower ones spatulate and generally obtuse; corymb simple; involucre viscidly pubescent.—*Inula mariana* Linn.

**Hab.** Sandy woods. N. J. to Car. Aug.—Oct. 2 ft—2
feet high, clothed with long hairs. *Flowers* in corymbs; *florets* of the ray 16—20.

2. *C. falcata* Beck: woolly and villous; leaves sessile, linear, very acute, subsalcate and spreading; nerves pilose on both sides; flowers in axillary corymbs; involucre pilose.—*Inula falcata* Pursh.

**Hab.** Pine woods. N. J. Sept., Oct. 2 ft—12 inches
high. *Flowers* in crowded corymbs, small, bright yellow. *Ray florets* oblong, tridentate.—Mr. Nuttall supposes this species to be a mere variety of the preceding.

3. *C. graminifolia* Nutt.: silky; stem leafy towards the summit; leaves linear-lanceolate, acute, entire, nerved; corymb compound.—*Inula graminifolia* Mich.

**Hab.** Sandy woods. Del. to Flor. Aug.—Oct. 2 ft—2
feet high and with the leaves covered with a silky pubescence. *Leaves* long, linear. *Corymb* made up of many heads. *Flowers* yellow.—Closely allied to *C. argentea* of Elliott, but the leaves are conspicuously nerved, the corymbs generally more compact and the *heads* more numerous.—The three species above described, differ so much in habit from *Inula heliennum*, as to warrant their separation; a suggestion first made by Mr. Nuttall, and subsequently adopted by Mr. Elliott. But it is doubtful whether the range of the genus is so extensive as we should be led to infer from the remarks of Mr. Nuttall.

21. ARNICA. Linn.

**Involucre** hemispherical, with the leaflets equal and longer than the disk. *Receptacle* naked. *Pappus* simple. *Florets* of the ray often with 5 filaments destitute of anthers, (yellow.)

*Syngenesia. Superflua.*

*A. nudicaulis* Nutt.: hisrute; radicle leaves opposite, decussate, broad-lanceolate, nerved and toothed; stem nearly leafless, divided near the summit into a few 1-flowered branches.—*A. claytoni* Pursh.—*Doronicum nudicaule* Mich.

**Hab.** Fine barrens. Penn. to Car. July, Aug. 2 ft—3
feet high, simple, hisrute, somewhat viscid. *Leaves* of the root large, spreading, strongly nerved. *Flowers* large, yellow.

*Leopard's-bane.*

22. GNAPHALIUM. Linn.

**Involucre** imbricate, with the scales membraneous and often coloured. *Receptacle* naked. *Florets* of the ray subulate; some of the disk occasionally abortive. *Pappus* rough.

*Syngenesia. Superflua.*
DICOTYLEDONOUS PLANTS.

* Flowers perfect.

1. *G. polycaphalum* Mich.: herbaceous, erect; leaves linear-lanceolate, acute, glabrous on the upper surface, pubescent beneath; stem paniculate, tomentose; corymb terminal, clustered.


2. *G. purpureum* Linn.: herbaceous; stem erect, simple; leaves linear-spathulate, pubescent beneath; flowers sessile, clustered, axillary and terminal.

**Hab.** Barren soil. N. Y. to Car. July—Oct. 2.—Stem erect and assurgent, 8—12 inches high. Flowers in compact axillary and sessile clusters, purplish.

3. *G. syltecctium* Linn.: stem herbaceous, very simple, nearly erect; leaves linear-lanceolate, downy on both sides; flowers axillary, forming a distant and leafy spike.

**Hab.** Woods. Can. and N. S. July, Aug. 2. —Stem a foot high. Flowers sessile in the axils of the leaves, forming a more or less interrupted spike. *Scales* of the involucre oblong, shining, with a broad brown border.

4. *G. americanum* Linn.: stem herbaceous, erect, branching; leaves obovate-spathulate, pubescent beneath; flowers axillary and terminal, in clustered spikes.

**Hab.** Rocky woods. Penn. and Virg. July—Sept. 0.—Stem 6—10 inches high. Flowers small, pale yellow.

5. *G. uliginosum* Linn.: stem herbaceous, branched, diffuse, woolly; leaves linear-lanceolate; flowers in terminal crowded clusters which are shorter than the leaves.

**Hab.** Wet grounds. Can. and N. S. Aug., Sept. 0.—Stem a span high, very much branched. Flowers small, 2—3 together, forming oblong clusters at the extremity of the branches. *Scales* of the involucre yellowish-brown, shining.

*Marsh Cudweed.*

6. *G. germanicum* Smith: stem herbaceous, erect, proliferous at the summit; leaves lanceolate, acute, downy; flowers capitiate in the axils of the branches and terminal.


*Common Cudweed.*

7. *G. decurrens* Linn.: stem erect, much branched; leaves linear-lanceolate, very acute, decurrent, white and woolly beneath, naked above; flowers in dense terminal roundish clusters.

**Hab.** Hills. N. S. Aug. 2. —Stem 1 1/2—2 feet high. Flowers yellowish.
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**Flowers dioecious. Antennaria. Brown.**

8. *G. margaritaceum* Linn.: herbaceous; stem branching near the summit; leaves linear-lanceolate, tapering, acute; tomentose beneath; corymb fastigate; flowers on pedicels.

**Hab.** Woods and mountains. Can. to Car. Aug., Sept. 24.—

Stem 1—2 feet high, clothed with a thick wool. Flowers large, in terminal corymbs. **Involucre** white. **Florets** yellow.

Life Everlasting.

9. *G. plantagineum* Linn.: shoots procumbent; stem simple; radial leaves ovate, nerved; corymbs clustered; flowers dioecious; inner scales of the involucre long, obtuse, coloured.—*G. dioicum* var. plantagineum Mich.

**Hab.** Woods. Can. to Car. W. to Miss. May, June. 24.—

Stem 8—10 inches high, downy. Radical leaves large and broad, those of the stem lanceolate. Flowers in a small terminal corym, reddish-white; fertile ones cylindrical and slender.

**Suborder III. ASTEREÆ.**

23. ERIGERON. Linn.

**Involucre** imbricate. **Receptacle** naked. **Florets** of the ray numerous, very narrow, (mostly of a different colour from the disk.) **Pappus** double; the outer very small; the inner hairy, of a few rays. **Syngenesis. Superflua.**

1. *E. bellidifolium* Linn.: hirsute-hoary; radical leaves obovate, slightly serrate; those of the stem sessile, scattered, oblong-lanceolate; stem 3—5-flowered; rays twice as long as the involucre.—*E. pulchellum* Mich.


Stem 12—18 inches high. Flowers few, large, pale purple. *Robin's Plantain.*

2. *E. integrifolium* Big.: stem simple, leafy, smooth; leaves lanceolate, entire, 3-nerved; flowers corymbed; involucre hemispheric, with acute scales.

**Hab.** Woods and road sides. N. S. June—Aug. 24.—

Stem 2 feet high, simple. Leaves slightly clasping, lower ones sometimes toothed. Flowers white, on rough leafy peduncles.

3. *E. philadelphicum* Linn.: pubescent; lower leaves cuneate, oblong, sometimes incisely toothed; stem leaves oblong-lanceolate, clasp; flowers somewhat corymbose; florets of the ray capillary, twice as long as the involucre.

**Hab.** Fields and woods. Can. to Car. W. to Miss. Aug., Sept. 24.—

Stem 2—3 feet high, slender. Flowers in a loose corym, pale purple; ray florets very numerous.

4. *E. purpureum* Linn.: pubescent; leaves oblong, toothed, clasp; upper ones very entire; peduncles corymbed, thick, the lower
ones elongated; scales of the involucre pilose; rays twice as long as the calyx.


5. *E. strigosum* Linn.: strigose and hairy; leaves lanceolate, attenuate at each end, entire or with a few coarse teeth in the middle; flowers in a corymbose panicle. — *E. strigosum* and *E. nervosum* Pursh. ?


6. *E. heterophyllum* Linn.: radical leaves roundish-ovate, deeply toothed, petiolate; those of the stem lanceolate, acute, serrate in the middle; corymb terminal.


*Subgenus Ceanotus.* Nutt. Pappus simple.

7. *E. canadense* Linn.: stem hispid, paniculate, often profusely branched; leaves lanceolate-linear; florets of the ray numerous, crowded, very short. — *E. canadense* and *E. pusillum* Nutt.


24. ASTER. Linn.

*Involucre* imbricate, with the lower scales often spreading. *Florets* of the ray generally more than 10, (not yellow.) *Receptacle* naked. *Pappus* simple, hairy. *Syngenesia, Superflua.*

Obs. Mr. Elliott’s admirable sketch of the Botany of South Carolina and Georgia, contains detailed descriptions of many of our Northern Asters, and may be consulted with much advantage. The whole genus is liable to great variations; and it is more than probable that many of the species here enumerated, will be found, on more minute investigation, to be mere varieties.

* *Florets of the ray 5, white. Scales of the involucre white, with the summits green.*

1. *A. solidaginoides* Mich.: leaves linear-lanceolate, entire, scabrous on the margin; branches corymbose-fastigiata; flowers sessile, aggregate; scales of the involucre oblong-obtuse, appressed, somewhat reflexed at the summit. — *Conyza linifolia* Linn.

2. *A. coayzoides* Wild.: stem simple, smooth and rigid; leaves oval-lanceolate, acute, serrate towards the summit, 3-nerved; the lower ones attenuate at base; the upper entire; scales of the involucre oval, obtuse, appressed, slightly reflexed at the summit.—*A. marylandicus* Mich.

_Hab._ Woods and copses. Penn. to Geor. July, Aug. 2f.—
_Stem_ 1—2 feet high.—Var. _plantiginifolius_ of Nuttall, differs only in being smaller and in having its leaves cuneate-ovate.

**Florets of the ray numerous. Pappus simple.**

† Leaves entire.

3. *A. hyssopifolius* Linn.: leaves linear-lanceolate, 3-nerved, dotted, acute, with the margin scabrous; branches fastigiate, clustered; florets of the ray about 5; scales of the involucre about half as long as the disk.

_Hab._ Sandy fields. N. J. to Car. Aug.—Oct. 2f.—_Stem_ 1—2 feet high, smooth. _Flowers_ in small terminal fastigiate corymb. _Florets_ of the ray 3—7 or more, white or purplish.

4. *A. subulatus* Mich.: very smooth; leaves linear-subulate, acute, erect; branches many-flowered; involucre cylindrical, the scales subulate; florets of the ray minute.

_Hab._ Salt marshes. Penn. to Car. Aug.—Nov. 2f.—_Stem_ erect, 2—3 feet high, smooth, with numerous spreading branches. _Flowers_ very small, in a loose terminal panicle, pale purple.

5. *A. foliolosus* Ait.: stem bearing many branches, erect; leaves linear-lanceolate, attenuate at each end, acuminate, margin scabrous; those of the branches minute and numerous; branches few-flowered; scales of the involucre linear-acute, appressed.—*A. cordifolius* Mich.

_Hab._ Fields and road sides. Can. to Car. Aug.—Oct. 2f.—
_Stem_ 2—3 feet high, with spreading branches. _Flowers_ in a compound panicle, white or pale purple.

6. *A. tenuifolius* Linn.: stem smooth, erect, with 1-flowered branches; leaves linear-lanceolate, tapering at each end, very entire, slightly scabrous along the margin; scales of the involucre acute, loose.

_Hab._ Fields and road sides. Can. to Car. Aug.—Nov. 2f.—
_Stem_ 2—3 feet high, with numerous leaves. _Flowers_ numerous, in racemes along the main branches, pale purple.—It sometimes has the branches paniculate, and at others the leaves are quite linear, constituting in the former case *A. dumosus* Linn., in the latter *A. cricoides* Linn.

7. *A. nemoralis* Ait.: leaves linear-lanceolate, attenuate at base, with the margin scabrous and revolute; branches filiform, naked, 1-flowered; involucre loosely imbricated, with the scales acute and much shorter than the disk; rays numerous.—*A. ledifolius* Pursh.

_Hab._ Sphagnous swamps. Can. and N. J. Sept., Oct. 2f.—
_Stem_ simple, 12—18 inches high, fragile and thickly set with leaves which are sometimes minutely bidentate. _Flowers_ large, pale violet.—The stem is sometimes simple and 1-flowered.—*A. uniflorus* Mich.
8. *A. paludosus* Ait.: stem simple; leaves sessile or clasping, subulate, smooth, with the margin scabrous; peduncles few, 1-flowered, axillary and terminal, leafy, pubescent; involucre large and squarrose. — *A. grandiflorus* Walt.? 

**Hab.** Borders of swamps. N. J. to Flor. Aug.—Nov. 2l.—Stem 1—2 feet high, smooth nearly to the top, 3—5-flowered. *Flowers* very large and beautiful, the *rays* bright blue.

9. *A. multiflorus* Ait.: stem diffusely branched, pubescent; leaves linear, entire, nearly smooth, slightly ciliate; involucre and peduncles squarrose, the scales oblong and ciliate. — *A. multiflorus* and *A. ciliatus* Willd.


10. *A. sparsiflorus* Mich.: very smooth; stem slender, much branched; leaves linear-subulate, somewhat fleshy and reflexed; branches spreading, leafy, 1-flowered; scales of the involucre acute, appressed.

**Hab.** Salt marshes. N. Y. to Car. Sept.—Nov. 2l.—Stem 1—2 feet high. *Flowers* large; *rays* pale purple; *disk* yellow.

11. *A. concolor* Linn.: stem simple, erect, pubescent; leaves oblong-lanceolate, entire, hoary and pubescent on both sides; raceme terminal; scales of the involucre lanceolate, silky, appressed.


12. *A. salicifolius* Pursh: stem smooth, paniculate at the summit; leaves linear-lanceolate, entire, hoary and pubescent on both sides; raceme terminal; scales of the involucre lanceolate, silky, appressed. — *A. precatius* Lam.


13. *A. esticus* Ait.: stem branching from the base, erect, hispid; branches hairy; leaves lanceolate, subclasping, attenuate at the apex, with the margin scabrous; scales of the involucre loose, linear, acute, equal.

**Hab.** Dry swamps. N. S. July—Sept. 2l.—Stem 2 feet high. *Flowers* middle-sized; *rays* blue.

14. *A. nova anglica* Linn.: stem erect, hairy, paniculate; leaves narrow-lanceolate, hairy, clasping, auriculate, crowded on the branchlets; scales of the involucre lanceolate, loose, rather longer than the disk.

**Hab.** Meadows. Can. to Car. Sept.—Nov. 2l.—Stem 3—6 feet high, almost hispid, with spreading branches. *Flowers* large, in a loose terminal panicle, blue or purple. — *A* very ornamental species.

15. *A. cyaneus* Pursh: stem very smooth, branching, the branches spreading; leaves linear-lanceolate, clasping, smooth; flowers in pani-
ciliate racemes; scales of the involucre loose, lanceolate, as long as the disk.—*A. nova anglica* var. *b. Ait.*

**Hab.** Old meadows. N. Y. to Car. Sept.—Nov. 2f.—Stem 3—4 feet high, smooth or slightly pubescent on the young branches. *Flowers* large, blue and purple.—Said by Pursh to be the handsomest of the genus.


**Hab.** Moist grounds. N. J. to Virg. Aug.—Nov. 2f.—Stem 1—2 feet high. *Flowers* middle-sized; *rays* blue or purple; *disk* yellow.

†† Leaves lanceolate and ovate; the lower serrate.

1. *Flowers in corymbs.*

18. *A. nudiflorus* Nutt.: stem simple and smooth; leaves sessile, ovate-lanceolate, subacuminate, sharply serrate, upper surface scabrous; corymb simple, few-flowered; peduncles pubescent, naked, mostly 1-flowered; involucre hemispherical, closely imbricated; scales linear-oblong and ciliate.

**Hab.** Swamps. N. J. rare. 2f.—Stem 2—3 feet high. *Leaves* 3 inches long, 1 inch wide. *Flowers* on peduncles 3—4 inches long, large, pale purple.

19. *A. radula* Ait.: stem erect, simple, angular; leaves lanceolate, serrate, acuminate, rugose and very scabrous; corymb terminal; involucre imbricate; scales lanceolate, somewhat obtuse, subsquarrose.

**Hab.** Nova Scotia and high mountains in N. S. Sept.—Nov. 2f.—*Flowers* middle-sized; *rays* short, white.

20. *A. strictus* Pursh: leaves sessile, narrow-lanceolate, serrate, scabrous; stem one or few-flowered above; scales of the involucre imbricate, appressed, oblong, acute, scarcely shorter than the disk.—*A. biflorus* Mich.

**Hab.** High mountains. N. S. N. to Labrador. Sept., Oct. 2f.—Stem 4—6 inches high. *Flowers* middle-sized; *rays* pale violet; *disk* brownish-yellow.

21. *A. surculosus* Mich.: stem simple, low and slender, minutely pubescent; lower leaves linear-lanceolate, entire or subseriate, scabrous above; upper ones linear, clasping; corymb 3—5-flowered, somewhat naked; involucre imbricate, subsquarrose; scales ciliate, linear-oblong, inner ones obtuse; rays about 20.

purple; inner scales of the involucre often coloured.—The habit of this species is very much like that of a corymbose Liatris, and Mr. Nuttall thinks it is the A. elegans of Willdenow.

22. A. spectabilis Ait.: leaves oblong-lanceolate, somewhat scabrous and clasping; lower ones serrate in the middle; branches corymbose; involucre hemispherical, somewhat glandularly pubescent, foliaceous and squarrose; scales ciliolate, cuneate-ovate and partly acute.

b. bellidifolius Nutt.: leaves oblong-obovate, serrate; corymb nearly simple, with the branchlets mostly 1-flowered.—A. bellidiflorus Willd.? 

Hab. Swamps. N. J. to Virg. Aug.—Nov. 2f.—Stem 2 feet high; branches 2 or 3-flowered, somewhat hairy. Flowers 10—15 in a corymb, large and blue. Var. b. has the stem never hairy above.

23. A. serotinus Willd.: leaves oblong-lanceolate, acuminate, sessile, smooth, scabrous on the margin; lower ones serrate; branches corymbose, smooth; branchlets 1-flowered; scales of the involucre lanceolate, acuminate, spreading.

Hab. Low grounds. N. Y. to Virg. Sept.—Nov. 2f.—Stem 3 feet high. Flowers large, blue.

24. A. punicus Linn.: stem hispid; leaves clasping, lanceolate, serrate, somewhat scabrous; branches paniculate; involucre loose, exceeding the disk; scales linear-lanceolate, nearly equal.

Hab. Salt swamps. Can. to Car. Sept.—Nov. 2f.—Stem 6—8 feet high, purplish. Flowers large, purple or blue.

25. A. novi belgii Linn.: stem terete, smooth; leaves subclasping, lanceolate, smooth, scabrous on the margin; lower ones somewhat serrate; branches subdivided; involucre loosely imbricated; scales linear-lanceolate.—A. novi belgii and A. floribundus Willd.


26. A. acuminatus Mich.: stem simple, flexuous, angular; leaves broad-lanceolate, tapering and entire towards the base, unequally serrate near the summit, conspicuously acuminate; Panicle corymbose, divaricate, dichotomous; scales of the involucre loose, linear, shorter than the disk.

Hab. Can. and mountains in N. S. Aug.—Oct. 2f.—Stem a foot or more high. Leaves large. Flowers middle-sized; rays white.

27. A. dracunculoides Willd.: stem nearly smooth; leaves linear, acuminate, very entire; lower ones linear-lanceolate, sub serrate; branches corymbose; involucre imbricate.

Hab. Low grounds. N. J. to Car. Sept.—Nov. 2f.—Stem 4 feet high. Flowers small; rays white.

2. Flowers in panicles.

23. A. amplexicaulis Willd.: stem smooth, paniculate; leaves ovate-
oblun, acute, clasping, cordate, serrate, smooth; scales of the involucre lanceolate, closely imbricate.—*A. pennsylvanicus Lam.*

**Hab.** Woods. N. J. to Car. Sept.—Nov. **2f.**—*Stem 2—3 feet high. Lower leaves attenuate and clasping, the upper ones more cordate. Flowers in a terminal panicle, middle-sized, blue.*

29. *A. prenanthoides Willd.*: branches hairy; leaves clasping, spathulate-lanceolate, acuminate, serrate in the middle, cordate at base; scales of the involucre lanceolate, squarrose.

**Hab.** Penn. **Muhl.** Aug.—Oct. **2f.**—*Flowers blue.*

30. *A. laxigatus Willd.*: stem much branched, smooth; branches many-flowered; leaves subclasping, broad-lanceolate, sub serrate, smooth; scales of the involucre lanceolate, loose, as long as the disk.


31. *A. versicolor Willd.*: stem much branched, smooth; leaves sub clasping, broad-lanceolate, smooth, somewhat serrate; radicle ones serrate in the middle; scales of the involucre loose, shorter than the disk.

**Hab.** Fields and Woods. N. J. to Car. Aug.—Oct. **2f.**—*Stem 2 feet high. Flowers large and very numerous, clustered towards the summits of the branches; disk yellow; rays white, changing to a deep violet. Pursh.*

32. *A. mutabilis Linn.*: stem smooth; branches virgate; upper leaves somewhat clasping, lanceolate, acuminate, very entire; lower ones lanceolate, narrow at base, serrate; scales of the involucre loose, shorter than the disk.

**Hab.** Fields and woods. Penn. to Virg. Aug.—Oct. **2f.**—*Flowers middle-sized; disk yellow; rays deep purple, changing to purple. Pursh.*

33. *A. laxis Linn.*: stem smooth, angular; branches simple, 1-flow ered; leaves somewhat clasping, remote, oblong, very entire, shining; radical ones sub serrate; scales of the involucre imbricate, subcunei form, acute, thickened at the apex.

**Hab.** Woods and sides of ponds. N. Y. to Virg. Sept.—Nov. **2f.**—*Stem 2 feet high. Flowers large, bluish-purple.*

34. *A. concinnum Willd.*: stem simple, paniculate at the summit; leaves lanceolate, somewhat clasping; lower ones smooth, sub serrate; involucre closely imbricate.

**Hab.** Woods. N. Y. and Penn. Sept.—Nov. **2f.**—*Stem 2 feet high. Flowers bluish-purple. Leaves, said by Pursh, to resemble those of Phlox maculata.*

35. *A. tardiflorus Linn.*: branches divaricate; leaves sessile, serrate, smooth, spathulate-lanceolate, attenuate at base, margin reflexed; involucre loose; scales linear-lanceolate, nearly equal, smooth.

**Hab.** Low ground. N. S. Sept.—Nov. **2f.** rare.—*Flowers middle-sized; rays pale blue.*

16*
36. *A. tradescanti* Linn.: stem terete, smooth; branches virgate; leaves lanceolate, serrate, sessile, smooth; involucre imbricate

**Hab.** Dry swamps. Can. to Virg. Aug.—Oct. 2ft.—Stem 3—4 feet high. Flowers very small; rays white or purple.—*A. recurvatus* of Willdenow, is considered by Dr. Torrey as a mere variety of the above. It has the leaves narrower and the panicle sometimes recurved.

37. *A. eminens* Willd.: stem paniculate; branchlets 1-flowered; leaves linear-lanceolate, acuminate, scabrous on the margin; lower ones subserrate; involucre imbricate; scales lanceolate—and *A. laxus.* Willd.

**Hab.** Fields. N. J. to Virg. Sept.—Nov. 2ft.—Flowers middle-sized; rays pale, lilac; disk yellow, changing to red.—As suggested by Mr. Nuttall, *A. laxus* of Willdenow is scarcely to be distinguished from this species.

38. *A. simplex* Willd.: stem very smooth, paniculate at the summit; leaves lanceolate, acuminate, scabrous on the margin; those of the stem serrate at the apex; of the branches very entire; involucre loosely imbricate; scales linear-subulate.

**Hab.** Penn. Torr. 2ft.—Rays white; disk yellow. Pursh.

39. *A. polyphyllus* Willd.: stem much branched, pubescent; leaves linear, very entire; radical ones oblong, subserrate; involucre loosely imbricate.

**Hab.** Penn. Torr. 2ft.—Rays white; disk yellow, changing to red or brown. Pursh.

40. *A. junceus* Ait.: stem paniculate, smooth; branches virgate; leaves lanceolate-linear, sessile, smooth; lower ones subserrate; those of the branches lanceolate; involucre imbricate.

**Hab.** Low grounds. N. S. Aug.—Oct. 2ft.—Stem 4—6 feet high. Flowers flesh coloured.—*A lanceolatus* of Willdenow, is only a variety with a branched stem and smaller flowers.

41. *A. fragilis* Willd.: stem smoothish; branches corymbose-paniculate; leaves linear, acuminate, very entire; radical ones oblong, serrate; involucre imbricate; scales appressed.

**Hab.** Fields. N. S. Sept. 2ft.—Stem 2 feet high. Flowers small, white.

42. *A. miser* Linn.: stem villous; leaves sessile, lanceolate, serrate, smooth; involucre imbricate; scales acute; disk equal to the ray.
   a. *divergens*; leaves elliptical-lanceolate.—*A. divergens* Ait.
   b. *diffusus*; leaves all proportioned.—*A. diffusus* Ait.
   c. *pendulus*; leaves of branches rather remote.—*A. pendulus* Ait.

**Hab.** Fields. N. S. Aug.—Nov. 2ft.—Flowers small, white.
   —I follow Dr. Torrey in uniting the above species with *A. miser.*

3. Leaves cordate and ovate, serrate.

43. *A. undulatus* Linn.: stem paniculate, hispid; branchlets secund, leafy, 1-flowered; leaves oblong, cordate, clasping, very entire, hairy,
subundulate; lower ones cordate, ovate, subserrate, petiolate; petioles winged.—*A. diversifolius* Mich.

**Hab.** Old fields. N. Y. to Car. Sept. 2f.—*Stem* 2—3 feet high. *Flowers* large, in a terminal spike; *rays* pale blue; *disk* yellow.—According to Mr. Elliott *A. petens* of Willdenow and *A. amplexicaulis* of Michaux are identical with this species.

41. *A. sagittifolius* Wild. : stem smooth, branched; leaves oblong-lanceolate, acuminate, sessile, serrate in the middle; radical ones oblong, cordate-saggitate, serrate, petiolate; scales of the involucre loosely imbricate, lanceolate.


45. *A. paniculatus* Ait. : stem much branched, smooth; branchlets hairy; leaves ovate, lanceolate, subserrate, smooth, petiolate; radical ones ovate-cordate, serrate, scabrous, petiolate; petioles naked; involucre loose, somewhat imbricate.

**Hab.** Woods. Can. to Car. Aug.—Oct. 2f.—*Stem* 2—4 feet high. *Flowers* rather small, but numerous; *rays* changing from white to blue; *disk* from yellow to purple or brown.—Sparcely different from *A. undulatus*.

46. *A. cordifolius* Linn.: stem paniculate, nearly smooth; leaves cordate, hairy beneath, coarsely serrate, petiolate; petioles winged; panicle divaricate; involucre loose, slightly imbricate—and *A. heterophyllus* Wild.

**Hab.** Mountainous woods. Can. to Flor. Sept.—Nov. 2f.—*Stem* 2—3 feet high, branched, with the branches pubescent. *Flowers* small, in panicles composed of crowded racemes, white or pale purple.

47. *A. corymbosus* Ait.: stem smooth; branches hairy; leaves ovate, sharply serrate, acuminate, nearly smooth; lower ones cordate, petiolate; petioles naked; corymb fastigiate; involucre oblong, imbricate; scales obtuse, closely appressed.

**Hab.** Dry woods. N. Y. to Car. July, Aug. 2f.—*Stem* 2 feet high. *Flowers* larger than in the preceding, in a fastigiate corymb, white tinged with purple.

48. *A. macrophyllus* Linn.: stem branched, diffuse; leaves ovate, petiolate, serrate, scabrous; upper ones cordate-ovate, sessile; lower ones cordate, petiolate; petioles somewhat margined; involucre cylindrical, closely imbricate; scales oblong, acute.

**Hab.** Rocky woods. Can. to Geor. Sept., Oct. 2f.—*Stem* 1—2 feet high. *Flowers* above middle-size; *rays* white or blue.

***Pappus double. Flowers generally in corymbs.***

49. *A. linariifolius* Linn.: stem somewhat decumbent; branches fastigiate, 1-flowered; leaves numerous, linear, mucronate, without nerves or punctures, carinate, scabrous, rigid; those of the branches recurved; involucre imbricate, as long as the disk—and *A. rigidus* Wild. Pursh.—*Chrysopsis linariifolia* Nutt.
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50. *A. linifolius* Linn.: stem corymbose-laterally branched, scabrous; branches leafy; leaves linear, without nerves, punctate, scabrous, reflexed-spreading; involucre imbricate, short; rays nearly equal to the disk.—*Chrysopsis linifolia* Nutt.

Hab. Shady woods. N. S. Sept., Oct. 2L.—Stem 1 1/2—2 feet high. Flowers large, white or pale purple.—Scarcely distinct from the preceding.?

51. *A. humilis* Willd.: leaves somewhat rhomboidal, oval-lanceolate, acuminate at each end, slightly petiolate, smooth, hispid on the margin; corymb diverging, dichotomous, rather naked, few-flowered; involucre loose, imbricate; florets of the ray 8—and *A. cornifolius* Willd.—*A. infirmus* Mich.—*Chrysopsis humilis* Nutt.

Hab. Rocky situations. Can. to Car. Aug., Sept. 2L.—Stem 1—2 feet high, pubescent. Flowers in small terminal corymbs, white and large in proportion to the plant; ray florets about 8.

52. *A. amygdalinus* Lam.: stem simple, corymbose-fasciculate at the summit; leaves lanceolate, attenuate at base, acuminate, scabrous on the margin; involucre loose, imbricate; scales lanceolate, obtuse.—*A. umbellatus* Ait.—*Chrysopsis amygdalina* Nutt.

Hab. Low grounds. N. S. Aug., Sept. 2L.—Stem 2 feet high. Flowers numerous; ray florets about 12, narrow, white.—Closely allied to the former.

25. SOLIDAGO. Linn.

Involucre imbricate, with the scales appressed. Florets of the ray about 5. Receptacle naked, punctate. Pappus simple, hairy.—Flowers yellow. _Syngenesia_. _Superflua_.

Obs. An excellent monograph of this difficult genus by Sir J. E. Smith, will be found in Rees’ _Cyclopaedia_, art. SOLIDAGO. The remarks made concerning the variable character of the preceding genus will equally apply to this.

* Racemes secund. Leaves with 3 combined nerves.

1. *S. canadensis* Linn.: stem villous; leaves lanceolate, serrate, 3-nerved, scabrous; racemes paniculate, secund, recurved; rays short.

Hab. Fields. Can. to Car. Aug., Sept. 2L.—Stem 2—5 feet high, very villous. Leaves large, always scabrous on the upper surface. Flowers in second racemes, on large branches, recurved at the summit. **Golden Rod.**

2. *S. procera* Ait.: stem erect, villous; leaves lanceolate, serrate, 3-nerved, scabrous, villous beneath; racemes erect, spiciform, before flowering nodding; rays short.

3. *S. serotina* Ait.: stem erect, terete, smooth; leaves linear-lanceolate, serrate, smooth, 3-nerved; racemes paniculate, secund; peduncles pubescent.


4. *S. gigantea* Ait.: stem erect, smooth; leaves lanceolate, serrate, scabrous on the margin, obscurely 3-nerved; racemes paniculate, secund; peduncles hirsute; rays short.

Hab. Low grounds. N. S. Aug., Sept. 2f.—Stem 4—7 feet high, purplish.

5. *S. ciliaris* Willd.: stem erect, smooth; leaves lanceolate, sub-3-nerved, smooth, scabrous on the margin, sub serrate; raceme paniculate, secund; peduncles smooth; bracts ciliate; rays short.


6. *S. reflexa* Ait.: stem erect, villous; leaves lanceolate, sub serrate, 3-nerved, scabrous, reflexed; branches paniculate, subsecund, reflexed.


7. *S. lateriflora* Linn.: stem erect, somewhat hairy; leaves lanceolate, sub-3-nerved, smooth, scabrous on the margin; the lower ones slightly serrate; racemes paniculate, somewhat recurved, secund.

Hab. Dry woods. Can. to Car. Aug.—Oct. 2f.—Stem 2—3 feet high; the lower part sometimes with lateral flowering branches. Flowers larger and leaves broader than in any of the preceding species.

** Racemes secund. Leaves veined.

8. *S. aspera* Ait.: stem erect, terete, hairy; leaves ovate, somewhat elliptic, very scabrous, rugose, serrate, without nerves; racemespaniculate, secund.

Hab. Fields and woods. N. Y. to Car. Sept. 2f.—Stem 3—5 feet high, very hairy and somewhat scabrous. Flowers in a long terminal panicle composed of secund racemes.

9. *S. altissima* Linn.: stem erect, hispid; leaves lanceolate, the lower ones deeply serrate, very scabrous, rugose; panicle secund and often spreading—and *A. rugosa* Willd.


10. *S. scabra* Willd.: stem erect, hairy, sulcate; leaves oblong, at-
tenuate at both ends, acuminate, glabrous above, rugose and scabrous beneath, with appressed serratures in the middle; racemes secund.


11. *S. memorialis* Ait.: stem erect, tomentose; radical leaves somewhat cuneate, serrate; cauleine ones lanceolate, hispid, very entire; racemes paniculate, secund.

Hab. Sandy fields. Can. to Car. Aug.—Oct. 2ft. — Stem 1—2 feet high. *Flovers* in a small and somewhat corymbose panicle. —The whole plant has a greyish or pulverulent appearance.

12. *S. patula* Willd.: stem erect, smooth; leaves elliptic, serrate, smooth; radical ones oblong-spathulate; racemes paniculate, secund, spreading; peduncles pubescent.


13. *S. ulmifolia* Willd.: stem erect, smooth, striate; leaves elliptic, deeply serrate, acuminate, villous beneath; radicle ones obvate; racemes paniculate, secund; peduncles villous; rays short.


14. *S. arguta* Ait.: stem erect, smooth; leaves smooth, acutely and unequally serrate; radical ones spathulate-ovate; cauleine elliptic; racemes paniculate, secund; florets of the ray long.


15. *S. juncea* Ait.: stem erect, smooth; leaves lanceolate, smooth, scabrous on the margin; lower ones serrate; racemes paniculate, secund.


16. *S. elliptica* Ait.: stem erect, smooth; leaves elliptic, smooth, serrate; racemes paniculate, secund; rays middle-sized.


17. *S. recurvata* Willd.: stem erect, pubescent; leaves lanceolate, serrate, scabrous on the margin; racemes elongated, secund, recurved, paniculate.


18. *S. sempereirens* Linn.: stem erect, smooth; leaves linear-lanceolate, somewhat fleshy, smooth, very entire, scabrous on the margin; racemes paniculate, secund; peduncles hairy.
COMPOSITÆ.

19. *S. odora* Ait.: stem erect, pubescent; leaves linear-lanceolate, entire, smooth, scabrous on the margin; racemes paniculate.

**Hab.** Fertile woods. Can. to Car. Aug.—Oct. *Stem 3 feet high, pubescent near the summit. Racemes recurved, forming a pyramidal panicle.—The flowers when dried, form an excellent substitute for tea, and have been exported to China. Pursh. The leaves yield by distillation, a fragrant volatile oil. Big. Med. Bot. i. 187.*

***Racemes erect.***

20. *S. speciosa* Nutt.: stem smooth, simple or virgately branched; leaves lanceolate, entire, somewhat fleshy, scabrous on the margin; the lower very broad; radical ones subserrate; racemes terminal, erect and compound, pubescent; peduncles mostly shorter than the involucre; rays elongated.—*S. sempervirens* Mich.

**Hab.** Shady woods. N. J. to Car. Sept., Oct. *Stem often 6 feet high, smooth and sulcate. Leaves large. Racemes numerous, terminal and erect; rays very broad.*

21. *S. bicolor* Linn.: stem and leaves hairy; leaves elliptic, the lower ones serrate; branches leafy; racemes erect; scales of the involucre obtuse.—*Aster bicolor* Nees and Sprengel.

**Hab.** Dry hills. Can. to Car. Aug.—Oct. *Stem 1—2 feet high, erect, very pubescent. Leaves covered with a whitish pubescence. Flowers numerous, rather large, in short clusters, forming a compact raceme along the upper part of the stem; rays nearly white.*

22. *S. petiolaris* Ait.: stem erect, villous; leaves elliptic, somewhat scabrous, petiolar; racemes erect; rays elongated.

**Hab.** Sandy woods. N. J. to Car. Sept., Oct. *Stem 2—3 feet high, very villous. Leaves large, the upper ones nearly sessile, the lower ones forming into a petiole. Racemes numerous, short.*

23. *S. stricta* Ait.: stem erect, smooth; cauline leaves lanceolate, very entire, smooth, scabrous on the margin; radical ones serrate; racemes paniculate, erect; peduncles smooth.

**Hab.** Sandy woods. N. J. to Car. Aug.—Oct. *Stem 2 feet high, very smooth.*

24. *S. virgata* Mich.: stem smooth and simple, summit racemose; leaves smooth, lanceolate-oblong, somewhat obtuse, appressed to the stem, diaphanously punctate; the upper ones small and entire; branches of the panicle elongate, racemed at the summit; peduncles erect, smooth, filiform and squarrose.


25. *S. casia* Ait.: stem erect, smooth; leaves lanceolate, smooth; racemes erect; rays middle-sized.
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26. *S. hispida* Willd.: stem erect, hispid, scabrous; leaves lanceolate, scabrous, entire; radical ones serrate; racemes erect; rays middle-sized.


27. *S. lithospermifolia* Willd.: stem branched, pubescent; leaves lanceolate, scabrous on both sides, attenuate, 3-nerved, very entire; racemes erect; rays elongated.


28. *S. laxigata* Ait.: stem erect, smooth; leaves lanceolate, fleshy, very entire, very smooth; racemes paniculate, erect; peduncles scaly, villous; rays elongated.


29. *S. vimea* Ait.: stem erect, subpubescent; leaves linear-lanceolate, membranaceous, attenuate at base, smooth, scabrous on the margin; lower ones slightly serrate; racemes erect; rays elongated.


30. *S. limonifolia* Pers.: stem oblique, smooth; leaves lanceolate, somewhat fleshy, entire, smooth on both sides; racemes panicled, erect; peduncles scaly, smooth; rays long.—*S. mexicana* Willd. Pursh.


31. *S. macrophylla* Pursh: lower leaves ovate, acuminate, attenuate, unequally and acutely serrate, smooth; cauline ones lanceolate, attenuate at each end, nearly sessile, serrate; racemes axillary, pedunculate, leafy, as long as the leaves; involucre oblong, turgid, many-flowered; rays somewhat elongated.

Hab. Woods, near White mountains. Big. Can. Pursh. Aug. 24.—Stem 3 feet high. Flowers yellow, in short axillary racemes.—This plant, which is described by Pursh, from a specimen in the Banksian Herbarium, he thinks intermediate between this genus and *Aster*. According to Dr. Bigelow it has broader leaves than any other species, sometimes rough beneath.

32. *S. flexicaulis* Linn.: stem flexuous, smooth, angled; leaves ovate, acuminate, serrate, smooth; racemes erect, axillary; rays middle-sized,—and *S. latifolia* Muhl.

33. *S. axillaris* Pursh: stem smooth, terete, very erect; leaves lanceolate, serrate, smooth; racemes axillary, subglobose, erect; rays elongated.

**Hab.** Woods. Can. to Virg. Aug.—Oct. 24. — Stem 2—3 feet high. Leaves narrow-lanceolate. —This species, which is quite common, is distinguished from the former by its narrower leaves and by its compact, somewhat globular racemes, clustered along the stem.

34. *S. rigida* Linn.: stem erect, terete, pubescent and branching at the top; cauline leaves lanceolate, serrate, attenuate at each end; lower ones elliptic, somewhat hairy; racemes erect; rays elongated.

b. *alpina* Big.: a few inches in height, with obovate or lanceolate, mostly entire, leaves.

**Hab.** Woods on the sides of the White Mountains. Big. N. to Labrador. Aug.—Oct. 24. — Stem flexuous, 1—3 feet high. Leaves elliptic or lanceolate, often with a long narrow base, serrate; the upper ones nearly entire. Flowers in a large panicle, yellow; rays 5—10. — Distinguished from all other species by its much larger flowers. Common to Europe, Asia and America. Var. *b.* is found, according to Dr. Bigelow, on the alpine summits of the White Mountains.

35. *S. rigida alpina* Linn.: stem hairy and scabrous; leaves ovate-oblong, rough with minute hairs; those of the stem very entire, lower ones serrate; flowering branches paniculate; racemes compact; scales of the involucre obtuse; rays elongated.

**Hab.** Mountains. N. J. to Car. Aug.—Oct. 24. — Stem 3—4 feet high, very pubescent when young. Flowers large, somewhat clustered near the summits of the branches, forming a somewhat fastigiate corymb.

36. *S. norvegica* Linn.: radical leaves ovate-oblong, petiolate; stem nearly naked, with fastigiate branches.


37. *S. squarrosa* Muhl.: stem thick, pubescent above; leaves smooth, lower ones very broad, spathulate oval, serrate, acute, margin scabrous; the upper sessile, lanceolate-elliptic, entire; racemes glomerate, rigid and pubescent; involucre squarrose, many-flowered; rays elongated, 10 or 12.


33. *S. puberula* Nutt.: stem simple and terete, somewhat pubescent; leaves lanceolate, entire, on each side minutely pubescent, attenuated at each end; radical ones sub serrate; racemes spiked, axillary, erect and condensed; peduncles pubescent; scales of the involucre linear-lanceolate, acute; rays elongated, about 10.
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Hab. Sandy fields. N. J. Nutt. 2l.—Stem brownish, 1—2 feet high. Racemes shorter than the lower leaves, collected into a leafy spike; rays bright yellow.—Resembles S. nemo-ralis.


39. S. lanceolata Ait: stem much branched, angular, hairy; leaves lanceolate-linear, very entire, nearly erect, 3—5-nerved, somewhat scabrous on the margin, nerves beneath minutely hispid; corymb terminal, fastigate; branches clustered; rays 15—20, as long as the disk.

—Chrysocoma graminifolia Linn.—Euthamia graminifolia Nutt.

Hab. Fields and meadows. Can. and N. S. N. to Subarc. Amer. Sept., Oct. 2l.—Stem 2—3 feet high, with the branches very numerous. Flowers numerous, clustered in a terminal corymb.

40. S. tenuifolia Pursh: stem angled, scabrous, with fastigate branches; leaves very narrow, linear, spreading, obscurely 3-nerved, scabrous on the margin, the axils leafy; corymb terminal, fastigate, heads clustered; rays about 10, scarcely as long as the disk.—S. lanceolata var. minor Mich.—Euthamia tenuifolia Nutt.


26. CHRYSOCOMA. Linn.


Syngenesis. Aequalis.

C. virgata Nutt: herbaceous and every where smooth; stem virgately branched; branches corymbiferous, fastigate; leaves all narrow and linear; involucre oblong, 3—4-flowered; scales glutinous and appressed.

Hab. Swamps. N. J. 2l.—Stem 18 inches high and branched nearly from the base. Leaves 1—2 inches long, smooth and thickish, somewhat remote. Flowers yellow.

27. BOLTONIA. L'Herit.

Involucre imbricate. Rays numerous. Receptacle conic, punctate. Acines flat and margined. Pappus consisting of many minute setæ, with two of them opposite and mostly elongated.

Syngenesis. Superflua.

1. B. glastifolia L'Herit: lower leaves serrate; flowers on short peduncles; seeds obcordate, conspicuously winged, pubescent; awns of the pappus 2, nearly of its own length.

2. *B. asteroides* L'Herit: leaves entire; flowers on long peduncles; seeds oval, smooth, nearly awnless.—*Chrysanthemum carolinianum* Walt.


**Suborder IV. Eupatorineæ.**

**28. KUHNIA. Linn.**


*Syngenesia. Aequalis.*

1. *K. eupatorioides* Linn.: smooth; leaves petiolate, broad-lanceolate, serrate; corymb terminal, few-flowered, crowded.


2. *K. criottia* Linn.: pubescent; leaves narrow-lanceolate or linear, petioled, punctate and glandular beneath; panicle terminal, divaricate.

   —*Criottia kuhnia* Mich.


**29. EUPATORIUM. Linn.**


*Syngenesia. Aequalis.*

—Involucre 3–5-flowered.

1. *E. hyssopifolium* Linn.: stem erect; lowest leaves opposite, lanceolate-linear, slightly toothed; corymb nearly fastigiate; style much larger than the corol.


2. *E. linearilolium* Walt.: stem somewhat procumbent, villous towards the summit; stem leaves opposite, lanceolate-linear, rarely toothed, sometimes clustered; style as long as the corol.

   HAB. Sandy fields. N. J. to Car. Aug.—Nov. 24.—Stem generally procumbent, 1–2 feet long, almost viscidly-pubescent. Flowers in an irregular corymb, white.—This species seems to have been confounded with the preceding, by both Walter and Michaux. I have adopted the characters given by Elliott.

3. *E. lanceolatum* Willd.: leaves sessile, distinct, oblong-lanceolate, scabrous, deeply serrate at base; scales of the involucre similar coloured.

   HAB. Dry woods. Penn. to Virg. Aug.—Nov. 24.—Resembles the preceding.

_Hab._ Low woods. N. Y. to Car. Aug.—Nov. 21.—_Stem_ 1—2 feet high, pubescent. _Leaves_ opposite, somewhat deltoid, very hairy beneath. _Flowers_ in a fastigiate corymb, small, white.—Michaux’s name for this species has the claim of priority, and as Mr. Elliott remarks, is equally, perhaps more appropriate.

5. _E. melissoides_ Willd. : leaves petiolate, ovate, somewhat obtuse, obtusely serrate, veined, nearly smooth.

_Hab._ Penn. Muhl. Aug.—Oct. 21.—Resembles the last, but the leaves are smaller, petiolate and smooth. Still a doubtful species.

6. _E. rotundifolium_ Linn. : leaves sessile, distinct, roundish-cordate, obtusely serrate, veined; scales of the involucre acuminate.


7. _E. pubescens_ Willd. : stem paniculate, pubescent; branches fastigiate; leaves sessile, distinct, ovate, scabrous, veined; lower ones doubly serrate; upper ones sub serrate.

_Hab._ Sandy woods. N. J. to Car. Aug.—Oct. 21.—_Stem_ 2 feet high, the lower branches opposite. _Leaves_ thin and slightly scabrous. _Flowers_ in a fastigiate corymb, white.

8. _E. ceanothifolium_ Willd. : leaves petioled, ovate, acuminate, dentate, 3-nerved, glabrous.

_Hab._ Shady woods. N. Y. to Virg. Aug.—Nov. 21.—Resembles _Ceanothus americanus_ in its foliage exceedingly.

9. _E. ovatum_ Big. : hairy and scabrous; leaves opposite, sessile, ovate, obtusely toothed; corymb fastigiate; involucre about 8-flowered.


10. _E. altissimum_ Linn. : leaves sub sessile, lanceolate, 3-nerved, attenuate at each end, pubescent; lower ones serrate in the middle.

_Hab._ Sandy woods. Penn. to Virg. W. to the Miss. Aug.—Oct. 21.—_Stem_ 3—7 feet high.

11. _E. amanum_ Pursh : leaves on short petioles, opposite and terminate lanceolate-oblong, acute at each end, serrate, nearly smooth, somewhat rugose, reticulated-veined beneath; panicle corymbose-fasciculate, crowded; scales of the involucre oblong, somewhat acute, coloured.

_Hab._ Mountains. N. J. Sept., Oct. 21.—_Stem_ 2 feet high, solid, smooth, purple; peduncles tomentose. _Flowers_ small, in a crowded corymbose panicle, pale purple.

12. _E. trifoliatum_ Linn. : leaves petiolate, in threes or fours, ovate, attenuate at each end, serrate, somewhat scabrous.
13. *E. sessilifolium* Linn. : stem nearly smooth; leaves sessile, clasping, distinct, ovate-lanceolate, round at base, serrate, very smooth. 


**Hab.** Shady woods. Penn. to Car. July—Sept. 24.—*Stem* slightly hairy.—Very similar to *E. sessilifolium*, yet sufficiently distinct by a *stem* pubescent; *leaves* truncate at base, the serratures larger and more obtuse, and the *involucre* more pubescent. *Willd.*

15. *E. album* Linn. : leaves nearly sessile, oblong-lanceolate, somewhat scabrous, serrate; the inner scales of the involucre long, lanceolate, scarious, white.—*E. glandulosum* Mich. 


"*Involucre many-flowered.*"

16. *E. purpureum* Linn. : stem smooth and glaucous, hollow; leaves petiolate, in fours or fives, ovate-lanceolate, serrate, rugose-veined, somewhat scabrous.


17. *E. maculatum* Linn. : stem solid, furrowed; leaves petiolate, in fours or sixes, ovate-lanceolate, unequally serrate, pubescent beneath. 


18. *E. verticillatum* Muhl. : stem solid, smooth; leaves petiolate, in threes or fours, ovate-lanceolate, acuminate at each end, unequally serrate, nearly smooth.—*E. purpureum* Mich. 


19. *E. punctatum* Willd. : stem solid, terete; leaves petiolated, in fours or fives, ovate, acuminate, serrate, scabrous on both sides. 

**Hab.** Mountains. N. J. and Penn. Aug.—Oct. 24.—This plant is described by Pursh as not so tall as the preceding—with the flowers purple and very ornamental. It may be only a variety.
DICOTYLEDONOUS PLANTS.


**Hab.** Swampy grounds. Can. to Flor. W. to Miss. Aug., Sept. **2f.**—Stem 2—4 feet high, hairy, branched at the top. **Leaves** large. **Flowers** in large corymbs, white.—The whole plant is bitter, and is used as a tonic. **Big. Med. Bot. i. 33. Anderson's Inaugural.** Boneset. Thoroughwort.

***Involucre simple.***

21. *E. aromaticum* Linn.: stem paniculate at the summit; leaves petiolate, ovate, acute, 3-nerved, obtusely serrate, smooth; flowers in corymbs; involucre simple.

**Hab.** Low woods. Penn. to Flor. Aug., Sept. **2f.**—Stem 2 feet high, pubescent. **Flowers** in small corymbs, large, white and aromatic.


**Hab.** Woods and rocky hills. Can. and N. S. W. to Miss. Aug.—Oct. 2f.—Stem 2 feet high, round and smooth. **Leaves** opposite, the lower ones on long petioles and somewhat cordate. **Flowers** small, white, in small panicled corymbs.

30. **CCELESTINA.** Cassin. Spreng.

**Involucre** imbricate. **Receptacle** naked. **Acines** angled, with a membranaceous crown. **Syngenesia. Æqualis.**

*C. carulea* Cassin: perennial; leaves petioled, cordate-ovate, somewhat obtuse, obtusely serrate, 3-nerved, scabrous; involucre many-leaved; flowers in corymbs.—*Eupatorium celestinum* Linn.

**Hab.** Woods. Penn. to Car. W. to Miss. Aug.—Oct.—Stem 2—3 feet high, pubescent. **Leaves** on petioles, opposite, sometimes deltoid. **Flowers** in close fastigate corymbs, fragrant, light blue. **Involucre** about 30-leaved, 40—60-flowered.

**Suborder V. JACOBÆ.**

31. **MIKANIA.**

**Involucre** 4—6-leaved, equal, 4—6-flowered. **Receptacle** naked. **Style** long, deeply cleft. **Pappus** pilose. **Syngenesia. Æqualis.**

1. *M. scandens* Willd.: stem climbing, smooth; leaves cordate, repand-toothed, acuminate, with the lobes divaricate and unequal; flowers in corymbs.—*Eupatorium scandens* Linn.

**Hab.** Low grounds. Can. to Car. July—Sept. 2f.—A twining plant. **Flowers** bluish-white, in axillary corymbs.

*Climbing Thoroughwort.*
2. *M. pubescens* Nutt.: stem climbing, pubescent; leaves cordate, acuminate, angularly toothed, and with the calyx pubescent; lobes divericate, equal.

**Hab.** Low grounds. Penn. to Car. Sept. 24.—*Flowers* pale purple, odorous, in paniculate corymbs which are axillary and terminal.—Nearly allied to the preceding.

32. **CACALIA.** Linn.

*Involucre* cylindric, oblong, the base only somewhat scaly. **Receptacle** naked. *Pappus* hairy. **Syngenesia.** *Æqualis.*

1. *C. suaveolens* Linn.: stem herbaceous; leaves petiolate, hastate-sagittate, serrate, smooth, similarly coloured on both sides; flowers corymbed, erect; involucre many-flowered.

**Hab.** Banks of streams. Penn. to Car. Aug., Sept. 24.—*Stem* 3—4 feet high. *Leaves* large. *Flowers* white, with yellow anthers.—According to Mr. Nuttall it is a *Senecio*.

2. *C. atriplicifolia* Linn.: stem herbaceous; leaves petioled, smooth, glaucous beneath; radical ones cordate, toothed; cauline ones rhomboidal, somewhat toothed on each side; flowers corymbed, erect; involucre 5-flowered.


3. *C. reniformis* Willd.: stem herbaceous; leaves petioled, smooth, hairy on the veins beneath; radical ones broad-cordate, reniform, repand-toothed; cauline oblong, toothed, wedgeform and very entire at base; corymbs fastigiate; involucre many-flowered.


33. **TUSSILAGO.** Linn.

*Involucre* simple, swelling; scales equal, even with the disk and submembranous. **Receptacle** naked. *Pappus* simple. (*Flowers* mostly polygamous, dioecious.) **Fertile florets** ligulate or tubular. **Syngenesia.** *Superflua.*

1. *T. frigida* Linn.: scape with a fastigiate many-flowered thyrse; flowers radiate; leaves roundish, unequally toothed, tomentose beneath.

**Hab.** Mountains. Can. and N. S. June. 24.—*Stem* 5—10 inches high. *Florets* of the ray white; of the disk pale purple.

2. *T. palmata* Ait.: scape with a fastigiate thyrse; flowers obscurely rayed; leaves roundish-cordate, half 7-lobed, incisely toothed, tomentose beneath.

**Hab.** Swamps. Fairhaven, Ver. Islands of Lake Huron. *Nutt.* N. to Labrador. April, May. 24.—The *leaves* of this species
are aptly compared by Mr. Nuttall to those of the *Podophyllum peltatum*, although they are not so large.

3. *T. farfara* Linn.: scape 1-flowered, bracteate; flowers rayed; leaves cordate, angular, toothed, pubescent beneath.


34. **SENECIO.** Linn.


*Flowers* radiate.

1. *S. gracilis* Pursh: radical leaves on very long petioles, orbicular, subcordate, crenate; cauline ones few, very remote, linear-oblong, dilated at base, incisely toothed; peduncles very short, hairy, somewhat umbelled; involucre smooth; rays few, very short.


2. *S. obovatus* Willd.: stem smoothish; radical leaves obovate, crenate-serrate, petiolate; cauline ones pinnatifid, toothed; flowers somewhat umbelled, on long peduncles.


3. *S. balsamita* Willd.: stem and peduncles villous at the base; radical leaves oblong, serrate, petiolate; lower cauline ones lyrate-pinnatifid, serrate; upper pinnatifid-toothed; flowers somewhat umbelled.—*S. lyratus* Mich.


4. *S. aureus* Linn.: radical leaves ovate, cordate, serrate, petiolate; cauline ones pinnatifid, toothed, the terminal segments lanceolate; peduncles thickened; flowers somewhat umbelled.


5. *S. dubius* Beck: woolly and tomentose; radical leaves on long petioles, spathulate-obovate and ovate, somewhat acute and pinnatifid; cauline ones 2—3, linear, pinnatifid; flowers corymbed.—*S. heterophyllus* Nutt. Torr.—*Cineraria heterophylla* Pursh.—*C. dubia* Spreng.

Hab. Rocks in Blue Mountains. Penn. *Pursh.* May, June. 2½.—Stem about a span high. *Flowers* deep yellow.—I have followed Mr. Nuttall and Dr. Torrey in placing this plant under genus *Senecio*, although there is still some doubt whether it really belongs to this or to *Cineraria*. Mr. Nuttall thinks it a variety of *C. integrifolia* of Willdenow and Pursh, a plant which
is still retained under the latter genus by Dr. Richardson, (App. to Frank. Jour.) and by Dr. Torrey, in his account of plants collected during a journey to the Rocky Mountains by Dr. E. James. I have changed the specific name, as that of heterophyllus had been long since applied to another Senecio from the Cape of Good Hope.

" Florets tubular : those of the ray wanting.


7. S. hieracifolius Linn.: stem virgate, paniculate; leaves clasping, oblong, acute, unequally and deeply toothed; involucre smooth; seeds pubescent.


8. S. elongatus Pursh: smooth; radical leaves spatulate, serrate, attenuated into a petiole; cauline ones pinnatifid, toothed, very remote; peduncles elongated, umbelled, corymbed.


Suborder VI. HELIANTHEÆ.

35. HELENIUM. Linn.


Syngenesia. Superflua.

H. autumnale Linn.: leaves lanceolate, serrate, decurrent; flowers in corymbs; florets of the disk 5-cleft; of the ray flat, reflexed.


36. HELIANTHUS. Linn.


Syngenesia. Frustranea.

* Florets of disk dark purple.

1. H. atrorubens Linn.: hispid; stem naked towards the summit, loosely paniculate; leaves opposite, spatulate, oblong-ovate, crenate, 3-nerved, scabrous on the upper side; scales of the involucre ovate-lanceolate, as long as the disk.
2. *H. angustifolius* Linn.: stem slender, slightly scabrous; leaves narrow-lanceolate, entire, glaucous beneath, with the margin revolute, the upper ones alternate; scales of the involucre linear-lanceolate, ciliate, spreading; chaff 3-toothed. — *Rudbeckia angustifolia* Willd.

Hab. Cedar swamps. N. J. to Flor. Sept.—Nov. 2f.—Stem 2—3 feet high, sparingly branched. *Leaves* opposite below, alternate above, scabrous on the upper surface. *Flowers* small, terminal. *Rays* about 12, yellow; *disk* dark purple at the summit.—I have adopted the specific description of Mr. Elliott.

**Florets of the disk yellowish.**

† *Leaves* opposite.

3. *H. dicaricatus* Linn.: stem smooth, branched; leaves ovate-lanceolate, 3-nerved scabrous above, smooth beneath; panicle trichotomous; flowers small.


4. *H. trackelilfolius* Willd.: leaves ovate-lanceolate, acuminate, serrate, 3-nerved, very scabrous on both sides; scales of the involucre linear-lanceolate, ciliate, outer ones larger. — *H. gigas* Mich.


5. *H. frondosus* Willd.: stem smooth below; leaves ovate, acutely serrate, peduncles scabrous; involucre squarrose, undulate, leafy, ciliate; rays 8-flowered.


6. *H. mollis* Willd.: stem smooth below, scabrous near the summit; leaves ovate-lanceolate, acute, serrate, scabrous above, pubescent and hoary beneath; flowers-few, terminal.

Hab. Low grounds. Penn. to Car. July—Sept. 2f.—Stem 3—6 feet high, purple, smooth except near the top. *Flowers* few, in a terminal panicle. *Rays* about 10.—This is the *H. mollis* of Elliott, which, although it agrees in most points with Pursh’s description, is not according to the former author *H. tomentosus* of Michaux.

† † *Upper leaves* alternate.

7. *H. giganteus* Linn.: leaves alternate, lanceolate, serrate, scabrous,
obscurely 3-nerved, tapering at each end, nearly sessile, ciliate at base; scales of the involucre lanceolate, ciliate.


8. *H. altissimus* Linn.: leaves alternate, ovate-lanceolate, serrate, scabrous, 3-nerved, tapering towards the summit, petioled; petioles ciliate; scales of the involucre lanceolate, ciliate.

**Hab.** Mountain meadows. Penn. to Car. July—Sept. 24. Resembles the preceding; but the _stem_ is smooth and purple. _Leaves_ petiolate, broader and almost ovate-lanceolate. _Scales_ of the involucre shorter. _Florets_ of the ray about 16. _Wild._—Pursh says the chaff of the receptacle is green in this species, but black in the preceding.

9. *H. strumosus* Linn.: leaves ovate, acuminate, serrate, 3-nerved, scabrous beneath; scales of the involucre linear-lanceolate, ciliate at base.

**Hab.** Can. and N. Eng. Aug.—Oct. 24. _Pursh._—Under the above name Mr. Elliott describes a plant found in North-Carolina; but it seems doubtful whether it is really the same. _Stem_ tall, slender, sparingly branched and smooth. _Leaves_ lanceolate or ovate-lanceolate, acuminate, serrate, thin, slightly scabrous on both sides, paler beneath. _Flowers_ small, few, terminal. _Florets_ of the ray 8–10. There are probably several species of this genus in the N. S. not now credited to it.

10. *H. decapetalus* Linn.: leaves ovate, acuminate, remotely serrate, 3-nerved, scabrous; scales of the involucre ovate-lanceolate, nearly equal, somewhat ciliate. _H. macrophyllum* Wild. _Pursh._?

**Hab.** Rocky woods. Can. to Car. Aug.—Oct. 24. _Stem_ 3–4 feet high, branching. _Leaves_ alternate above, the petioles ciliate at base. _Flowers_ large, in terminal panicles.

11. *H. multiflorus* Linn.: leaves 3-nerved, scabrous, lower ones cor-date; upper ones ovate; florets of the ray numerous; scales of the involucre lanceolate.


12. *H. tuberosus* Linn.: leaves 3-nerved, scabrous; lower ones cor-date-ovate; upper ones ovate-acuminate; petioles ciliate.

**Hab.** Fields. N. S. July—Sept. 24. _Root_ tuberous. _Stem_ 4–8 feet high. Naturalized in various parts of the N. S. _Jerusalem Artichoke._

37. **HELIOPSIS.** Pers.

_Involute_ imbricate; scales subovate, nearly equal. **Rays** large and linear. _Receptacle_ chaffy, conic; chaff lanceolate. _Seeds_ 4-angled. _Pappus_ none. _Syngenesis. Superflua._
H. laxis Pers.: leaves opposite, ovate, serrate, 3-nerved.—Buphthalmum helianthoides Wild.—Helianthus laxis Linn.

Hab. Banks of streams. N. Y. to Flor. Aug., Sept. 21.—Stem 3—5 feet high, dichotomously branched above. Flowers solitary, terminal and in divisions of the stem, on long peduncles, large, yellow.

38. RUDBECKIA. Linn.

Involucre nearly equal; scales in a double series. Receptacle conic, chaffy. Pappus a 4-toothed margin.

Syngenesia. Frustranea.

* Involucre imbricate; chaff of the receptacle mucronate.

1. R. purpurea Linn.: very rough; lower leaves broad-ovate, attenuate at base, remotely toothed; cauline ones lanceolate-ovate, acuminate at each end, nearly entire; ray florets very long, deflexed, bifid.

Hab. High grounds. N. Y. to Flor. W. to Miss. July—Sept. 21.—Stem 3—4 feet high, sparingly branched, differing somewhat in the degree of roughness. Leaves also varying much in length and breadth. Flowers large, terminal; rays purple; disk brown.—This plant has been found by Mr Edward Dunn, on the banks of the Hudson, about two miles below this city, which I believe is the most northern station yet discovered. It differs considerably in its generic character from most of the other species, and Mr. Elliott, indeed, suggests its separation from them.

** Involucre nearly equal; chaff unarmed.

2. R. fulgida Ait.: stem hispid, the branches long, virgate and 1-flowered; leaves oblong-lanceolate, denticulate, hispid, narrowed and slightly cordate at base; scales of the involucre as long as the ray; chaff lanceolate.—R. chrysomela Mich.


3. R. hirta Linn.: very hirsute; stem virgate, sparingly branched, 1-flowered; peduncles naked; leaves ovate-spathulate, 3-nerved, serrate, hairy; scales of the involucre imbricate, in a triple series, shorter than the ray; chaff obovate, acute.

Hab. Mountains. N. S. to Flor. W. to Miss. Aug., Sept. 21.—Stem 2—3 feet high, scabrous and hairy. Leaves alternate, sessile or subclasping; very hairy. Flowers solitary, terminal. Ray florets about 14, bifid, hairy, yellow, twice as long as the involucre.

4. R. triloba Linn.: hairy-hispid; stem paniculate; branches divaricate, many-flowered, leafy; leaves lanceolate, acuminate at each end, serrate; the lower ones 3-lobed; scales of the involucre linear, deflexed, as long as the ray.

24. — Stem 4—5 feet high. Flowers numerous, on the summits of the branches. Ray florets about 8, yellow; disk dark purple.

5. R. laciniata Linn.: stem smooth; lower leaves pinnate, the segments 3-lobed; upper ones ovate; pappus crenate.


25. — Stem 4—6 feet high, branching. Leaves rough, the lower ones pinnate or pinnatifid, with about 5 segments; upper ones nearly sessile, ovate or 3-cleft. Flowers large, yellow, in a loose terminal panicle. Ray florets about 6, 3-toothed. Cone Flower.

6. R. digitata Ait.: stem smooth; lower leaves pinnate, the segments pinnatifid; the upper ones simple, pinnate; the highest 3-cleft; pappus crenate.


26. — Stem 5—6 feet high. Leaves thin, the lower ones pinnate; generally lanceolate. Flowers terminating the branches, yellow.

7. R. pinnata Mich.: stem furrowed, hispid; leaves all pinnate; lower segments sometimes 2-parted; pappus entire.


27. — Flowers very large, yellow. Rays long reflexed; disk ovate, purple.

39. VERBESINA. Linn.

Involucre many-leaved, the leaves in a double series. Rays about 5. Receptacle chaffy. Pappus 2-awned.

Syngenesia. Superflua.

V. siegesbeckia Mich.: stem winged; leaves opposite, ovate-lanceolate, acuminate at each end, acutely serrate; corymb brachiate; branches irregularly many-flowered at the summit.—Siegesbeckia occidentalis Linn.


28. — Root creeping. Stem erect, 4—6 feet high, 4-winged. Flowers in large somewhat fastigiate corymbs, yellow; rays 3-toothed.

40. CALLIOPSIS. Reichenbach.

Involucre double; inner one many-parted, coloured; outer erect. Receptacle chaffy. Pappus none.

Syngenesia. Frustranca.

C. rosea Spreng.: small and very smooth; stem mostly simple; leaves linear, entire, axils leafy; flowers few, on long peduncles, axillary, terminal; rays unequally 3-toothed; seeds very entire, naked.—Coreopsis rosea Nutt.


29. — Stem 12 inches high, smooth and generally simple. Leaves 2 inches long, op-
DICOTYLEDONOUS PLANTS.

posite and connate at base. Flowers small, few, on peduncles 3 inches long, pale red.

41. COREOPSIS. Linn.

Involucre double, each many-leaved; the inner one equal, subcoriaceous and coloured. Receptacle chaffy, scales flat. Acines compressed, emarginate, bidentate; dentures rarely awned.

Syngenesia. Frustranca.

* Leaves opposite, divided.

1. C. trichosperma Mich.: smooth; leaves generally quinate, pinnate; segments linear-lanceolate, serrate; flowers in corymbs; leaflets of the outer involucre spatulate, ciliate-serrate; rays entire; acines cuneate, 2—4-toothed.

Hab. Swamps. N. J. and Car. Aug., Sept. 2. — Stem 2—3 feet high, branching towards the top. Flowers peduncled, opposite and terminal; rays about 8, lanceolate, yellow.

Tickseed Sunflower.

2. C. tripteris Linn.: smooth; leaves petiolate, lanceolate, very entire; radical ones pinnate; cauline ternate; rays entire; acines obovate, naked at the summit.


** Leaves alternate.

3. C. gladiata Walt.: stem smooth, dichotomous towards the summit; leaves narrow-lanceolate, entire, thick, tapering into a petiole; acines obvate, winged, the wings serrulate; pappus 2-awned, bristly.

— C. dichotoma Mich.


4. C. aspera Pursh: leaves lanceolate-linear, rough; upper ones alternate; lower opposite; stem 1-flowered.

Hab. In Maryland. Pursh.

42. ACTINOMERIS. Nutt.

Involucre simple, many-leaved; leaves nearly equal. Rays remote, elongated, (4 to 8.) Receptacle small and chaffy, the scales embracing the margin of the acines. Acines compressed and margined, with the summit persistently 2-awned.

Syngenesia. Frustranca.

A. ? squarrosa Nutt.: stem erect, winged, pubescent towards the summit; leaves lanceolate, serrate, scabrous; panicle loose, leafy;
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involucre spreading; receptacle nearly globose.—Coreopsis alternifolia Linn.—Verbesina coreopsis Mich. Spreng.

Hab. Penn. to Car. July—Sept. 2 ft. Stem 3–4 feet high. Leaves alternate. Flowers varying, yellow and white.—There seems to be still some doubt with regard to its generic character.

43. BIDENS. Linn.

Involucre double, the outer unequal. Ray florets frequently wanting. Receptacle chaffy, flat. Pappus of 4 reflected or erect and retropinac scabrous awns. Acines 4-angled.

Syngenesia. Frustranea.

1. B. cernua Linn.: flowers subradiate, cernuous; outer involucre as long as the flower; leaves lanceolate, subconnate, dentate.

Hab. Near ponds and ditches. Can., N. Y. and Penn. W. to Miss. Aug.—Sept. —Stem 1–2 feet high. Ray florets as in all the species, yellow, often wanting.—This plant is sometimes not more than 8 inches high, with very small erect flowers, when it constitutes the variety minima.

Water Beggar-ticks.

2. B. chrysanthemoides Mich.: flowers radiate, nodding; florets of the ray thrice as long as the nearly equal involucre; leaves oblong, tapering at each end, toothed, connate at base.

Hab. Wet places. N. Y. to Car. Aug., Sept. —Stem 1–3 feet high. Leaves glabrous. Flowers erect, yellow. Acines commonly with 4 awns.—From the remarks of Mr. Elliott, it is not improbable that several distinct species are covered under the above name.

3. B. frondosa Linn.: flowers discoid; outer involucre six times as long as the flower, its leaflets ciliate at base; lower leaves pinnate; upper ones ternate, lanceolate, serrate.


Burr Marygold.

4. B. connata Willd.: flowers discoid; outer involucre thrice as long as the flower; cauline leaves ternate; lateral ones connate; floral oblong-lanceolate.


5. B. bipinnata Linn.: flowers somewhat rayed; outer involucre as long as the inner; leaves bipinnate; leaflets lanceolate-pinnatifid.


6. B. beckii Torr.: stem subsimple; submerged leaves capillaceous-multifid; emersed ones lanceolate, connate, acutely serrate or lacinate; flowers rayed; the rays longer than the involucre.
DICOTYLEDONOUS PLANTS.

Hab. In water. Can. and N. Y. July, Aug. 24. — Stem 2—3 feet long, simple or with very small and slender branches arising from the axils of the upper leaves. Lower leaves very multifid, capillary, as in Ranunculus aquatilis; upper ones about an inch and a half long, broadly lanceolate, attenuated at each extremity, deeply serrated. Flowers solitary, at the extremity of the stem, rather large, yellow. Rays much longer than the involucre.—This species was first discovered in a pond near Schenectady, N. Y. It has since been found in Canada, by Mr. Goldie, and more recently in the western part of N. Y. by Drs. Asa Gray and William Aikin.

Water Marygold.

44. POLYMNIA. Linn.

Involucre double; the outer one 4—5-leaved; the inner 10-leaved; leaflets concave. Receptacle chaffy. Pappus none.

Syngenesis. Necessaria.

1. P. canadensis Linn.: viscid and villous; leaves denticulate, acuminate; lower ones pinnatifid, upper 3-lobed or entire.


2. P. veedalia Linn.: leaves opposite, 3-lobed, acute, decurrent into a petiole; lobes angled and sinuate; rays elongated.


45. SILPHIUM. Linn.


Syngenesis. Necessaria.

1. S. perfoliatum Linn.: stem 4-angled, smooth; leaves opposite, connate, ovate, serrate.

Hab. Mountains. Penn. to Car. Aug. 24. — Stem 6 feet high, angled, smooth. Peduncles terminal and from the axils of the highest leaves; rays 24, yellow.

2. S. trifoliatum Linn.: stem 6-angled, smooth; leaves verticillate by threes, ovate-lanceolate, unequally toothed and serrate, scabrous on the upper surface; upper ones sessile, panicle trichotomous.—S. ternifolinum Mich.


3. S. ternatum Retz.: stem terete, smooth; leaves verticillate by threes, petiolate, lanceolate, slightly toothed, ciliate at base, somewhat scabrous; upper ones scattered, sessile; panicle dichotomous; involucre ciliate.
HAB. Penn. to Car. July. 24.—Stem 4—6 feet high. Flowers in a loose terminal corymb; rays 14, long, yellow.—Mr. Elliott doubts whether the two last species are sufficiently distinct.

**Suborder VII. AMBROSIAE.**

46. IVA. Linn.


1. *frutescens* Linn.: shrubby; leaves opposite, lanceolate, deeply serrate, slightly scabrous; heads globular-depressed.

HAB. Sea coast. N. Y. to Flor. Aug. 24.—Shrub 3—8 feet high, with numerous opposite branches and leaves. *Flowers* small, in axillary leafy raceme, forming a large terminal panicle.

47. AMBROSIA. Linn.


**Monoecia. Pentandria.**

1. *A. integrifolia* Muhl.: leaves ovate, sessile, acuminate, serrate, hispid on both sides, ciliate at base; racemes terminal and mostly terminate.


2. *A. bidentata* Mich.: very hairy; leaves closely sessile, simple, lanceolate, 1—2 toothed on each side near the base; fruit 4-sided, 4-spined below the summit.

HAB. Allegany mountains. W. to Illinois.—Perhaps not in the limits assigned to the present work. July—Sept. ♀.

3. *A. trifida* Linn.: hirsute, rough; leaves 3-lobed, serrate; the lobes oval-lanceolate, acuminate; fruit 6-spined below the summit.


4. *A. elatior* Linn.: stem virgate; leaves bipinnatifid, nearly smooth; petioles conspicuously ciliate; racemes terminal.


**Hog Weed.**
5. *A. artemisifolia* Linn.: leaves bipinnatifid, hoary underneath, the uppermost pinnatifid; racemes by threes, terminal; branches fastigiate.—*A. absinthifolia* Mich.

**Hab.** Fields. Penn. to Car. W. to Miss. Aug., Sept. **S**.—

**Stem** 4—6 feet high. Leaves opposite below, alternate above. Racemes loosely paniculate. Spines of the fruit very short.

6. *A. paniculata* Mich.: stem branching, paniculate at the summit, and with the petioles villous; leaves green on both sides, bipinnatifid, the segments lanceolate; fruit somewhat clustered, small, obovate, slightly awned.—*I. monophylla* Walt.

**Hab.** Old fields. Can. to Flor. July—Sept. **S**. Pursh.—

**Stem** 2—6 feet high. Flowers in simple terminal and axillary racemes.

7. *A. heterophylla* Muhl.: stem paniculate; cauline leaves pinnatifid, subdentate, petiolate, those of the branches lanceolate, sessile; petioles with long ciliae; racemes terminal, solitary.—*A. peruviana* Willd.


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48. **XANTHIUM**. Linn.


**Monoecia.** Pentandria.

1. *X. strumarium* Linn.: stem unarmed, branching; leaves cordate, lobed, serrate, scabrous, 3-nerved; fruit elliptic, pubescent, armed with rigid hooked bristles.


2. *X. macrocarpon* De Cand.: stem unarmed, spotted; leaves cordate, lobed, obscurely sinuate-toothed, scabrous, 3-nerved; fruit oval, densely armed with short rigid uncinate bristles; horns incurved.—*X. orientale* Linn.—*X. maculatum* Raf.

**Hab.** Near salt water. N. S. Aug. **S**.—**Stem** purple, spotted. Fruit very large, woolly.

3. *X. spinosum* Linn.: spines ternate; leaves 3-lobed.


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**Suborder VIII. ANTHEMIDÆ.**

49. **SPARGANOPHORUS**. Mich.

Involucre somewhat globose, imbricate, with the scales recurved at the point. Receptacle naked. Acines crowned with a small cartilaginous cup. Syngenesia. ♂Equalis.
S. verticillatus Mich.: leaves linear, verticillate; heads few, terminal; pappus campanulate, 5-toothed.


50. TANACETUM. Linn.


Syngenesia. Superflua.

T. vulgare Linn.: leaves doubly pinnate, incisely serrate; corymb terminal.


51. ARTEMISIA. Linn.

Involucre imbricate; scales round, connivent. Florets of the ray none. Pappus none. Receptacle naked, or slightly villous.

Syngenesia. Superflua.

1. A. vulgaris Linn.: leaves tomentose beneath; cauline ones pinnatifid; segments lanceolate, subdentate, acute; floral ones undivided, linear, lanceolate; flowers nearly sessile, oblong, erect; involucre tomentose.


2. A. canadensis Mich.: stem herbaceous and paniculate, mostly erect; radical leaves subpinnate, somewhat tomentose; cauline subpinnate; segments subsectaceous, incised, flat, nearly smooth; flowers partly glomerate and sessile; involucre subglobose; scales oval, scarious.—A. campestris Pursh.


3. A. caudata Mich.: stem herbaceous, simple, densely and pyramidal paniculate; radical and lower cauline leaves sub-bipinnate, pubescent; upper subpinnate; segments subsectaceous, alternate, divaricate, somewhat convex; flowers pedicillate, erect, globose ovate.


52. CHRSANTHEMUM. Linn.

Involucre hemispherical, imbricate; innermost scales scarious. Receptacle naked. Pappus none.

Syngenesia. Superflua.
DICOTYLEDONOUS PLANTS.

C. leucanthemum Linn.: stem erect, branching; leaves clasping, lanceolate, deeply notched and toothed at the base.


53. ANTHEMIS. Linn.

Involucre hemispherical, subequal. Rays more than 5. Receptacle chaffy; chaff flat, with rigid acuminate points. Pappus none or a membranous margin.

Syngenesia. Superflua.

1. A. arvensis Linn.: leaves bipinnate; segments lanceolate-linear; receptacle conic; chaff lanceolate; acines crowned with a margin.


2. A. cotula Linn.: leaves bipinnatifid; segments subulate, 3-parted; receptacle conic; chaff setaceous; pappus none.


54. ACHILLEA. Linn.


1. A. ptarmica Linn.: leaves linear-lanceolate, acuminate, equally and acutely serrate, smooth.


2. A. millefolium Linn.: stem furrowed; leaves bipinnate, slightly hairy; segments linear, toothed, acute.


Order LXVIII. CAMPANULACEÆ. Lind.

Calyx superior, usually 5-lobed, (sometimes 3—8,) persistent. Corol monopetalous, inserted into the top of the calyx, usually 5-lobed, (sometimes 3—8,) withering on the fruit, regular; ñestivation valvate. Stamens inserted into the calyx…
alternately with the lobes of the corol, to which they are equal in number; **anthers** 2-celled, distinct; **pollen** spherical. **Ovary** inferior, with 2 or more polyspermmous cells opposite the stamens or alternate with them; **style** simple, covered with collecting hairs; **stigma** naked, simple, or with as many lobes as there are cells. **Fruit** dry, crowned by the withered calyx and corol, dehiscing by lateral irregular apertures, or by valves at the apex, always loculicidal. **Seeds** numerous, attached to a placenta in the axis; **embryo** straight, in the axis of fleshy albumen; **radicle** inferior.

**Herbs** or **undershrubs** yielding a white milk. **Leaves** simple or deeply divided, without stipules.

1. **CAMPANULA.** Linn.

**Calyx** mostly 5-cleft. **Corol** campanulate, the base closed with 5 staminiferous valves. **Stigma** 3—5-cleft. **Capsule** inferior, 3- (rarely 5-) celled, opening by lateral pores.

**Pentandria. Monogynia.**

1. **C. rotundifolia** Linn.: glabrous; stem erect, slender, somewhat branched at base; radical leaves reniform-cordate, crenate or cut; cauline ones linear, entire; panicle lax, few-flowered.

**Hab.** Rocky banks. N. S. N. to Subarct. Amer. W. to Rocky Mountains. June, July. 2 ft. **Stem** 8—12 inches high. **Radical leaves** cordate, (withering early.) **Flowers** few, large, blue, in a loose terminal panicle or raceme. **Flax Bell-flower.**

2. **C. amplexicaulis** Mich.: stem simple, erect, angular; angles hispid backwards; leaves cordate, toothed, clasping; flowers sessile, 1—5 in the axil of each leaf.—**C. perfoliata** Linn.

**Hab.** Fields. Can. to Geor. W. to Miss. May—July. 2 ft. **Stem** 8—12 inches high. **Leaves** sessile, closely embracing the stem, but never perfoliate. **Flowers** small, sessile, 1—4 in the axil of the leaf, purple. **Clasping Bell-flower.**

3. **C. americana** Linn.: stem simple, smooth; leaves ovate-lanceolate, much acuminate, membranaceous, uncinately serrate; lower ones somewhat cordate, with the petioles ciliate; flowers subsolitary, nearly sessile, in a terminal leafy raceme; corol subrotate; style exserted.—**C. acuminata** Mich.

**Hab.** Mountains and rocks. Niagara Falls and S. to Geor. July, Aug. 2 ft. **Stem** 2—3 feet high. **Flowers** blue, flat, 1—2 in the axils of the leaves.

4. **C. aperinoides** Pursh: stem slender, much branched, acutely angled; angles with the margin and nerves of the leaves aculeate backwards; leaves linear-lanceolate, sessile, somewhat serrate, smooth
DICOTYLEDONOUS PLANTS.

above; flowers solitary, on terminal filiform flexuous peduncles.—C. crinoides Muhl.—C. flexuosa Mich.?


Order LXIX. LOBELIACEÆ. Lind.

Calyx superior, 5-lobed, or entire. Corol monopetalous, irregular, inserted into the calyx, 5-lobed, or 5-cleft. Stamens 5, inserted into the calyx alternately with the lobes of the corol; anthers cohering; pollen oval. Ovary inferior, with from 1 to 3-cells; ovules very numerous, attached either to the axis or the lining; style simple; stigma surrounded by a cup-like fringe. Fruit capsular, 1 or more celled, many seeded, dehiscent at the apex. Seeds attached either to the lining or the axis of the pericarp; embryo straight, in the axis of fleshy albumen; radicle pointing to the hilum.

Herbs or shrubs. Leaves alternate, without stipules. Flowers axillary or terminal.

1. LOBELIA. Linn.


1. L. dortmanna Linn.: leaves linear, 2-celled, fleshy, obtuse; scape nearly naked; flowers in a terminal raceme, remote, pedicelled, nodding.—L. paludosa Nutt.


2. L. kalmii Linn.: whole plant smooth; stem erect, branched; leaves linear, remotely toothed; radicle ones spathulate; racemes terminal, lax, few-flowered, leafy; peduncles longer than the flower, with 2 minute bracts near the flower; capsule tapering at base.

Hab. Fields. N. S. July, Aug. 2f.—Stem 12—20 inches high, slender. Flowers blue, on long peduncles.

3. L. nuttallii R. & S.: stem erect, minutely scabrous, simple, or with filiform branches; leaves oblong-linear, denticulate; flowers in slender racemes, distinct; peduncles coloured, shorter than the flower, with minute bracts near the base; capsule obtuse below.—L. gracilis Nutt.—L. kalmii Bart. Ell.
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Hab. Margins of swamps. N. J. to Car. Aug. 3.—Stem filiform, erect, 2 feet high, often flexuous. Peduncles 1-4 inch long. Flowers pale blue, smaller than in the preceding; segments of the calyx nearly double the length of the capsule.

4. *L. claytoniana* Mich.: stem erect, simple, pubescent; leaves oblong, pubescent, obtuse, nearly entire; radical ones spatulate; raceme virgate, naked; segments of the calyx subulate, nearly as long as the tube of the corol.—*L. claytoniana* and *L. pallida* Muhl.

Hab. Fields. Can. to Car. July, Aug. 2f.—Stem 1 1-2—2 feet high, generally simple. Flowers pale blue, as large as those of *L. kalminii*, from 6—30 in a raceme.—I follow Dr. Torrey in uniting *L. pallida* of Muhl. with this species. They are, how ever, considered distinct by Mr. Elliott.

5. *L. puberula* Mich.: covered with silky down; stem erect, simple, slightly angled; leaves oblong-oval, obtuse, repand-serrulate; flowers nearly sessile, in a 1-sided spike; segments of the calyx longer than the tube of the corol, ciliate; margins reflexed.

Hab. Mountains. Penn. to Geor. Sept. 2f.—Stem 2 feet high. Lower leaves obvate; upper lanceolate. Flowers large, in a second-spike or raceme, nearly sessile, bright blue.—Allied to the next, but smaller in all its parts.

6. *L. syphilitica* Linn.: stem erect, somewhat hairy; leaves closely sessile, ovate-lanceolate, unequally serrate, with scattered hairs on the upper surface; raceme leafy, with the flowers on short pedicels; calyx hairy, with the margins reflexed.


7. *L. inflata* Linn.: stem erect, hairy, branched; leaves ovate-lanceolate, sessile, serrate, hairy; racemes leafy, somewhat paniculate; capsules inflated.


8. *L. cardinalis* Linn.: stem erect, simple, smooth; leaves oblong-lanceolate, serrate; lower ones tapering at base; spike 1-sided, somewhat leafy, with the flowers on pubescent pedicels; stamens longer than the corol.

Hab. Low wet grounds. Can. to Car. July, Aug. 2f.—Stem 1 1-2—2 feet high. Flowers very large, bright scarlet, in a terminal raceme which is from 8—10 inches long.—One of the most splendid plants in the Northern Section. Cardinal Flower.

Order LXX. ERICE.E. Linn.

Calyx 4 or 5-cleft, nearly equal, inferior, persistent. Corol hypogynous, monopetalous, 4 or 5-cleft, occasionally separable into 4 or 5 pieces, regular or irregular. Stamens definite,
equal in number to the segments of the corol, or twice as many, hypogynous, or inserted into the base of the corol. Anthers 2-celled, the cells hard and dry. Ovary surrounded at the base by a disk or secreting scales, many-celled, many-seeded; style 1, straight; stigma 1, undivided or toothed. Fruit capsular, many-celled, with central placenta. Seeds indefinite, minute; embryo cylindrical, in the axis of fleshy albumen; radicle opposite the hilum.

Shrubs or undershrubs. Leaves evergreen, rigid, entire, whorled or opposite, without stipules.

1. ARBUTUS. Linn.

Calyx minute, 5-parted. Corol ovate, diaphanous at the base; border small, 5-cleft, revolute. Stamens 10. Berry superior, 5-celled; cells 1, or many-seeded.

Decandria. Monogynia.

A. uva ursi Linn.: stem woody, procumbent; leaves petioled, cuneate-ovate, very entire, coriaceous; margin convex; flowers in a terminal clustered raceme; berries red, persistent, 5-seeded.—Arctostaphylos uva ursi Adams. Spreng.


2. GAULTHERIA. Linn.

Calyx 5-cleft or 5-toothed, bibracteate at base. Corol ovate; border partly 5-cleft, revolute. Stamens 10, with the filaments hisrtle. Anthers two horned at the summit. Capsule superior, 5-celled, invested by the calyx which becomes a berry.

Decandria. Monogynia.

1. G. procumbens Linn.: stem procumbent, with the branches erect; leaves obovate, wedgeform at the base, ciliate-denticulate; flowers few, terminal, nodding.


2. G. hispidula Muhl.: stem filiform, creeping, hispid; leaves ovate, acute, with scattered hairs; flower solitary, axillary, sub sessile, octandrous; corol small, bell-shaped.—G. serpyllifolia Pursh.—Vaccinium hispidulum Linn.—Arbutus filiformis Lam.—Oxycoccus hispidulus Pers.

Hab. Alpine swamps. N. S. April, May. 21. —Stems creeping. Leaves evergreen, small, ovate or roundish oval. Flowers
solitary, on recurved peduncles. Calyx in 4 acute segments. Corol small, white, with as many segments as the calyx. Berry white. Taste of the leaves resembling that of G. procumbens.—There is some doubt with regard to the generic character of this plant. Dr. Torrey thinks it will constitute the type of a new genus.

3. ANDROMEDA. Linn.

Calyx 5-parted, minute, inferior. Corol ovate or subcylindrical, smooth; border 5-cleft, reflexed. Stamens 10. Capsule 5-celled, 5-valved; valves producing dissepiments from the middle; margins naked. Decandria. Monogynia.

Leaves evergreen.

1. A. hypnoides Linn.: leaves imbricate, subulate, smooth; peduncles solitary, terminal, 1-flowered; corol nodding, globose-campanulate.


2. A. polyfolia Linn.: leaves linear-lanceolate, convex, revolute, whitish-glaucous beneath; flowers in short terminal racemes.

HAB. Sphagnous swamps. N. S. N. to Arc. Amer. June. —Stem a foot high. Leaves varying from linear to oblong. Flowers white, tinged with red.

3. A. calyculata Linn.: leaves lanceolate-oblong, rather obtuse, obsolesly serrulate, subrevolute, ferruginous beneath; racemes terminal, leafy, subsecund; pedicels short, solitary, axillary; calyx bibracteate; corol oblong-cylindrical.


Leaves deciduous.

4. A. mariana Linn.: leaves oval, somewhat acute, very entire, smooth, subcoriaceous, paler beneath; flowering branches nearly naked; pedicels fasciculate; calyx leafy; corol ovate-cylindric; anthers simple at the summit.

HAB. Sandy soils. N. J. to Flor. June, July. —Shrub 2—3 feet high. Flowers white and pale red, large. Anthers with two minute awns at the base.

5. A. racemosa Mich.: leaves oval-lanceolate, acute, serrulate, membranaceous, smooth above, somewhat pubescent beneath; racemes terminal, secund, simple or branched; corol oblong-cylindrical, anthers 4-awned at the summit.—A. paniculata Walt.
Hab. Swamps and wet woods. Can. to Flor. June, July. — Shrub 4—6 feet high. Flowers white, in racemes which are 3 or 4 inches long. Corol contracted at the mouth. Anthers cleft, 4-awned.

6. A. arborescens Linn.: branches terete; leaves oblong-oval, acuminate, sharply serrate, smooth; panicles terminal, many-spiked; corol ovate-oblong, pubescent; anthers unawned, linear.

Hab. Mountains. Penn. to Flor. June, July. — A beautiful tree 40—50 feet high. Leaves large, shining above, paler beneath. Flowers white, in large terminal panicles consisting of numerous second racemes or spikes. Sorrel Tree.


4. CLETHRA. Linn.


C. alniolia Linn.: leaves cuneate-obovate, acute, serrate, smooth, of the same colour on both sides; racemes spiked, simple, bracteate, hoary tomentose.


5. MENZIESIA. Smith.


1. M. cærulea Swartz: stem branched, woody below; leaves scattered, crowded, linear-toothed; peduncles terminal, aggregate, 1-flowered; flowers bell-shaped, 5-cleft, decandrous; calyx very acute. — Andromeda cærulea Linn. — Erica cærulea Willd.


2. M. globularis Salisb.: leaves lanceolate, glaucous beneath, except the nerves, pubescent; calyx 4-cleft; flowers globose, octandrous. — M. smithii Mich.
ERICEÆ.


6. KALMIA. Linn.

Calyx 5-parted. Corol salver-form; border on the under side producing 10 cornute protuberances and as many cavities in which the anthers are concealed. Capsule 5-celled, many-seeded; dissepiments marginal.

Decandria. Monogynia.

1. K. glauca Ait.: branches ancipitous; leaves opposite, subsessile, oblong, smooth, glaucous beneath, revolute on the margin; corymb terminal and axillary, bracteate; peduncles and calyx very smooth.

b. rosmarinifolia Pursh: leaves linear, conspicuously revolute, nearly green beneath.

Hab. Sphagnous swamps. N. S. N. to Arc. Amer. June, July. ½.—Shrub 12—18 inches high, with opposite lanceolate leaves. Flowers pale rose coloured, in terminal corymbs or umbels. Var. b. is found in a swamp two miles east of this city.

Glaucous Kalmia.

2. K. angustifolia Linn.: leaves scattered or ternate, petiolate, oblong, obtuse, slightly ferruginous beneath; corymb lateral-linear; peduncles and calyx glandular-pubescent.

Hab. Sandy woods. Can. to Car. June, July. ½.—Shrub 12—18 inches high. Leaves entire, somewhat glaucous beneath. Flowers deep rose colour, in lateral corymbs, forming a kind of whorl around the stem.

Sheep Laurel.

3. K. latifolia Linn.: leaves on long petioles, scattered and ternate, oval, coriaceous, green on both sides; corymb terminal, viscidly pubescent.


7. EPIGÉEÆ: Linn.


Decandria. Monogynia.

E. repens Linn.: branches, nerves of the leaves and petioles very hairy; leaves on long petioles, cordate-ovate, very entire; corol sub-cylindrical.

Hab. Side hills, roots of pines. Can. and N. S. April. ½.—A small trailing and creeping evergreen. Flowers white, tinged with red, very fragrant.

Ground Laurel.
8. RHODORA. Linn.

Calyx 5-toothed. Corol 3-petalled; petals unequal, slightly united at the base; the upper one thrice broader and 3-lobed, (or corol bilabiate; upper lip 2—3-cleft; lower one 2-toothed.) Stamens and style declinate. Capsule 5-celled, 5-valved, opening at the top; dissepiments formed of the inflexed margins of the valves. Decandria. Monogynia.

R. canadensis Linn.

Hab. Mountain bogs. Can. and N. S. May. 7. — Shrub 2 feet high. Leaves alternate, oval, very entire, pubescent and glaucous beneath. Flowers purple, in terminal clusters or umbels, appearing before the leaves.

9. RHODODENDRON. Linn.


Obs. It was suggested by Pursh, that all the species of Azalea which he described, except A. procumbens, should be united with Rhododendron. This view has been adopted by Mr. Don and Dr. Torrey. These genera do not appear to differ at all, except in the number of stamens, which even in the true Azalea is liable to great variations.—See Don’s remarks on Azalea, Rhododendron, Ledum and Leiophyllum in Edin. Phil. Jour. vi. 47.

* Stamens 5—10.

1. R. lapponicum Wall. : leaves elliptical, roughened with excavated punctures; flowers in terminal leafy clusters, campánulate; stamens mostly 8.—Azalea lapponica Linn.

Hab. White Hills, N. H. Big. N. to Arc. Amer. July. 7. — Shrub 8—10 inches high, with coriaceous evergreen leaves. Flowers deep purple, in terminal clusters or umbels.

2. R. maximum Linn. : arborescent; leaves oblong, acute, papier beneath; umbels terminal, segments of the calyx oval, obtuse; corol campanulate.


** Stamens 5.

3. R. nudiflorum Torr. : flowers rather naked; leaves lanceolate-oblong, nearly smooth and green on both sides; the midrib beneath brist-
ly; margin ciliate; flowers not viscid; tube longer than the divisions; teeth of the calyx short, somewhat rounded; stamens much exserted. 

_Azalea nudiflora Linn._—_A. periclymenoides Mich._

_Hab._ Woods. Can. to Geor. April, May. _R._—_Shrub 2—6 feet high. Flowers reddish, in terminal clustered racemes, appearing before the leaves.—Of this species there are a number of varieties. Among others mentioned by Pursh, is one which has from 10—20 stamens. _Upright Honeysuckle._ Pinxter Blom.

4. _R. viscosum_ Torr.: flowers leafy; branches hispid; leaves oblong-ovate, acute, smooth and green on both sides, ciliate on the margin; midrib bristly; flowers glutinous, hairy; tube as long again as the segments; teeth of the calyx short, rounded; stamens scarcely longer than the corol._—_Azalea viscosa_ Linn. and _A. glauca_ Pursh.

_Hab._ Woods. Can. to Geor. June. _R._—_Shrub 6—8 feet high. Flowers white, in terminal clusters, sweet scented. Corol viscid and pubescent. _A. glauca_ of Pursh appears to be only a variety, with the leaves glaucous beneath.

5. _R. calendulaceum_ Torr.: flowers rather naked; leaves oblong, pubescent on both sides, at length hirsute; flowers large, not viscid; teeth of the calyx oblong; tube of the corol hairy, shorter than the segments._—_Azalea calendulacea_ Mich.—_A. nudiflora_ var. _coccinea_ Ait.

_Hab._ Penn. to Car. May. _R._—_Shrub 2—6 feet high. Flowers yellow or flame colour.—Said to be the handsomest shrub in N. America.

6. _R. arborescens_ Torr.: flowers leafy; leaves obovate; somewhat obtuse, smooth on both sides, glaucous beneath, ciliate on the margin; nerve almost smooth; flowers not viscid; tube longer than the segments; calyx leafy, with the segments oblong, acute; filaments exserted._—_Azalea arborescens_ Pursh.

_Hab._ Blue Mountains, Penn. May—July. _R._ Pursh.—_Shrub 10—20 feet high. Flowers large, reddish; scales of the flower-buds large, yellowish-brown, surrounded with a fringed white border. _Pursh._

7. _R. nitidum_ Torr.: flowers leafy; branches somewhat smooth; leaves oblanceolate, submuconate, coriaceous, smooth on both sides, shining above; nerve bristly beneath; margins revolute-ciliate; flowers viscid; tube a little longer than the segments; calyx very short. 

_Azalea nitida_ Pursh.

_Hab._ Mountain swamps. N. Y. to Vir. June, July. _R._—_Leaves_ dark green and shining, smaller than in any other species. _Flowers_ white, with a reddish tinge. _Pursh._

8. _R. hispidum_ Torr.: flowers leafy; branches straight, very hispid; leaves long-lanceolate, hispid above, smooth beneath, glaucous on both sides; nerve bristly beneath; margin ciliate; flowers very viscid; tube scarcely longer than the segments; teeth of the calyx oblong, rounded; filaments exserted._—_Azalea hispida_ Pursh.

Stamens often 10.—This shrub is said by Pursh to have a blueish appearance, by which it may be distinguished from all others at a great distance.

10. AZALEA. Linn. Don.


A. procumbens Linn.: stems diffusely procumbent; leaves opposite, elliptical, glabrous, revolute on the margin, included.—Loiseleuria procumbens R. & S.

—Shrub 3—4 inches long, branched, leafless below. Flowers small, reddish, in small terminal umbels or corymbs.

11. LEDUM. Linn.

Calyx minute, 4-toothed. Corol 5-petalled, spreading. Stamens 5—10, exserted; anthers opening by two terminal pores. Capsule subovate, 5-celled, 5-valved, opening at the base, pedicellate. Seeds numerous, flat, linear, scabrous, with a membranaceous wing at each extremity.

Decandria. Monogynia.

1. L. latifolium Ait.: leaves oblong, replicate on the margin, ferruginous tomentose beneath; stamens 5, as long as the corol.—L. palustre var. latifolium Mich.

Hab. Sphagnous swamps. N. S. N. to Arc. Amer. June. 7.
—An evergreen shrub, with the stem irregularly branched; the branches woolly. Leaves alternate, broad-oblong, obtuse. Flowers large, in terminal corymbs, white. Labrador Tea.

2. L. palustre Linn.: leaves linear, revolute on the margin, ferruginous tomentose beneath; stamens 10, longer than the corol.

Hab. Swamps. N. S. N. to Arc. Amer. June. 2f.—A shrub smaller than the last and with narrower leaves.—I have found both species in a sphagnous swamp near Fairhaven, Vt.

Order LXXI. VACCINEÆ. De Cand. Lind.

Calyx superior, entire, or with from 4 to 6 lobes. Corol monopetalous, lobed as often as the calyx. Stamens distinct, double the number of the lobes of the corol, inserted into an epigynous disk; anthers with 2 horns and 2 cells. Ovary inferior, 4 or 5-celled, many-seeded; style simple; stigma simple. Berry crowned by the persistent limb of the calyx, succulent, 4 or 5-celled, many-seeded. Seeds minute; em-
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*bryo* straight, in the axis of a fleshy albumen; *cotyledons* very short; *radicle* long, inferior.

*Shrubs,* with alternate coriaceous leaves.

1. **VACCINIUM. Linn.**


*Decandria. Monogynia.*

*Leaves deciduous.*

† *Corol* campanulate.

1. **V. stamineum** Linn.: much branched; the younger branches pubescent; leaves oval, acute, very entire, glaucous beneath; pedicels solitary, axillary, filiform, nodding; corol campanulate, spreading; segments oblong, acute; anthers exerted, awned, somewhat pyriform.—*V. stamineum* and *V. album* Pursh.


2. **V. dumosum** Curt.: younger branches, leaves and racemes sprinkled with resinous dots; leaves obovate, wedgeform at the base, mucronate, entire, (or finely serrulate,) green on both sides; racemes bracteate; pedicels short, axillary, subsolitary; corol campanulate; segments rounded; anthers included.—*V. frondosum* Mich.


3. **V. frondosum** Linn.: leaves obovate-oblong, obtuse, very entire, sprinkled with resinous dots, glaucous beneath; racemes lateral, few-flowered, loose, bracteate; pedicels long, filiform; corol ovate-campanulate; anthers included.—*V. glaucum* Mich.


† † *Corol* urceolate.

*a. Flowers* racemose or fasciculate.

4. **V. resinosum** Ait.: leaves petiolate, oblong-oval, mostly obtuse, very entire, sprinkled with resinous dots beneath; racemes lateral, second, bracteate; corol ovate, conic, pentangular, contracted at the mouth.

5. *V. corymbosum* Linn.: flower bearing branches almost leafless; leaves oblong-oval, acute at each extremity, nearly entire; the young ones pubescent; racemes short, sessile, bracteate; corol cylindrical-ovate—and *V. fuscatum* Ait. and *V. amanum* Pursh.—*V. disomorphum*. Mich.

Hab. Swamps and wet woods. Can. to Virg. June. ♀.—Shrub 4—8 feet high, with a few straggling branches. Flowers purplish-white, in racemes which are crowded near the summit of the naked branches. Berries large, black, subacid.

High Whortle-berry.

6. *V. pennsylvanicum* Lam.: branches angular, (green;) leaves sessile, ovate-lanceolate, mucronate, serrulate, shining on both surfaces; fascicles of flowers, subterminal; corol ovate.—*V. virginatum* Ait.?—*V. tenellum* Pursh.


Low Blue-berry.

7. *V. tenellum* Ait.: racemes bracteate, sessile; corol ovate cylindrical; leaves oblong-elliptic, subcuneiform, serrulate, nearly smooth.

Hab. N. J. and Penn. April. ♀.—Muhl.

8. *V. ligustrinum* Mich.: branches angular and erect; leaves subsessile, erect, lanceolate, mucronate, serrulate; fascicles gemmaceous, sessile; flowers nearly sessile; corol oblong-ovate.

Hab. Dry woods. Penn. and Virg. May, June. ♀.—A small shrub with straight and slender branches. Flowers purplish-red. Berries black.—It is said to vary very much in the shape and size of its leaves.

b. Flowers solitary.

9. *V. uliginosum* Linn.: procumbent; branches rigid; leaves obvate, very obtuse, entire, smooth above, veined and glaucous beneath; flowers subsolitary, octandrous; corol short, ovate, 4-cleft; anthers awned at the base.—*V. uliginosum* var. *alpinum* Big.

Hab. White Hills, N. H. N. to Arc. Amer. April, May. ♀.—A low procumbent shrub. Flowers single or in pairs, nearly sessile. Berries oblong, deep blue, crowned with the style.

**Leaves evergreen.

10. *V. vitis idea* Linn.: stem creeping; branches erect; leaves obovate, evergreen, dotted beneath, subentire and revolute at the margin; flowers in terminal drooping racemes; corol oblong, campanulate.


Cow-berry.
2. **OXYCOCCUS.** Pers.

*Calyx* superior, 4-cleft. *Corol* 4-parted, with the segments somewhat linear and revolute. *Stamens* 8. *Filaments* connivent; *anthers* tubular, 2-parted. *Berry* many-seeded.

**Octandria. Monogynia.**


2. *O. palustris* Pers.: stem filiform, creeping; leaves ovate, evergreen, entire, with revolute margins; peduncles 1-flowered, terminal; corol 4-parted; segments ovate.—*O. vulgaris* Pursh.—*Vaccinium oxyccocus* Linn.

**Hab.** Alpine bogs. Can. and N. S. June. &—A small evergreen creeping plant. *Flowers* red. *Berries* bright purple, smaller than the former.

**Order LXXII. PYROLACEÆ.** Lind.

*Calyx* 5-parted, persistent, inferior. *Corol* monopetalous, hypogynous, regular, deciduous, 4 or 5-toothed, with an imbricated aestivation. *Stamens* hypogynous, twice as numerous as the divisions of the corol; *anthers* 2-celled, opening longitudinally, and furnished with appendages at the base. *Ovary* superior, 4 or 5-celled, many-seeded, with a hypogynous disk; *style* 1, straight or decline; *stigma* simple. *Fruit* capsular, 4 or 5-celled, dehiscent, with central placenta. *Seeds* indefinite, minute, winged; *embryo* minute, inserted at the extremity of a fleshy albumen.

**Herbs,** rare'y undershrubs, sometimes parasitical and leafless. *Leaves* either wanting or simple. *Flowers* solitary, or in terminal racemes.

1. **PYROLA.** Linn.

DICOTYLEDONOUS PLANTS.

OBS. In the arrangement and description of our species of _Pyrola_, I have mainly adopted the views expressed by Mr. Don in his valuable monograph of this genus.—Wernerian Transactions, v. 220.

* Values of the capsules with their margins connected by an intricate fine tomentum, dehiscent at the base. Leaves alternate. Flowers in racemes.

† Stamens ascending. Style declinate, longer than the petals. Stigma annulate.

1. _P. rotundifolia_ Linn.: leaves roundish, very entire or crenulate, coriaceous, shorter than the diluted petiole; scape triquetrous; segments of the calyx lanceolate, acute; stigma clavate, obtusely 5-toothed.

_Hab._ Woods. Can. to Car. July. 2f.—Leaves all radical, evergreen, sometimes scarcely half the length of the petioles. Scape a foot or more high. Flowers cernuous, white, in an erect elongated raceme, emitting a fragrant smell.—The largest of the whole genus. 

Round-leaved Wintergreen.

2. _P. asarifolia_ Mich.: leaves reniform, coriaceous, repandly crenate, half as long as the diluted petiole; scape acutely triquetrous; raceme many-flowered; segments of the calyx ovate, acuminate, appressed; stigma clavate, with the disk elongated and 5-lobed.

_Hab._ Dry woods. Can. and N. S. 2f.—Mr. Don considers this to be entirely distinct from the next, with which it is confounded by Mr. Nuttall.—"The leaves," he observes, "appear to be subject to some slight variations; but in the true state they are of a reniform shape, nearly about the size and form of those of _Asarum europaeum_; this remarkable character, if constant, would alone have been sufficient to distinguish it from every other species. The plant itself, is about the size of _P. rotundifolia_, which it greatly resembles in the figure and disposition of its flowers, which are of a greenish-white colour."

3. _P. chlorantha_ Swartz: leaves orbicular, retuse, obsolesly crenulate, half as long as the narrow petiole; raceme few-flowered; segments of the calyx very short, obtuse; petals oblong; pores of the anthers tubular; stigma clavate, with the disk elongated and 5-lobed.

—_P. rotundifolia_ var. mammularia Mühl. Cat.

_Hab._ Woods. Can. and N. S. 2f.

4. _P. elliptica_ Nutt.: leaves elliptic or ovate, membraneous, serrulate, longer than the diluted petiole; raceme few-flowered; bracts lanceolate-subulate, recurved at the summit; segments of the calyx very short, with recurved points; petals oval; stigma clavate, with the disk elongated and 5-lobed.

_Hab._ Dry woods. Can. and N. S. July, Aug. 2f.—Leaves membraneous, finely serrate, oblong-oval, sometimes ovate, with an attenuated base, much longer than the petiole. Raceme few-flowered. Flowers white, odorous.—Allied to _P. rotundifolia_, but is smaller.

†† Stamens erect. Style straight. Stigma not annulate.

5. _P. minor_ Linn.: leaves roundish or oval, coriaceous, repandly-
crenate, longer than the dilated petiole; racemes spiked, with bracts much longer than the pedicels; segments of the calyx very short; style included; stigma nearly flat, 5-lobed.

Hab. N. Y. and Penn. Pursh & Muhlenburg. N. to Arc. Amer. June. 24.—Resembles *P. medica*, from which, however, it is distinguished by its straight style, equal to the length of the stamens, and shorter than the petals; by its spiked and closer raceme, by the pedicels being shorter than the bracts, and the pedicels shorter than the leaves, &c. Don credits this species only to Northern Europe and Asia, and Sprengel unites the *P. minor* of Pursh with *P. chlorantha* of Swartz.—But it cannot be mistaken for the latter species.

6. *P. secunda* Linn.: leaves ovate, acute, membranaceous, sharply serrate, longer than the narrow petiole; raceme secund; segments of the calyx rounded; petals oblong; style exserted; stigma nearly flat, 5-lobed.


**Values of the capsules with their margins unconnected by tomentum, opening from the top. Leaves in threes or verticillate. Flowers solitary, in corymbs or umbels.**

7. *P. uniflora* Linn.: flower solitary; leaves orbicular, serrate; pores of the anthers elongated-tubular; stigma acute; style straight, 5-toothed.

Hab. Can. and N. S. rare. July. 24.—A small and very delicate species. *Flow*er terminal, large, white, fragrant, nodding.

8. *P. umbellata* Linn.: leaves cuneate-lanceolate, serrate, in fours or sixes; peduncle pubescent, corymbed; bracts linear-subulate; appendages of the filaments ciliate; style immersed in the germ.— *Chimaephyra corymbosa* Pursh.

Hab. Woods. Can. and N. S. July. 24.—Root woody and creeping. *Stem* ascending, somewhat woody. *Leaves* evergreen, smooth and coriaceous, lower surface somewhat paler. *Scapes* or peduncle 4—6 inches high. *Flow*ers large, greenish-white tinged with purple, in a terminal corymb or imperfect umbel, on nodding pedicels.—It is known by the Indians by the name of *Pipsissewa* or *Sipsissewa*. Medicinal. See Big. Med. Bot. ii. 15.

9. *P. maculata* Linn.: leaves lanceolate, acuminate, incisely serrate, discoloured, opposite or in threes; peduncles pubescent, corymbed; bracts linear; appendages of the filaments woolly; style very short.— *Chimaephyra maculata* Pursh.

Hab. Sandy woods. Can. to Car. July. 24.—This species may be distinguished by its variegated leaves. *Stem* 3—4 inches high. *Flow*ers large, reddish-white, nodding, fragrant, 2 or 3 in a corymb or umbel.

2. **MONOTROPA.** Linn.

*Calyx* 4—5-parted, or none. *Corol* 5-petalled, cucullate
DICOTYLEDONOUS PLANTS.


1. M. lanuginosa Mich.: scape bearing the flowers in a spike; bracts and flowers woolly.—Hypopitys lanuginosa Nutt.

Hab. Roots of trees. Can. to*Car. Aug. 2f. —Scape 4—6 inches long. Leaves merely scales, lanceolate, obtuse, crowded at base and a little hairy. Flowers white, in a terminal spike, on short peduncles.—Whole plant of a clear white, turning black by decay or by drying. Tobacco-pipe.

2. M. hypopitys Linn.: scape bearing the flowers in a spike; scales and flowers smooth externally; lateral flowers with 8 stamens.—Hypopitys europea Nutt.

Hab. *Roots of trees. Can. Penn. and N. Car. June, July. 2f. —The whole plant is of a brownish-yellow colour. There is still some doubt whether this is a plant of the Northern States; what has been called by that name here being merely a smooth variety of the preceding. According to Sprengel, the Monotropsis odorata of Elliott is identical with this species.


3. M. uniflora Linn.: scape straight, elongated, 1-flowered; flowers with 10 stamens, erect, or cernuous.


3. PTEROSPORA. Nutt.

Calyx 5-parted. Corol monopetalous, ovate; margin 5-toothed, reflexed. Anthers excentrically peltate, 2-celled, adnate to the filaments by the margin, bisetose. Capsule 5-celled, imperfectly 5-valved; dissepiments from the middle of the valves; septa and valves uniting towards the base, and coalescing with the receptacular axis; receptacle 5-lobed. Seeds very numerous and minute, each furnished with a terminal wing.

Decandria. Monogynia.

P. andromeda Nutt.


Subclass III. COROLLIFLORÆ.

Petals united in the form of a hypogynous corol, which is not attached to the calyx. Stamens inserted into the corol.
Order LXXIII. EBENACEÆ. Vent. Lind.

Flowers polygamous or dioecious, rarely perfect. Calyx 3—6-divided, nearly equal, persistent. Corol monopetalous, regular, deciduous, somewhat coriaceous, 3—6-divided; aestivation imbricated. Stamens inserted on the corol, or hypogynous, definite; filaments usually in two rows; anthers erect, linear-lanceolate, 2-celled, bursting longitudinally. Ovary free, sessile, many-celled; ovules 1 or 2 in each cell, pendulous; style divided, rarely simple; stigmas simple or bifid. Fruit fleshy, round or oval, the pericarp sometimes opening regularly. Seeds few, with a membranous coat; embryo straight; albumen cartilaginous; radicle next the hilum; cotyledons foliaceous.

Trees or shrubs, without milky juice. Leaves coriaceous, alternate, without stipules.

1. DIOSPYROS. Linn.


D. virginiana Linn.: leaves ovate-oblong, acuminate, reticulately veined, nearly smooth; petioles pubescent; buds smooth.

Hab. Woods. Penn. to Geor. and throughout the Western States. May. ½.—A small tree, seldom more than 30—40 feet high. Leaves alternate. Flowers solitary, axillary, on short peduncles, greenish-yellow. Fruit as large as a common plum, golden-yellow, well flavored when fully ripe, but very astringent before that time. Persimmon.

Order LXXIV. ILICINEÆ. Lind.

Sepals 4—6; aestivation imbricated. Corol monopetalous, 4—5-parted, hypogynous; aestivation imbricated. Stamens inserted into the corol, alternate with its segments; filaments erect; anthers adnate. Disk none. Ovary fleshy, superior, somewhat truncate, 2—6-celled; ovules solitary, pendulous from a cup-shaped funiculus; stigma subsessile, lobed. Fruit fleshy, indehiscent, with from 2 to 6 stones. Seed suspended, nearly sessile; albumen large, fleshy; embryo small, 2-lobed, lying next the hilum, with minute cotyledons and a superior radicle.
Trees or shrubs. Leaves alternate or opposite, coriaceous.

1. ILEX. Linn.


**Tetrandria. Tetracygnia.**

1. opaca Ait.: leaves ovate, flat, coriaceous, acute, smooth, their margins with sharp spines; flowers scattered at the base of the younger branches; teeth of the calyx acute.—I. aquifolium Walt.

Hab. Sandy woods. Can. to Car. W. to Arkansas. June ?—An evergreen tree 10—15 feet high. Leaves tough, smooth and shining, with rigid spines at the edges. Flowers growing in bunches around the branches, small, white.—It is stated by the younger Michaux, that birdlime may be extracted from the bark. The wood is fine grained and compact, and is employed by cabinet makers and turners. American Holly.

2. NEMOPANTHES. Raf.


**Pentandria. Tetracygnia.**

N. canadensis De Cand.: leaves deciduous, ovate-oblong, very entire, smooth, mucronate; peduncles subsolitary (or fasciculate) very long, 1-flowered; fruit obtusely quadrangular.—N. fascicularis Raf.—Ilex canadensis Mich.


3. PRINOS. Linn.

Characters same as Ilex, but the flowers are often by abortion dioecious or polygamous, 6-cleft, 6-stamened, and the berry 6-seeded.

**Hexandria. Monogynia.**

1. P. verticillatus Linn.: stem much branched; leaves deciduous, oval, serrate, acuminate, pubescent beneath; flowers dioecious, 6-cleft; sterile ones axillary, subumbellate; fertile ones aggregated; berries globose.—P. gronovii Mich.

b. dubius De Cand.: flowers 4—5-cleft.—P. ambiguus Pursh.—P. verticillatus var. tenuifolius Torr. ?
OLEACEÆ.


2. *P. ambiguus* Mich.: leaves deciduous, oval, entire, acuminate at each end; flowers 4-cleft; sterile ones crowded on the lower branchlets; fertile ones solitary, on long peduncles.


3. *P. leavigatus* Pursh: leaves deciduous, lanceolate, with appressed serratures, smooth] on both sides, shining above; nerves beneath scarcely pubescent; flowers 6-cleft; fertile ones axillary, subsessile; sterile scattered, pedunculate.


4. *P. glaber* Linn.: leaves evergreen, wedge-form, lanceolate, coriaceous, smooth and shining, somewhat toothed at the extremity; pedicels axillary, subsolitary, mostly 3-flowered.


Order LXXV. OLEACEÆ. Lind.

*Flowers* monochinious, sometimes dioecious. *Calyx* monophyllous, divided, persistent. *Corol* hypogynous, monopetalous, 4-cleft, sometimes of 4 petals, connected in pairs by the intervention of the filaments, rarely wanting; *aestivation* somewhat valvate. *Stamens* 2, alternate with the segments of the corol; *anthers* 2-celled, bursting longitudinally. *Ovary* free, 2-celled; *ovules* in pairs, collateral, pendulous; *style* 1, or none; *stigma* entire or bifid. *Fruit* drupaceous, baccate or capsular. *Seeds* often by abortion solitary; *albumen* dense, fleshy, abundant; *embryo* straight, about half the length of the albumen; *radicle* superior; *cotyledons* foliaceous.

Trees or shrubs. *Leaves* opposite, simple, sometimes pinna-atifid.

1. LIGUSTRUM. Linn.

*Calyx* minute, 4-toothed. *Corol* with the tube short; the limb 4-cleft, spreading. *Stamens* 2. *Berry* 1-celled, 2—4-seeded.

*L. vulgare* Linn.: leaves elliptical-lanceolate, somewhat acute, smooth; panicle terminal, compact.
2. CHIONANTHUS. Linn.


C. virginica Linn.: panicle terminal; peduncles 3-flowered; leaves acute.

a. montana Pursh: leaves oval-lanceolate, coriaceous, smooth; panicles dense; drupe oval.

b. maritima Pursh: leaves obovate-lanceolate, membranaceous, pubescent; panicles very loose; drupe elliptical.

Hab. a. on mountains; b. on the sea coast. Penn. to Car. May, June. — A small tree, 6—10 feet high, with opposite branches. Flowers white, in pendulous panicles. Drupe purple. The corol is sometimes 5 or 6-cleft. Fringe Tree.

3. FRAXINUS. Linn.

Calyx none, or 3—4-cleft. Corol none or deeply 4-parted, Stamens 2. Capsule 2-celled, 2-seeded, compressed and foliaceous at the extremity. Seed solitary, pendulous.—Polygamous.

* Flowers naked, never perfect. Anthers sessile.

1. F. sambucifolia Willd.: leaves pinnate; leaflets sessile, ovate-lanceolate, rugose and shining, rounded and unequal at base; axils of the veins villous beneath; flowers naked.


** Flowers calyculate, apetalous.

2. F. acuminata Lam.: leaves pinnate; leaflets petiolate, oblong, shining, acuminate, very entire or slightly toothed, glaucous beneath; flowers calyculate.—F. americana Willd.—F. concolor Mich. f.

Hab. Woods. Can. to Car. May. — A large tree 50—60 feet high. Leaves at first downy, at length green above and white beneath. Leaflets in 3—4 pairs.—The wood is valuable in many of the arts. White Ash.

3. F. pubescens Walt.: leaves pinnate; leaflets petiolate, elliptical-ovate, serrate; the under surface, petioles and young branches tomentose; flowers calyculate.—F. tomentosa Mich. f.

4. *F. juglandifolia* Lam.: leaves pinnate; leaflets petiolate, ovate, opake, serrate, glaucous beneath; axils of the veins pubescent; branches smooth; flowers calyculate.


5. *F. ornus* Linn.: leaves pinnate; leaflets broad-ovate, serrate, the terminal one obovate. — *Ornus europea* var. americana Pers. — *O. americana* Pursh.

Hab. Shady woods. Md. and Virg.; rare. May. Pursh. — A tree with opposite and unequally pinnate leaves. Flowers in panicles resembling those of *Chionanthus*. Fruit small and winged. — A very obscure plant, concerning which so little is known, that it is impossible to determine whether it is distinct from the foreign *F. ornus*, or a mere variety. It is certain, however, that the genus *Ornus* of Persoon is not sufficiently distinct from *Fraxinus*. Flowering Ash.


*Calyx* divided in 5, persistent. *Corol* monopetalous, hypogynous, regular, 5-lobed, deciduous; aestivation contorted-imbricate. *Stamens* 5, inserted on the corol, alternate with its lobes; *filaments* distinct; *anthers* 2-celled, bursting longitudinally; *pollen* granular, globose, or 3-lobed, immediately applied to the stigma. *Ovaries* 2, or 1—2-celled, many-seeded; *styles* 2 or 1; *stigma* 1. *Fruit* a follicle, capsule, or drupe or berry, double or single. *Seeds* indefinite or rarely definite; *albumen* fleshy, cartilaginous, or horny, rarely wanting; *embryo* foliaceous; *radicle* turned to the hilum.

Plants with usually a milky juice. *Leaves* entire, generally opposite.

1. *Apoecynum*. Linn.

*Calyx* very small, 5-cleft, persistent. *Corol* campanulate; border with 5 short spreading or revolute lobes; the base furnished with 5 glandular teeth alternating with the stamens. *Stamens* 5, included. *Anthers* sagittate, connivent, cohering to the stigma by the middle. *Ovaries* 2; *style* obsolete; *stigmas* dilated, conic at the apex. *Follicles* long, distinct. Pentandria. Digynia.

1. *A. androsemifolium* Linn.: leaves ovate, smooth on both sides; cymes lateral and terminal, smooth; tube of the corol longer than the calyx.
DICOTYLEDONOUS PLANTS.


2. *A. cannabinum* Linn.: leaves on short petioles, lanceolate, acute at each end, smooth on both sides; cymes paniculate; calyx as long as the tube of the corol.

HAB. Fields and woods. Can. to Car. W. to Miss. June, July. 2f. — Stem erect, branched. Flowers small, greenish-white, in terminal cymes.—Has the leaves narrower and the flowers smaller than in the preceding.

3. *A. hypericifolium* Ait.: leaves oblong, smooth, on very short petioles, mucronate, obtuse and subcordate at base; cymes shorter than the leaves; calyx nearly as long as the tube of the corol.

HAB. Gravelly banks of streams. N. S. June, July. 2f. — Stem 2 feet high, erect. Flowers small, greenish-white.—Plant smaller than the former.


HAB. Fields. N. S. June, July. 2f. — Stem 2—3 feet high. Flowers small, greenish-white.—Can be distinguished by the pubescence of its leaves and cymes.

**Order LXXVII. ASCLEPIADÆ. Brown. Lind.**

Calyx 5-divided, persistent. Corol hypogynous, monopetalous, 5-lobed, regular deciduous; aestivation contorted-imbricate, rarely valvate. Stamens 5, inserted into the base of the corol, and alternate with its segments; filaments usually connate; anthers 2-celled, each cell sometimes divided by incomplete septa; pollen, when the anther bursts, coalescing into masses which are as numerous as the cells, or sometimes confluent by pairs, and sticking to the 5 processes of the stigma, either by twos, by fours, or singly. Ovaries 2; ovules indefinite; styles 2, close to each other, often very short; stigma 1, common to both styles, dilated, with 5 corpusculiferous angles. Placenta attached to the suture, at length separating. Follicles 2, 1 of which is sometimes abortive. Seeds indefinite, imbricate, pendulous, usually with a coma at the hilum; albumen thin; embryo straight; radicle superior; cotyledons foliaceous.

Plants, with usually a milky juice, often twining. Leaves entire, usually opposite, with interpetiolar cilia, instead of stipules.
1. ASCLEPIAS. Linn.

Calyx small, 5-parted. Corol 5-parted, reflexed. Staminial crown (nectary) 5-leaved; leaflets opposite the anthers, each producing from its base a subulate averted process. Stigma with 5-angles, opening by longitudinal chinks, depressed. Pollinia 5 distinct pairs. Follicles 2, ventricose, smooth or muricate. Seeds comose.

Pentandria. Digynia.

* Leaves opposite. Nectaries with horns.

1. A. syriaca Linn.: stem simple; leaves oblong-lanceolate, petiolate, tomentose beneath; umbel subterminal, many-flowered, nodding; flowers large; nectary 2-toothed; follicles muricate.


Common Milk-reed.

2. A. phytoleacoides Pursh: stem erect, simple; leaves broad-lanceolate, acuminate, smooth, pale beneath; umbels many-flowered, lateral and terminal, solitary, on long peduncles, nodding; nectary 2-toothed.—A. exaltata and acuminata Muhl.


—A more delicate species than the preceding.

3. A. debilis Mich.: smooth; stem erect, weak, simple; leaves petiolate, oval-lanceolate, acute at each end, membranaceous; umbels terminal, loose; pedicels capillary.—A. parviflora Linn.?


4. A. incarnata Linn.: stem erect, tomentose, branched above; leaves lanceolate, subsessile, somewhat tomentose; umbels erect, mostly in pairs; nectary entire; horns subulate, exserted.

b. pulchra Pers.: stem and leaves very hairy.—A. pulchra Willd.


5. A. amana Linn.: stem erect, branched above, with 2 longitudinal pubescent lines; leaves subsessile, oblong-oval, acute, pubescent beneath; umbels terminal, erect, many-flowered; nectary entire; horn subulate, exserted.


6. A. purpurascens Linn.: stem erect, nearly simple; leaves ovate, subsessile, nearly smooth above, white, downy beneath, with the midrib broad and purple; umbels erect; horns of the nectary resupinate.

DICOTYLEDONOUS PLANTS.

Umbels terminal, on short peduncles. Flowers dark purple, about the size of *A. syriaca*.—Well defined by the peculiar curvature of the horn.

7. *A. obtusifolia* Mich.: stem simple, erect; leaves closely sessile or clasping, oblong-obtuse, undulate on the margin, very smooth, glaucous beneath; umbel terminal, long peduncled, generally solitary; nectary slightly 2-toothed; horns exserted.—*A. purpurascens* Walt.

Hab. Sandy fields. N. Y. to Car. June. 2l.—Stem 2—3 feet high, erect, simple, very smooth. Umbels 1—3, terminal, on long peduncles. Leaves much waved on the margin. Flowers large, pale purple.

8. *A. variegata* Linn.: stem simple, erect; leaves ovate, petiolate, smooth, somewhat glaucous beneath; umbels lateral and terminal, on short peduncles, crowded; pedicels tomentose; horn broad-falcate.—*A. hybrida* Mich.


9. *A. acuminata* Pursh: stem erect, very smooth, simple; leaves ovate, subcordate, acuminate, subsessile; umbels 'lateral, solitary, erect; nectary acute; horns scarcely exserted.—*A. periplacofolia* Nutt.

—*A. cordata* Walt.


10. *A. laurifolia* Mich.: stem erect, smooth; leaves nearly sessile, oval-lanceolate, tapering at the summit, very acute, smooth, margins somewhat rough; umbels on long peduncles, terminal and axillary.

Hab. Penn. Muhl. Aug. 2l.—Stem 2 feet high, pubescent near the top. Leaves sessile, obtuse at base. Umbels few, near the summit. Corol 3 or 4 times as long as calyx, green and purple.

11. *A. quadrifolia* Jacq.: stem erect, simple, smooth; leaves in fours, ovate, acuminate, membranaceous, petiolate, smooth; umbels 2, terminal, erect, loose; pedicels capillary; nectary 2-toothed; horn very short.

Hab. Stony woods. Can. to Car. W. to Miss. June. 2l.—Stem 1—2 feet high, slender, pubescent towards the top. Leaves in fours; the upper and lower ones often opposite. Umbels few, on long peduncles. Flowers small, white.

12. *A. verticillata* Linn.: stem simple, marked with pubescent lines; leaves mostly whorled, narrow-linear, revolute; nectaries short, bidentate; horns falcate, much exserted.

Hab. Dry hills. N. Y. to Car. W. to Miss. June, July. 2l.—Stem 3 feet high, very slender. Leaves generally in whorls of 5 or 6, 2—3 inches long, very narrow. Umbels numerous. Flowers small, yellowish-white.
**Leaves opposite. Nectary without horns. Acerates.**

13. *A. viridiflora* Raf.: stem erect, simple, hairy; leaves oblong, on short petioles; tomentose-pubescent on both sides, obtuse; umbels lateral, solitary, subsessile, nodding, dense; pedicels tomentose; horns of the nectary wanting.—*A. nutans* Muhl.

*b. obovata* Torr.: leaves obovate.—*A. obovata* Ell.


14. *A. lanceolata* Iec.: stem decumbent, hirsute; leaves opposite, lanceolate, acute, subsessile, hirsute; umbels lateral, solitary, sessile, nodding, subglobose, dense flowered; horn of the nectary wanting.—*A. viridiflora* var. *lanceolata* Torr.


***Leaves alternate.***

15. *A. tuberosa* Linn.: stem erect, hairy, with spreading branches; leaves oblong-lanceolate, sessile, alternate, somewhat crowded; umbels numerous, forming terminal corymb.


**Pleurisy Root.**

2. **GONOLOBUS.** Mich.


**Pentandria. Digynia.**

1. *G. obliquus* Brown: stem climbing, hairy; leaves ovate-cordate, villous, acute; corymb axillary; segments of the corol ovate, acuminate, oblique, revolute; calyx small.—*Cynanchum obliquum* Muhl.


2. *G. hirsutus* Mich.: stem twining; younger branches very hairy; leaves cordate-oval, acuminate, pubescent on both sides; segments of the corol linear-oblong; follicles oblong, muricate.—*Gonolobium hirsutum* Pursh.

3. PERIPLOCA. Linn.


Pentandria. Digynia.

P. greca Linn.: climbing; leaves opposite, ovate, acuminate; flowers hairy within, and terminal.

Hab. Western part of N.Y. Aug. 7.—Shrub climbing. Leaves on short petioles. Corymbs axillary, on long peduncles. Flowers dark purple.—It has been found, and I believe growing wild, near Rochester, N.Y., by my friend Dr. Samuel B. Bradley.

Order LXXVIII. SPIGELIACEÆ. Lind.

Calyx inferior, regularly 5-parted. Corol hypogynous, 5-lobed; aestivation valvate. Stamens 5, inserted into the corol; pollen triangular, the angles globular. Ovary free, 2-celled; ovules few; style articulated with the ovary; stigma simple. Fruit capsular, 2-celled, 2-valved, the valves turned inwards at the margin, and separating from the central placenta. Seeds several, small; albumen copious, fleshy; embryo very minute; radicle next the hilum.

Leaves entire, opposite, with stipules, or a tendency to produce them.

1. SPIGELIA. Linn.


S. marilandica Linn.: stem, simple, square, smooth; leaves all opposite.


Order LXXIX. GENTIANAE. Juss. Lind.

Calyx monophyllous, 5—10-divided, inferior, persistent. Corol hypogynous, monopetalous, usually regular, withering
or deciduous; limb divided into as many lobes as the calyx; aestivation imbricate-twisted. Stamens inserted upon the corol, alternate with the segments and equal to them in number, some occasionally abortive; pollen 3-lobed or triple. Ovary single, 1—2-celled, many-seeded; style 1, continuous; stigmas 1 or 2. Fruit capsular or fleshy, 1-celled, usually 2-valved, the margins of the valves turned inwards, and in the genera with 1-cell bearing the seeds; in the 2-celled genera inserted into a central placenta. Seeds small; embryo straight, in the axis of soft fleshy albumen; radicle opposite the hilum.

Herbs, rarely shrubs. Leaves opposite, without stipules.

1. GENTIANA. Linn.


* Corol 5—10-cleft, campanulate, or funnel-form.

1. G. saponaria Linn.: stem terete, smooth; leaves ovate-lanceolate, acute, 3-nerved; flowers axillary and terminal, sessile, capitately verticillate; corol ventricose, closed, 5-cleft; inner segments unequal to 2-cleft, as long as the outer ones; segments of the calyx ovate, shorter than the tube.—G. catesbeii Wall.


2. G. ochroleuca Willd.: stem subangular; leaves ovate-lanceolate, acute, scabrous on the margin; flowers in terminal subsessile fascicles; segments of the calyx linear-lanceolate; corol campanulate-ventricose, 5-cleft; segments acute, slightly connivent; inner ones short toothed.—G. saponaria Walt.—G. villosa Linn.

Hab. Sandy fields. N. J. to Flor. Aug., Sept. 2l.—Stem a foot high, a little scabrous. Flowers yellowish-white, inside striped with blue and purple, large.

3. G. pneumonanthe Linn.: stem terete, smooth; leaves linear-lanceolate, obtuse; terminal flowers fascicled; lateral ones solitary, peduncled; corol campanulate, 5-cleft; segments rounded; inner folds 1-toothed, short.—G. pseudo pneumonanthe R. & S.

Hab. Swamps, &c., near Portland, Maine. Big. Aug., Sept. 2l.—Stem a foot high. Flowers large, blue.—Allied to G. saponaria, but much more slender in all its parts.

4. G. quinqueflora Willd.: stem square, branched; leaves ovate-lanceolate, subclasping, acute, 3-nerved; flowers somewhat in fives, axillary and terminal, pedicellate; corol tubular-campanulate, 5-cleft:
segments lanceolate, mucronate; calyx very short.—G. amarelloides Mich. Pursh.


5. G. angustifolia Mich.: stem terete, smooth, simple, slender, 1-flowered; leaves linear, spreading, smooth, the lower ones somewhat wedge-shaped; corol funnel-form, 5-cleft; inner segments lacerate.—A. purpurea Walt.


6. G. linearis Willd.: stem simple, somewhat scabrous; leaves linear-lanceolate, undulate, and with the segments of the calyx ciliate; flowers sessile, in crowded terminal fascicles; corol campanulate, 5-cleft; segments obtuse, with the inner folds toothed.—G. puberula Mich.


** Corol 4-cleft, funnel-form; segments ciliate. Crossopetalum.

7. G. crinita Willd.: stem smooth, terete, below, square above; branches elongated, 1-flowered; leaves lanceolate, acute; corol 4-cleft; segments obovate, fringed at the top; inner folds simple.


2. SWERTIA. Linn.


1. S. deflexa Smith: stem 4-sided; branches short; leaves opposite, sessile, ovate; corol campanulate, with deflexed horns at the base.—S. corniculata Pursh.

Hab. Swamps. Can. and N. Y. Aug. 3.—Stem 18 inches high. Flowers axillary and terminal, greenish-yellow.—Plant almost black when dried. It has been found in Canada by Mr. Goldie, and near Fairfield, N. Y. by Prof. Hadley. Felwort.

2. S. pusilla Pursh: stem simple, 1-flowered; leaves few, small, oblong; corol rotate, twice as long as the calyx; segments oblong, acuminete.

Hab. White Hills, N. H. June. 2t. Pursh.—Stem an inch high. Leaves 1 or 2 pairs, small. Flowers large, blue.
3. FRASERA. Walt.

*Calyx* deeply 4-parted. *Corol* 4-parted, spreading; segments oval, with a bearded orbicular gland in the middle of each. *Stamens* 4. *Capsule* compressed, partly margined, 1-celled. *Seeds* few, imbricate, large, elliptic, with a membranaceous margin.

*Tetrandra. Monogynia.*


*Hab.* Swamps. N. Y. to Car. July. 3. — *Stem* 3—6 feet high, nearly square, branched, furrowed. *Leaves* smooth, usually whorled, sometimes opposite, oblong-lanceolate. *Flowers* on whorled peduncles, greenish-yellow. *Peduncles* 1-flowered.—This rare and interesting plant has been found by Prof. Haidley in the vicinity of Fairfield, N. Y. Medicinal.

_American Columbo._

4. SABBATIA. Adans.


1. *S. campanulata* Torr.: stem terete; leaves linear-lanceolate. smooth; calyx as long as the corol.—*Chironia campanulata* Linn.

*Hab.* Wet grounds. Penn. to Car. July, Aug. 3.— *Stem* a foot high, terete, with long branches. *Flowers* terminal, subsolitary, purple, on long peduncles.

2. *S. stellaris* Pursh: stem terete, dichotomously branched; branches elongated, 1-flowered; leaves sessile, lanceolate, acute; segments of calyx subulate, half as long as the corol; segments of the corol obovate.—*S. gracilis* Ell.

*Hab.* Salt marshes. N. Y. to Car. Aug. 3.— *Stem* 12—18 inches high. *Leaves* somewhat fleshy, obscurely 3-nerved. *Flowers* solitary, at the extremity of the branches, forming a small corymb, rose coloured.

3. *S. angularis* Pursh: stem erect, square, somewhat winged; leaves ovate, clasping; peduncles elongated, corymbed; segments of the calyx lanceolate, much shorter than the corol.—*Chironia angularis* Linn.

*Hab.* Wet meadows. Can. to Car. Aug. 2 and 3.— *Stem* 1—2 feet high, with opposite branches. *Leaves* obscurely 5-nerved. *Flowers* rose coloured. _American Centaury._

4. *S. calycosa* Pursh: stem erect, leafy, few-flowered; leaves oblong, 3-nerved; flowers solitary, 7—9-parted; calyx leafy, longer than the corol; segments oblong-lanceolate.—*Chironia calycosula* Mich.—*C. dichotoma* Walt.

*Hab.* Wet meadows. N. Y. to Car. Aug. 3.— *Stem* a foot high, slightly angled, with few branches. *Leaves* sessile, oval, thin. *Flowers* terminal, often solitary.
DICOTYLEDONOUS PLANTS.

5. *S. chloroides* Pursh: stem weak, somewhat angled; leaves lanceolate, erect; branches few, 1-flowered; flowers 7—12-parted; segments of the calyx linear, shorter than the corol.—*Chironia chloroides. Mich.*—*C. dodecandra* Walt.—*Chlora dodecandra* Linn.

Hab. Salt bogs. N. Y. to Car. Aug. 3.—Stem 2—3 feet high. Leaves closely sessile, acute, without nerves. Flowers solitary, terminal, bright rose coloured.—This and the preceding are very variable.

6. *S. corymbosa* Bald.: stem erect, nearly square; leaves ovate, closely sessile; flowers corymbed; segments of the calyx subulate, much shorter than the corol.—*S. paniculata var. a. Pursh.—Chironia lanceolata* Walt.


5. ERYTHREA. Rich.


*E. centaurium* Pers.: stem erect, nearly simple; leaves ovate-oblong, nerved; flowers subsessile, fasciculate-paniculate; calyx half as long as the tube of the corol.—*Chironia centaurium* Willd.

Hab. Dry grounds. N. S. July, Aug. 3.—Stem 8—12 inches high. Leaves variable; the lower ones broader than the upper. Flowers in fascicles, near the top of the stem.—I have specimens of this plant which were found near Oswego, N. Y. by the Rev. David Brown of Lockport. It is apparently indigenous.

6. EXACUM. Linn.


*E. pulchellum* Pursh: calyx 4-parted; corol 4-cleft, segments subulate; panicle corymbed; peduncle filiform.

Hab. Sea Coast. N. J. rare. Aug. 3.—Flowers rose coloured.

7. HOUSTONIA. Linn.


*Tetrandria. Monogynia.*

1. *H. carulea* Linn.: stem erect, setaceous, dichotomous; radical leaves spatulate-oval; stem leaves lanceolate; peduncles solitary, ax-
illary, very long, 1-flowered; segments of the corol acute.—*H. linnai* Mich.

**Hab.** Fields. N. Y. to Flor. April, May. 2ft.—Stem 4—8 inches high. *Flowers* blue, sometimes nearly white.

2. *H. longifolia* Willd.: stem branched, smooth; leaves narrow-lanceolate, tapering at each extremity, very smooth; flowers mostly in threes, terminal, nearly sessile.—*H. angustifolia* Mich.

**Hab.** Hills and mountains. N. Y. to Flor. W. to Miss. June. 2ft.—Stem 6—10 inches high, branched at the top. *Leaves* about an inch thick. *Flowers* often by threes, purple.

3. *H. purpurea* Willd.: stem erect, branched above, pubescent at the joints; leaves sessile, ovate or lanceolate, obtuse at base; flowers in terminal corymbs.—*H. varians* Mich.


4. *H. ciliolata* Torr.: smooth, branched above, with remote joints; radical leaves ovate, obtuse, tapering at base; margin ciliate; stem leaves ovate-spathulate, sessile; flowers in terminal corymbs; pedicelled; peduncles trichotomous; segments of the calyx linear-lanceolate.


5. *H. pubescens* Raf.: leaves wedge-form, acute, pubescent; the lower ones somewhat petioled, lanceolate; upper ones semi-oval, sessile; panicle trichotomous, terminal.

**Hab.** Penn. and Ohio. *Raf.*

8. CENTAURELLA. *Mich.*


*Tetrandria. Monogynia.*

*C. paniculata* Mich.: stem somewhat branched, smooth; peduncles opposite, the lower ones branched; leaves minute, subulate, alternate below, nearly opposite above; flowers in panicles; corol as long as the calyx; style very short.—*C. autumnalis* Pursh.—*Bartonia paniculata* Muhl. Torr.—*Sagina virginica* Willd.

**Hab.** Damp grounds. Mass. to Car. Aug., Sept. 2ff.—Stem 4—8 inches high, square, often twisted. *Flowers* small, greenish-white, on the ends of the branches.

9. VILLARSIA. *Vent.*


**Pentandria. Monogynia.**

*V. lacunosa* Pursh: leaves reniform, subpeltate, slightly crenate, lacunose beneath; petioles bearing the flowers; corol smooth.—*V. aquatica* R. & S. — *V. trachysperma* Ell.—*Menyanthes trachysperma* Mich.


10. **MENYANTHES.** Linn.


**Pentandria. Monogynia.**

*M. trifoliata* Linn.: leaves ternate, petioled, sheathing, smooth.


Buck-bean.

11. **OBOLARIA.** Linn.


**Tetrandria. Monogynia.**

*O. virginica* Linn.

Hab. Woods. Penn. to Car. April, May. 2L.?—Stem 4—6 inches high, cespitose, nearly simple, smooth. Leaves opposite, obovate, sessile, glaucous. Flowers in pairs or threes, towards the top of the stem, white or pale red.

**Order LXXX. BIGNONIACEÆ.** Brown. Lind.

Calyx divided or entire, sometimes spathaceous. Corol hypogynous, monopetalous, usually irregular, 4—5-lobed. Stamens 5, unequal, always 1, sometimes 3, sterile; anthers 2-celled. Ovary seated in a disk, 2-celled, or spuriously 4-celled, many-seeded. Style 1; stigma of 2 plates. Capsule 1 or 2-celled, sometimes spuriously 2 or 4-celled, 2-valved. Seeds transverse, compressed, often winged; albumen none; embryo straight, foliaceous; radicle next the hilum.

Trees or shrubs, often twining or climbing. Leaves opposite, or rarely alternate, without stipules.
1. BIGNONIA. Linn.


*Didynamia. Angiosperma.*

*B. radicans* Linn.: stem creeping; leaves pinnate; leaflets ovate, toothed, acuminate; corymb terminal; tube of the corol three times as long as the calyx.


2. CATALPA. Juss.


*Diandria. Monogynia.*

*C. cordifolia* Ell.: leaves simple, cordate, entire; flowers panicled. —C. *bignonioides* Walt.—C. *syringaefolia* Sims. Pursh,—Bignonia *Catalpa* Linn.

*Hab.* Fields, about habitations. N. Y. to Flor. and throughout the Western and Southwestern States. July. —A large tree with irregular branches. *Leaves* round, cordate, whorled in threes, large. *Flowers* white, yellow and purple, in large pyramidal terminal panicles. Probably introduced, as it is generally found in the vicinity of habitations, Indian encampments, &c.

**Order LXXXI. PEDALINEAE.** Brown. Lind.

*Calyx* divided into 5 nearly equal pieces. *Corol* monopetalous, hypogynous, irregular; tube ventricose, the limb 5-lobed, bilabiate. *Stamens* 4, didynamous, (2 sometimes sterile,) with the rudiment of a fifth. *Ovary* seated in a glandular disk, 1—2-celled, of 2 carpels, the introflexed margins of which by splitting and diverging constitute several cells; *ovules* few in each spurious cell; *style* 1; *stigma* divided. *Fruit* drupaceous, or rarely capsular and 2-valved, spuriously many-celled. *Seeds* few, large, pendulous; *albumen* none; *embryo* straight.

*Herbs*, with opposite *leaves* and axillary *flowers*.

1. MARTYNIA. Linn.

*Calyx* 5-cleft. *Corol* ringent. *Capsule* ligneous, corticate, 4-celled, 2-valved; each of the valves terminating in a long hooked beak.

*Didynamia. Angiosperma.*
**M. proboscidea** Linn.: stem viscid, pubescent, branched, mostly decumbent; leaves alternate, cordate, nearly round, very entire, villous; flowers axillary, on long peduncles.


Stem 1—2 feet long. Flowers dull yellow, large, spotted. Whole plant fetid. Unicorn Plant.

**Order LXXXII. POLEMONIACEÆ. Lind.**

Calyx 5-parted, persistent, sometimes irregular. Corol regular, 5-lobed. Stamens 5, inserted on the middle of the tube of the corol and alternate with its segments. Ovary superior, 3-celled; ovules ascending; style simple; stigma trifid. Capsule 3-celled, or spuriously so, 3-valved, with a loculicidal dehiscence; the valves separating from the axis. Seeds angular or oval, often enveloped in mucus, ascending; embryo straight in the axis of horny albumen; radicle inferior, next the hilum; cotyledons elliptical, foliaceous.

*Herbs*, with opposite or alternate, simple or variously divided leaves.

1. **PHLOX. Linn.**

Calyx prismatic, deeply 5-cleft; segments connivent. Corol salver-form; border 5-lobed, flat; lobes cuneate. Stamens inserted above the middle of the tube of the corol, very unequal. Capsule roundish, ovate, 3-celled; cells 1-seeded.

*Pentandria. Monogynia.*

1. **P. paniculata** Linn.: stem erect, smooth; leaves lanceolate, flat, the margin scabrous; corymb panicked; segments of the corol rounded; calyx tapering to an awn.

**Hab.** Meadows. Penn. to Car. June, July. 

Stem 2—3 feet high. Leaves opposite. Flowers in opposite corymbs, somewhat paniculate, purple; tube of the corol pubescent, much longer than the calyx.

2. **P. pyramidalis** Smith: erect, smooth; stem scabrous; leaves cordate-ovate, acute; panicle fastigiate, pyramidal; segments of the corol cuneate, truncate; teeth of the calyx somewhat erect, lanceolate, acute.

**Hab.** Mountain meadows. Penn. to Car. Aug. 

Stem 2—3 feet high. Leaves opposite, sessile, very entire. Corol beautiful purple.

3. **P. maculata** Linn.: stem erect, scabrous and spotted; leaves oblong-lanceolate, smooth, with the margin scabrous; panicle oblong,
many-flowered; segments of the corol rounded; teeth of the calyx acute, recurved.

b. suaveolens Nutt.: stem without spots; corol white.—P. suaveolens Ait.—P. maculata var. caudita Mich.

Hab. Moist meadows. N. J. to Car. June. 2f.—Stem 2—3 feet high, simple. Corolms few-flowered. Corol pale purple. Var. b. according to Mr. Nuttall is only a white flowered variety, raised from seed.

4. P. aristata Mich.: stem erect, weak, viscid-pubescent; leaves linear or linear-lanceolate; panicle lax, fastigate; segments of the corol obovate; tube curved, pubescent; teeth of the calyx very long, subulate.

Hab. Wet woods. N. J. to Car. W. to Miss. June. 2f.—Stem 18 inches high, simple. Leaves sometimes nearly linear, with the margins revolute. Teeth of the calyx awned. Corol pale purple or white.—P. pilosa is not distinct from this species.

5. P. dixaricata Linn.: stem low, pubescent, decumbent; leaves oval-lanceolate, the upper ones alternate; branches divaricate, loose, few-flowered; segments of the corol slightly obcordate; teeth of the calyx linear, subulate.

Hab. N. Y. and Penn. June. 2f.—Stems numerous, 9—12 inches high. Flowers in a terminal panicle, blue.—Dr. Gray informs me that this species is very abundant near Utica, N. Y.

6. P. reptans Mich.: pubescent, with creeping suckers; radical leaves spatulate-ovate; stem leaves oval-lanceolate; corymb few-flowered, divaricate; segments of the corol obovate; teeth of the calyx subulate, reflexed.—P. stolonifera Pursh.

Hab. Mountains. Penn. to Car. June. 2f.—Stem 6—8 inches high. Flowers in a small corymb, blue, with a purple centre.

7. P. subulata Linn.: procumbent, cespitose, pubescent; leaves linear-subulate, rigid, ciliate; corymb few-flowered; segments of the corol wedgeform, emarginate; calyx with subulate teeth shorter than the tube of the corol.


8. P. setacea Linn.: procumbent, cespitose, hairy; leaves fasciculate, subulate, ciliate, rigid; pedicels few-flowered, terminal, somewhat umbelled; segments of the corol wedgeform, emarginate; teeth of the calyx subulate, much shorter than the tube of the corol.

Hab. Penn. to Car. May. 2f.—Flowers large, reddish, with a purple star in the centre.—Resembles the preceding, but the leaves are longer and more hairy.

2. POLEMONIUM. Linn.

Calyx campanulate, 5-cleft. Corol rotate; limb 5-lobed, erect. Stamens 5; filaments broader at the base, inserted
DICOTYLEDONOUS PLANTS.

upon the 5 teeth or valves which close the orifice of the corol. **Ag.** incumbent. **Pentandria. Monogynia.**

*P. reptans* Linn.: stem erect, branched, smooth; leaves pinnate, mostly by sevens; leaflets ovate-lanceolate, acute; flowers terminal, nodding.

**Hab.** Hills. N. Y. to Car. W. to Miss. May. 24.—Stem a foot high. *Flowers* blue, somewhat corymbose. **Jacob's Ladder.**

**Order LXXXIII. CONVOLVULACEÆ. Lind.**

*Calyx* 5-divided, persistent. *Corol* deciduous, regular, 5-lobed; aestivation usually plicate. *Stamens* 5, inserted into the base of the corol, alternate with its segments. *Torus* discoid. *Ovary* free, with 2—4-cells, seldom with 1; *ovules* erect, definite, when more than 1 collateral; *style* 1, sometimes entire, usually bifid, rarely 2; *stigmas* obtuse or acute. *Capsule* with from 1—4-cells; the valves fitting at their edges to the angles of a loose dissepiment, bearing the seeds at the base, sometimes valveless or dehiscing transversely. *Seeds* at the base of the placenta; *albumen* mucilaginous; *embryo* curved; *cotyledons* shrivelled; **radicle** inferior.

*Herbs* or shrubs, usually twining and with a milky juice. **Leaves** alternate, without stipules.

1. **CONVOLVULUS.** Linn. **Spreng.**

*Calyx* 5-parted, naked or with 2 bracts at base. *Corol* funnel-form or campanulate, with 5 plaits. *Stamens* 5, shorter than the limb. *Ovary* 2—3-celled; cells 2-seeded. **Style** undivided. *Stigma* capitate, lobed or divided. *Capsule* valved, 1—4-celled. **Pentandria. Monogynia.**

Obs. I concur with Sprengel in uniting *Ipomoea* with this genus; which can scarcely be distinguished, except perhaps, by its simple stigma—a character too unimportant for the basis of a generic distinction.

1. *C. arvensis* Linn.: stem climbing; leaves saggitate, with acute lobes; peduncles mostly 1-flowered; bracts minute, remote from the flower.—*C. sagittifolius* Mich.? **Hab.** Fields. Maine to Car. rare. June, July. 24.—Stem hairy, often prostrate. *Leaves* rather hastate. *Flowers* white, an inch long, on axillary peduncles; which are longer than the leaves.—This plant has been found on the banks of the canal near this city.
2. *C. sepium* Linn.: stem climbing, angular, twisted; leaves sagittate, very acute, with the lobes truncate; peduncles square, 1-flowered; bracts large, cordate, close to the flower.—*Calystegia sepium* Pursh.

**Hab.** Hedges and woods. Can. to Car. June, July. 2f.—Stem climbing or trailing, pubescent. Flowers large, white, on peduncles which are longer than the leaves. Great Bind-weed.

3. *C. panduratus* Linn.: stem climbing, pubescent; leaves cordate, entire or lobed and panduriform; peduncles long; flowers in fascicles; calyx smooth; corol tubular-campanulate.


4. *C. spithamaeus* Linn.: stem erect or trailing; leaves oval or oblanceolate, subcordate, pubescent, hoary; peduncles 1-flowered, about as long as the leaves; bracts much longer than the calyx.—*C. stans* Mich. —*Calystegia tomentosa* and *spithamaeus* Pursh.

**Hab.** Sandy woods. Can. and N. S. June. 2f.—Stem erect or spreading. Flowers white, on peduncles which are about as long as the leaves.

5. *C. purpureus* Linn.: stem twining and climbing; leaves cordate, acuminate, undivided, entire; peduncles 2—3-flowered; pedicels thickened, nodding; capsule smooth.—*Ipomoea purpurea* Pursh. Torr.

**Hab.** Fields, &c. July, Aug. 2f.—Stem hairy, climbing to a great height. Flowers large, blue, purple or nearly white. Introduced. Common Morning Glory.


**Hab.** Penn. Muhl. S. to Flor. Aug., Sept. 2f.—Flowers white with a purple rim.

7. *C. nil* Linn.: stem hairy, twining; leaves cordate, 3-lobed; peduncles short, 1—3-flowered; calyx very villous; segments acuminate, subulate; corol funnel-form.—*Ipomoea nil* Pursh. Torr.

**Hab.** Penn. Muhl. S. to Car. Aug. 2f.—Flowers 1—2, on peduncles shorter than the petioles. Corol white at base, blue near the border. Morning Glory.

2. **CUSCUTA.** Linn.


1. *C. americana* Linn.: flowers in umbellate clusters; pedunculate,
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5-cleft; stigmas capitate; corol tubular-bell-shaped, with the border small and spreading.


---Stem filiform, twining around other plants; parasitic. Flow-ers small, white. American Dodder.

2. C. europea Linn.: flowers in sessile clusters; corol 4—5-cleft, without scales at the base of the stamens; stamens 4—5; stigmas simple.

Hab. Parasitic on flax, &c. Sch'y, N. Y. July.  

---Stem filiform, long and climbing, leafless. Flowers clustered, pale yellow or rose coloured. Introduced. Dodder.

ORDER LXXXIV. HYDROLEACEÆ. Kunth. Lind.

Calyx 5-parted, persistent; aestivation imbricated. Corol regular, monopetalous, not always agreeing with the calyx in the number of its divisions. Stamens 5, inserted on the corol, equal; anthers deeply lobed at the base, 2-celled. Ovary superior, surrounded by an annular disk, 2—3-celled; ovules indefinite; styles 2 or 3; stigmas thickened. Fruit capsular, 2—3-celled, splitting through the middle of the cells. Seeds indefinite, very small; embryo straight in the axis of a fleshy albumen; radicle next the hilum; cotyledons flat.

Herbs, or undershrubs. Leaves alternate, entire or lobed, without stipules.

1. DIAPENSIA. Linn.

Calyx 5-parted, subtended by 3 bracts. Corol salverform; border 5-cleft, flat. Stamens 5, from the summit of the tube, alternating with the segments of the corol. Stigmas 3. Capsule 3-celled, 3-valved, many-seeded. 

Pentandria. Monogynia.

1. D. lapponica Linn.: cespitose; leaves spatulate, smooth; flower terminal, solitary, on short peduncles; anthers simple.—D. obtusifolia Pursh.

Hab. Summits of the White Mountains, N. H. June.  

---Stems short, diffuse. Leaves crowded, fleshy, evergreen, very entire. Flowers white.

2. D. barbulata Ell.: leaves lanceolate-wedgeshaped, pubescent at base; flower solitary, terminal, sessile; anthers horizontal, beaked at base.—D. canecifolia Pursh.—Pyxidanthera barbulata Mich.  


---Plant small, creeping, forming dense mats; branches assurgent, 1-flower-ed. Upper leaves crowded near the base of the flower which is small and white.—Very abundant in New-Jersey.

Calyx 5-divided, persistent. Corol hypogynous, monopetalous, regular, 5-cleft; aestivation imbricate. Stamens inserted into the corol, alternate with its segments; anthers erect. Ovary 4-lobed, 4-celled; ovules 4, each suspended from the inner angle near the summit of the cell; style simple, arising from the base of the lobes of the ovary; stigma simple or bifid. Nuts 4, distinct. Seed separable from the pericarp, destitute of albumen; embryo with a superior radicle; cotyledons plano-convex.

Herbs or shrubs with round stems. Leaves alternate, scabrous, without stipules.

1. Lithospermum. Linn.


1. L. arcense Linn.: stem erect, branched; leaves sessile, linear-lanceolate, rather acute, veinless, rough, hairy; calyx a little shorter than the corol; segments spreading; nuts rugose.

Hab. Fields. N. S. April, May. @.-Plant hispid-pilose. Flowers solitary, axillary, white. Calyx with the segments thrice as long as the fruit.Introduced. Corn Grumcell.

2. L. officinale Linn.: stem erect, much branched, covered with rigid hairs; leaves broad-lanceolate, acute, nerved, rough on the upper surface, hairy on the lower; tube of the corol as long as the calyx; nuts smooth.


3. L. denticulatum Lehm.: stem erect; leaves nerved, subglabrous, acute; margin scabrous, with minute teeth; radical ones ovate; those on the stem oblong; segments of the calyx denticulate on the margin.


4. L. maritimum Lehm.: very smooth; stem procumbent, branched; leaves ovate, obtuse, fleshy, glaucous.—Pulmonaria maritima Linn.

2. BATSCHIA. Gmel.

_Calyx_ 5-parted. _Corol_ salver-form, rather large; tube straight, much longer than the calyx, closed at the base by a bearded ring; orifice naked or partially closed; border orbiculate, nearly flat, segments rounded. _Nuts_ shining.—_Flowers_ yellow.

_Pentandria._ Monogynia.

1. _B. canescens_ Mich.: stem erect, simple, villous; leaves oblong, obtuse, slightly mucronate, silky above, subvillous beneath; flowers axillary, crowded near the top of the stem; tube of the corol as long again as the calyx.—_Anchusa canescens_ Muhl.—_Lithospermum canescens_ Lehm. Torr.

_Hab._ Hills. N. Y. to Virg. N. to Subarct. Amer. W. to Miss. June, July. 2f.—_Stem_ 8—12 inches high. _Flowers_ axillary, crowded near the top of the stem, bright orange.—Found near Fairfield, N. Y. by Prof. Hadley. Used by the Indians as a red dye.

_Puccoon._

2. _B. gmelini_ Mich.: plant hirsute; stem simple; floral leaves ovate; those of the stem oblong; flowers in a terminal raceme; calyx with long lanceolate segments.—_Batschia caroliniensis_ Gmel.—_Anchusa hirta_ Muhl.

_Hab._ Woods. Penn. to Car. June, July. 2f.—_Stem_ 8—12 inches high. _Flowers_ in a terminal raceme, orange.

3. ONOSMODIUM. Mich.

_Calyx_ deeply 5-parted; segments linear. _Corol_ somewhat tubular-campanulate; border ventricose, half 5-cleft; segments connivent, acute. _Anthers_ sessile, included. _Style_ much exserted. _Nuts_ imperforate, shining.

_Pentandria._ Monogynia.

1. _O. hispidum_ Mich.: stem hispid, branched; leaves obovate-lanceolate, hairy, papillose-punctate; segments of the corol subulate.—_Lithospermum virginianum_ Linn.—_Purshia hispida_ Lehm.

_Hab._ Hills. N. Y. to Car. Aug. 2f.—_Stem_ 1—2 feet high. _Flowers_ white, in simple leafy secund racemes which at first are recurved and afterwards straight.

2. _O. molle_ Mich.: whole plant white-villous; leaves oblong-oval, somewhat 3-nerved; segments of the corol semi-oval.—_Lithospermum molle_ Muhl.—_Purshia mollis_ Lehm.

_Hab._ N. Y. and Penn. S. W. to Tenn. July, Aug. 2f.—Dif- fers from the former in its soft white pubescence, and in the broader segments of its corol. It has been found by Mr. George W. Clinton, in the sand plains near Albany.

4. SYMPHYTUM. Linn.

_Calyx_ 5-parted. _Corol_ ventricose, its orifice closed with connivent subulate scales. _Nuts_ imperforate at base.

_Pentandria._ Monogynia.
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S. officinale Linn.: stem hispid; radical leaves on long petioles, rough; those of the stem ovate-lanceolate below, lanceolate above, sessile, very decurrent and winging the upper part of the stem.


5. ECHIUM. Linn.


E. vulgare Linn.: stem erect, bristly and tuberculate; leaves lanceolate, very hispid, radicle ones petiolate, spreading, very long; flowers in lateral spikes; stamens longer than the corol.

Hab. Hills. N. S. June, July. 3. Stem 2–3 feet high. Flowers large, blue, in lateral spikes, which are at first recurved but gradually become erect. Introduced. Viper’s Bugloss.

6. LYCOPSIS. Linn.


L. arvensis Linn.: leaves lanceolate, repand-denticulate, very hispid; lower ones tapering into a petiole; upper ones sessile, subclasping; racemes leafy; calyx erect while in flower, shorter than the tube of the corol.—Anchusa arvensis Lehm.


7. MYOSOTIS. Linn.

Calyx 5 cleft. Corol salver-form; tube short; limb flat, with 5 emarginate lobes; orifice closed, with short connivent scales. Nuts smooth or scabrous. Pentandria. Monogynia.

1. M. palustris Roth.: leaves oblong-lanceolate, rough, with short mostly appressed hairs; racemes rather short; pedicules when in fruit divergent, twice as long as the 5-cleft spreading calyx; border of the corol expanded, longer than the tube.—M. scorpioides Willd.—M. scorpioides var. palustris Linn.

Hab. Ditches and wet grounds. Can. and N. S. May—July. 2. Stem 12–18 inches high. Flowers very small, bright blue, in secund racemes.—Our plant differs from the foreign one, in having the flowers very small. Marsh Scorpion Grass.

2. M. arvensis Sibth.: leaves oblong-lanceolate, hairy; racemes very long; pedicels when in fruit spreading, twice as long as the 5-cleft
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and closed calyx; limb of the corol erect-spreading, about as long as the tube.—*M. scorpioides var. arvensis* Linn.—*M. verna* Nutt.

_Hab._ Sandy woods. Can. and N. S. W. to Miss. June. ☞

—Plant gray, pubescent. Stem 4—10 inches high. Flowers very small, white, on long pedicels. _Field Scorpion Grass._

8. ECHINOSPERMUM. _Lehm._

_Calyx_ 5-parted. Corol salver-form, closed by connivent scales. _Nuts_ fixed to a central column, echinate, compressed.

_Pentandria. Monogynia._

1. _E. lappula_ _Lehm._: stem branched above; leaves lanceolate or linear-lanceolate, hairy; corol longer than the calyx; border erect, spreading; nuts with 2 rows of hooked prickles on the margin.—_Myosotis lappula_ Linn.—_Rochelia lappula_ R. & S. Torr.

_Hab._ Road sides. Can. and N. S. N. to Subarct. Amer. July. ☞

—Stem a foot high, branched above. Flowers minute, blue, erect when in fruit.

2. _E. virginicum_ _Lehm._: leaves oblong-lanceolate, acuminate, scabrous above; racemes divaricate, dichotomous; nuts densely covered with hooked prickles.—_Myosotis virginiana_ Linn.—_Rochelia virginiana_ R. & S. Torr.

_Hab._ Can. to Car. July. ☞

—Stem 2 feet high. Leaves very large. Flowers minute, pale blue, in dichotomous racemes.

9. CYNOGLOSSUM. _Linn._

_Calyx_ 5-parted. Corol short, funnel-form, 5-lobed; orifice closed with convex connivent scales. _Nuts_ depressed, affixed to the styles by their inner margin.

_Pentandria. Monogynia._

1. _C. officinale_ _Linn._: leaves lanceolate, attenuate at the base, sessile, downy; lower ones large, petiolate; upper ones subclasping; flowers in terminal racemes; stamens shorter than the corol.


2. _C. virginicum_ _Linn._: leaves oval-oblong, acute, hairy; lower ones long, petiolate; upper ones cordate and clasping at the base; corymb on a large almost naked panicle.—_C. amplexicaule_ Mich.

_Hab._ Shady woods. N. Y. to Car. May. 2f. —Stem 2—3 feet high, very hispid. Leaves less hairy than in the former. Flowers in a small terminal corymb, blue.

10. PULMONARIA. _Linn._

_Calyx_ prismatic, 5-sided. Corol funnel-form, somewhat 5-lobed; orifice naked. _Nuts_ imperforate at base.

_Pentandria. Monogynia._
P. virginica Linn.: smooth; stem erect; radical leaves obovate-oblong, obtuse; stem leaves narrower; flowers in terminal racemes or fascicles; calyx much shorter than the tube of the corol; segments lanceolate, acute.—Lithospermum pulchrum Lehm.


Order LXXXVI. HYDROPHYLLEÆ. Lind.

Calyx 5–10-divided, persistent. Corol monopetalous, regular, or nearly so, 5-lobed, with 2 lamellae towards the base of each constituent petal. Stamens alternate with the lobes of the corol; anthers ovate, 2-celled, versatile, bursting longitudinally. Ovary free, simple, 1-celled; ovules definite or indefinite, suspended; style terminal, bifid; stigmas 2. Placenta 2, parietal, or on stalks from the base of the cavity. Fruit capsular, few, or many-seeded, invested with the permanent calyx. Seeds definite or indefinite; embryo taper, lying at the end of a copious cartilaginous albumen; radicle superior.

Hispid herbs. Leaves opposite, or alternate and lobed.

1. HYDROPHYLLUM. Linn.


Pentandria. Monogynia.

1. H. virginicum Linn.: stem nearly smooth; leaves pinnatifid and pinnate; segments oval-lanceolate, with deep serratures; clusters of flowers crowded; peduncles larger than the petioles.


2. H. canadense Linn.: somewhat hairy; leaves angularly sub-5-lobed, cordate at base; remotely serrate; flowers in crowded fascicles; peduncles shorter than the petioles.

Hab. Mountains. Can. and N. S. June. 2f.—Stem 18 inches high. Leaves large and broad, somewhat palmate, about 5–7-lobed. Flowers blue and white, in clusters.

2. NEMOPHILA. Nutt.

Calyx 10-parted; alternate lobes reflexed. Corol subcam...
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panulate, 5-lobed; the lobes emarginate, with margined nec-
tariferous cavities at base. Stamens 5, shorter than the corol; 
filaments naked. Style 2-cleft. Capsule fleshy, 1-celled, 2-
valved, 4-seeded. *Pentandria.* Monogynia.

*N. paniculata* Spreng.: very hairy; radical leaves subpinnatifid; 
cauline ones angularly lobed; sinuses of the calyx with minute oval 
appendages.—*Hydrophyllum appendiculatum* Mich.

Hab. Moist woods. Penn. and Virg. W. to Miss. May. —
—Stem a foot high. Flowers blue, on short peduncles, some-
what paniculate.—Very properly separated from the preceding 
genus.—See Nutt. in Jour. Phil. Acad. ii. 179.

3. PHACELIA. *Juss.*

*Calyx* 5-parted. Corol subcampanulate, 5-cleft, with 5 
longitudinal margined melliferous grooves on the inside. *Sta-
mens* 5, exserted. Style filiform. Stigmas 2. Capsule 2-
celled, 2-valved, 4-seeded, each of the valves septiferous in 
the centre.

1. *P. fimbriata* Mich.: whole plant hairy; stem ascending; leaves 
pinnatifid with undivided lobes; flowers in a simple terminal raceme; 
segments of the corol fimbriate.

Hab. Alluvial soil. Penn. to Geor. W. to Miss. May, June. —
—Stem a foot high. Flowers blue, in a terminal raceme, at 
first revolute, afterwards erect.

2. *P. bipinnatifida* Mich.: stem erect, hairy; leaves pinnatifid, seg-
ments incisely lobed; racemes mostly bifid, oblong, many-flowered; 
divisions of the corol entire.

Hab. Mountains. Penn. W. to Miss. May, June. —
—Stem a foot high. Flowers blue, in terminal racemes.

3. *P. parviflora* Pursh: stem diffuse, pubescent; leaves subsessile, 
pinnatifid; segments oblong, rather obtuse, entire; racemes solitary; 
pedicels short; segments of the corol round, very entire.—*Polemonium 
dubium* Willd.

Hab. Penn. May. —Stem 6–8 inches high. Flowers pale 
blue, much smaller than in the preceding.—May belong to a dif-
ferent genus.

Order LXXXVII. SOLANEÆ. *Juss.* Lind.

*Calyx* 5- rarely 4-parted, persistent. Corol monopetalous, 
hypogynous; limb 5- rarely 4-cleft, regular or somewhat un-
equal, deciduous; aestivation plaited, or somewhat imbricate. 
*Stamens* inserted on the corol, alternate with its segments, 
sometimes 1 abortive; *anthers* bursting longitudinally or by 
terminal pores. *Ovary* 2 or more celled; *style* continuous;
stigma obtuse, rarely lobed. Fruit either a capsule, which is 2—4-celled, 2—4-valved, with a double dissepiment, parallel with the valves, or a berry with the placentæ adhering to the dissepiment. Seeds numerous, sessile; embryo more or less curved, often eccentric, lying in fleshy albumen; radicle next the hilum.

**Herbs or shrubs.** Leaves alternate.

**Div. I.** Fruit a berry.

1. **SOLANUM.** Linn.


*Pentandria. Monogynia.*

1. *S. dulcamara* Linn.: stem fruticose, flexuous, without thorns, smooth or pubescent; leaves ovate-cordate, smooth; upper ones hastate; flowers in lateral clusters.


2. *S. nigrum* var. *virginianum* Linn.: stem herbaceous, without thorns, angular, toothed; leaves ovate, obtusely toothed and waved; flowers subumbelled.—*S. nigrum* Big.


*Common Night-shade._

3. *S. carolinense* Linn.: stem annual, aculeate; leaves ovate-oblong, tomentose, hastate-angled, prickly on both sides; raceme simple, lax; berries globose.


*Horse Nettle._

2. **PHYSALIS.** Linn.


*Pentandria. Monogynia._

1. *P. viscosa* Linn.: leaves in pairs, subcordate-oval, repand, obtuse, subtomentose, a little viscid; stem herbaceous, paniculate above; fruit bearing calyx pubescent.
—Stem 2—3 feet high. Flowers yellow. Berries viscosous.
Ground Cherry.

2. P. obscura Mich.: pubescent; stem prostrate, divaricate; leaves broad-cordate, subsolitary, unequally and coarsely toothed; flower solitary, nodding; calyx very hairy.—P. pruinosa Ell.?
—Flowers pale yellow, with 5 purple spots at base. Anthers bluish.

3. P. lanceolata Mich.: stem erect, densely pubescent; leaves mostly in pairs, oval-lanceolate, very entire, narrowed at the base into a petiole; flower solitary, nodding; calyx villous.

4. P. pennsylvanica Linn.: stem herbaceous, branched; leaves ovate, somewhat repand, obtuse, nearly naked; peduncles axillary, solitary, a little longer than the petioles.

3. NICANDRA. Adans.


N. physaloides Pers.: stem herbaceous; leaves sinuate, angled, glabrous; flowers solitary, axillary, on short peduncles; calyx closed, with the angles very acute.—Atropa physaloides Linn.

Div. II. Fruit a capsule.

4. NICOTIANA. Linn.


N. rustica Linn.: plant viscid-pubescent; stem terete; leaves petiolated, ovate, very entire; tube of the corol cylindrical, longer than the calyx; segments round.
Hab. Western part of New-York. Nutt. 0.—Stem 12—18 inches high. Flowers greenish-yellow, in a terminal panicle or raceme.—According to Mr. Nuttall it has been introduced by the Indians. Tobacco.

5. DATURA. Linn.

Calyx large, tubular, ventricose, 5-angled, deciduous; the

*D. stramonium* Linn.: stem dichotomously branched; leaves ovate, smooth, angular-dentate, somewhat cordate; capsule spiny, erect.

b. *tatula* Torr.: stem and flowers purple.—*D. tatula* Linn.


6. **HYOSCYAMUS.** Linn.


*H. niger* Linn.: hispidly pilose and fetid; stem erect, very leafy; leaves sinuate, clasping; flowers sessile, arranged in terminal recurved leafy spikes; corol reticulate.


*Henbane.*

7. **VERBASCUM.** Linn.


1. *V. thapsus* Linn.: stem simple, erect, tomentose; leaves ovate-oblong, decurrent, very woolly on both sides; flowers in a long dense terminal spike; stamens unequal, two smooth.


2. *V. blattaria* Linn.: stem angled, smooth; leaves clasping, oblong, serrate; flowers in a terminal raceme; peduncles 1-flowered, solitary.

Hab. Road sides. N. Y. to Car. June, July. ☑.—Stem 2 feet high. *Flowers* white and yellow.—Considered by some as distinct varieties.

3. *V. lychnitis* Linn.: leaves oblong-cuneiform, naked above, white-tomentose beneath; stem angular, paniced; spikes lax, lateral and terminal.

Hab. Penn. *Pursh. S.* to Car. June, July. ☑.—Stem straight
and angled. Leaves very white beneath. Flowers pale yellow, clustered, on short peduncles.

**Order LXXXVIII. Orobanchaceae. Juss. Lind.**

*Calyx* divided, persistent. *Corol* irregular, usually bilabiate, persistent; aestivation imbricated. *Stamens* 4, didynamous. *Ovary* superior, seated in a fleshy disk, with 2—4-parietal many-seeded placentae; *style* 1; *stigma* 2-lobed. *Fruit* capsular, inclosed within the withered corol, 1-celled, 2-valved, each valve bearing 1 or 2 placentae in the middle. *Seeds* indefinite, minute; *embryo* very minute, inverted at the apex of a fleshy albumen.

*Herbs* growing parasitically upon the roots of other species. *Stems* covered with brown or colourless scales.

1. **Orobanche. Linn.**


*Didynamia. Angiospermia.*

1. *O. americana Linn.*: stem very simple, covered with ovate-lanceolate imbricate scales; spike terminal, smooth; corol recurved; stamens exerted.


*Cancer-root.*

2. *O. uniflora Linn.*: stem very short; peduncles elongated, scapiform, 1-flowered, naked; scales smooth, concave; lobes of the corol oblong-oval, with a pubescent coloured margin.


2. **Epiphagus. Nutt.**

Polygamous. *Calyx* abbreviated, 5-toothed. *Corol* of the sterile flower ringent, compressed, 4-cleft, lower lip flat; of the fertile flower minute 4-toothed, deciduous. *Capsule truncate*, oblique, 1-celled, imperfectly 2-valved, opening only on one side.

*Didynamia. Angiospermia.*

*E. americanus Nutt.—Orobanche virginiana Linn.*

**Hab.** Woods. Can. to Car. July—Sept. 24.—Stem a foot high, branched, leafless, with small ovate scales. *Flowers* alter-
nate, distinct, small; fertile ones deciduous; sterile ones larger, white striped with purple.—Parasitic.  Beech-drops.

Order LXXXIX. SCROPHULARINEÆ.  Juss.  Lind.

Calyx divided, unequal, persistent. Corol usually irregular and bilabiate, or personate, deciduous; aestivation imbricate. Stamens usually 4, didynamous, rarely equal, sometimes 2. Ovary free, 2-celled; ovules definite or indefinite; style simple; stigma 2-lobed, rarely entire. Fruit capsular, rarely fleshy, 2—rarely 1-celled, 2—4-valved; the valves entire or bifid, with a dissepiment either double from the inflexed margin of the valves, or simple parallel and entire, or opposite and bipartible. Placenta central, either adhering to the dissepiment or separating from it. Seeds indefinite; embryo straight, included within a fleshy albumen.

Herbs, seldom shrubs. Leaves usually opposite.

Div. I. Veronicae.

1. Veronica. Linn.

Calyx 4—rarely 5-parted. Corol subrotate, 4-lobed, unequal, the lower segments narrower. Stamens 2, antheriferous, sterile ones none. Capsule 2-celled, obcordate. Seeds few.

"Spikes or racemes terminal.

1. V. serpyllifolia Linn.: racemes spiked, many-flowered; leaves ovate, slightly crenate; capsule broadly obcordate.


Thyme-leaved Speedwell.

"Spikes or racemes axillary.

2. V. scutellata Linn.: racemes alternate; pedicels divaricate; leaves linear, dentate-serrate.


3. V. anagallis Linn.: racemes opposite; leaves lanceolate, serrate; stem erect.

4. *V. beccabunga* Linn.: racemes opposite; leaves elliptical, obtuse, sub serrate, glabrous, on short petioles; stem procumbent, rooting at base.


**Brooklime.**

5. *V. officinalis* Linn.: flowers in spikes; leaves ovate or obovate, serrate, shortly petiolate, rough, pubescent; stem procumbent, rough. 


**Common Speedwell.**

***Flowers axillary, solitary.***

6. *V. agrestis* Linn.: flowers peduncled; leaves on short petioles, cordate-ovate, deeply serrate; segments of the calyx ovate-lanceolate; stem procumbent.


Hab. Clay grounds. Arctic Amer. to Car. W. to Miss. May, July. 2L.—Whole plant smooth. Stem simple, or branched only at base. Flowers very small, white or pale blue, nearly or quite sessile.

8. *V. arvensis* Linn.: flowers subsessile; leaves cordate-ovate, deeply serrate, floral ones lanceolate; segments of the calyx lanceolate; stem nearly erect.


**Common Speedwell.**

9. *V. hederifolia* Linn.: leaves cordate-ovate, mostly 5-lobed, petiolated; segments of the calyx cordate, ciliate, acute; stem procumbent.


10. *V. reniformis* Raf.: stem procumbent, hispid; leaves sessile, reniform, entire, hairy, villous; flowers axillary, solitary, subsessile.

Hab. Sandy soils. N. J. Raf. May—July. 2L.—*Stems* few, terete, procumbent. Flowers white or pale blue.—It should not be confounded with *V. reniformis* of Pursh. It may be only a variety of *V. arvensis.*

**2. LEPTANDRA. Nutt.**

Corol tubular—
Scrophularineae. 263

Campanulate; border 4-lobed, a little ringent, the lower segment narrower. Stamens 2, and with the pistil at length much exserted. Capsule ovate, acuminate, 2-celled, many-seeded, opening at the summit. Diandria. Monogynia.

L. virginica Nutt.: leaves whorled in fours or fives, lanceolate, serrate, petiolate.—Veronica virginica Linn.—Callistachya virginica Raf.


Div. II. Erinaceae.


Calyx 5-toothed. Corol with the tube slender; border 5-cleft and nearly equal; lobes cordate. Capsule 2-celled.

Didynamia. Angiospermia.

B. americana Linn.: stem simple; leaves lanceolate, subdentate, rough, 3-nerved; spikes with the flowers remote.


Div. III. Scrophularieae.

4. Scrophularia. Linn.

Calyx 5-cleft. Corol subglobose; limb contracted, short-ly 2-lipped; upper lip 2-lobed (with a scale or abortive stamen frequently within); lower 3-lobed. Capsule 2-celled.

Didynamia. Angiospermia.

1. S. marylandica Linn.: leaves cordate, serrate, acute, rounded at the base; petioles fringed near the base; branches of the panicle composed of loosely flowered clusters.—S. nodosa var. americana Mich.


2. S. lancelolata Pursh: leaves lanceolate, unequally and incisely serrate, acute at the base; petioles naked; fascicles of the panicle corymbed.


5. Antirrhinum. Linn.

Calyx 5-parted. Corol personate, with a deflexed promi-
nence or spur at the base. *Capsule 2-celled; opening at the extremity with minute valves. Didynamia. Angiospernia.*

1. *A. elatine Linn.*: procumbent, hairy; leaves alternate, hastate, very entire; peduncles solitary, axillary, very long.
   **Hab.** Sandy fields. N. Y. to Virg. July. ♀—Stem 1—2 feet long. *Flowers* small, bluish-white. Introduced.

2. *A. linaria Linn.*: stem erect; leaves linear-lanceolate, scattered, crowded; spikes terminal; flowers imbricate; calyx smooth, shorter than the spur.
   **Hab.** Road sides. N. S. June—Oct. ♀—Stems 1—2 feet high. *Flowers* large, yellow, in long spikes. Introduced. ?

3. *A. canadense Linn.*: assurgent, smooth, mostly simple; leaves scattered, erect, linear, obtuse; flowers in racemes; suckers (or sterile branches) procumbent.

6. **MIMULUS. Linn.**


1. *M. ringens Linn.*: erect, smooth; leaves sessile, lanceolate, acuminate, serrate; peduncles axillary, opposite, longer than the flower; teeth of the calyx oblong, acuminate.

2. *M. alatus Linn.*: erect, smooth; leaves petioled, ovate, acuminate, serrate; peduncles axillary, opposite, shorter than the flower; teeth of the calyx round, mucronate; stem square, winged.
   **Hab.** Wet meadows. N. Y. to Car. Aug. ♀—Stem 2 feet high, winged. *Flowers* pale blue.—Abundant in the western part of New-York. Distinguished from the former by its larger and petiolate leaves and winged stem.

7. **GRATIOLA. Linn.**


1. *G. aurea Muhl.*: smooth; leaves linear-oblong, subclasping, obscurely toothed; segments of the calyx equal; sterile filaments minute.—*G. officinalis Mich.*—*G. caroliniensis Pers.*
SCROPHULARINAE. 265

HAB. Sandy swamps. N. Y. to Car. Aug. 2l.—Stem 1—2 feet long, rooting at base. Flowers bright yellow, on axillary peduncles. *Hedge Hyssop.*

2. *G. virginica* Linn.: stem pubescent, assurgent, terete; leaves smooth, lanceolate, sparingly dentate-serrate, attenuate and connate at the base; segments of the calyx equal.


3. *G. megalocarpa* Ell.: leaves lanceolate, serrate, pubescent; peduncles opposite, longer than the leaves; segments of the calyx linear, as long as the globose capsule.—*G. acuminata* Pursh. (excl. syn.)


8. LINDERNIA. Linn.

Calyx 5-parted. Corol tubular, ringent; upper lip short, emarginate; lower one trilobed, unequal. Filaments 4; 2 longer, forked and sterile. Stigma emarginate. Capsule 2-celled, 2-valved; dissepiment parallel with the valves.

*Diandria. Monogynia.*

1. *L. dilatata* Muhl.: leaves dilated at the base, clasping, remotely toothed; peduncles longer than the leaves.—*L. pyzidaria* Pursh.—*Gratiola anagalloidea* Mich.

HAB. Inundated banks. N. Y. to Car. July, Aug. 2l.—Stem 6 inches high, 4-sided, smooth. Flowers pale purple, on alternate and opposite peduncles.

2. *L. attenuata* Muhl.: leaves lanceolate and obovate, narrowed at the base; peduncles shorter than the leaves, erect.—*L. pyzidaria* var. major Pursh.

HAB. Inundated banks. N. Y. to Car. July—Sept. 2l.—Stem erect or procumbent. Peduncles shorter or nearly as long as the leaves.

3. *L. monticola* Muhl.: stem slender, dichotomous; radical leaves spathulate; cauline ones linear, small and remote; peduncles very long, at length deflected.

HAB. White Hills, N. H. June. 2l.—Stem erect, 4—6 inches high. Radical leaves obscurely toothed, punctate; cauline ones very few. Flowers pale blue.

9. SCHWALBEA. Linn.

Calyx ventricose, tubular, obliquely 4-cleft; upper segment shortest; the lower large, emarginate or bidentate. Corol bilabiate; upper lip entire, arched; the lower 3-lobed. Capsule ovate-roundish, 2-celled, 2-valved; dissepiment produced by the inflected margin of the valves, and parallel with

S. americana Linn.


10. CHELONE. Linn.


C. glabra Linn.: smooth; leaves opposite, oblong, lanceolate; acuminate, serrate; flowers in dense spikes.


11. PENTSTEMON. Linn.


1. P. lexigatum Linn.: smooth; leaves ovate-oblong, clasping at base, slightly toothed, the lower ones entire; flowers paniculate; sterile filament bearded near the top.—Chelone pentstemon Walt.

Hab. Low grounds. Penn. to Car. June. 2 ft. — Stem 1—2 feet high. Flowers in terminal panicles.

2. P. pubescens Linn.: stem pubescent; leaves serrulate, lanceolate-oblong, sessile, clasping; flowers in panicles; sterile filament bearded from the top below the middle.


12. HERPESTIS. Gaert.


H. cuneifolia Pursh: very smooth; leaves cuneate-ovate, obscurely crenate near the summit; peduncles as long as the leaves; corol 5-cleft — Monniera cuneifolia Mich.

Hab. Inundated banks. Penn. to Car. Aug. 2 ft. — Stem pros-
trate, creeping. *Leaves* opposite, thick, somewhat clasping. *Flowers* very small, pale purple, solitary, axillary.

13. HEMIANTHUS. *Nutt.*

*Calyx* tubular, cleft on the under side; border 4-toothed. *Corol* with the upper lip obsolete; the lower 3-parted; intermediate segment ligulate and truncate, much longer, closely incurved. *Stamens* 2; filaments bifid, lateral fork antheriferous. *Style* bifid. *Capsule* 1-celled, 2-valved, many-seeded. *Diandria. Monogynia.*

*H. micranthoides Nutt.*—Herpestis micrantha Pursh. (excl. syn.)


14. COLLINSIA. *Nutt.*

*Calyx* 5-cleft. *Corol* bilabiate, orifice closed; upper lip bifid; the lower trifid; intermediate segment carinately sacculate and closed over the declinate style and stamens. *Capsule* globose, partly 1-celled and imperfectly 4-valved. *Seeds* 2—3, umbilicate.

*C. verna Nutt.*: leaves ovate-oblong, sessile, obtuse, the lower ones attenuated into a long petiole; peduncles axillary, long.


15. LIMOSELLA. *Linn.*


*L. subulata Ives*: leaves linear, very narrow, scarcely dilated at the apex; scape 1-flowered, as long as the leaves.

*Hab.* Muddy shores. N. S. Aug. 2f.—Stem an inch high. *Flowers* very small, bluish-white. *Mudwort.*

16. GERARDIA. *Linn.*


*Flowers* purple.

1. *G. purpurea Linn.*: stem angular, much branched; leaves linear, long, acute at each end, very scabrous; flowers nearly sessile; teeth of the calyx subulate, short, acute.
DICOTYLEDONOUS PLANTS.


2. *G. tenuifolia* Linn.: stem much branched, smooth; leaves linear, acute at each end, smooth, rough; peduncles axillary, opposite, longer than the flowers; teeth of the calyx, small, acute.—*G. erecta* Walt. Hab. Fields and woods. N. Y. to Car. W. to Miss. July—Sept. 2.—Stem 6—10 inches high, much branched. Flowers small, purple.—Differs from the former in its corol and peduncle.


3. *G. auriculata* Mich.: subsimple, scabrous; leaves ovate, lanceolate, auriculate at the base, very entire, sessile; flowers sessile, axillary.


5. *G. flavum* Linn.: pubescent; stem mostly simple; leaves lanceolate, entire or toothed, the lower ones notched and pinnatifid; flowers axillary, opposite, nearly sessile.


6. *G. glauca* Eddy: smooth; stem panicled; leaves petioled, pinnatifid, paler beneath; the upper ones lanceolate; flowers axillary, opposite, on pedicels.—*G. quercifolia* Pursh. Hab. Woods. N. Y. to Car. W. to Miss. Aug., Sept. 2.—Stem 3—5 feet high. Flowers large, yellow.—Resembles the preceding, but has the stem smooth and more branched, the leaves petioled and pinnatifid, and the flowers on pedicels.

7. *G. pedicularia* Linn.: stem much branched, villous; leaves oblong, smoothish, pinnatifid; segments uncinate, serrate; flowers axillary, opposite, on pedicels; segments of the calyx leafy, notched and toothed.


DIV. IV. RHINANTHÆ.

17. RHINANTHUS. Linn.

Calyx inflated, 4-toothed. Corol ringent; upper lip com-
pressed; lower one flat, 3-lobed. **Capsule** 2-celled, obtuse, compressed. Didynamia. Angiospermia.

*R. crista galli* Linn.: upper lip of the corol arched; calyx smooth; leaves lanceolate, serrate.


18. **PEDICULARIS.** Linn.


1. *P. pallida* Pursh: stem smooth, branched, with pubescent lines; leaves subopposite, lanceolate, pinnatifid, toothed and crenate, sebaceous on the margin; helmet of the corol truncated at the apex; calyx bifid with round segments—and *P. lanceolata* Mich.

**Hab.** Low grounds. N. Y. to Virg. W. to Miss. Sept. 2f. —Stem 1—2 feet high. **Flowers** large, straw yellow. **Capsule** short and broad-ovate.

2. *P. canadensis* Linn.: stem simple; leaves pinnatifid, notched and toothed; spike leafy at the base, hairy; helmet of the corol with 2 setaceous teeth; calyx obliquely truncate.


3. *P. gladiata* Mich.: stem simple; leaves lanceolate, pinnatifid, toothed; spikes leafy, hairy, with the flowers alternate; capsule terminating in a long flat point.

**Hab.** Wet meadows. N. Y. to Virg. May, June. 2f. —Stem a foot high. **Flowers** yellow and purple.

19. **EUPHRASIA.** Linn.

Calyx tubular, 4-cleft. Corol bilabiate; upper lip bifid; lower one of 3 notched lobes. **Anthers** with their lobes mucronate at base. **Capsule** ovate-oblong, 2-celled. **Seeds** striate. Didynamia. Angiospermia.

*E. officinalis* Linn.: leaves ovate, deeply toothed, furrowed; flowers axillary towards the summit; calyx 4-toothed, hairy; segments of the lower lip of the corol emarginate.


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DICOTYLEDONOUS PLANTS.

20. BARTSIA. Linn.

_Calyx_ 4-cleft, mostly coloured. _Corol_ ringent, with a contracted orifice; upper lip concave, longest, entire; lower one in 3 equal reflexed lobes. _Capsule_ ovate, compressed, 2-celled, many-seeded. _Seeds_ angular.

_Didynamia._ Angiospermia.

_B. pallida_ Mich.: leaves alternate, linear, undivided, 3-nerved; upper ones lanceolate; floral ones sulcate, toothed at the end; teeth of the calyx entire, acute.


_Sprengel has removed this species to the genus Castelleja of Mutis._

21. EUCHROMA. Nutt.

_Calyx_ ventricose, 2—4-cleft. _Corol_ bilabiate; upper lip very long and linear, embracing the style and stamens; lower lip short and trifid, without glands. _Anthers_ linear, with unequal lobes, all cohering in the form of an oblong disk. _Capsule_ compressed, ovate, oblique, 2-celled, 2-valved. _Seeds_ numerous, small, surrounded by a membranaceous inflated vesicle.

_Didynamia._ Angiospermia.

_E. coccinea_ Nutt.: leaves and coloured bracts pinnatifidly 3-cleft; segments divaricate; calyx 2-cleft, nearly as long as the corol; segments retuse and emarginate.—_Bartsia coccinea_ Linn.


_Painted-cup._

22. MELAMPYRUM. Linn.

_Calyx_ 4-cleft. Upper lip of the _corol_ compressed, margin folded back; lower lip grooved, trifid, subequal. _Capsule_ 2-celled, oblique, opening on one side; cells 2-seeded. _Seeds_ cartilaginous, cylindric-oblong. _Didynamia._ Angiospermia.

_M. americanum_ Mich.: lower leaves lanceolate or linear-lanceolate; floral ones lanceolate, toothed at the base; flowers axillary, distinct. —_M. lineare_ Lam. and _M. latifolium_ Muhl.

_Hab._ Woods. Can. to Car. June, July. 22.—_Stem_ 8—12 inches high, branched at the upper part. _Flowers_ yellow.—It varies considerably in the form of the leaves. _Cow Wheat._

Order XC. LABIATÆ. Juss. Lind.

_Calyx_ tubular, regular or bilabiate, persistent. _Corol_ bilabiate; upper lip entire or bifid, the lower 3-cleft; the upper
in aestivation overlapping the lower. *Stamens* 4, didynamous, (2 being sometimes abortive,) inserted on the corol, alternate with the lobes of the lower lip; *anthers* 2-celled, sometimes apparently 1-celled, either by the obliteration of the septum or by the abortion of a cell. *Ovary* free, deeply 4-lobed; *ovules* 4; *style* 1, proceeding from the base of the lobes; *stigma* bifid, usually acute, sometimes unequal or dilated. *Fruit* 1—4 small nuts, enclosed within the persistent calyx. *Seeds* erect, with little or no albumen; *embryo* erect; *cotyledons* flat.

Herbs or undershrubs with square stems and opposite branches. *Leaves* opposite, without stipules.

**Div. I. Menthoideæ.**

1. **LYCOPUS.** *Linn.*


1. *L. europæus* *Linn.*: leaves narrow, lanceolate, serrate; *calyx* 5-cleft with the segments acuminate, longer than the seed.—*L. americanus* *Muhl.*—*L. europæus* var. *angustifolius* *Torr.*


2. *L. virginicus* *Linn.*: leaves broad-lanceolate, serrate, tapering and entire at the base; *calyx* shorter than the seed, spineless.


*Water Horehound.*

3. *L. unijlorus* *Mich.*: plant small; root tuberous; stem simple; leaves oval, obtuse, obsoletely toothed; axils 1-flowered.


2. **ISANTHUS.** *Mich.*


*Didynamia. Gymnospermia.*
DICOTYLEDONOUS PLANTS.

1. *caruleus* *Mich.*


— *Plant* viscidly pubescent, a foot high. *Leaves* oval-lanceolate, acute at both ends, 3-nerved. *Flowers* pale blue, 1—2 on axillary peduncles.

3. MENTHA. *Linn.*

*Corol* nearly regular, 5-lobed; the broadest lobe notched. *Stamens* erect, distant. **Didynamia. Gymnospermia.**

* *Flowers in a spike.*

1. *M. piperita* *Linn.*: spikes obtuse, interrupted below; leaves ovate, subglabrous, petiolate; calyx very smooth at the base.

**Hab.** Marshy grounds near Salina, N. Y.; apparently native. July. 2*.—* **Stem** 12—15 inches high, erect, often purplish. *Leaves* varying in form from cordate-ovate to ovate-lanceolate. *Flowers* purple. **Peppermint.**

2. *M. viridis* *Walt.*: spikes interrupted; leaves subsessile, lanceolate-ovate, smooth; bracts setaceous, and with the teeth of the calyx somewhat hairy; stamens not exserted.—*M. tenuis* *Mich.*

**Hab.** Wet grounds. N. Y. to Geor. July, Aug. 26.—* **Stem** 12—18 inches high. *Flowers* pale purple, in a long spike consisting of remote whorls. **Spearmint.**

**/* *Flowers whorled.*

3. *M. canadense* *Linn.*: flowers whorled; leaves lanceolate, serrate, petiolated, hairy; stamens as long as the corol.

**Hab.** Sandy soils. Can. and N. S. W. to Miss. Aug., Sept. 26.—* **Stem** a foot high. *Flowers* in axillary whorls, pale purple.

4. *M. borealis* *Mich.*: ascending, pubescent; leaves petiolated, ovate-lanceolate, acute at both ends; flowers in whorls; stamens exsert.

**Hab.** Moist grounds. Can. and N. S. July, Aug. 26.—* **Stem** 1—2 feet high. *Flowers* white or pale purple. **Stamens** twice as long as the corol.—Perhaps not distinct from the preceding.

DIV. II. SATUREINEÆ.

4. PYCNANTHEMUM. *Mich.*

Heads of flowers surrounded by an involucre of many bracts. *Calyx* tubular, striate, 5-toothed. *Corol* with the upper lip nearly entire, the lower one trifid; middle segment longer. *Stamens* distant; cells of the anthers parallel. **Didynamia. Gymnospermia.**

* *Stamens* exserted.

1. *P. incanum* *Mich.*: leaves oblong-ovate, shortly petiolate, acute, sub serrate, hoary-tomentose; heads of flowers pedunculate, compound, lateral and terminal; bracts setaceous.—*Clinopodium incanum* *Linn.*
LABIATÆ.

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Hab. Low fields. N.Y. to Car. July—Sept. 2f. —Stem 2—3
feet high, whitish. Flowers pale red, in dense lateral and terminal
heads or whorls. —Whole plant covered with white soft
down. Wild Basil.

2. P. aristatum Mich.: leaves lanceolate-ovate, sub serrate, on very
short petioles, whitish; heads sessile; bracts awned. —Nepeta virginiaca
Linn.

1—2 feet high. Upper leaves hoary. Flowers very small, white,
in one or two sessile whorls and a terminal head. Bracts and
calyx terminated by long awns.

3. P. linifolium Pursh: stem straight, much branched, somewhat
scabrous; leaves linear, 3-nerved, very entire, smooth; heads terminal,
in a fasciculate corymb. —Brachystemum virginicum Mich.—B. linifolium Willd.

Stem 12—18 inches high, with trichotomous fastigate branches.
Flowers white, minute, spotted internally. Virginian Thyme.

**Stamens included.**

4. P. lanceolatum Pursh: stem straight, branched, somewhat rough;
leaves linear-lanceolate, subsessile, very entire, smooth; heads terminal,
sessile, in fasciculate corymbs. —P. virginicum.—Brachystemum lanceolatum Willd.

Flowers minute, white, in heads which form irregular corymbs.

5. P. muticum Pers.: leaves ovate-lanceolate, subdentate, smoothish;
heads terminal; bracts lanceolate, somewhat acute. —Brachystemum
muticum Mich.

feet high. Leaves large. Flowers whitish, small, in loosely
flowered heads.

6. P. verticillatum Pers.: leaves ovate-lanceolate, sometimes toothed;
whorls sessile, compact; bracts acuminate. —Brachystemum verticillatum Mich.

Hab. Mountains. Penn. to Car. July, Aug. 2f. —Stem 2 feet
high, very pubescent when young. Flowers small, white.

5. THYMUS. Linn.

Calyx subcampanulate, orifice closed with villous hairs. Corol shortly 2-lipped; upper one notched; the lower one the largest, submarginate. Didynamia. Gymnospermia.

T. serpyllum Linn.: stems branched, decumbent; leaves flat, ovate,
obtuse, entire, petioled, more or less ciliate at base; flowers capitate.

spreading, procumbent, branched. Leaves more or less hairy. Flowers purple or white, in heads, on short hairy pedicels. Wild Thyme.
6. ORIGANUM. Linn.

Flowers collected into a 4-sided cone or dense spike. Upper lip of the corol erect, flat, emarginate; lower 3-parted. Didynamia. Gymnospermia.

O. vulgare Linn.: spikes roundish, panicked, clustered, smooth; bracts ovate, longer than the calyx; leaves ovate, entire. 
Hab. Rocky fields. N. S. July—Sept. 2ft.—Stems 8—12 inches high, hairy. Flowers purplish, in numerous small spikes, which are crowded together so as to form a terminal head.

Marjoram.

7. HYSSOPUS. Linn.


1. H. nepetoides Linn.: spike formed of whorls, cylindrical; leaves opposite, subcordate, ovate, acuminate, toothed; styles shorter than the corol.

2. H. scorpiularifolius Linn.: spike formed of whorls, cylindrical; leaves cordate, ovate, acuminate, obtusely toothed; styles longer than the corol.

Div. III. Ajugoidæ.

8. TEUCRIUM. Linn.

Upper lip of the corol short, 2-parted; the lower one 3-lobed, the middle lobe the largest. Stamens projecting through the cleft in the upper lip. Didynamia. Gymnospermia.

1. T. canadense Linn.: hoary-pubescent; leaves ovate-lanceolate, serrate, all petiolate; spike whorled, crowded, long; bracts longer than the calyx.

2. T. virginicum Linn.: pubescent; leaves ovate-oblong, serrate; the upper ones subsessile; spikes whorled, crowded; bracts as long as the calyx.
Hab. Low grounds. N. Y. to Car. W. to Miss. Aug. 2f.—Resembles the preceding and is not perhaps specifically distinct.
9. TRICHOSTEMA. Linn.


1. T. dichotoma Linn.: leaves rhombic-lanceolate, pubescent; stamens very long.


2. T. linearis Walt.: stem viscidly pubescent; leaves linear-smooth, sessile, acute at each end; teeth of the calyx awned; stamens very long.—T. dichotoma var. linearis Pursh.

Hab. Sandy fields. N. J. to Car. June—Sept. $^\circ$.—Resembles the former in habit, but is smaller. It is considered distinct by Nuttall and Elliott.

10. COLLINSONIA. Linn.

Calyx bilabiate, 3-toothed above, bifid below. Corol much longer than the calyx, somewhat funnel-form, unequally 5-lobed; lower lobe longer and fimbriate. Stamens 2—4.

Diandria. Monogynia.

C. canadensis Linn.: leaves broad-cordate-ovate, glabrous; teeth of the calyx short, subulate; panicle terminal, compound.


DIV. IV. MONARDEÆ.

11. MONARDA. Linn.

Calyx 5-toothed, cylindric, striate. Corol ringent, with a long cylindric tube; upper lip linear, nearly straight and entire, involving the filaments; lower lip reflexed, broader, 3-lobed, the middle lobe longer. Diandria. Monogynia.


1. M. didyma Linn.: nearly smooth; stem acute-angled, smooth; leaves broad-ovate or oblong, sometimes cordate, acuminate, mucronate, serrate, rugose, on hairy petioles, midrib and veins hairy beneath; heads of flowers large, often proliferous; bracts oblong, acuminate, nearly entire, coloured; calyx somewhat pubescent; corol large, pubescent.—M. purpurea Lam.—M. coccinea Mich.—M. kalmiana Pursh.

Hab. Swamps. Can. to Car. July, Aug. $^\circ$.—Stem 2—3 feet high, simple or branched at the top. Leaves varying from lanceolate to broad-ovate, sometimes attenuate at base, sometimes subcordate. Flowers scarlet or crimson, in large heads which are sometimes proliferous.—This species, like most of
the rest, is very variable. I have specimens from Whitesborough, N. Y., in which the leaves are much attenuated at base as in Pursh's figure of \textit{M. kalmiana}; but this is not a constant character, nor do I know of any by which that species can be distinguished. \textit{Oscego Tea}.

2. \textit{M. fistulosa} Linn.: stem obtuse-angular, nearly smooth, hollow; leaves oblong-lanceolate, acuminate, coarsely serrate, thin and nearly smooth, on slightly pubescent petioles; heads simple or prolificous; outer bracts oblong, smooth; calyx long, curved, bearded; corol rough, pale.

\textbf{Hab.} Rocky banks. N. Y. to Car. July, Aug. \textit{2f}.—\textit{Stem} 2 feet high, always simple. \textit{Leaves} yellowish-green, petioled, 3—4 inches long and 1 broad, membranaceous, nearly smooth, coarsely-toothed. \textit{Flowers} pale yellow, in heads which are smaller than in the preceding; \textit{corol} pubescent.—When cultivated the leaves are often smaller, subcordate, ovate, and more hairy than in the native state. Abundant near Rochester, N. Y.

3. \textit{M. allophylla} Mich.: stem obtuse-angular, branched and hairy above; leaves oblong-lanceolate, remotely toothed, smooth above, somewhat hairy beneath; heads simple; outer bracts ovate, acute, coloured; calyx short, densely bearded at the throat.—\textit{M. longifolia} Lam.—\textit{M. mollis} Pursh not of Linn.—\textit{M. oblongata} Ait. Torr.

\textbf{Hab.} Rocky woods. N. Y. to Car. July. \textit{2f}.—\textit{Stem} 3—4 feet high, much branched. \textit{Leaves} often rounded at base, and with a few large teeth, varying in the degree of pubescence. \textit{Flowers} in heads, about the size of the preceding, pale blue.—The habit is sufficiently characteristic of this species.

4. \textit{M. clinopodia} Linn.: stem obtuse-angular, smooth; leaves ovate-lanceolate, remotely serrate, tapering at base, nearly smooth; heads simple; bracts broad-ovate, acute, entire, nearly smooth; calyx short, ciliate; corol pubescent, slender.—\textit{M. glabra} Linn.?

\textbf{Hab.} Woods. Can. to Car. Pursh. July—Sept. \textit{2f}.—\textit{Stem} 3 feet high, obtuse-angular and nearly smooth. \textit{Leaves} ovate-lanceolate, tapering at base into a petiole, with a few serratures near the middle, punctate as in the preceding, whithish beneath, (closely resembling those of \textit{Clinopodium incanum,}) though apparently quite smooth. \textit{Flowers} pale purple.—I am not sure that this is the plant described by Pursh under the above name, but I believe it to be the Linnaean one. It is cultivated at Albany, and in many respects much resembles the preceding, with which it may be hereafter united.

** Calyx with 5 unequal teeth. \textit{Flowers} in whorls. \textbf{Cheilycitis}. \textit{Ref}.

5. \textit{M. punctata} Linn.: nearly smooth; stem obtuse-angular, branched, white-downy; leaves lanceolate-oblong, remotely and obscurely serrate, smooth; flowers whorled; bracts lanceolate, coloured, longer than the whorl.—\textit{M. lutea} Mich.

\textbf{Hab.} Pine barrens. N. J. to Car. W. to Miss. Sept. \textit{2f} and \textit{3}.—\textit{Stem} 2—3 feet high, branched. \textit{Flowers} in whorls; \textit{calyx} long; \textit{corol} yellow; dotted with brown. \textit{Bracts} large, red and

Horse Mint.


6. M. hirsuta Pursh: whole plant hairy; leaves on long petioles, ovate, acuminate serrate, hirsute; flowers small, in whorls; bracts short, oblong, acuminate; calyx 2-lipped; upper lip of two short acuminate teeth; lower of three almost bristleform awns.—M. ciliata Mich.

Hab. Low woods. N. Y. to Car. W. to Miss. June, July. 2ft.—Stem 2—3 feet high, branched. Whorls 4 or 5 on the upper part of each branch. Corol small, pale blue, dotted with purple.

12. CUNILA. Linn.

Calyx cylintrical, 10-striate, 5-toothed. Corol ringent, with the upper lip erect, flat and emarginate. Stamens 2-sterile; the 2 fertile ones with the style exserted nearly twice the length of the corol. Stigma unequally bifid.

Diandria. Monogynia.

1. C. mariana Linn.: leaves ovate, serrate; corymb axillary and terminal, dichotomous.—Ziziphora mariana R. & S.


Dittany.

2. C. glabella Mich.: smooth; stem surculose; radicle leaves nearly oval; stem leaves oblong-linear, all entire; flowers axillary, mostly solitary, on long peduncles.—Hedeoma glabra Pers.—Ziziphora glabella R. & S.

Hab. Limestone rocks. Niagara Falls. W. to Miss. Aug. 2ft. —Stem 8—10 inches high, branched below. Corol violet, much longer than the calyx.—Dr. Houghton has found this species at the Falls of St. Anthony.

Div. V. Nepetee.

13. GALEOPSIS. Linn.

Calyx 5-cleft, awned. Upper lip of the corol vaulted, subcrenate; lower lip with 3 unequal lobes, having 2 teeth on its upper side.

Didynamia. Gymnospermia.

1. G. ladanum Linn.: stem hairy, not swollen below the joints; leaves on short petioles, lanceolate, more or less serrate, hairy; flowers whorled; upper lip of the corol slightly crenate.

Hab. Waste grounds. N. S. July. 2ft.—Stem a foot high,
branched. **Flowers** variegated with red and white. **Calyx** hairy. Smaller than the next. Introduced. **Red Hemp Nettle.**

2. **G. tetrahit** Linn.: stem hispid, swollen between the joints; leaves ovate, hispid, serrate; flowers numerous, in whorls; corol twice as long as the calyx.

**Hab.** Waste places. N. S. W. to Mich. July. 2. —Stem 1—2 feet high. **Flowers** rose-coloured, with a white tube; lower lip dotted with purple. **Calyx** hispid, the teeth pungent. Introduced. **Hemp Nettle.**

14. **LEONURUS.** Linn.

**Calyx** 5-angled, 5-toothed. Upper lip of the corol very hairy above, entire; lower one reflexed, 3-parted. **Anthers** sprinkled with shining dots. **Didynamia. Gymnospermia.**

**L. cardiaca** Linn.: leaves petiolate, pubescent, paler beneath; cauline ones lanceolate, 3-lobed; upper ones entire; flowers in numerous whorls; corol downy on the upper lip; calyx stiff, becoming spiny.

**Hab.** Waste grounds. Can. to Car. July, Aug. —Stem 2—3 feet high, branched, villous. **Flowers** in crowded whorls, white with a reddish tinge. Introduced. **Motherwort.**

15. **LAMIUM.** Linn.

**Calyx** 5-toothed; the teeth acuminate, spreading. Upper lip of the corol vaulted, entire; lower one 2-lobed, toothed on each side at the base. **Anthers** hairy.

**Didynamia. Gymnospermia.**

**L. amplexicaule** Linn.: floral leaves broadly cordate, sessile, crenate or cut; lower ones petiolate.

**Hab.** Fields and road sides. N. S. May—Nov. —Stem 6—8 inches high. **Flowers** with the tube slender, rose coloured. Introduced. ? **Dead Nettle.**

16. **DRACOCEPHALUM.** Linn.

**Calyx** subequal, 5-cleft. Orifice of the corol inflated; upper lip concave. **Stamens** unconnected.

**Didynamia. Gymnospermia.**

1. **D. virginianum** Linn.: spikes long, with the flowers crowded; bracts small, subulate; teeth of the calyx short, nearly equal; leaves sessile, opposite, linear-lanceolate, acutely serrate.

**Hab.** Mountain meadows. N. Y. to Car. W. to Michigan. June. 2. —Stem 1—2 feet high, smooth except at the summit. **Flowers** large, bright purple, generally opposite, in terminal spikes.—Dr. Houghton has found this species as far west as Red Cedar River.

2. **D. denticulatum** Linn.: spikes long, with the flowers distant;
bracts small, subulate; teeth of the calyx nearly equal; leaves sessile, ovate-lanceolate, slightly toothed.—*Prasium purpureum* Walt.


17. STACHYS. Linn.

Calyx 5-cleft, awned. Upper lip of the corol vaulted; lower one 3-lobed, with the 2 lateral lobes reflexed. Stamens when old bent downwards. Didynamia. Gymnospermia.

1. *S. hyssopifolia* Mich.: scarcely pubescent, slender, erect; leaves sessile, linear-lanceolate, remotely subdentate; whorls about 4-flowered. — *S. palustris* Walt.

Hab. Meadows. N. Y. to Car. July. 2 ft. — Stem 6—12 inches high. Leaves often linear, very finely serrulate. Flowers sessile. Calyx with the teeth almost spinous. Corol a little hairy, purple.—This plant has been found a few miles east of this city.

2. *S. aspera* Mich.: stem erect, angles hairy backwards; leaves subpetiolate, lanceolate, acutely serrate, very smooth; whorls about 6-flowered; calyx teeth divaricate, spiny. — *S. arecensis* Walt.


3. *S. sylvestria* Nutt.: leaves shortly petiolate, cordate, ovate, acuminate, serrate, hairy; floral ones nearly linear; whorls of 6 flowers; calyx hairy, with 5 acute teeth. — *S. hispida* Pursh.


18. NEPETA. Linn.

Calyx arid, straight. Upper lip of the corol notched; lower one 3-lobed; the middle lobe the largest and crenate; lateral ones very short, reflexed. Didynamia. Gymnospermia.

*N. cataria* Linn.: flowers spiked; whorls slightly pedunculate; leaves petioled, cordate, dentate-serrate, pale underneath, covered with soft down; flowers dotted.

Hab. Fields and roads sides. N. S. June—Sept. 2 ft. — Stem 2—3 feet high, and with the leaves downy and whitish. Flowers white, with a reddish tinge. Introduced. — Cat-mint.

19. GLECHOMA. Linn.

Calyx 5-cleft, subequal. Upper lip of the corol bifid; the lower one trifid, with the intermediate lobe emarginate. Anthers approaching each other in pairs and forming a cross. Didynamia. Gymnospermia.
DICOTYLEDONOUS PLANTS.

G. hederacea Linn.: leaves reniform, crenate, hairy, veined.
Hab. Road sides. N. S. W. to Ohio. May, June. 21.—Stem a foot high, decumbent. Flowers large, blue, in threes, axillary.

Ground Ivy.

20. MARRUBIUM. Linn.

Calyx with 10 ribs and 5 or 10 spreading teeth. Upper lip of the corol bifid, linear, straight; lower one trifid; middle segment the largest, emarginate.

Didynamia. Gymnospermia.

M. vulgare Linn.: stem erect, woolly; leaves roundish-ovate, toothed, rugose, very woolly beneath; whorls villous, many-flowered; calyx with 10 setaceous uncinate teeth.

21. BALLOTA. Linn.

Calyx with 10 ribs and 5 teeth. Upper lip of the corol concave, notched; lower one trifid; middle lobe the largest, emarginate, Didynamia. Gymnospermia.

B. nigra Linn.: leaves ovate, undivided, serrate; calyx dilated above, subtruncate, with spreading teeth.
Hab. Mass. Big. July. 2f.—Stem 2—3 feet high. Leaves a little cordate. Flowers purple or white, in axillary whorls.

Black Horchound.

22. MELISSA. Linn.

Calyx arid, above nearly flat; upper lip subfastigiate. Upper lip of the corol partly vaulted, bifid; middle lobe of the lower lip cordate.

Didynamia. Gymnospermia.

M. officinalis Linn.: whorls dimidiate; bracts oblong, pedicellate; leaves ovate-acute, serrate.
Hab. Road sides, &c. N. S. July. 2f.—Naturalized. Balm.

23. HEDEOMA. Pers.

Calyx bilabiate, gobbous at the base; upper lip 3-toothed, lower 2; dentures all subulate. Corol ringent. Stamens 2-sterile; the 2 fertile ones about the length of the corol.

Diandria. Monogynia.

H. pulegioides Pers.: leaves oblong, serrate; peduncles axillary, many-flowered.—Cunila pulegioides Linn.—Ziziphora pulegioides R. & S.
24. CLINOPODIUM. Linn.

Involucre of many linear acuminate leaflets placed under the whorls of flowers. Upper lip of the corol erect, emarginate; lower one the largest, emarginate.

Didynamia. Gymnospermia.

C. vulgare Linn.: leaves petiolate, ovate, sub serrate, hairy; whorls hairy, axillary and terminal; pedicels branched; bracts setaceous.


25. PRUNELLA. Linn.

Upper lip of the calyx with 3 very short teeth. Filaments forked at the extremity, one point bearing the anther. Stigma bifid.

Didynamia. Gymnospermia.

P. vulgaris Linn.: leaves petiolate, oblong-ovate, toothed at base; lips of the calyx unequal; the upper one truncate, 3-awned; stem ascending.

Hab. Meadows. Can. to Car. W. to Miss. June—Aug. 2l. —Stem 8—12 inches high, hairy. Flowers large, purple, densely whorled, so as to form an imbricated oblong spike.—P. pennsylvaniaica of Willdenow is a mere variety. Introduced.

Self-heal.

26. SCUTELLARIA. Linn.

Calyx bilabiate; upper lip with a lid covering the seeds like an operculum. Corol bilabiate; upper lip concave; lower 3-lobed.

Didynamia. Gymnospermia.

* Flowers axillary, solitary.

1. S. galericulata Linn.: somewhat branched; leaves cordate-lan- ceolate, subsessile, crenate; flowers axillary, solitary or in pairs; calyx hairy.


Common Skull-cap.

2. S. gracilis Nutt.: stem mostly simple; leaves remote, broad- ovate, toothed, smooth and sessile, scabrous on the margin; upper ones smaller, entire; flowers axillary.

Hab. Shady rocks. Penn. S. to Louisiana. June. 2l.—Stem 12—18 inches high, slender, erect. Leaves opposite, remote, sparingly toothed, veined. Flowers pale blue, axillary and op-
posite.—I have specimens collected near New-Orleans by Dr. T. R. Ingalls.

3. S. ambigua Nutt.: low, subdecumbent and divaricately branched; leaves sessile, ovate, remotely and rarely serrate, subhirsute above; flowers small, axillary.—S. parrula Mich.?

Hab. Rocky grounds. Can. N. J. Ohio. W. to Miss. July. 2f.—Root long, consisting of a succession of tubers. Stem coloured, branched divaricately from near the base, 4—6 inches high. Leaves small, closely sessile, prominently veined. Flowers small, axillary, blue, hairy.—I have found this plant on the slate hills near New-Brunswick, N. J. The specimens obtained from that locality, agree exactly with the Canadian plant received from my friend, Dr. A. F. Holmes, of Montreal. It has also been found by Dr. Houghton on the Upper Mississippi.

** Flowers racemose.

4. S. lateriflora Linn.: much branched, nearly smooth; leaves on long petioles, ovate, toothed, those of the stem slightly cordate, membranaceous; racemes lateral, leafy.

Hab. Wet meadows. Can. to Car. and W. to Miss. July, Aug. 2f.—Stem 1—2 feet high, branching. Flowers small, blue, in long racemes.—At one time in great repute as a cure for hydrophobia.

Skull-cap.

5. S. integrifolia Linn.: stem nearly simple, densely pubescent; leaves subsessile, oblong, obtuse, wedge-form at base, obscurely toothed; racemes loose, leafy.

Hab. Swamps. N. Y. to Car. W. to Miss. June. 2f.—Stem 18—24 inches high. Flowers large, blue, opposite, often in panicles.—A variable species.

6. S. hyssopifolia Linn.: minutely and densely pubescent, branched; leaves lanceolate-linear, very entire.

Hab. Swamps. Penn. Muhl. June. 2f.—Stem a foot high. Leaves obtuse. Flowers very large.—Perhaps only a variety of the preceding.

7. S. pilosa Mich.: nearly simple; pubescent; leaves remote, rhombic-ovate, obtuse, attenuated at the base into a petiole, rounded-crenate; racemes terminal, loose, mostly branched; bracts lanceolate entire.—S. caroliniana Walt.—S. ovalifolia Muhl. Torr.


8. S. canescens Nutt.: branched; leaves ovate, acute, petiolate, acutely toothed, under side with the bracts and flowers hoary-villous; lower leaves subcordate; racemes pedicelled, subpaniculate, axillary and terminal; bracts ovate-lanceolate, longer than the calyx.

27. SALVIA. Linn.

Calyx subcampanulate, 2-lipped; upper lip 3-toothed; lower bifid. Corol ringent. Filaments 2, fertile, bifid, one lobe ascending with a dimidiate anther, the other sterile.

Diandria. Monogynia.

1. S. lyrata Linn. : stem nearly leafless, retrorsely pubescent; radi- cle leaves lyrate-dentate; upper lip of the corol very short.
   Hab. Woods. Can. to Car. June. 2fl.—Stem about a foot high, densely covered with reflected hairs. Leaves mostly radical, more or less lyrate or pinnatifid, very obtuse. Flowers blue, about 6 in a whorl.

2. S. claytoni Ell. : leaves cordate-ovate, sinuate, toothed, rugose; teeth of the upper lip of the calyx connivent.—Salvia verbenacea Muhl.

3. S. urticifolia Linn. : viscous and villous; leaves ovate-oblong, toothed, base narrowed into a petiole; calyx 3-cleft, the upper segment 3-toothed.

Order XCI. VERBENACEÆ. Brown. Lind.

Calyx tubular, persistent, inferior. Corol hypogynous, monopetalous, tubular, deciduous, limb usually irregular. Stamens usually 4, didynamous, seldom equal, sometimes only 2. Ovary 2—4-celled; ovules erect or pendulous, solitary or twin; style 1; stigma bifid or undivided. Fruit a drupe or berry. Seeds erect or pendulous; albumen none or very thin; embryo erect.

Trees, shrubs or herbs. Leaves generally opposite, simple or compound, without stipules.

1. VERBENA. Linn.


* Leaves laciniate.

1. V. hastata Linn. : erect, tall; leaves lanceolate, acuminate, sharply serrate; lower ones lobed or subhastate; spikes filiform, erect, panicled, somewhat imbricate; flowers tetrandrous.
2. **V. spuria Linn.**: stem decumbent, branched, divaricate; leaves laciniate, much divided; spikes filiform, loose; bracts longer than the calyx.

Stem 1—2 feet long. Flowers small, blue, in paniculate spikes, at length scattered.

** Leaves entire.

3. **V. urticifolia Linn.**: erect, somewhat pubescent; leaves ovate, acute, serrate, petiolate; spikes filiform, axillary and terminal; flowers distinct, tetrandrous.

Stem 2—3 feet high, somewhat hairy. Flowers small, white, tinged with purple, in filiform spikes forming panicles.

4. **V. angustifolia Mich.**: erect, mostly simple; leaves linear-lanceolate, attenuate at the base, remotely toothed, with elevated veins; spikes filiform, solitary, axillary and terminal. — **V. rugosa Willd.**

June—Aug.  
Stem a foot high, hairy. Flowers blue.

2. **ZAPANIA.** Link.


**Didynamia. Angiosperma.**

1. **Z. nodiflora Lam.** : leaves ovate-wedge-form, serrate above; spikes solitary, on long filiform peduncles, forming conical heads; stem herbaceous, creeping. — **Verbena nodiflora Linn.** — **Lippia nodiflora Mich.**

Stem 6—8 inches long, procumbent. Flowers bluish-white, in heads which are on peduncles 4—6 inches long.

2. **Z. lanceolata Pers.** : leaves linear-lanceolate, acutely serrate; spikes solitary, on long peduncles, forming conical heads; stem herbaceous, creeping. — **Lippia lanceolata Mich.**

Does not differ from the former, except in the shape of the leaves; and is, perhaps, not a distinct species.

3. **PHRYMA.** Linn.

Calyx cylindric; upper lip longer, trifid; lower 2-toothed. Corol with the upper lip emarginate, the lower much longer. Seed one.  

**Didynamia. Angiosperma.**

**P. leptostachya Linn.** : leaves ovate, toothed, petioled; spikes terminal, slender; flowers opposite.

Order XCI. ACANTHACEÆ. Juss. Lind.

Calyx 4 or 5-divided, rarely either multifid or entire and obsolete, persistent. Corol mostly irregular, with the limb ringent or bilabiate, or occasionally 1-lipped, sometimes nearly equal, deciduous. Stamens mostly 2, sometimes with 2—3 shorter ones; anthers 1—2-celled, bursting longitudinally. Ovary seated in the disk, 2-celled; ovules 2 or many in each cell; style 1; stigma 2-lobed or entire; placenta in the axis. Capsule 2-celled, bursting elastically with 2 valves. Seeds 2 or many in each cell, or by abortion solitary, ascending, usually subtended by rigid subulate processes from the dissepiment; albumen none; embryo curved or straight; radicle cylindrical, descending, next the hilum; cotyledons large, foliaceous.

Herbs or shrubs. Leaves opposite, without stipules.

1. JUSTICIA. Linn.

Calyx 5-parted, often with 2 bracts at the base. Corol irregular, bilabiate; upper lip emarginate; the lower 3-cleft. Filaments 2, each with a single or double anther. Stigma 1. Capsule attenuated, 2-celled, 2-valved; dissepiment growing from the centre of each valve. Diandria. Monogynia.

J. pedunculosa Mich.: spikes axillary; peduncles elongated, alternate; flowers crowded; leaves lanceolate.—J. americana Vahl.—J. linearifolia Lam.—Dianthera americana Linn.

Hab. In water. Can. to Car. W. to Miss. July, Aug. 24.—Root creeping. Stem 2 feet high. Leaves nearly 6 inches long, narrow-lanceolate. Flowers on axillary peduncles which are nearly as long as the leaves, pale purple.

2. RUCELLIA. Linn.


R. strepens Linn. : erect, hairy; leaves on petioles, opposite, lanceolate-ovate, entire; peduncles 1—3-flowered; segments of the calyx linear-lanceolate, very acute, hispid, shorter than the tube of the corol.
DICOTYLEDONOUS PLANTS.


Order XCIII. LENTIBULARIÆ. Rich. Lind.

Calyx divided, persistent. Corol irregular, bilabiate, with a spur. Stamens 2, included within the corol and inserted into its base; anthers 1-celled, sometimes contracted in the middle. Ovary 1-celled; style 1; stigma bilamellate. Capsule 1-celled, many seeded, with a large central placenta. Seeds minute; albumen none; embryo sometimes undivided.

Herbs, growing in water or marshes. Leaves radical, undivided; or compound, resembling roots and bearing little vescicles.

1. PINGUICULA. Linn.


P. vulgaris Linn.: spur cylindrical, acute, as long as the veinless petal; upper lip 2-lobed; lower one in three unequal obtuse segments.


2. UTRICULARIA. Linn.

Calyx 2-parted; lips undivided, nearly equal. Corol personate, with the lower lip spurred at the base. Stamens 2, with the filaments incurved bearing the anthers within the apex. Stigma 2-lipped. Capsule 1-celled. Diandria. Monogynia.

Obs. The North American species of this genus have been attentively studied by Capt. Le Conte, whose valuable observations are published in the first volume of the Annals of the New-York Lyceum.

1. U. ceratophylla Mich.: floating; scape many-flowered; radicle leaves whorled, inflated, pinnatifid at the extremities; lower lip of the corol deeply 3-lobed; spur short, obtuse, deeply emarginate.—U. inflata Walt.

Hab. Ponds. N. Y. to Mexico. July, Aug. 21. — Root very long, branching, with capillary radicles furnished with numer-
ous compressed air vessels. *Stem* 8 inches high. *Flowers* large, yellow, subcorymbed.

2. *U. vulgaris* Linn.: floating; stems submerged, dichotomous; leaves many-parted, margins bristly; *scape* 5—9-flowered; upper lip of the corol entire, broad-ovate; spur conical, incurved.—*U. macro-rhiza* Le Conte.

—Root much branched. *Scape* 8—10 inches high. *Flowers* large, racemcd, yellow; spur entire at the apex and rather obtuse.

3. *U. fornicata* Le Conte: floating; *scape* 1—2-flowered; upper lip 3-lobed, the middle lobe arched over the palate; spur incurved, conoidal, obtuse, very entire, appressed to the lower lip of the corol.—*U. minor* Pursh. Torr.—*U. gibba* Ell.

*Hab.* Swamps and ditches. N. Y. to Geor. Aug. 21.—Root furnished with air vessels. *Scape* naked. *Flowers* few, small, yellow.—According to Capt. Le Conte, it bears no resemblance to *U. minor* of Europe, except in the smallness of its flowers.

4. *U. setacea* Mich.: *scape* filiform, rooting, with 2 or more flowers; upper lip of the corol ovate; the lower deeply 3-lobed; spur subulate, as long as the lower lip of the corol.—*U. subulata* Pursh.—*U. pumila* Walt.

*Hab.* Swamps. N. Y. to Flor. June. 21.—*Scape* very slender, 4—6 inches high, furnished with scales. *Flowers* many, small, yellow. Upper lip of the corol half the size of the lower.

5. *U. gibba* Gron.: floating; *scape* mostly 2-flowered; spur shorter than the lower lip of the corol, obtuse, gibbous in the middle.


6. *U. cornuta* Mich.: *scape* rooting, erect, rigid; flowers 2—3, sub sessile; lower lip of the corol very wide, 3-lobed; spur very acute, porrected.

*Hab.* Wet rocks. Can. and N. S. On Lake Superior. *Dr. Houghton.* Aug. 21.—*Scape* 10 inches high, with minute bracts. *Flowers* yellow, approximate, nearly sessile, as large as those of *U. vulgaris*.

7. *U. striata* Le Conte: floating; *scape* 2—6 flowered; upper lip of the corol ovate-round, subemarginate, margin waved; lower lip 3-lobed, reflected at the sides; spur straight, obtuse, shorter than the lower lip.—*U. fibrosa* Ell. not of Walt.

*Hab.* Swamps. N. Y. to Flor. June. 21.—Root furnished with air vessels. *Scape* a foot high. *Corol* large, yellow, striated with red; *spur* much shorter than the lower lip.

8. *U. personata* Le Conte: *scape* rooting, many-flowered; upper lip of the corol emarginate, reclinate; lower small, entire; palate very large; spur linear subulate, somewhat acute.

9. U. purpurea Walt.: scapes axillary, generally 1-flowered; involucre none; lower lip of the corol 3-lobed; lateral lobes cucullate on the underside; spur compressed, half as long as the corol.—U. succata Ell.


Calyx 5- rarely 4-cleft, inferior, regular, persistent. Corol monopetalous, hypogynous, regular; the limb 5- rarely 4-cleft. Stamens inserted upon the corol, equal in number, and opposite to its segments. Ovary 1-celled; style 1; stigmas capitate. Capsule opening with valves; placenta central, distinct. Seeds numerous, peltate; embryo straight, cylindrical, included within fleshy albumen, and lying across the hilum.

Herbs, with the leaves usually opposite and either whorled or scattered.

1. PRIMULA. Linn.


P. farinosa var. americana Torr.: leaves obovate-spatulate, repandly crenate-dentate, pulverulent beneath; umbel many-flowered; peduncles spreading; border of the corol flat, as long as the tube, with obtuse obcordate segments.—P. pusilla Goldie.


2. DODECANTHÈON. Linn.


1. D. meadia Linn.: scape erect, simple, smooth; leaves oblong-oval, repandly toothed; umbel many-flowered; flowers nodding; bracts numerous, oval.
PRIMULACEÆ. 289


3. TRIENTALIS. Linn.


4. HOTTONIA. Linn.


H. inflata Linn. : stem thick, generally submersed; scape jointed, with the internodes and lower part inflated; flowers verticillate, mostly in fours, pedunculate. — H. palustris Pursh.

5. GLAUX. Linn.

Calyx campanulate, 5-lobed, coloured. Corol none. Stamens 5. Capsule globose, 5-valved, 5-seeded, surrounded by the calyx. Receptacle rounded, marked with favulose punc-

G. maritima Linn.
HAB. Marshes on the sea coast. Can. and N. S.; rare. July. 21. — Stem suberect or procumbent, 4—5 inches high, very leafy. Leaves opposite, ovate or roundish, smooth, entire, fleshy. Flowers minute, sessile, solitary, axillary, reddish-white. — For specimens of this plant from the vicinity of Boston, I am indebted to my friend Dr. Charles Pickering of Philadelphia.

Black Salt-wort.
1. L. stricta Ait.: stem erect, smooth; leaves opposite, lanceolate, sessile, punctate; raceme terminal, very long, lax; pedicels long, slender.—L. racemosa Mich. Pursh.


Pentandria. Monogynia.

2. L. quadrifolia Linn.: stem simple, a little hairy; leaves in whorls of four or fives, ovate-lanceolate, nearly sessile, acuminate; peduncles in fours, axillary, 1-flowered; segments of the corol oval, entire.—L. hirsuta Mich.—L. punctata Walt.


3. L. longifolia Pursh: very smooth and branched; leaves opposite, sessile, linear, very long; upper ones in fours; peduncles in fours, 1-flowered; segments of the corol ovate, acuminate, serrulate.—L. quadrifolia Sims.

Hab. Wet woods. Penn. to Vir. Pursh. June. 21.—Stem 2—3 feet high. Leaves narrow, not dotted; floral ones whorled. Flowers mostly at the extremity of the branches, at length nodding.—It seems to be distinct from the preceding, although not so considered by Muhlenberg.

4. L. ciliata Linn.: stem nearly smooth; leaves opposite, on long petioles, subcordate-ovate, acuminate; petioles ciliate; peduncles mostly in pairs, 1-flowered; flowers drooping; segments of the corol rounded, acuminate, crenate.

Hab. Banks of streams. Can. to Car. July. 21.—Stem 2—3 feet high. Flowers large, yellow, the corol deeply 5-cleft.

5. L. hybrida Mich.: stem smooth; leaves petioled, opposite, lanceolate, acute at each end; petioles ciliate; flowers nodding; peduncles axillary; corol shorter than the calyx; divisions crenulate.—L. heterophylla Nutt.

Hab. Moist grounds. N. Y. to Car. July. 21.—Resembles the preceding species in every respect except in the form of the leaves which are narrow and lanceolate, and never cordate at base.

6. L. capitata Pursh: stem smooth, simple, punctate; leaves opposite, sessile, broad-lanceolate, punctate; peduncles axillary, elongated; flowers in dense roundish heads, 6—7-parted.—L. thyrsifolia Mich.?

Hab. Swamps. N. S. N. to Arc. Amer. June. 21.—Stem a foot high. Flowers yellow, in roundish or ovate heads which are on axillary pedicules.
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7. \textit{L. revoluta} Nutt. : stem square, smooth, branched; leaves opposite, sessile, long linear, margin revolute; peduncles 1-flowered, subterminal, nodding.

Hab. Rocks. N. Y. to Del. Aug. 24.—Stem 12—18 inches high. Flowers yellow, mostly on the summit of the stem, on slender peduncles.—This species is abundant on the shores of the great lakes, and Dr. Houghton informs me that he has found it on the banks of the St. Croix river, in the North Western Territory.

7. ANAGALLIS. Linn.


\textit{A. arvensis} Linn. : stem procumbent, branched; leaves opposite, ovate, sessile, dotted beneath, very entire; margin of the corol broadly and very obtusely crenate, pilose-glandular.


8. SAMOLUS. Linn.

\textit{Calyx} 5-cleft, semisuperior, persistent. \textit{Corol} salver-form, 5-lobed. \textit{Stamens} 5, antheriferous, opposite the segments of the corol, and 5 (scales) alternate with them, sterile. \textit{Capsule} half inferior, 1-celled, 5-toothed, many-seeded; receptacle unconnected. \textit{Pentandria. Monogynia.}

\textit{S. valerandi} Linn. : stem erect; leaves obtuse; racemes many-flowered; pedicels with small bracts.


Order XCV. PLUMBAGINEÆ. Juss. Lind.

\textit{Calyx} tubular, plaited, persistent. \textit{Corol} monopetalous or of 5 petals, regular. \textit{Stamens} 5, hypogynous when the petals are combined, inserted into the base of the petals when distinct. \textit{Ovary} free, 1-celled; \textit{ovule} pendulous, from the end of an umbilical cord, arising from the bottom of the cell; \textit{styles} 5, seldom 3—4, each bearing a subulate stigma. \textit{Fruit} a utricle. \textit{Seed} pendulous; \textit{embryo} straight; \textit{radicle} superior.

\textit{Herbs} or \textit{undershrubs}. \textit{Leaves} alternate or clustered, undivided, somewhat sheathing at base.
DICOTYLEDONOUS PLANTS.

1. STATICE. Linn.

—Flowers in spikes or heads.

Pentandria. Pentagynia.

1. S. limonium Linn.: scape paniculate, terete; leaves all radical, oblong, undulate, smooth and nerveless, mucronate below the tip.—S. caroliniana Walt.


2. S. armeria Linn.: leaves all radical, linear, flat, smooth; scape simple, terete, bearing a round head of flowers.


Thrift, Order XCVI. PLANTAGINÆ. Juss. Lind.

Flowers usually monochinous, seldom diclinous. Calyx 4-parted, persistent. Corol monopetalous, persistent, with a 4-parted limb. Stamens 4, inserted into the corol, alternate with its segments; filaments long, filiform, doubled inwards in aestivation; anthers versatile, 2-celled. Ovary sessile, without a disk, 2- very seldom 4-celled; ovules solitary, in pairs or indefinite; style simple, capillary; stigma hispid, simple or rarely bifid. Capsule membranous, opening transversely. Seeds sessile, peltate or erect; embryo in the axis of fleshy albumen; radicle inferior.

Herbs usually stemless. Leaves flat and ribbed, or taper and fleshy.

1. PLANTAGO. Linn.


Tetrandria. Monogynia.

* Leaves broad.

1. P. cordata Lam.: leaves on long petioles, ovate, cordate, very broad, subdentate, smooth; spike very long; flowers subimbricated;
the lower ones scattered; bracts ovate, obtuse; cells of the capsule 2-seeded.—*P. kentuckiensis* Mich.


2. *P. major* Linn.: leaves ovate, smoothish, subdentine, on longish petioles; scape terete; spike cylindrical, very long; flowers closely imbricated; cells of the capsule many seeded.


3. *P. media* Linn.: leaves ovate, pubescent, on very short petioles; spike short, cylindrical; scape rounded; cells of the capsule 1-seeded.

**Hab.** Fields. N. Y. and Penn. July. *2f.*—Leaves 2 inches long. *Scape* longer than the leaves. *Flowers* in a closely imbricated spike, which is seldom more than 2 inches long.

4. *P. virginica* Linn.: hairy-pubescent; leaves lanceolate-ovate, sparingly toothed, 3-nerved, tapering at base; spike cylindrical, with remote flowers; scape angular.

**Hab.** Sandy soils. Throughout the U. S. June. *3.*—Scape hairy, almost hirsutus, longer than the leaves. *Spikes* 1—4 inches long, with the flowers at first crowded, but at length distant. Corol yellowish.

5. *P. lanceolata* Linn.: leaves lanceolate, tapering at each end, 3—5-nerved, remotely toothed; spike short, ovate-cylindrical, compact; scape angled; capsule 2-seeded.


**Leaves linear.**

7. *P. maritima* Linn.: leaves linear, grooved, fleshy, hairy near the base, mostly entire, often remotely toothed; scape round, terete; spike cylindrical, dense.—*P. pauciflora* Pursh.


8. *P. pusilla* Nutt.: minutely pubescent; leaves linear-subulate, flat, entire, acute; scape terete, slender, longer than the leaves; spike cylindrical, loose; lower flowers distant; bracts ovate, acute, as long as the calyx.—*P. hibrida* Bart.?—*P. linearifolia* Muhl.? 25*
DICOTYLEDONOUS PLANTS.

Hab. Sandy hills. Penn. to Flor. W. to Miss. June. —
Scape 2—3 inches high. Flowers in an interrupted spike.

Subclass IV. MONOCHLAMYDEÆ.

Flowers with a simple perianth or perigonium. (Apetalous.)

Order XCVII. AMARANTHACEÆ. Juss. Lind.

Perianth 3—5-parted, hypogynous, scarious, persistent. Stamens hypogynous, either 5, or some multiple of that number, distinct or monadelphous; anthers 1—2-celled. Ovary single, superior, 1 or few-seeded; style 1 or none; stigma simple or compound. Fruit a membranaceous utricle. Seeds lentiform, pendulous; testa crustaceous; albumen central, farinaceous; embryo curved round the circumference; radicle next the hilum; plumula inconspicuous.

Herbs or shrubs. Leaves simple opposite or alternate. Flowers in heads or spikes, occasionally diclinous, generally monoclinous.

1. AMARANTHUS. Linn.


Monoecia. Pentandria.

1. A. lividus Linn. : stem erect; leaves elliptic, retuse; flowers clustered, triandrous, in rounded spikes.


Stem 2—3 feet high, smooth.

2. A. hybridus Linn. : leaves ovate-lanceolate; flowers pentandrous; perianth subulate; racemes compound, erect, crowded.


Stem 2—3 feet high. Introduced?

3. A. blitum Linn. : stem diffuse; leaves ovate, retuse; flowers triandrous, three-leaved; racemes somewhat spiked.

Hab. In and about gardens. N. S. June—Sept. —

Introduced.

4. A. spinosus Linn. : axils spiny; racemes terminal, compound; flowers pentandrous.

Hab. Road sides. June—Sept. —

Stem diffuse, generally coloured. Introduced.
5. *A. retroflexus* Linn. : branches pubescent; leaves ovate, undulate; racemes erect, much compounded; flowers pentandrous.


6. *A. pumilus* Nutt. : stem diffuse, smooth; leaves ovate, obtuse, smooth and fleshy, often retruse; flowers pentandrous, in axillary clusters.

**Hab.** Sandy beach. N. Y. Aug. ○—Stem a foot high, somewhat decumbent. Flowers green.

**ORDER XCVIII. CHENOPODEAE. De Cand. Lind.**

**Perianth** deeply divided, sometimes tubular at the base, persistent. **Stamens** inserted into the base of the calyx, opposite its segments and equal to them in number or fewer. **Ovary** single, superior, or occasionally adhering to the tube of the calyx. **Style** 2—1-divided, rarely simple; **stigmas** simple. **Fruit** membranous, not valvular, sometimes berried. **Seed** erect; **embryo** curved round farinaceous albumen, or spiral, or doubled together without albumen; **radicle** next the hilum; **plumula** inconspicuous.

**Herbs or undershrubs.** Leaves alternate, without stipules, occasionally opposite. Flowers small, sometimes polygamous.

1. **CHENOPODIUM. Linn.**

Flowers perfect. **Perianth** 5-cleft, closing upon but not wholly enveloping the fruit. **Stamens** 5. **Styles** 2.

**Pentandria. Digynia.**

* Leaves ovate or rhomboid, often toothed or lobed.

1. *C. bonus hernicus* Linn. : leaves triangular, sagittate, very entire; spikes compound, peduncled, crowded, terminal and axillary, erect, leafless.

**Hab.** N. Y. Muhl. June. 21.—Stem a foot high, striate. Leaves large, dark green. Flowers green. **Good King Henry.**

2. *C. rhombifolium* Muhl. : leaves triangular-rhombic, acute, repandly toothed; upper ones lanceolate, toothed, cuneate at base; racemes axillary, erect, leafless.


3. *C. rubrum* Linn. : leaves rhomboid-triangular, deeply toothed and sinuate; racemes erect, compound, leafy.

**Hab.** Waste places. N. S. Aug. ○—Stem 2 feet high, reddish. **Racemes** very compound, intermixed with small leaves. Introduced.
4. *C. hybridum* Linn.: leaves cordate, angularly toothed, acuminate; racemes much branched in a somewhat cymose manner, divaricate, leafless.

Hab. Waste places. N. S. July, Aug. Ọ.—Stem 2—3 feet high, slender, with large and bright green leaves. Flowers in compound clusters, remote from the leaves. Introduced.

5. *C. album* Linn.: leaves ovate, inclining to rhomboid, jagged, entire at the base; upper ones perfectly entire; racemes branched, somewhat leafy; seed very smooth.

b. *viride* Pursh: leaves greener and more entire; racemes more branched, a little leafy.—*C. viride* Linn.


6. *C. ambrosioides* Linn.: leaves lanceolate, remotely toothed; racemes simple, axillary, leafy.


7. *C. botrys* Linn.: leaves oblong, pinnatifid-sinuate; racemes naked, many-cleft, very large; flowers distinct, on short pedicels.

Hab. Waste places. N. S. July—Sept. Ọ.—Stem short, branching, somewhat viscid. Flowers in numerous short axillary racemes covering the ends of the branches.—Whole plant has a strong smell.

Jerusalem Oak.

8. *C. anthelminticum* Linn.: leaves oblong-lanceolate, nearly sessile, coarsely toothed; spikes long, interrupted, leafless, axillary and terminal; style 3-cleft.

Hab. Fields. N. S. Aug. 21.—Stem 1 1-2—2 feet high, much branched. Racemes long and slender, axillary and terminal.

Worm-seed.

9. *C. glaucum* Linn.: leaves oblong, repand, smooth, glaucous beneath; spikes simple, naked, glomerate, terminal and axillary.


**Leaves linear, fleshy.**


2. *ATRIPLEX* Linn.

Flowers polygamous. *Perianth* single, 5-parted. *Sta-

Pentandria. Digynia.

1. *A. halimus* Linn.: stem frutescent; leaves alternate or opposite, oblong-subhomboid, entire, decurrent into the petiole.

_Hab._ New-Jersey. _Muhl._ 5.

2. *A. laciniata* Pursh: stem herbaceous, diffuse, pubescent towards the summit; leaves triangular, deeply toothed, white pubescent beneath; lower ones opposite; perfect flowers tetandrous; perianth of the fruit rhomboid, acute, entire.—*A. laciniata* var. _americana_ Torr.


3. *A. patula* Linn.: stem herbaceous, spreading; leaves triangular-hastate, acuminate, smooth above, irregularly toothed; the upper ones entire; perianth of the fruit submuricate on the sides.

_Hab._ N. Y. to Car. Aug. _®._—Stem prostrate, 1—2 feet long. Leaves on petioles nearly an inch long. _Flowers_ clustered on axillary and terminal spikes.

4. *A. arenaria* Nutt.: stem herbaceous, spreading; leaves oblong-ovate, subsessile, silvery-mealy beneath, very entire; upper ones acute or acuminate; perianth of the fruit muricate, dentate, retuse.

_Hab._ Sea coast. N. J. to Car. Aug., Sept. _®._—Stem a foot high, angular, much branched. Lower leaves often cuneate. _Flowers_ monoecious; the sterile ones in short glomerate spikes at the end of the branches; the fertile ones in axillary clusters.

5. *A. hortensis* Linn.: stem erect, herbaceous; leaves triangular, dentate, green on both sides; perianth of the fruit ovate, reticulate, entire; flowers in terminal interrupted racemes or spikes.


3. ACNIDA. Linn.


1. *A. cannabina* Linn.: leaves ovate-lanceolate; capsules smooth, acutely angled.


DICOTYLEDONOUS PLANTS.


4. SALICORNIA. Linn.


1. *S. herbacea* Linn.: annual; stem erect or branched; joints compressed, notched at the summits; spikes peduncled, cylindrical, slightly tapering at the extremity; perianth truncated—and *S. virginica* Linn. Pursh.


*Herbaceous Samphire.*

2. *S. ambiguа* Mich.: perennial, procumbent, branching; joints crescent-shaped, small; spikes opposite and alternate; calyx truncate.


5. SALSOLA. Linn.


1. *S. soda* Linn.: herbaceous, smooth; branches ascending; leaves semi-terete, rather acute; fructiferous perianth transversely connate in the middle, somewhat membranaceous.


2. *S. tragus* Linn.: herbaceous, spreading, smooth; leaves subulate, spinose, fleshy; flowers solitary, axillary, bracteate; perianth subovate; margin flattened, discoloured.

Hab. N. J. and Md. Muhl. July. ©.—Dr. Torrey thinks Muhlenberg’s plant is *S. kali*.

3. *S. kali* Linn.: herbaceous, decumbent; leaves subulate, spinose, rough; flowers axillary, solitary; fruit-bearing perianth with a scarios margin.


Hab. Sea coast. N. Y. to Car. Aug., Sept. ©.—Stem much branched, diffuse. Flowers succulent, sessile, with 2 or 3 bracts at the base of each.
PHYTOLACCEÆ.

6. BLITUM. Linn.


1. B. capitatum Linn.: procumbent; leaves triangular-hastate; heads of flowers alternate, in a leafless terminal spike.


2. B. virgatum Linn.: leaves triangular-hastate; heads scattered, lateral.


3. B. maritimum Nutt.: perianth membranaceous; clusters axillary, spiked, naked; leaves lanceolate, attenuated at each extremity, incisely toothed.


Order XCIX. PHYTOLACCEÆ. Lind.

Perianth 4—5-petaloid leaves. Stamens either indefinite, or, if equal to the number of the divisions of the calyx, alternate with them. Ovary of 1 or several cells, each containing 1 ascending ovule. Styles and stigmas equal in number to the cells. Fruit berried or dry, indehiscent. Seeds ascending, solitary; embryo cylindrical, curved round mealy albumen; radicle next the hilum.

Undershubs or herbs. Leaves alternate, without stipules, often with pellucid dots.

1. PHYTOLACCA. Linn.


Decandria. Decagynia.

P. decandra Linn.: leaves ovate, acute at each end, alternate, petiolate; flowers in simple racemes, with 10 stamens and 10 styles; globose-depressed, purple when mature.

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globose-depressed, purple when mature.—The root is a violent

Poke Weed.

2. RIVINA. Linn.

Perianth 4-parted, persistent. Stamens 4, 8 and 12.

Tetrandria. Monogynia.

R. laxis Linn.: leaves alternate, on long petioles, ovate, acuminate,
smooth; flowers in simple axillary racemes.


ORDER C. POLYGONEÆ. Lind.

Perianth divided, inferior; aestivation imbricate. Stamens
definite, inserted in the bottom of the perianth; anthers bursting
longitudinally. Ovary superior, with a single erect ovule. Styles or stigmas several. Fruit a nut, usually triangular, naked or covered by the enlarged perianth. Seed with farinaceous albumen, rarely with scarcely any; embryo inverted, generally on one side; radicle superior.

Herbs, rarely shrubs. Leaves alternate, sheathing at the
base or adhering there to intrafoliaceous stipules, revolute
when young. Flowers occasionally diclinous.

1. POLYGONUM. Linn.

Perianth 4—6-parted, petaloid, persistent. Stamens 5—9,

Octandria. Trigynia.


1. P. aviculare Linn.: stem procumbent, herbaceous; leaves elliptic-lanceolate, rough on the margin; nerves of the stipules distant.

Hab. Waste places. N. Y. to Car. N. to Subarc. Amer. May
—Sept. 12.—Stem much branched, nearly erect. Leaves varying
much in size and shape.—When growing near the sea the
leaves are glaucous and rather fleshy, and then forms P. glaucum
of Nuttall. This fact is noticed by Dr. Smith, in his Fl. Brit.,
and by Dr. Greville in his Flora Edinensis. Knot Grass.

2. P. erectum Muhl.: stem mostly erect; leaves broad, oval, petio-
late, smooth; flowers pentandrous.—P. aviculare var. latifolium Mich.
Torr.

Hab. Near cultivated grounds. N. S. N. to Subarc. Amer.
Aug. 24.—Stem 1—3 feet high. Flowers greenish.—Dr. Dar-
lington concurs in the opinion expressed by Muhlenberg, that this is a distinct species.—Fl. Ces.

3. *P. tenue* Mich.: stem slender, erect, branched, acutely angled; leaves linear, acuminate, straight; stipules tubular, lacerate, with the segments finely attenuate at the extremity; flowers alternate, subsidiary, on very short pedicels.—*P. linifolium* Muhl.


**Flowers in terminal solitary spikes.** Stamens 9. Stigmas 3. **Bistorta.**

4. *P. virgiparum* Linn.: stem simple; spike linear, solitary; leaves linear-lanceolate, revolute on the margin; the lower ones elliptical, petiolate.


**Flowers in axillary or terminal spikes.** Stamens 5—8. Stigmas mostly 2. **Persicaria.**

5. *P. punctatum* Ell.: stem branched, sometimes decumbent at base; leaves lanceolate, with pellucid punctures, scabrous on the margin and midrib; stipules slightly hairy, ciliate; spikes few-flowered, filiform, at first cernuous; flowers octandrous, glandular-punctate; styles 3-parted.—*P. hydropiper* Mich.—*P. hydropiperoides* Pursh.


6. *P. mitre* Pers.: stem hairy at the summit; leaves narrow-lanceolate, acuminate, entire, somewhat hairy; stipules hairy, with long ciliate; flowers octandrous, in crowded spikes; styles 3-parted.—*P. hydropiperoides* Mich.—*P. barbatum* Walt.


7. *P. virginianum* Linn.: stem simple, angular, hairy towards the top; leaves broad-lanceolate, acuminate, with fringed serratures; flowers 4-cleft, unequal, remote, pentandrous; styles 2; spike very long, slender, naked.—*P. bistorta* Walt.


8. *P. amphibium* Linn.: stem nearly erect; leaves petiolate, oblanceolate, sometimes cordate at base; flowers in dense terminal spikes, pentandrous; styles bifid.—*P. coccineum* var. *terrestrial* Pursh.

b. *aquaticum* Hook.: stem spreading on the surface of water; leaves ovate-lanceolate, cordate; spike cylindrical-oblong.—*P. natans* Eaton.

**Hab.** Borders of swamps and ponds. N. S. W. to Miss. July.
21. — *Stem* 8—12 inches long. *Flowers* large, reddish, in an ovate spike.—Var. *b.* has the stems long and the leaves broad-cordate and floating; but it passes into the former variety.

9. *P. pennsylvanicum* Linn.: *stem* with tumid joints, smooth; leaves lanceolate, slightly hairy, petioled; stipules smooth and naked; flowers in crowded oblong spikes, octandrous; style 2-cleft; peduncles hispid.


10. *P. lapathifolium* Linn.: *stem* geniculate, smooth; leaves ovate-lanceolate, on short petioles, often hoary beneath; spikes numerous, rather crowded, erect; peduncles scabrous; flowers hexandrous; styles 2.—*P. incarnatum* Ell.

_Hab._ Ditches and swamps. N. Y. to Car. Aug., Sept. ☘.—*Stem* 2—3 feet high. *Flowers* white or pale red, smaller than in the former.

11. *P. persicaria* Linn.: *stem* erect; leaves on short petioles, lanceolate, the upper surface marked with dark coloured spots; stipules smooth, ciliate; spikes dense, terminal, ovate-oblong, erect; flowers hexandrous; styles bifid.

_Hab._ Wet grounds. July, Aug. ☘.—*Stem* 12—18 inches high, branched, smooth, often red. *Flowers* reddish, in erect oblong terminal spikes. _Ladies’ Thumb._

12. *P. orientale* Linn.: *stem* erect; leaves very large, petioled, ovate, acuminate, minutely pubescent; stipules hairy, hypocrateriform; flowers in crowded terminal spikes, hexandrous, digynous.

_Hab._ Old fields and roads sides. July, Aug. ☘.—*Stem* 4—5 feet high, branched, pubescent. *Flowers* large, crimson, in pendulous spikes.—Naturalized throughout the whole U. States.

**** *Flowers* in panicled spikes. _Perianth* 5-parted. _Polygonaella._

13. *P. articulatum* Linn.: *stem* erect; leaves linear, obtuse; stipules short, truncate; spikes paniculate, filiform, erect; pedicels solitary, articulate near the base; flowers perfect, octandrous, trigynous, nodding.

_Hab._ Sandy plains. N. S. W. to Michigan. Sept. ☘.—*Stem* 12 inches high, branched above. *Leaves* very small, linear. *Flowers* reddish-white, in spikes which are jointed by a succession of imbricate sheathing bracts.—A singular plant which should perhaps be separated from this genus.

**** *Flowers* in racemose panicles. _Leaves* subcordate or sagittate. _Fagopyrum._

14. *P. sagittatum* Linn.: *stem* prostrate, square; the angles awned with reversed prickles; leaves sagittate, acute, nearly sessile; flowers in small peduncled heads, octandrous; styles 3-cleft.

_Hab._ Wet grounds. N. Y. to Flor. July, Aug. ☘.—*Stem*
long and slender. *Flowers* white, axillary and terminal, in small compact heads which are supported on long peduncles.

15. *P. arifolium* Linn.: stem prostrate, square, the angles with reversed prickles; leaves on long petioles, hastate, with the lobes acute; spikes few-flowered; flowers hexandrous, distinct; styles bifid.


16. *P. convolvulus* Linn.: stem long, climbing, angular, somewhat rough; leaves petioled, oblong, hastate-cordate, with the lobes spreading and acute; flowers in lax spikes, octandrous; styles 3-cleft; segments of the perianth bluntly keeled.


17. *P. cilinodt* Mich.: stem angular, climbing or prostrate, pubescent; leaves petioled, cordate; stipules somewhat acute, ciliate at the base; panicles somewhat leafy; flowers octandrous; styles 3-cleft; segments of the perianth bluntly keeled.


18. *P. scandens* Linn.: stem climbing, smooth; leaves broad-cordate, with the sinus broad and obtuse; stipules truncate, naked; flowers large, in axillary racemes, octandrous; segments of the perianth winged.


19. *P. fagopyrum* Linn.: stem erect, unarmed; leaves cordate, sagittate; racemes panicked; angles of the seed equal.

Hab. Fields; remaining as a weed where it has been cultivated. June. — Buckwheat.

2. **RUMEX** Linn.


*Flowers* all perfect, containing both stamens and pistils. **Lapathum.**

† *Inner valves of the perianth entire.*

1. *R. aquaticus* Linn.: valves ovate, entire, all of them granuliferous; leaves lanceolate, acute, the lower ones on long petioles and cordate at base.


2. *R. crispus* Linn.: valves very large, cordate, entire, veined, granuliferous; leaves lanceolate, acute, waved at the margin.
DICOTYLEDONOUS PLANTS.


3. R. sanguineus Linn.: valves small, oblong, one or more granuliferous; leaves lanceolate, somewhat cordate, petioled, smooth, mostly with red veins.


4. R. britannicus Linn.: valves all entire and granuliferous; leaves broad-lanceolate, flat, smooth; sheaths obsolete; whors of flowers leafless.


** Inner valves of the perianth toothed.

5. R. verticillatus Linn.: valves entire, all of them granuliferous; flowers whorled, in long nearly simple leafless racemes; leaves lanceolate, acute, flat; sheaths cylindrical.


8. R. obtusifolius Linn.: valves ovate, toothed, one chiefly granuliferous; leaves cordate-oblong, obtuse, somewhat crenate and waved; upper ones narrower and more acute; stem roughish.


** Flowers dioecious. Acetosa.

9. R. acetosella Linn.: leaves lanceolate, hastate; lobes acute, spreading; racemes paniculate; valves of the fruit grainless.

Hab. Fields, &c. Throughout the U. S. June, July. 2 ft.—Stem 6—12 inches high.—The plant has a pleasant acid taste. Sheep Sorrel.

Perianth 4—6-cleft. Stamens definite, perigynous, opposite the segments of the perianth and usually twice as numerous, 3 innermost ones sterile, or wanting; 6 outer ones scarcely ever abortive; anthers adnate, 2—4-celled, the cells bursting by a longitudinal persistent valve from the base to the apex; the outer anthers valved inwards, the inner outwards. Glands usually present at the base of the inner filaments. Ovary superior, single; style simple; stigma obtuse. Fruit a berry or drupe, naked or covered. Seed without albumen; embryo inverted; cotyledons large, plano-convex, peltate near the base. Plumula conspicuous, 2-leaved.

Trees, often large. Leaves without stipules, alternate.

1. LAURUS. Linn.

Perianth 4—5-cleft, equal. Stamens 8—12, arranged in a double row; outer ones all fertile; alternate inner ones fertile and furnished at base with 2 appendices or glands, (nectary.) Drupe fleshy. Enneandria. Monogynia.

* Leaves perennial.

1. L. carolinensis Mich.: leaves oval-lanceolate, coriaceous, glaucous beneath; peduncles simple, terminated with a few-flowered fascicle; outer segments of the calyx half as long as the inner.


** Leaves deciduous. Flowers dioecious.

2. L. benzoin Linn.: leaves obovate, lanceolate, wedgeform at base, entire, whitish and subpubescent beneath; flowers in clustered umbels, appearing before the leaves; buds and pedicels smooth.—L. pseudo-benzoin Mich.


3. L. sassafras Linn.: leaves entire, lanceolate-ovate, or 2—3-lobed, under surface prominently veined; flowers in clustered umbels, appearing before the leaves; buds, younger branches and under surface of the leaves, pubescent.

Hab. River banks. Can. to Geor. April. ʰ.—Varies in size from that of a large shrub to a large tree. Leaves various, glabrous or pubescent. Flowers yellow.—This and the foregoing species possess medicinal powers. See Dr. Brockenbrough's In-
DICOTYLEDONOUS PLANTS.


Order CII. ELÆAGNEÆ. Juss. Lind.

Flowers dioecious, rarely monoclinous. Sterile Fl. Stamens 3, 4 or 8, sessile; anthers 2-celled. Fertile Fl. Perianth tubular, persistent; the limb entire, or 3—4-toothed. Ovary superior, simple, 1-celled; ovule solitary, ascending, stalked; style short; stigma simple, subulate, glandular. Fruit crustaceous, enclosed within the perianth, becomes succulent. Seed erect; embryo straight, surrounded by very thin fleshy albumen; radicle short, inferior; cotyledons fleshy. 

Trees or shrubs, covered with leprous scales. Leaves alternate or opposite, entire, without stipules.

1. SHEPHERDIA. Nutt.


S. canadensis Nutt.: leaves oblong-ovate, nearly smooth above, stellately hairy and scaly beneath; the scales ferruginous and deciduous.

—Hippophae canadensis Willd. Pursh.


—A shrub 6—8 feet high. Flowers minute. Berries scaly, sweetish.

Order CIII. THYMELEÆ. R. Brown. Lind.

Perianth inferior, tubular, coloured; the limb 4- seldom 5-cleft; aestivation imbricate. Stamens definite, periginous, usually 8, sometimes 4 or 2; anthers 2-celled. Ovary solitary; style 1; stigma undivided. Fruit a nut or drupe; albumen none, or thin and fleshy; embryo straight, inverted; cotyledons plano-convex.

Shrubs with a tough bark. Leaves alternate or opposite, entire.

1. DIRCA. Linn.

Perianth coloured, campanulate; limb obsolete. Stamens 8, inserted into the perianth, unequal. Style 1. Berry 1-seeded.

Octandria. Monogynia.
D. palustris Linn.

Hab. Woods. Can. to Geor. April. 24.—Shrub 2—4 feet high, with tough branches. Leaves alternate, ovate, petioled, entire, obtuse. Flowers appearing before the leaves, yellow.—The bark has a sweetish taste, and when chewed excites a burning sensation in the fauces.

Leather Wood.

Order CIV. SANTALACEÆ. Brown. Lind.

Perianth superior, 4 or 5-cleft, half coloured, with valvate estivation. Stamens 4 or 5, opposite the segments of the perianth and inserted into their bases. Ovary 1-celled, with from 1—4 ovules; style 1; stigma often lobed. Fruit a nut or drupe. Seed solitary; albumen fleshy; embryo minute; radicle superior.

Trees or shrubs sometimes undershrubs or herbs. Leaves alternate, undivided.

1. NYSSA. Linn.


1. N. multiflora Walt.: leaves oval-lanceolate, very entire, acute at each end; the petiole margined and midrib villous; fertile peduncles many-flowered.—N. villosa Mich.


Sour or Black Gum.

2. N. biflora Walt.: leaves ovate-oblong, very entire, acute at each end, smooth; fertile peduncles 2-flowered; drupe oval-compressed.—N. aquatica Linn.


—The woody fibres of this tree are remarkably interlocked, so as to render it difficult to be split; on this account it is much used in making naves for carriage wheels, &c.

Tupelo Tree. Swamp Hornbeam.

2. HAMILTONIA. Willd.


Pentandra. Monogynia.
H. oleifera Muhl.—Pyrularia pubera Mich.

Hab. Mountains. Penn. to Geor.; rare. May, June. ½.—Shrub 4—6 feet high with a very deep root. Leaves oblong-obovate, entire, acuminate, 2—3 inches long, petiolate, pubescent when young. Flowers in a terminal raceme, small, greenish-yellow.—Whole plant more or less oily.

3. THESIUM. Linn.


T. umbellatum Linn.: stem round and erect; leaves oblong-ovate, obtuse, smooth; panicles terminal, subcorymbed.—Comandra umbellata Nutt.—Hamiltonia umbellata Spreng.

Hab. Rocky hills. Subarc. Amer. to Geor. W. to Miss. July, Aug. ½.—Stem 8—12 inches high. Leaves alternate, entire, sessile, mucronate. Flowers white, in a terminal corymb.—It is still doubtful whether this deserves to be separated from Thesium. It appears to agree very well with Hamiltonia.

Bastard Toad-flax.

Order CV. ARISTOLOCHIÆ. Juss. Lind.

Flowers monoclinous. Perianth superior, tubular, 3-cleft, regular or very unequal; aestivation valvate. Stamens 6—12, epigynous, distinct or adhering to the style and stigmas. Ovary inferior, 3—6-celled; ovules numerous; style simple; stigmas radiating, as numerous as the cells of the ovary. Fruit dry or succulent, 3—6-celled. Seeds numerous; embryo minute, placed in the base of fleshy albumen.

Herbs or shrubs. Leaves alternate, simple, often with leafy stipules.

1. ARISTOLOCHIA. Linn.

Perianth tubular, ventricose at base, dilated at the apex and ligulate. Anthers 6, subsessile, inserted into the style. Stigma 6-cleft. Capsule 6-sided, 6-celled.

Gynandria. Hexandria.

1. A. sipho L’Herit: stem twining; leaves cordate, acute; peduncles 1-flowered, furnished with an ovate bract; corol ascending, the border 3-cleft and equal.

2. *A. serpentaria* Linn.: stem flexuous; leaves cordate, oblong, acuminate; peduncles radical; lip of the corol lanceolate.


2. ASARUM. Linn.

*Perianth* campanulate, 3-cleft. *Stamens* 12, placed upon the ovary; *anthers* adnate with the middle of the filaments. *Style* short. *Stigma* stellate, 6-lobed. *Capsule* 6-celled.

**Gynandria. Decandria.**

1. *A. canadense* Linn.: leaves by pairs, broad reniform; perianth woolly, cleft to the base; the segments sublanceolate, reflexed.—*A. carolinianum* Walt.

**Hab.** Woods. Can. to Car. W. to Miss. April. 2f.—Stem none. *Leaves* generally 2, with long and hairy petioles. *Flower* somewhat campanulate, solitary, on a short peduncle, sometimes nearly buried in the ground.—The root has an agreeable and aromatic flavor.

**Wild Ginger.**

2. *A. virginicum* Mich.: leaves solitary, cordate, nearly round, glabrous, coriaceous; flower nearly sessile; perianth externally glabrous, short, campanulate.

**Hab.** Rocky woods. N. J. to Car. April. 2f.—*Leaves* spotted or clouded, smooth. Segments of the *perianth* obtuse.—Very similar in habit to the preceding.

**Order CVI. EMPETERAE. Nutt. Lind.**

*Flowers* dioecious. *Perianth* consisting of 2—4 imbricat-ed rows of hypogynous scales. *Stamens* equal in number to the scales and alternate with them; *anthers* roundish, 2-cell-ed, the cells distinct, bursting longitudinally. *Ovary* superior, seated in a fleshy disk, 3—6 or 9-celled; *ovules* solitary, ascending; *style* 1; *stigma* radiating, multifid. *Fruit* fleshy, seated in the persistent perianth. *Seed* solitary, ascending; *embryo* taper in the axis of the fleshy albumen; *radicle* inferior.

Small acrid shrubs, with heath-like evergreen leaves without stipules, and minute flowers in their axils.

1. EMPETRUM. Linn.

**Dioecious. Perianth** consisting of 2 rows of scales. **Sterile Fl.** *Stamens* 3, upon long filaments. **Fertile Fl.**
**DICOTYLEDONOUS PLANTS.**


*E. nigrum Mich.*: procumbent; leaves oblong-obtuse, revolute on the margin.

**Hab.** White Hills. N. H. Big. N. to Arc. Amer. May, June. 7.—A low shrub with small and dense evergreen foliage, like that of the heaths. **Leaves** imbricate, oblong, obtuse. **Flowers** axillary, very small, reddish. **Berries** roundish, black.—Dr. Houghton has found it on the shores of Lake Superior.

**Order CVII. EUPHORBIACEÆ. Lind.**

Flowers monoecious or dioecious. *Perianth* lobed, inferior, with various glandular or scaly appendages; (sometimes wanting.) **Sterile Fl.** *Stamens* 1—12; **anthers** 2-celled. **Fertile Fl.** *Ovary* 1, superior, sessile or stalked; **styles** 2—3; **stigmas** compound, or single with several lobes. **Fruit** consisting of 2—3 or more dehiscent cells, separating with elasticity from their commor axis, sometimes indehiscent. **Seeds** suspended, arillate; **embryo** enclosed in fleshy albumen; **cotyledons** flat; **radicle** superior.

**Trees,** **shrubs** or **herbs,** often abounding in acrid milk. **Leaves** simple, rarely compound, usually with stipules.

1. **CROTONOPSIS. Mich.**


*C. linearis Mich.:* stem erect, dichotomously branched; leaves stellately pubescent above, hairy and covered with silvery scales beneath. *E. argentea Pursh.—Friesia argentea Spreng.* 7. **Hab.** Swamps in sands. N. J. to Car. W. to Miss. June. 7. —**Stem** 12—18 inches high, covered like the leaves, with solitary scales. **Leaves** varying from linear-lanceolate to ovate, on short petioles. **Flowers** in terminal and axillary spikes, very minute.

2. **PHYLLANTHUS. Linn.**

**Monoecious.** **Sterile Fl.** *Perianth* 5—6-parted. **Filaments** united. **Fertile Fl.** as the sterile. **Nectary?** a 12-angled margin. **Styles** 3. **Capsule** 3-celled. *Monoecia. Monadelphia.*
P. caroliniensis Walt.: stem erect; branches distichous; leaves alternate, oval, obtuse, smooth, somewhat distichous; flowers few, (2—4) axillary, on pedicels, nodding.—P. obovatus Willd. Pursh. Torr.


— Stem 12 inches high, with distichous branches. Flowers on short pedicels, axillary; nodding. Stamens 6, united at base.

3. RICINUS. Linn.


R. communis Linn.: stem herbaceous, glaucous-pruinose; leaves peltate palmate; lobes lanceolate, serrate; capsule echinate.


— Introduced. Cultivated extensively in various parts of the U. S. for the purpose of obtaining oil from the seed. Castor-oil Bean.

4. ACALYPHA. Linn.


1. A. virginica Linn.: pubescent; leaves on short petioles, lanceolate-oblong, remotely and obtusely serrate; involucre cordate, ovate, acuminate, toothed; fertile flowers at the base of the sterile spike.


2. A. caroliniana Walt.: leaves on long petioles, rhombic-ovate, acuminate, serrate, entire at base; involucre cordate, toothed; fertile flowers at the base of the sterile spike.


— Stem 9—18 inches high.—The A. caroliniana of Elliott is apparently a distinct species.

5. EUPHORBIA. Linn.

Monoecious. Rarely furnished with a perianth. Involucre monophyllous, campanulate, 8—10 toothed, the inner segments membranaceous and erect. Sterile Fl. 12 or more. Stamens 1; filament articulated in the middle. Fertile Fl. solitary, stipulate, naked. Stigmas 3, 2-cleft. Capsule 3-lobed.

Monoecia. Monandria.

* Flowers in terminal fascicles.

1. E. dentata Mich.: hairy; leaves opposite, oval, dentate; flowers crowded at the summit of the stem.
DICOTYLEDONOUS PLANTS.


2. *E. hypericifolia* Linn.: smooth, branching, erect-spreading; branches divericate; leaves opposite, oval-oblong, slightly falcate, serrate; corymbs terminal.

   b. *hirsuta* Torr.: stem slender or hairy; leaves oblong, smooth, serrulate.


   Stem erect, 1—2 feet high, very smooth. Leaves 3-nerved and spotted. Flowers small.—Var. *b.* is 8—12 inches high, much branched and purple.

3. *E. maculata* Linn.: erect-spreading or procumbent; leaves opposite, serrate, oblong, hairy; flowers axillary, solitary; inner segments of the involucre coloured.

HAB. Near cultivated grounds. N. Y. to Car. Aug.—Oct. ꝑ—

   Stem 6—12 inches long, generally purple. Leaves on short petioles, oblique at base, 3-nerved. Flowers crowded near the summit, but in reality solitary in each axil. Spotted Spurge.

4. *E. polygonifolia* Linn.: procumbent, branching, very smooth, succulent; leaves oblong-ovate, linear-lanceolate, entire, obtuse, sometimes subcordate at base; flowers solitary in the divisions of the stem; stipules simple.


   —Stem 8 inches long. Stipules subulate and simple.

5. *E. ipecacuanha* Linn.: procumbent or nearly erect, small, smooth; leaves opposite, obovate and lanceolate; peduncles axillary, 1-flowered, elongated.

HAB. Sandy soil. N. J. to Car. June. 24. —Root very long and tapering. Stem short. Leaves sessile, varying in form from obovate to linear. Flowers solitary, on peduncles which are about as long as the leaves.

6. *E. portulacoides* Linn.: erect; leaves entire, oval, retuse; peduncles axillary, 1-flowered, as long as the leaves.

HAB. Sandy soils. Penn. June—Aug. 24.—Dr. Torrey thinks it may be a variety of *E. corollata*.

7. *E. dentata* Mich.: hairy; leaves opposite, oval, dentate; flowers crowded at the summit of the stem.


   —Upper leaves spotted.

** Flowers umbelled-involucrate.

8. *E. peplus* Linn.: umbel 3-cleft, dichotomous; involucels (floral leaves) ovate; leaves entire, obovate, petioled.

HAB. Cultivated grounds. Penn. to Vir. July, Aug. ꝑ—

   Floral leaves large. Flowers conspicuous.

9. *E. obtusata* Pursh: umbel 3-cleft, twice dichotomous; involucels ovate, somewhat obtuse, subcordate; leaves alternate, sessile, spatulate, serrate, smooth; capsules muricate.
URTICEÆ.


10. E. mercurialina Muhl. : stem weak and slender, simply 3-cleft; leaves opposite and ternate, sub sessile, oval, entire; peduncles terminal, solitary, 1-flowered.


11. E. lathyrus Linn. : umbel 4-cleft, dichotomous; leaves opposite, lanceolate, entire.


12. E. corollata Linn. : umbel 5-cleft, 3-cleft, dichotomous; leaves and those of the stem oblong, obtuse; inner segments of the involucre petaloid, obovate.


13. E. pilosa Linn. : umbel 5-cleft, 3-cleft, bifid; floral leaves ovate; stem leaves lanceolate, somewhat hairy, serrulate at the summit; petals entire.

Hab. Wet woods. Can. to Vir. June, July. 21.—Stem 1—3 feet high.—Found in Canada by Mr. Goldie.

14. E. helioscopia Linn. : umbel 5-cleft, 2-cleft, dichotomous; floral leaves obovate; stem leaves cuneiform, serrate, smooth; capsule smooth.


Order CVIII. URTICEÆ. Lind.

Flowers monoecious or dioecious, scattered or clustered. Perianth membranous, lobed, persistent. Stamens definite, distinct, inserted into the base of the calyx and opposite its lobes. Ovary superior, simple; stigma simple. Fruit a simple indehiscent nut, surrounded either by the membranous or fleshy perianth. Seed solitary, erect; embryo straight, curved or spiral; radicle superior.

Trees, shrubs or herbs, with alternate leaves, often covered with pungent hairs.

1. URTICA. Linn.

1. *U. pumila* Linn.: leaves opposite, ovate, acuminate, 3-nerved, serrate; lower petioles as long as the leaves; flowers monoecious, triandrous, in clustered corymbs, shorter than the petioles.


2. *U. urens* Linn.: leaves opposite, elliptic, somewhat 5-nerved, acutely serrate; spike glomerate, by pairs; flowers clustered.


3. *U. dioica* Linn.: leaves opposite, cordate, ovate-lanceolate, coarsely serrate; flowers dioecious; spike paniculate, clustered, by pairs, longer than the petiole.


Large Stinging Nettle.

4. *U. procera* Muhl.: leaves opposite, ovate-lanceolate, serrate; petioles fringed; flowers dioecious; spikes branching, clustered, by pairs, longer than the petioles.

Hab. Low grounds. N. Y. S. to Car. July, Aug. 2lf.—Stem 3–4 feet high, obtusely 4-angled. Flowers in compact approximate clusters.—According to Mr. Elliott, the leaves of this species are never cordate, and the spikes are uniformly longer than the petioles, in which points it differs from the *U. procera* of Pursh, which would seem to be a distinct species, probably the next.

5. *U. gracilis* Linn.: stem hispid; leaves opposite, ovate-lanceolate, serrate, cordate at base; flowers dioecious; peduncles hispid; clusters in pairs, somewhat branched, about as long as the petioles.—*U. procera* Pursh.?


Slender Stalked Nettle.

6. *U. capitata* Linn.: leaves alternate, cordate-ovate, acuminate, serrate, 3-nerved, twice as long as the petiole; clusters spiked; spikes solitary, shorter than the leaves, leafy at the summit; stem naked.


7. *U. divaricata* Linn.: leaves alternate, ovate, acuminate, serrate, rather smooth; petioles long, ciliate; panicles axillary, solitary, diversely branched, longer than the petiole; stem stinging.

Hab. Damp rocky grounds. Can. to Car. July, Aug. 2lf.—Stem 2–3 feet high, branched.—Allied to the next species, but differs in the leaves being smooth and not cordate, the panicles solitary and mixed with fertile flowers.
8. *Urtica canadensis* Linn.: leaves alternate, cordate-ovate, acuminate, serrate, hispid on both sides; panicles axillary, mostly in pairs, di-varicately branched; the lower ones sterile, and longer than the petiole; the upper ones fertile, elongated; stem very hispid, stinging.

**Hab.** Miry shaded grounds. Can. to Car. July, Aug. 24.—**Stem 5—6 feet high. Leaves ovate, large.** The fibres of this species are very tough and strong, and it was formerly proposed by Mr. Whitlow as a substitute for hemp.  *Canadian Nettle.*

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2. **Parietaria** Linn.


*P. pensylvanica* Muhl.: leaves oblong-lanceolate, veiny, with opaque dots; involucre 3-leaved, longer than the flower.  **Hab.** Moist rocks. Penn. to Geor. June. 24.—**Stem 12—15 inches high, simple. Flowers in compact axillary clusters.**  *Pellitory.*

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3. **Cannabis** Linn.


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4. **Humulus** Linn.


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5. **Boehmeria** Wild.

Monoecious. **Sterile Fl. Perianth 4-parted.**
mens 4. **Fertile Fl. Perianth none. Style 1. Nut compressed.**

1. **B. cylindrica** Willd.: leaves opposite, ovate-oblong, acuminate, toothed, smooth; flowers dioecious; sterile spikes clustered, interrupted; fertile ones cylindrical; stem herbaceous.
   **Hab.** Wet ground. Can. to Flor. June—Aug. **2f.—Stem 2—3 feet high. Leaves petioled, 3-nerved. Flowers minute; the fertile ones forming a compact cylindrical spike which is 1—2 inches long.**

2. **B. lateriflora** Muhl.: leaves alternate, ovate-lanceolate, acuminate-serrate, scabrous; flowers lateral, clustered; stem herbaceous.
   **Hab.** Shady woods. Penn. to Car. July. **2f.—Stem smooth. Leaves on long petioles, 3-nerved, scabrous on both sides. Clusters axillary and lateral, few-flowered.**

**Order CIX. ARTOCARPEÆ.** R. Brown. Lind.

**Flowers** monoecious, in heads or aments. **Perianth usually divided, sometimes tubular or entire. Stamens solitary or several, straight. Ovary 1- or 2-celled, superior, rarely inferior; ovule suspended; style single, filiform; stigma bifid. Fruit usually a fleshy receptacle, covered by numerous nuts, rarely reduced to a single flower. Seed suspended, solitary; embryo straight or curved; radicle pointing to the hilum.**

**Trees, shrubs or herbs. Leaves alternate, toothed or lobed, or entire.**

1. **MORUS.** Linn.


1. **M. rubra** Linn.: dioecious; leaves cordate, ovate, acuminate, often 3-lobed, equally serrate, scabrous, pubescent beneath; fertile aments cylindrical; fruit purple.
   **Hab.** Woods. N. S. to Car. May. **3.—A large tree with long virgate branches. Leaves often divided. Flowers, according to Mr. Elliott, always dioecious.—The fruit is esteemed by some, and the wood is remarkably durable. Red Mulberry.**

2. **M. alba** Linn.: monoecious; leaves deeply cordate, unequal at base, ovate and lobed, unequally serrate, nearly smooth; fruit white.
   **Hab.** Naturalized in various parts of the U. S. May. **3.—A tree from 20 to 30 feet high.—Employed chiefly in raising the silk worm. White Mulberry.**

Flowers naked, seated upon a scale, monoclinous. Stamen 6, clavate, hypogynous, persistent; filaments slender; anthers continuous with the filament, cuneate, with a thick connecticum and 2 lateral lobes bursting longitudinally. Ovary 4, each distinct, with 1 ascending ovule and a sessile recurved stigma, or connate into a 3 or 4-celled pistil, with a few ovules ascending from the edge of the projecting semi-disseminates. Fruit consisting of 4 fleshy indehiscent nuts or 3- or 4-celled capsule, opening at the apex and containing a few ascending seeds. Seeds with a membranous integument; embryo minute, lying in a fleshy lenticular sac, which is seated on the outside of mealy albumen at the end most remote from the hilum.

Herbs growing in marshy places, or floating in water. Leaves alternate, with stipules.

1. Saururus. Linn.

Flowers in an ament, or crowded spike. Scales 1-flowered. Stamens 6. Anthers adnate with the filaments. Capsule 4, each 1- or rarely 2-seeded, not opening.

Hexandria. Tetracyonia.

S. cernua Linn.—Anonymos aquatica Walt.


Order CXI. Amentaceæ. Juss.

Flowers monoecious or dioecious. Sterile Fl. in aments, with scales, or a scaly perianth. Stamens inserted into the scales, definite or indefinite, rarely monadelphous; anthers 2-celled. Fertile Fl. in aments, solitary or fasciculated, with scales or perianths. Ovary free, simple, rarely several; stigmas many. Fruit a drupe, or a bony or membranaceous capsule, mostly 1-celled. Seeds 1 or many; albumen none; radicle straight.

Trees or shrubs. Leaves alternate.
DICOTYLEDONOUS PLANTS.

Suborder I. SALICINEÆ.

1. SALIX. Linn.


* Leaves entire or obscurely serrate.

1. S. viminalis Linn.: leaves linear-lanceolate, very long, acuminate, nearly entire, somewhat undulate, white silky beneath; stipules very small, sublanceolate; branches virgate; amens appearing before the leaves; scales roundish, very hairy; germs sessile, ovate; style filiform; stigmas acute, undivided.


2. S. candida Willd.: leaves linear-lanceolate, very long, obscurely toothed at the point, pubescent above, white-tomentose beneath, with the margin revolute; stipules lanceolate, as long as the petioles; amens appearing before the leaves, cylindric; scales obovate-lanceolate, very long, villous.

Hab. Shady woods. N. Y. and Penn. N. to Arc. Amer. April, May. *

3. S. muhlenbergiana Willd.: leaves lanceolate, nearly acute, entire, pubescent-hoary, rugosely-veined beneath, with the margin revolute; stipules deciduous, lanceolate; amens appearing before the leaves, diandrous; scales oblong, the margins villous; germs ovate-lanceolate, clothed with silken hairs, on long pedicels; style short; stigmas bifid.—S. alpina Walt.

Hab. Dry woods. N. Y. to Car. April. — A shrub 2—5 feet high, often decumbent; branches pubescent, greenish-yellow, with black dots. Scales white, with a red tip. Anthers purple and yellow. Dwarf or Speckled Willow.

4. S. tristis Muhl.: leaves linear-lanceolate, acute at each end, entire, with the margins revolute, smoothish above, rugosely veined and tomentose beneath; stipules none; amens appearing before the leaves.

Hab. Sandy woods. N. J. to Car. March, April. — A shrub resembling the preceding, but differing in the form of the leaves and in the absence of stipules.

5. S. recurvata Pursh: leaves obovate-lanceolate, acute, very entire, with the margin glandular, smooth, glaucous beneath, silky when young; stipules none; amens appearing before the leaves, recurved; scales black at the point, with long hairs; germs ovate, on short pedicels, silky; style very short; stigmas bifid.
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Hab. Shady woods. N. J. and Penn. April. ♀.—A low shrub, with brown smooth branches and yellow buds.

6. S. pedicillaris Pursh: branches smooth; leaves obovate-lanceolate, acute, very entire, smooth and of the same colour on both sides; stipules none; aments pedunculate, very smooth; scales oblong, half the length of the pedicel, scarcely hairy; germs ovate-oblong, on a very long pedicel; stigmas sessile, bifid.


7. S. rosmarinifolia Linn.: leaves straight, linear-lanceolate, acute at each end, very entire, pubescent above, silky beneath; stipules lanceolate, erect; aments appearing before the leaves; scales oblong, obtuse, ciliate; germs pedicellate, lanceolate, villous; stigmas subsessile, bifid.

Hab. Wet meadows and mountain swamps. Penn. to Car. March. ♀.—A shrub 1—3 feet high; the branches silky pubescent. Leaves 1 1-2 inches long, becoming smooth when old. —According to Sprengel, the Linnaean S. rosmarinifolia is identical with S. depressa of Hoffmann.

8. S. repens Linn.: creeping; leaves elliptic-lanceolate, very entire, acute, smooth, somewhat silky beneath; stipules none; aments appearing before the leaves, ovate, diandrous; scales obovate, obtuse, hairy, fuscous at the point; germs ovate-oblong, on pedicels, pubescent; style very short; stigmas 2-lobed; capsule smooth.—S. depressa Hoff.

Hab. Can. and N. Y.? May. ♀.—A very small creeping species.

**. Leaves remotely and obtusely serrate.

9. S. conifera Wangh.: leaves oblong-lanceolate, flat, remotely serrate, acute, smooth above, tomentose beneath; stipules lunate, subdentine; aments appearing before the leaves, diandrous; scales lanceolate, obtuse, villous; germs on pedicels, lanceolate, silky; style bifid; stigmas 2-lobed.—S. longirostris Mich.

Hab. Shady woods. N. Y. to Car. April. ♀.—Shrub 4—8 feet high, with cone-like excrescences at the end of the branches. Style long.

10. S. myricoides Muhl.: leaves oblong-lanceolate, acute, biglandular at base, obtusely serrate, smooth, glaucescent beneath; stipules ovate, acute, glandular-serrate; aments villous, leafy at the base; scales lanceolate, obtuse, villous, black; germs on long pedicels, lanceolate, glabrous; style bifid; stigmas bifid.


11. S. prinoides Pursh: leaves oval-oblong, acute, remotely undulate-serrate, glabrous, glaucescent beneath; stipules semicordate, incisedly toothed; aments appearing before the leaves, villous; germs pedicellate, ovate, acuminate, silky; style long; stigmas bifid.
On the banks of rivers. Penn. to Vir. March, April. ½. —A shrub 6–8 feet high.

12. *S. discolor* Willd.: leaves oblong, somewhat obtuse, smooth, remotely serrate, very entire at the point; glaucous beneath; stipules deciduous, lanceolate, serrate; aments appearing with the leaves, diandrous, oblong, tomentose; scales oblong, acute, hairy, black; germs subsessile, lanceolate, tomentose; style of middling length; stigmas 2-parted.

Hab. Low grounds. N. Eng. to Car. April. ½.—A shrub or small tree, dark brown. Filaments white; anthers red, yellow when burst.—Perhaps identical with the preceding. **Bog Willow.**

13. *S. angustata* Pursh: leaves lanceolate, acute, very long, gradually attenuated at the base, serrulate, very smooth, nearly of the same colour; stipules semicordate; aments appearing before the leaves, erect, somewhat glabrous; germs pedicellate, ovate, smooth; style bifid; stigmas 2-lobed.

Hab. Banks of streams. N. Y. and Penn. W. to Miss. March, April. ½.—A shrub with very long leaves.—Resembles *S. prionoides*. According to Mr. Nuttall it is identical with the next.

14. *S. longifolia* Muhl.: leaves linear, acuminate at each end, elongated, remotely toothed, smooth, nearly of the same colour on both sides; stipules lanceolate, toothed; aments peduncled, tomentose, diandrous; scales flat, retuse; filaments bearded at base, twice the length of the scales.

Hab. On the banks of the Susquehannah. Penn. W. to Miss. Muhl. July. ½.—A shrub about 2 feet high, with brown branches and white branchlets.

**Leaves closely and acutely serrate.**

15. *S. babylonica* Linn.: branches pendulous; leaves lanceolate, acuminate, serrate, smooth, somewhat glaucous beneath; stipules roundish-acuminate, serrate; aments appearing with the leaves; germs sessile, ovate, smooth.

Hab. Road sides, near cultivated ground. May. ½.—A tree which is introduced from Europe, but has been so much planted for ornament as to have become almost naturalized. **Weeping Willow.**

16. *S. purshiana* Spreng.: leaves very long, linear-lanceolate, gradually attenuate above; subsfalcate at base, acute, approximate-serrate, smooth on both sides, silky when young; stipules lunate, toothed, reflexed.—*S. falcata* Pursh.—*S. cordata* var. *falcata* Torr.? Fab. Banks of streams. Penn. to Vir. Pursh. Penn. Darlington. ½.—A small tree, 8–15 feet high, with smooth and slender branches.—Humboldt having given the name of *falcata* to a South American species of *Salix*, Sprengel proposes to change the name of Pursh's plant. *Spreng. Syst.* v. 608.

17. *S. nigra* Marsh.: leaves lanceolate, acute at each end, serrulate,
smooth on both sides; petiole and midrib tomentose above; stipules toothed; aments appearing with the leaves, erect, cylindric, villous; scales oblong, very villous; filaments 3—6, bearded at base; germs pedicelled, ovate, smooth; style very short; stigmas bifid.—S. caroliniana Mich.—S. pentandra Walt.

Hab. Banks of streams. Penn. to Car. April, May. ½.—A tree from 15—20 feet high, generally branching from the base; branches very brittle at base. Sterile aments 3 inches long. Filaments generally 5.

18. S. lucida Muhl.: leaves ovate-oblong, cuspidate-acuminate, rounded at base, serrate, smooth and shining on both sides; stipules oblong, serrate; aments appearing with the leaves, triandrous; scales lanceolate, obtuse at base, pilose, serrate at the point, smooth; germs lanceolate-subulate, smooth; style very short; stigmas obtuse.

Hab. Low grounds. N. Y. to Vir. May. ½.—A shrub or small tree with yellowish-brown branches. Leaves thick.

19. S. rigida Muhl.: leaves oblong-lanceolate, acuminate, subcordate at base, rigid, smooth, coarsely serrate, the lowest serratures elongated; petioles villous; stipules large, cordate, obtuse, serrate; aments appearing with the leaves, triandrous; scales lanceolate, woolly, black; germs on long pedicels, lanceolate, smooth; style very short; stigmas 2-parted.—S. cordata Mich.

Hab. Swamps. N. Eng. to Vir. April, May. ½.—A small tree; branches green, red towards the end, the younger ones pubescent. It is tough and much used by basket makers.

20. S. cordata Muhl.: leaves oblong-lanceolate, acuminate, cordate at base, acutely serrate, smooth, paler beneath; stipules large, ovate-roundish, serrate; aments appearing with the leaves, triandrous; scales lanceolate woolly, black; germs on pedicels, lanceolate, smooth; style very short; stigmas bifid.

Hab. Low swampy ground. N. Y. to Vir. N. to Arc. Amer. April, May. ½.—A shrub 6—8 feet high, with large and broad leaves.

21 S. grisea Willd.: leaves lanceolate, acuminate, serrulate, smooth above, silky or naked beneath; stipules linear, deflexed, deciduous; aments appearing before the leaves; scales oblong, hairy, black at the point; germs oblong, pedicelled, silky; stigmas sessile, obtuse.—S. sericea Muhl.

Hab. Low grounds. Penn. to Vir. April. ½.—A shrub 3—8 feet high; branches greenish-purple, very brittle at the base.

22. S. petiolaris Smith: leaves lanceolate, serrate, smooth, glaucous beneath, silky at base, mostly unequal; stipules lunate, toothed; aments appearing before the leaves, loose; scales obovate, obtuse, hairy, black; germs on long pedicels, ovate, silky, stigmas sessile, 2-lobed.

Hab. Swamps and banks of streams; common. Pursh. April. ½.—A small tree with slender smooth dark brown branches.
23. *S. alba* Linn.: leaves lanceolate, acuminate, serrate, silky on both sides; lower serratures glandular; stipules obsolete; amens appearing with the leaves, elongated; scales elliptic-lanceolate, of the same colour, pubescent; germs sessile; ovate-oblong; style short; stigmas 2-parted, thick.

_Hab._ Road sides and river banks. April, May. _P._—A tall tree, introduced from Europe. _Pursh._

24. *S. vitellina* Linn.: leaves lanceolate, acuminate, with thickened serratures, smooth above, paler and somewhat silky beneath; stipules none; amens appearing with the leaves, cylindric; scales ovate-lanceolate, externally pubescent; germs sessile, ovate lanceolate, smooth; stigmas subsessile, 2-lobed.

_Hab._ Road sides and about farms. May. _P._—A middle-sized tree, introduced from Europe.

25. *S. decipiens* Hoff.: leaves lanceolate, acuminate, serrate, very smooth, same colour on both sides; petioles glandular toothed; stipules roundish; amens appearing with the leaves; scales obovate, villous; germs subsessile, lanceolate, smooth; stigmas sessile, 2-parted.—*S. fragilis* Linn.—*S. russelianana* Smith.

_Hab._ Road sides, &c. Introduced into the N. S.? Native in Arc. Amer. _Richardson._ April, May. _P._—A small tree with very brittle branches.

26. *S. ambigua* Pursh: leaves lanceolate, acuminate, same colour on both sides, smooth, glandular, serrate; amens appearing with the leaves; nectary large; its lobes lanceolate, smooth, toothed at the summit; terminal flowers triandrous.

_Hab._ Low grounds. N. Y. and N. J. April. _P._—The only authority for this as an American species, I believe, is _Pursh_, who says it resembles in leaves and habit *S. vitellina*, and in fructification *S. decipiens*. _Sprengel_ considers it a variety of *S. triandra* of _Linnaeus_.

2. *POPULUS._ Linn.

_Dioecious._ *Ament* cylindrical; scales lacerated. _Sterile Fl._ *Anthers* 8—30, arising from a turbinate, oblique, entire, single perianth. _Fertile Fl._ *Perianth* turbinate, entire. _Stigmas* 4. _Capsule* superior, 2-celled, 2-valved, many-seeded. _Seeds_ comose. _Dioecia._ _Octandria._

1. *P. balsamifera* Linn.: leaves ovate, acuminate, appressed-serrate, white and reticular-veined beneath; buds resinous.

_Hab._ Can. and N. to the Arctic Sea; abundant. Introduced into N. Y. March. _P._—A tree from 70—80 feet high, the young buds of which are covered with an odoriferous balsam.

_Balsam Poplar._ Tacamahac.

2. *P. candicans* Ait.: leaves cordate, ovate, acuminate, obtusely and unequally serrate, white beneath, somewhat 3-nerved, reticular-vein-
AMERICAN COTTON-WOOD. 325
ed; petioles hairy; buds resinous; branches terete.—P. canadensis
and latifolia Moench.

Hab. Woods. N. Eng. Pursh. March. β.—A tree from
40—50 feet high; leaves large; buds covered with balsam.
Balm of Gilead.

3. P. tremuloides Mich. : leaves roundish, abruptly acuminate, den-
tate-serrate, pubescent on the margin.—P. trepida Willd. ？

Hab. Woods. N. S. N. to Subarc. Amer. April. β.—A
tree from 20—30 feet high, with smooth bark. Leaves small,
light, roundish. Flowers in pendulous silken aments.

4. P. monilifera Ait. : leaves subcordate-deltoid, smooth, glandular
at base, serrate; serratures cartilaginous, hamate, somewhat hairy;
nerves spreading; petioles compressed above; older branches terete.
—P. glandulosa and P. carolinensis Moench.

Hab. Banks of the Hudson, near Troy, N. Y.; apparently native.
April. β.—A tree 70—80 feet high. Fertile aments very long.
—Michaux remarks that this tree has not been met with in N.
America growing wild, but it has been generally considered a
native of this country. Virginia Poplar.

5. P. hudsonica Mich. : leaves rhomboid, with a very long acumina-
tion, dentate-serrate, smooth; young branches hairy.—P. betulifolia
Pursh.

Hab. Banks of streams. N. S. March. β.—A tree 30—40
feet high, with spreading branches, which are covered with a
grayish-white bark when young. American Black Poplar.

6. P. grandidentata Mich. : leaves ovate, nearly round, acute, unequal-
ly and sinutately toothed, smooth, the younger ones villous; petioles
compressed near the summit.

b. penduila Nutt. : branches pendulous.

Hab. Can. and N. S. April. β.—A tree from 40 to 50 feet high,
covered with a smooth greenish bark. Young leaves covered with
a thick down, which disappears as they become older. The
large and unequal indentations on the margins of the leaves
sufficiently-characterises this species.—Var b, is found on the
Alleghany mountains, Penn. American Large Aspen.

7. P. laxigata Ait.: leaves roundish-ovate, deltoid, acuminate, sub-
cordate, unequally serrate, smooth, glandular at base; petioles com-
pressed; younger branches angled.—P. canadensis Mich.

Hab. Rocky grounds. Can. to Vir. W. to the Rocky Moun-
tains. March. β.—A tree from 70 to 80 feet high; branches
angular, the angles forming whitish lines. Leaves large, deltoid,
somewhat cordate; petioles with two glands at the base.—This
species has been confounded with P. angulata, but according to
the younger Michaux it is distinct. Cotton Wood.

8. P. heterophylla Linn. : leaves roundish-ovate, obtuse, uncinately
toothed; the sinus small, cordate and somewhat auricled; when young
tomentose.

Hab. Swamps. N. Y. to Car. and W. to Miss. May. β.
A tree 60—80 feet high, with the branches not angled. Leaves with lobes or auricles that often conceal the insertion of the petiole.

**Suborder II. MYRICEÆ.**

3. **MYRICA.** Linn.

Dioecious. *Ament* ovate-oblong; scales lunulate. **Sterile Fl.** Stamens 4—6. **Anthers** 4-valved. **Fertile Fl.** Ovary 1. **Stigmas** 2. **Drupe** 1-celled, 1-seeded.

**Dioecia.** Tetrandria.

1. **M. gale** Linn.: leaves cuneate-lanceolate, serrate at the apex, obtuse; sterile aments imbricated; scales acuminate, ciliate; fruit in scaly heads.

**Hab.** Bogs and mountain lakes. Can. and N. S. May. b.—A branching shrub 4—5 feet high. Leaves alternate. Fruit with a strong penetrating spicy scent.

**Sweet Gale.** Dutch Myrtle.

2. **M. cerifera** Linn.: leaves cuneate-lanceolate, with a few serrations near the summit, acute; sterile aments loose; scales acute; fruit globular, naked.—*M. caroliniensis* and *pennsylvanica* Pursh, ?

**Hab.** Shady woods. N. Eng. to Flor. May, June. b.—A shrub 2—8 feet high, but sometimes (especially at the South,) 10—18 feet, diffusely spreading. Leaves varying in width, sometimes entire, somewhat pubescent. Fruit small, dry and juiceless; but by boiling, a wax of very pleasant flavour is extracted from it, which is used for making candles, &c. Big. Med. Bot. iii.

**Bayberry.** Wax Myrtle.

4. **COMPTONIA.** Gaert.

Monoecious. **Sterile Fl.** *Ament* cylindrical; scales 1-flowered. **Perianth** 2-parted. **Stamens** 3, forked; anthers 6. **Fertile Fl.** *Ament* globose; scales 1-flowered. **Styles** 2. **Nut** ovate.

**Monoecia.** Triandria.

*C. asplenifolia* Ait.—Liquidambar asplenifolium Linn.

**Hab.** Woods. Can. to Geor. April, May. b.—A shrub 2—4 feet high. Leaves long, linear, cut almost to the midrib into numerous roundish lobes. Flowers in oval sessile aments—The whole plant when rubbed, has a strong and somewhat fragrant scent. Nuts forming a round burr.

**Sweet Fern.**

**Suborder III. BETULINEÆ.**

5. **BETULA.** Linn.

Monoecious. **Ament** cylindrical. **Sterile Fl.** **Perianth** none. **Stamens** 10—12. **Fertile Fl.** Scales imperfectly

*Monoecia. Polyandria.*

1. *B. populifolia* Ait.: leaves deltoid, long-acuminate, unequally serrate, very smooth; petioles smooth; scales of the strobile with rounded lateral lobes.

**Hab.** Rocky woods. Can. and N. S. May. ą.—A tree from 30—40 feet high, with white bark which is easily separable into thin layers. *Leaves* tapering to a long point. *Flowers* in long pendulous aments. *White Birch.*

2. *B. excelsa* Ait.: leaves ovate, acute, serrate; petioles pubescent, shorter than the peduncles; scales of the strobile with rounded lateral lobes.—*B. lutea* Mich. f.

**Hab.** Low grounds. N. Eng. and N. Y. May, June. ħ. —A tree from 70—90 feet high, with a yellowish bark, which is slightly fragrant. *Fertile aments* ovate, erect.—Used for fuel. *Yellow Birch.*

3. *B. nigra* Linn.: leaves rhombic-ovate, doubly serrate, acute, pubescent beneath, entire at base; fertile amant ovate; scales villous, with the segments linear and equal.—*B. rubra* Mich. f.

**Hab.** Banks of streams. N. J. to Car. May. ħ. —A medium-sized tree, though sometimes quite large. *Leaves* on short petioles and acutely serrate.—The wood is of little consequence.

*Red Birch.*

4. *B. papyracea* Ait.: leaves ovate, acuminate, doubly serrate; veins beneath hirsute; petioles smooth; fertile aments pedunculate, nodding; scales with short suborbicular lateral lobes.—*B. papyrifera* Mich.

**Hab.** Can. and N. Y. N. to Hudson's Bay. May, June. ħ. —A large tree, the bark of which is used by the Indians for constructing their canoes. *Canoe Birch.*

5. *B. lenta* Linn.: leaves cordate-ovate, sharply serrate, acuminate; nerves beneath and petioles hairy; scales of the amant smooth; lobes obtuse, equal, with elevated veins.—*B. carpinifolia* Mich.

**Hab.** Woods. Can. to Geor. May, June. ħ. —A large tree, with the branches spotted with white when young. Its bark is fragrant and aromatic. *Leaves* cordate at base and terminating in a long point.—The wood of this species has a fine grain, and is susceptible of polish. *Black Birch. Mahogany Birch.*

6. *B. pumila* Linn.: young branches pubescent, without dots; leaves orbicular-ovovate; petioles densely pubescent beneath; fertile amant cylindrical.

**Hab.** Mountain bogs. Can., N. Y. and Penn. May, June. ħ.—A shrub 2—3 feet high, with the leaves on short petioles.

7. *B. glandulosa* Mich.: branches glandular, punctate, smooth; leaves obovate, serrate, very entire at base, smooth, subsessile; fertile amant oblong; scales half 3-cleft; seeds orbicular, with a narrow margin.
DICOTYLEDONOUS PLANTS.

HAB. Mountains. Can. and N. S. W. to N. W. Terr. May. 6.—A shrub about 2 feet high.

8. *B. nana* Linn.: very smooth; leaves orbicular, crenate, reticulare-veined beneath; scales of the ament deeply 3-parted; segments oblong; seeds orbicular, nearly wingless.

HAB. White Mountains, N. H. N. to Hudson's Bay. April, May. 6.—A shrub 1 or 2 feet high, with small leaves.

6. ALNUS. Willd.


Monoecia. Tetrandria.

1. *A. serrulata* Willd.: leaves obovate, acuminate, veins and axils of the veins hairy beneath; stipules elliptic, obtuse.

HAB. Swamps and banks of rivers. Can. to Car. March. 6.—A shrub 6—10 feet high, with alternate leaves. Sterile flowers in a long pendulous ament; fertile ones short and rigid, forming a persistent cone. Alder.

2. *A. undulata* Willd.: leaves ovate-oblong, acute, unequally serrate, undulate; petioles and veins beneath hairy; stipules ovate-oblong.—*A. crispa* Pursh.—*Blechera crispa* Mich.

HAB. Can. and mountains in N. S. April. 6.—A shrub 3—4 feet high.

7. CARPINUS. Linn.


Monoecia. Polyandria.

*C. americana* Willd.: leaves oblong-ovate, acuminate, unequally serrate; scales of the strobile 3-parted, the middle segment oblique, ovate-lanceolate, toothed on one side.—*C. virginiana* Mich.f.

HAB. Woods. Can. to Flor. May. 6.—A small tree, with the leaves alternate on short petioles and sharply serrate. Fertile aments loose, with large foliaceous scales. Hornbeam.

8. OSTRYA. Mich.


Monoecia. Polyandria.
O. virginica Willd.: leaves ovate-oblong, cordate at the base, acuminated, unequally serrate; strobile oblong-ovate, erect; buds acute.

—Carpinus Ostrya Mich.?

Hab. Woods. Can. to Car. May. 5.—A small tree with exceedingly hard and heavy wood. Leaves alternate, ovate. Fertile flowers enlarged into a sort of oblong cone resembling the common hop.


Suborder. IV. PLATANEÆ.

9. PLATANUS. Linn.


P. occidentalis Linn.: leaves 5-angled, obscurely lobed, toothed, pubescent beneath; branches nearly white.

Hab. Banks of streams. Can. to Flor. and W. to Miss. May. 5.—One of the largest trees in North America, attaining in favorable situations an enormous size. Leaves alternate, on long petioles. Aments axillary, on long peduncles, globular. 

Button Wood. Sycamore.

10. LIQUIDAMBAR. Linn.


Monoecia. Polyandria.

L. styraciflua Linn.: leaves palmately lobed; lobes acuminate, serrate, with the sinuses at the base of veins villous.

Hab. Low woods. N. Y. to Flor. and W. to Miss. May. 5.—A tree sometimes attaining very large dimensions. Leaves when bruised, fragrant, and exuding a gum which is pleasant and slightly aromatic.

Sweet Gum Tree.

Suborder V. CUPULIFERÆ.

11. QUERCUS. Linn.


Monoecia. Polyandria.
Dicotyledonous Plants.

* Fructification biennial. Leaves setaceous mucronate.
† Leaves entire.

1. Q. phellos Linn.: leaves deciduous, linear-lanceolate, tapering at each end, very entire, smooth, mucronate; acorn nearly round.

Hab. Low swampy forests. N. J. to Flor. May. †.—A tree from 30 to 60 feet high, generally straight and slender. Leaves when young of a light green colour and dentate. Acorn small, nearly round.—The timber is of little use. Willow Oak.

2. Q. imbricaria Mich.: leaves deciduous, oblong, acute at each end, mucronate, very entire, shining, pubescent beneath; cup shallow; scales broad ovate; acorn subglobose.

Hab. Banks of rivers in mountaneous regions. Penn. to Car. W. to Miss. June. †.—A tree 40—50 feet high, with numerous irregular branches. Acorn small, nearly spherical, in a flat nearly sessile cup.—The wood splits easily and is used in the Western States for shingles. Shingle Oak.

†† Leaves dentate or with short lobes.

3. Q. heterophylla Mich.: leaves on long petioles, ovate-lanceolate or oblong, entire or coarsely toothed; cup hemispherical; acorn subglobose.

Hab. Banks of the Delaware. Penn. May. †.—According to Pursh, there is only one individual of this species known, which grows near Philadelphia. He suggests that it may be a hybrid. It is figured and described by Michaux in his Sylva Americana.

4. Q. aquatica Walt.: leaves obovate-wedge-form, smooth, very entire, obscurely 3-lobed at the end, with the middle lobe largest; cup hemispherical; acorn subglobose.—Q. nigra Linn.


Water Oak.

5. Q. triloba Linn.: leaves oblong-wedge-form, acute at the base, somewhat 3-lobed at the end; lobes equal, mucronate, tomentose beneath, middle one longer; cup flat; acorn depressed-globose.


6. Q. nigra Willd.: leaves coriaceous, wedgeform, subcordate at base, dilated and retusely 3-lobed at the summit; when young mucronate, smooth above, rusty and pulverulent beneath; cup turbinate, with scales obtuse and scarious; acorn short, ovate.—Q. ferruginea Mich. f.

Hab. Sandy woods. N. J. to Flor. May. †.—A tree 20—30 feet high, irregular in its growth, and covered with a thick rough black bark.—The wood is much esteemed for fuel.

Barren Oak. Black Jack.

7. Q. tinctoria Bartram: leaves obovate-oblong, slightly sinuate, pubescent beneath; lobes oblong, obtuse, obscurely toothed, mucronate; cup flat; acorn depressed-globose.
Hab. Woods. Can. to Geor. W. to Miss. May. ½.—One of the largest species of oak, sometimes attaining the height of 70 or 80 feet, covered with a dark coloured bark, from whence it has derived its common name. It is highly valued on account of its timber, as well as its bark. **Black Oak. Quercitron.**

8. *Q. discolor* Ait.: leaves oblong, pinnatifid-sinuate, pubescent beneath; lobes oblong, toothed, setaceous-mucronate; cup turbinate; acorn ovate.—*Q. tinctoria* sinuosa Mich.f.

Hab. Forests. Penn. to Car. May. ½.—A large tree, resembling the preceding, and also *Q. coccinea*, but differs in having the young leaves covered with down.—It is still, however, doubtful whether it is really distinct.

†† Leaves deeply sinuate and lobed.

9. *Q. coccinea* Waugh.: leaves on long petioles, oblong, deeply sinuate, smooth; lobes divaricate, dentate, acute, setaceous-mucronate; cup turbinate, scaly; acorn short, ovate.

Hab. Fertile woods. N. Eng. to Geor. May. ½.—A tree 70–80 feet high. Distinguished by the brilliant red colour of its leaves towards the close of autumn.—Its wood is used for staves and fuel. **Scarlet Oak.**

10. *Q. rubra* Linn.: leaves on long petioles, oblong, smooth, obtusely sinuate; lobes rather acute, toothed, setaceous-mucronate; cup flat, nearly smooth; acorn subovate.

Hab. Forests. Can. to Geor. May. ½.—A tree 70–80 feet high. *Leaves* bright green; sinuses large, rounded.—Resembles the former, but its leaves are large, and in autumn they change to a dull red and finally become yellow. The acorn also is larger, has a flat base and shallow cup.—It is valuable both for its wood and bark. **Red Oak.**

11. *Q. catesbaei* Mich.: leaves on short petioles, wedgeform at base, oblong, deeply sinuate, smooth; lobes 3–5, divaricate, dentate, acute, setaceous-mucronate; cup turbinate, broad; scales obtuse, those of the margin bent inwards; acorn subglobose.

Hab. Pine barrens. Md. to Flor. May. ½.—A shrub or small tree, from 10–20 feet high, with an irregular stem and branches. *Leaves* coriaceous and glossy. *Cup* large and remarkable for its obtuse scales.—The wood makes excellent fuel, and its bark is used for the tanner. **Barren Scrub Oak.**

12. *Q. falcata* Mich.: leaves on long petioles, obtuse at base, tomentose beneath, 3-lobed or sinuate; lobes somewhat falcate, setaceous-mucronate, the terminal one long; cup shallow, somewhat turbinate; acorn globose.—*Q. elongata* Linn.—*Q. rubra* Walt.

Hab. Sandy soil. N. J. to Geor. May. ½.—A tree 70–80 feet high. *Leaves* with 3–5 lobes, glossy on the upper surface.—The wood is used for staves, fencing and fuel. The bark is highly esteemed by tanners. **Spanish Oak. Red Oak.**

13. *Q. palustris* Mich.: leaves on long petioles, oblong, deeply sinuate, smooth; axils of the veins villous beneath; lobes divaricate, den-
tate, acute, setaceous mucronate; cup flat, smooth; acorn subglobose.

Hab. Swampy woods. N. Y. N. Eng. and Penn. W. to Ill. May. ✪—A tree 40—60 feet high, with small handsomely divided leaves. Acorns small, abundant.—The wood is firm and much used by mechanics. Water Oak. Pin Oak.

14. Q. bannisteri Mich.: leaves on long petioles, obovate-wedgeform, 3—5-lobed, entire on the margin, grayish tomentose beneath; lobes setaceous mucronate; cup subturbinate; acorn subglobose.—Q. illicifolia Wild.


Shrub or Scrub Oak.

* Fructification annual. * Fruit pedunculate. Leaves awnless.

† Leaves lobed.

15. Q. obtusiloba Mich.: leaves oblong, sinuate, wedgeform at base, pubescent beneath; lobes obtuse, the upper one dilated and 2-lobed; cup hemispherical; acorn oval.—Q. stellata Linn.

Hab. Sterile grounds. Can. to Flor. May. ✪.—A tree 30—50 feet high, with straggling irregular branches. Leaves mostly 5-lobed. Cup hemispherical, enclosing nearly half of the acorn. —The timber is much esteemed in ship building, and is supposed in durability and strength to surpass that of any other species of oak except the live oak.

16. Q. macrocarpa Linn.: leaves tomentose beneath, deeply and irregularly sinuate-lobed; lobes obtuse, repand, upper ones dilated; cup deep, with the upper scales setose; acorn ovate, turgid.

Hab. Limestone hills. Penn. and throughout the Western and South Western States. May. ✪.—A large tree with the fruit larger than in any other American species.—The wood is of excellent quality. Overcup White Oak.

17. Q. oliviformis Mich.: leaves oblong, smooth, glaucous beneath, deeply and unequally sinuate-pinnatifid; cup very deep, crenate above; acorn elliptic-oval.

Hab. Hills. N. Y. to Vir. May. ✪.—A tree somewhat resembling the preceding.—Michaux credits it to the banks of the Hudson near Albany, but I have never met with it in this vicinity.

18. Q. alba Linn.: leaves oblong, pinnatifid-sinuate, pubescent beneath; lobes linear-lanceolate, obtuse, very entire, attenuate at base; fruit pedunculate; cup deep, turbinate; acorn ovate.

Hab. Fertile forests. Throughout the U. S. May. ✪.—One of the largest and most valuable of the American forest trees, often 80—100 feet high, and 3—7 in diameter. Bark white. Leaves pubescent beneath when young.—Timber firm and durable, and of great use in ship building and in many other arts. White Oak.
AMEN TACEÆ.

19. Q. prinus Linn. : leaves on long petioles, obovate, acute, pubescent beneath, coarsely toothed; teeth unequal, dilated, callous at the point; cup deep, attenuate at base; acorn ovate.—Q. prinus palustris Mich.

Hab. Shady woods. N. Y. to Flor. May. ♀.—A large tree. Leaves large, on petioles about an inch long. Cup hemispherical, enclosing about one third of the acorn, on short peduncles. Acorn large.—Timber inferior to that of the preceding, but often employed indiscriminately with it. Swamp Chesnut Oak.

20. Q. bicolor Wildl. : leaves on short petioles, oblong-obovate, white tomentose beneath, coarsely toothed, very entire at the base; teeth unequal, dilated, rather acute, callous at the summit; fruit in pairs, on long peduncles; cup hemispherical; acorn oblong-ovate.—Q. prinus discolor Mich. ♀.

Hab. Low woods and swamps. N. Y. to Car. May. ♀.—A large tree, with the bark separating into large flat scales or plates. Leaves variable. Acorn large, in a small cup.—Its timber is in less repute than that of many other species. Swamp White Oak.

21. Q. montana Wildl. : leaves on petioles, broad-obovate, oblong, white tomentose beneath, shining above, coarsely toothed, obtuse and unequal at the base; teeth nearly equal, very obtuse; fruit in pairs, on short peduncles; cup hemispherical; scales tuberculate, rugose; acorn ovate.—Q. prinus monticola Mich.

Hab. In rocky situations. N. Y. to Car. May. ♀.—A tree of less size than the two preceding.—Its wood resembles the white oak in strength, and its bark is highly esteemed by tanners. For fuel it is scarcely exceeded in value by any of our trees.

Rock Chesnut Oak.

22. Q. castanea Muhl. : leaves on long petioles, oblong-lanceolate, obtuse at base, acuminate, tomentose beneath, coarsely toothed; teeth unequal, dilated, acute, callous at the point; cup hemispherical; acorn ovate, subglobose.—Q. prinus acuminata Mich.

Hab. Mountains. N. Y. to Geor. May. ♀.—A tree 60—70 feet high. Leaves on long petioles and narrower than those of the former. Fruit middle-sized, on short peduncles.—In name and use it is often confounded with Q. prinus. Yellow Oak.

23. Q. chinquapin Mich. : leaves on short petioles, obovate, acute at the base, coarsely toothed, glaucous beneath; teeth nearly equal, dilated, callous at the point; cup hemispherical; acorn ovate.—Q. prinoides Wildl.

Hab. Barrens. N. Y. to Geor. May. ♀.—A shrub from 3—4 feet high. Acorns small, numerous.—It occurs in tracts or patches intermingled with Q. bannisteri.

Chinquapin. Dwarf Chesnut Oak.

12. CASTANEA. Tourn.

Monoecious. Sterile Fl. Ament very long, cylindrical.

Monoecia. Polyandria.

1. C. vesca Willd.: leaves lanceolate, acuminate, mucronately-serrate, smooth on both surfaces.—Fagus castanea Linn. Walt.

Hab. Dry woods. N. Y. to Car. W. to Ill. May, June. ½.—A large tree, and one of the most useful. Leaves 6 inches long, pubescent beneath when young. Spikes of sterile flowers as long as the leaves, yellowish. Nuts generally 3.—The American species appears to be identical with the European, although by some botanists it is considered distinct. The wood is extremely durable and is highly esteemed for posts and rails to construct fences.

Chesnut Tree.

2. C. pumila Willd.: leaves oblong, acute, mucronate-serrate, white tomentose beneath.

Hab. Sandy fields and woods. N. J. to Geor. May. ½.—A shrub or small tree—at the North being seldom more than 10 or 12 feet high. Leaves smaller than in the preceding, oval and ovate. Nut small, ovate, acute, very sweet.—The wood is durable, but too small to be converted to much use.

Chinquapin.

13. CORYLUS. Linn.


1. C. americana Walt.: leaves roundish, cordate, acuminate; involucre roundish-campanulate, larger than the subglobose nut; border dilated, many-cleft.


2. C. rostrata Ait.: leaves oblong-ovate, acuminate; stipules linear-lanceolate; involucre tubular-campanulate, longer than the nut, 2-parted, with incised segments.


14. FAGUS. Linn.

Monoecious. Sterile Fl. Ament globose. Perianth 6-cleft. Stamens 5—12. Fertile Fl. 2, within a 4-lobed prickly involucre or cupule. Perianth with 4—5 minute

Monoecia. Polyandria.

1. F. sylvestris Linn.: leaves ovate, acuminate, slightly toothed, ciliate on the margin, acute at base; nut ovate, triquetrous, obtuse, but mucronate.—F. sylvestris Mich.

Hab. Woods. N. H. to Geor. May. A large and beautiful tree. Leaves of a bright green.—According to Mr. Nuttall this species is dioecious. White Beach.

2. F. ferruginea Ait.: leaves ovate-oblong, acuminate, pubescent beneath, coarsely toothed, obtuse and unequally subcordate at base; nut acutely triquetrous, very acute.

Hab. Woods. Throughout the N. S. May, June. A large tree, with smooth bark. Leaves ribbed. Fruit muricate.—The wood is of a darker colour than the preceding. Both species are highly valuable timber trees, although the wood is not very durable. Red Beach.

Order CXII. ULMACEÆ. Mirb. Lind.

Flowers monochinous or polygamous. Perianth divided, campanulate, inferior. Stamens definite, inserted into the base of the calyx; erect in aestivation. Ovary superior, 2-celled; ovules solitary, pendulous; stigmas 2, distinct. Fruit 1 or 2-celled, indefinite, membranous or drupaceous. Seed solitary, pendulous; albumen none or small in quantity; embryo with foliaceous cotyledons.

Trees or shrubs with scabrous alternate simple deciduous leaves and stipules.

1. ULMUS. Linn.


1. U. americana Linn.: branches smooth; leaves somewhat doubly serrate, unequal at the base; serratures uncinately acuminate; flowers pedicellate; fruit fimbriate.

Hab. Low grounds. N. Y. to Car. W. to Miss. April, May. A large tree, with long recurved branches. Flowers purplish, in small fascicles, generally appearing before the leaves. Stamens from 4—8.—In favorable situations the most magnificent tree on the continent. White Elm.

2. U. fulva Mich.: branches scabrous, white; leaves ovate-oblong, much acuminate, pubescent on both sides; buds tomentose, with a thick tawny wool; flowers sessile.
DICOTYLEDONOUS PLANTS.

Hab. Mountains. N. Y. to Car. May. ʰ.—Tree of smaller size than the preceding. *Leaves* much larger, very rough. *Stamens* 7.—The inner bark contains a large portion of mucilage, and has been employed for medicinal purposes. *Slippery Elm.*

3. *U. nemoralis* Ait.: leaves oblong, somewhat glabrous, equally serrate, nearly equal at base; flowers sessile.

Hab. Banks of streams. N. Eng. to Vir.; scarce. April, May. ʰ.—Tree of smaller size than the preceding. *Leaves* much larger, very rough. *Stamens* 7. — *The inner bark contains a large portion of mucilage, and has been employed for medicinal purposes. Slippery Elm.*

4. *U. racemosa* Thomas: flowers in racemes; pedicles in distinct fascicles, united at their bases.


2. CELTIS. Linn.


1. *C. occidentalis* Linn.: leaves ovate, acuminate, equally serrate, unequal at base, scabrous above, hairy beneath; flowers small, subsolitary.


2. *C. crassijolia* Lam.: leaves ovate, acuminate, unequally serrate, subcoriaceous, scabrous on both sides, unequal at the base; peduncles mostly 2-flowered.


3. *C. pumila* Pursh: leaves broad-ovate, acuminate, equally serrate, unequal at the base, smooth on both sides, the younger ones only pubescent; peduncles mostly 3-flowered; fruit solitary.—*C. occidentalis var. pumila* Muhl.


Order CXIII. JUGLANDEÆ. De Cand. Lind.

Flowers diclinous. *Sterile Fl.* in an ament. *Perianth* scaly, oblique, irregularly lobed. *Stamens* inserted on the receptacle, indefinite (3—36); *filaments* short, distinct; an-
thers thick, 2-celled, bursting longitudinally. **Fertile Fl.**
with a single or double perianth, the outer 4-parted, the inner
(when present) of 4 pieces. *Ovary* inferior, 1-celled; *ovule*
soleitary, erect; *styles* 1—2, very short or none; *stigmas* large,
either 2 and lacerated, or discoid and 4-lobed. **Fruit** drupaceous,
1-celled, with 4 imperfect partitions. *Seed* 4-lobed;
embryo large; *albumen* none; *cotyledons* fleshy, 2-lobed,
wrinkled; *radicle* superior.

**Trees.** Leaves alternate, unequally pinnate.

1. **JUGLANS.** Linn.

Monoecious. **Sterile Fl.** *Ament* imbricate; scales
**Fertile Fl.** *Perianth* double, each 4-parted. *Styles* 1 or
2. **Drupe** partly spongy; *nut* rugose and irregularly furrowed.

**Monoecia. Polyandria.**

1. *J. nigra* Linn.: leaves pinnate; leaflets numerous, ovate-lanceo-
late, serrate, subcordate, tapering to the summit; the under surface
and petioles slightly pubescent; fruit globose, scabrous, dotted; nut
corrugated.

**Hab.** Fertile woods. N. Y. to Flor. W. to Miss. April, May.

*Φ.*—A tree 50—60 feet high. *Leaves* pinnate, with from 15—21
leaflets. Sterile *aments* axillary.—Timber compact, fine grain-
ed, heavy and dark coloured, when exposed to the air.

**Black Walnut.**

2. *J. cinerea* Linn.: leaves pinnate; leaflets numerous, lanceolate,
serrate, rounded at the base, soft pubescent beneath; petioles villous;
fruit oblong-ovate, with a terminal projection, viscid and hairy, on a
long peduncle; nut oblong, acuminate, conspicuously sculptured.—*J.*
cathartica Mich. f.

*Leaves* pinnate, with 15—17 pubescent leaflets.—Habit and fruc-
tification very similar to the preceding, but the *fruit* is oblong,
with a protuberant summit, and the *nut* much more deeply and

**Butter-nut. Oil-nut.**

2. **CARYA.** Nutt.

Monoecious. **Sterile Fl.** *Ament* imbricated; scales 3-
parted. *Perianth* none. *Stamens* 4—6. **Fertile Fl.** *Pe-
rianth* 4-cleft, superior. *Style* none. *Stigma* partly discoid,
4-lobed. **Pericarp** 4-valved. **Nut** quadrangular, even.

**Monoecia. Polyandria.**

_Hab._ Fertile soils. N.Y. to Car. April, May. ℃.—A large tree. _Leaves_ pinnate, with 7—9 leaflets. Sterile _aments_ 3-parted, very long, peduncled. _Nut_ large, oblong, with a very thick 4-parted pericarp.—This, like most of the species, is valuable for fuel.


_Hab._ Fertile woods. Can. to Car. and W. to Miss. April, May. ℃.—A very large and valuable tree, with the bark separating in large flat scales or plates. _Nut_ with a thinner shell than that of most other species and of a fine flavor; _pericarp_ thin, globose, depressed at the summit.—Timber much prized in consequence of the fineness of the grain and the elasticity of the fibre.

_Shell_ or _Shag-bark_ Hickory.

3. *C. tomentosa Nutt.* : leaflets generally 7—9, oblong-lanceolate, acuminate, smooth, slightly serrate, pubescent and scabrous beneath; terminal one nearly sessile; ament filiform, very long, tomentose; fruit subglobose, smooth; pericarp very thick; nut somewhat 6-angled, the shell very thick and hard.—*Juglans tomentosa* Mich.—*J. alba* Linn. b. _maxima_ Nutt.: fruit twice the ordinary size, as large as an apple.

_Hab._ Fertile woods. N.Y. to Geor. April, May. ℃.—A large tree. _Leaflets_ sometimes 5, but generally 7, very pubescent beneath. _Fruit_ large. _Nut_ compressed, somewhat oval, with 4 prominent angles, and 2 obscure ones on the ends, thick shelled and hard. Timber valuable. Var. _b._ is found near Philadelphia.

_Common_ Hickory.

4. *C. amara Nutt.* : leaflets generally 9, ovate-oblong, acuminate, sharply serrate, smooth on both sides; fruit subglobose; nut smooth, mucronate, with the shell fragile.—*Juglans amara* Mich.—*Hicorius amara* Raf.

_Hab._ Dry fertile woods. Can. to Car. May. ℃.—A large tree. _Leaflets_ 9, sessile, with the nerves and midrib pubescent. _Nut_ small, almost obcordate, with bitter and astringent kernels.

—Often confounded with the next species.

_Bitter-nut._ Swamp Hickory.

5. *C. porcina Nutt.* : leaflets generally 7, lanceolate, acuminate, serrate, smooth on both sides; fruit oblong-globose or obcordate; nut smooth, very hard.—*Juglans porcina* Mich.—*J. obcordata* and *J. glabra* Willd.

_Hab._ Fertile woods. N.Y. to Geor. May. ℃.—A very large
tree. Leaflets 5–7. Fruit small, variable, with a very bitter kernel.—Wood very tough. Pig or Hog-nut. Broom Hickory.


Flowers monoecious or dioecious. Sterile monandrous or monadelphous, collected in an ament about a common rachis; anthers 2 or many-lobed, bursting outwardly; often terminated by a crest, which is an uncovered portion of the scale, out of which each stamen is formed. Fertile usually in strobiles or cones, sometimes solitary. Ovary none (in the solitary flower,) or spread open (in the cone) and resembling a flat scale, destitute of style or stigma, arising from the axil of a membranous bract; ovules exposed; in the cones in pairs on the face of the ovary, inverted; in the solitary flower erect. Fruit a solitary naked seed, or a cone. Seeds with a hard crustaceous integument; embryo in the midst of oily albumen; radicle next the apex of the seed, having an organic connexion with the albumen.

Trees or shrubs, with a branched trunk, abounding in resin. Leaves with the veins parallel to each other.

1. Juniperus. Linn.


Dioecia. Monadelphia.

1. J. communis Linn.: leaves ternate, spreading, mucronate, longer than the berry.

b. depressa Pursh.: stems prostrate.


2. J. virginiana Linn.: trunk arboreous; upper leaves imbricated in four rows, ovate, pungently acute.


3. J. prostrata Mich.: stems prostrate, creeping; leaves imbricate,
in four rows, ovate, sub acuminate, glandular in the middle, appressed; berries large and conspicuously tubercular.—\textit{J. repens} Nutt.

\textbf{Hab.} Sandy soils. Can. and N. S. W. to Miss. May. \textit{h}.—A low shrub, with long and creeping branches, 2 yards long.

2. \textbf{THUYA.} \textit{Linn.}


\textit{Monoezia. Monadelphia.}

\textit{T. occidentalis} \textit{Linn.}: branches ancipitous; leaves imbricated in 4 rows, ovate-rhomboidal, appressed, tuberculate; strobiles obovate; inner scales truncate, gibbous below the summit.

\textbf{Hab.} Mountains. Can. to Car. May. \textit{h}.—A small tree, with very tough branches. \textit{Leaves} resembling scales.

\textit{American Arbor Vitae.}

3. \textbf{CUPRESSUS.} \textit{Linn.}


\textit{Monoezia. Monadelphia.}

1. \textit{C. disticha} \textit{Linn.}: leaves distichous, flat, deciduous; sterile flowers leafless, paniculate; strobile subglobose.

\textbf{Hab.} Swamps. N. J. to Flor. W. to Miss. May. \textit{h}.—One of the largest trees of the forest, occurring in extensive swamps, especially at the South. \textit{Leaves} small, linear and acute. \textit{Cone} with an irregular surface.—Timber very durable. \textit{Cypress.}

2. \textit{C. thyoides} \textit{Linn.}: branches compressed; leaves imbricate in four rows, ovate, tuberculate at base; strobile globose.

\textbf{Hab.} Swamps. N. Y. to Car. May. \textit{b}.—A middle-sized tree, composing the \textit{cedar swamps} of the Middle and Southern States. —Wood light, soft and durable. \textit{White Cedar.}

4. \textbf{PINUS. \textit{Linn.}}


\textit{Monoezia. Monadelphia.}

\* \textit{Leaves} 2—5, sheathing at base. \textit{Scales} of the cone thickened at the summit. \textit{Pinus.}

1. \textit{P. inops} \textit{Ait.}: leaves short, in pairs; strobile recurved, oblong-conic, as long as the leaves; spines of the scales subulate, straight.

2. P. resinosa Ait.: leaves elongated, in pairs; sheaths elongated; strobile ovate-conic, rounded at base, subsolitary, half the length of the leaves; scales dilated in the middle, unarmed.—P. rubra Mich.


3. P. banksiana Lamb.: leaves short, in pairs, rigid, divaricate, oblique; strobile recurved, tortuous; scales unarmed.—P. rupestris Mich. f.


4. P. variabilis Lamb: leaves elongated, in pairs and threes, channelled; strobile ovate-conic, mostly solitary; spines of the scales incurved.—P. mitis Mich. f.


5. P. rigida Linn.: leaves in threes; sheaths short; sterile aments erect-incumbent; strobile ovate, scattered or aggregated; spines of the scales reflexed.


6. P. serotina Mich.: leaves elongated, in threes; sterile aments incumbent, nearly erect; strobile ovate; spines of the scales straight, slender.


7. P. strobus Linn.: leaves in fives, slender; sheaths very short; strobile pendulous, cylindrical, longer than the leaves; scales loose.

Hab. Fertile soils. Can. to Vir. May. ɣ.—A very large and valuable tree, sometimes attaining the height of 140 feet. Leaves 4 inches long. Cone solitary, very long.—Timber soft fine-grained and light. White or Weymouth Pine.

** Leaves fasciculate, deciduous. Larix.

8. P. pendula Ait.: leaves fasciculate, deciduous; strobile oblong; margin of the scales inflexed; bracts panduriform, with the point attenuated.

Hab. Cedar swamps. Can. and N. Y. April, May. ɣ.—A middle-sized tree, which differs from the preceding by its leaves growing in tufts or fascicles, and in their being deciduous. Cone small, covered with soft scales. Hackmatack. Tamarack.
9. _P. microcarpa_ Lamb.: leaves fasciculate, deciduous; strobile roundish, few-flowered; scales reflexed; bracts elliptic, obtusely acuminate.—_P. pendula_ Willd.—_Larix americana_ Mich.

Hab. Mountains. N. S. N. to Subarc. Amer. May. ⁹.—A large tree, resembling the preceding, but according to Pursh and Lambert, specifically distinct. Red Larch.

*** Leaves solitary, distinct at base. Scales of the cone even and attenuated. Abies.

10. _P. balsamea_ Linn.: leaves solitary, flat, emarginate or entire, glaucous beneath, somewhat pectinate at the summit, nearly erect, below recurved-spread; strobile cylindrical, erect; bracts short, obovate, inconspicuously mucronate, somewhat serrulate.—_Abies balsamifera_ Mich.


11. _P. fraseri_ Pursh: leaves solitary, flat, shorter, emarginate, glaucous beneath, subsecund, erect above; strobile ovate-oblung, erect; bracts elongated, reflexed, oblong-cuneate, emarginate, shortly mucronate, incisely toothed. _P. balsamea_ var. _fraseri_ Nutt.

Hab. Broad Mountains. Penn. Pursh. May. ⁹.—Resembles the former, but differs in being a smaller tree, the leaves shorter and more erect, and the cones not one-fourth the size. Double Balsam Fir.

12. _P. canadensis_ Linn.: leaves solitary, flat, denticulate, somewhat distichous; strobile ovate, terminal, scarcely longer than the leaves. —Abies canadensis Mich.


13. _P. nigra_ Ait.: leaves solitary, 4-sided, every where scattered, erect, straight; strobile ovate; scales elliptical, undulate on the margin, erosely denticulate at the apex.—_A. nigra_ Mich. ⁹.


14. _P. rubra_ Lamb.: leaves solitary, subulate; strobile oblong, obtuse; scales rounded, somewhat 2-lobed, entire on the margin.


Red Spruce.

15. _P. alba_ Ait.: leaves solitary, 4-sided, incurved; strobile subcylindrical, loose; scales obovate, very entire.

HYDROCHARIDEÆ.

5. TAXUS. Linn.


Dioccia. Monadelphia.

*T. canadensis Willd.* leaves linear, distichous, revolute on the margin; receptacle of the sterile flower globose.—*T. baccata minor Mich.*

Hab. Moist rocky places. Can. and N. S. March, April. ♂ —Shrub 4—8 feet high. Leaves resembling those of *Pinus canadensis*, but larger. Fruit having the appearance of a berry.

Yew.

Class II. ENDOGENÆ or MONOCOTYLEDONOUS PLANTS.

Trunk usually cylindrical, with no perceptible distinction of bark, wood and pith, increasing in diameter by the addition of new matter to the centre. Leaves frequently sheathing at the base and not readily separating from the stem by an articulation, mostly alternate, with parallel simple nerves and minute transverse veins. Embryo with but one cotyledon; if with two, then the additional one is imperfect and alternate with the other; radicle usually enclosed within the substance of the embryo, through which it bursts when germinating.

Subclass I. PETALOIDEÆ. Lind.

Stamens and pistils naked or covered by verticillate floral envelopes.

Order CXV. HYDROCHARIDEÆ. Juss. Lind.

*Flowers* spathaceous, monoclinous or diclinous. Perianth with the limb 6-parted, the 3-outer segments herbaceous; the 3 inner petaloid. Stamens epiginoous, definite or indefinite. Ovary solitary, 1 or many-celled; ovules indefinite, often pa-
rietal; stigmas 3—6. Fruit dry or succulent, indehiscent, 1 or many-celled. Seeds without albumen; embryo undivided, cylindrical; radicle at the opposite extremity from the hilum.

Floating plants. Leaves with parallel nerves, sometimes spiny.

1. UDORA. Nutt.


U. canadensis Nutt.: leaves verticillate in threes and fours, lanceolate, oblong or linear, serrulate; tube of the perianth filiform.—Eloidea canadensis Mich.—Serpicula verticillata Muhl.


2. VALLISNERIA. Linn.


V. spiralis var. americana Torr. leaves linear and obtuse, equal from the base, 3-nerved, margin minutely and aculeately serrulate; sterile peduncles very short; fertile ones spiral.—V. americana Mich.

Hab. Still water. N. Y. to Flor. W. to Ill. Aug. 2f.—Leaves all radical, 2—3 lines broad and very long.

Order CXVI. ORCHIDEÆ. Juss. Lind.

Perianth with a ringent 6-parted limb; outer segments usually coloured, of which the odd one is often uppermost by a twisting of the ovary; inner segments more petaloid, the odd one or the lip being frequently lobed and unlike the others, and often spurred at the base. Stamens 3, in a double row, epiginous, united in a central column, the two lateral ones, or the central one abortive; anther persistent or deciduous, 2—4 or 8-celled; pollen powdery or cohering in definite or indefi-
nate waxy masses (pollinia.) Ovary 1- rarely 3-celled; ovules indefinite; style forming part of the column of the stamens; stigma a viscid cavity in front of the column. Capsule 3-ribbed, 3-valved, rarely baccate. Seeds numerous; albumen none; embryo a solid fleshy mass.

Herbs. Roots tuberous or fibrous. Leaves simple, quite entire.

* Pollen simple or consisting of granules in a lax state of cohesion.

1. **GOODYERA.** Brown.

Perianth ringent; the 2 outer or lateral segments placed beneath the lip, which is gibbous at the base and undivided at the extremity. Column free. Pollen angular.

Gynandria. Monandria.

1. *G. pubescens* Brown: radical leaves ovate, petiolate, reticulate; scape sheathed and with the flowers pubescent; lip ovate, acuminate; segments of the perianth ovate.


2. *G. repens* Brown: radical leaves ovate, petiolate, reticulate; scape sheathed and with the flowers pubescent; flowers unilateral; lip and segments lanceolate.

**Hab.** Shady woods. N. S. July. 24.—Root creeping. Scape 6—8 inches high. Leaves less distinctly veined than in the preceding. Flowers greenish-white.

2. **SPIRANTHES.** Rich.

Spike spiral; inner segments of the perianth connivent. Lip unguiculate, parallel with the column, with 2 calli at the base, entire. Anther terminal, peduncled at the end. Ovary oblique.

Gynandria. Monandria.

1. *S. tortilis* Rich. : radical leaves linear; scape sheathed; flowers spirally secund; lip trifid; the middle lobe large and crenulate.—**Neottia tortilis** Schwartz. Pursh.—**Ophrys aestivalis** Mich.

**Hab.** Low meadows. N. Y. to Car. June, July. 24.—Scape a foot high. Flowers white.

2. *S. gracilis* Beck: radical leaves ovate; scape sheathing; flowers in a spiral row; lip obovate, curled.—**Neottia gracilis** Big.

**Hab.** Dry woods. Mass. July. 5.—Scape 8—12 inches high, erect, with a few sheathing scales or leaflets. Leaves on short
petioles, sometimes falling off before the plant flowers. Flowers white, in a twisted spike.—According to Dr. Bigelow, the spike is sometimes unilateral and scarcely twisted, and the flowers more slender, when it forms its var. secunda. Ladies' Tresses.

3. S. cernua Rich.: leaves lanceolate, nerved; stem sheathing; flowers in a dense spike, cernuous; lip oblong, entire, acute.—Neottia cernua Willd.


3. LISTERA. Brown.


1. L. cordata Brown: stem with only 2 opposite roundish cordate leaves; raceme loose; column without any appendage behind; lip elongate, 2-toothed at base, deeply bifid, the segments divaricate and acute —Ophris cordata Mich.


2. L. convallarioides Nutt.: stem with only 2 opposite oval-roundish leaves, pubescent above; raceme few-flowered, (4—6); column porrected; lip oblong, dilated, and obtusely 2-lobed at the extremity.—Epipactis convallarioides Pursh. excl. syn.

Hab. Swamps. Can. to Car. May. 21.—Stem 6 inches high and very slender. Flowers dark brown and green, larger than in the preceding.—These two species have been confounded by many of our botanists—when in fact they are entirely distinct, and it is even doubtful whether they belong to the same genus. Ophris cordata of Michaux given by Pursh as a synonym of his Epipactis convallarioides, belongs to the former.

4. POGONIA. Brown.

Lip sessile, cucullate, internally crested; 5 segments of the perianth distinct, without glands. Pollen farinaceous.

Gynandria. Monandria.

1. P. ophioglossoides Brown: root fibrous; stem with an oval-lanceolate leaf and a foliaceous bract near the flower; lip fimbriate.—Arethusa ophioglossoides Linn.

2. *P. verticillata* Nutt.: leaves 5, oblong-lanceolate, verticillate; flower solitary; 3 outer segments of the perianth very long and linear; the inner ones lanceolate, obtuse; lip 3-lobed, dilated, the middle lobe undulated.—*Arcturus verticillata* Wild.

**Hab.** Swamps. N. Y. to Geor. June, July. 24. — Root fasciculate. Stem about a foot high. Leaves 5 in a whorl at the top of the stem. Flower solitary; outer segments brown, 2 inches long; inner ones short, paler and obtuse.

3. **CALOPOGON.** Brown.

Lip behind (or inverted,) unguiculate, the lamina bearded; 5 segments of the perianth distinct. Column free. Pollen angular. Gynandria. Monandria.

*C. pulchellus* Brown: radical leaves ensiform; scape few-flowered. —*Cymbidium pulchellum* Willd. Pursh.


4. **CORALLORHIZA.** Brown.

Lip produced behind, adnate with the spur or free. Column free. Pollinia 4, oblique, not parallel. Gynandria. Monandria.

1. *C. verna* Nutt.: leafless; segments of the perianth linear-lanceolate, spreading; lip oblong, without spots, bidentate at the base, the apex recurved and ovate; spur obsolete, adnate.—*Cymbidium corallorhizon* Muhl.

**Hab.** Sphagnous swamps. N. S. May. 24. — Root coralloid. Scape 5—6 inches high, with about 3 sheathing stipules. Flowers 7—15, small, yellowish-green. Lip nearly white, oblong-oval, without spots.—Mr. Nuttall in his "Genera of N. A. Plants," confounds this plant with the *C. innata* of Europe, a mistake which he corrects in his valuable paper on the species of *Corallorhiza*, indigenous to the United States, published in the Mem. of the Phil. Acad. of Nat. Sciences, from which the present descriptions are taken.

2. *C. odontorhiza* Nutt.: leafless; lip oval, undivided, spotted; spur obsolete, adnate; capsule subglobose.—*Cymbidium odontorhizon* Willd. —*Ophrys corallorhiza* Mich.


MONOCOTYLEDONOUS PLANTS.

HAB. Roots of trees. N. Y. to Car. July—Sept. 24. —Root coralloid, much branched. **Scape** a foot high, with 3—4-sheaths. **Raceme** with many-flowers which are purplish, with the lip white and spotted; spur very distinct, yellowish.

7. APLECTRUM. Nutt.

**Lip** unguiculate, not produced at the base. **Anther** situated below the summit of the column. **Pollinia** 4, oblique, lenticular. **Gynandria. Monandria.**

A. *hiemalis* Nutt.: leaf solitary, ovate, striate; lip trifid, obtuse, with the palate ridged; central lobe rounded, crenulate.—*Cymbidium hyemale* Willd. Pursh.

HAB. Shady woods. Can. to Flor. May, June. 24. —Root bulbous. **Scape** a foot high, sheathed. **Flowers** brownish, at length pendulous. **Lip** dilated at the end and trifid.

8. ARETHUSA. Linn.

**Lip** united at base with the column, cucullate at the end, crested internally; 5 segments of the **perianth** united at base. **Pollen** angular. **Gynandria. Monandria.**

A. *bulbosa* Linn.: leafless; root bulbous; **scape** sheathed, 1-flowered.

HAB. Sphagnous swamps. Can. to Car. May, June. 24. —**Stem** 6—10 inches high, the lower part with 3 or 4 sheaths. **Flowers** 1, rarely 2, terminal, large, purple. **Lip** curled, crenate, bearded in the middle.

9. TRIPHORA. Nutt.

**Lip** unguiculate, cucullate; 5 segments of the perianth distinct, equal and connivent, without glands. **Column** spathulate, complanate and aperous. **Pollen** farinaceous. **Gynandria. Monandria.**

*T. pendula* Nutt.: root tuberous; stem leafy, about 3-flowered at the summit; leaves ovate, alternate; flowers pedunculate; peduncles at length recurved.—*Arethusa pendula* Willd.—*Pogonia pendula* Lind.

HAB. Roots of trees. N. Y. to Geor. W. to Ky. Sept. 24. —**Stems** often in clusters, a span high, angular. **Leaves** 6 or 7, remote, very short, clasping, ovate and acute. **Flowers** 3 or 4, pale purple, on axillary and terminal peduncles.

**Pollen adhering in granules, which finally become waxy and are indefinite in number.**

10. ORCHIS. Linn.

**Perianth** ringent. **Lip** with a spur on the under side at
the base. Glands of the stalks of the pollinia (1—2) contained in one common little pouch. Gynandria. Monandria.

O. spectabilis Linn.: lip obovate, undivided, crenate, retuse; segments of the perianth connivent, longer; spur clavate, shorter than the ovary; bracts longer than the flower; scape few-flowered, angular, scarcely longer than the erect leaves.—Orchis humilis Mich.—Habenaria spectabilis Spreng.

Har. Shady woods. N. Y. to Car. June. 2f.—Scape 6—8 inches high, angular. Leaves mostly 2, large. Flowers large, purple and white.

11. PLATANTHERA. Rich.

Perianth vaulted. Lip entire, with a spur. Cells of the anther widely divided at their base by the broad interposed stigmas. Glands of the pollinia naked. Lips of the stigma absent.

1. P. orbiculata Lind.: lip linear-lanceolate, obtuse; three upper segments of the perianth erect, connivent; lateral ones reflexed, oblique at the base; spur longer than the germ; scape with 2- orbicular leaves at the base.—Orchis orbiculata Pursh.

Har. Shady woods. N. S. July. 2f.—Scape 12—18 inches high. Leaves very large, fleshy, spreading on the ground. Flowers greenish-white, in a loose spike.

2. P. dilatata Lind.: lip linear, very entire, rather obtuse, rounded and dilated at base; spur as long as the lip, a little shorter than the germ; stem leafy; bracts as long as the flower.—Orchis dilatata Pursh.

Har. Woods. N. S. July. 2f.—Stem 2—3 feet high. Leaves numerous. Flowers greenish or white.

12. HABERNARIA. Willd.

Perianth ringent. Lip spurred on the upper side at the base beneath. Glands of the stalk of the pollinia naked and distinct; cells of the stalks adnate, or separated.

Gynandria. Monandria.

1. H. herbiola Brown: lip oblong obtuse, bidentate at base; palate 1-toothed; spur filiform, shorter than the germ; bracts longer than the flower.

Har. Swamps. N. S. June. 2f.—Stem 12—18 inches high. Flowers small, greenish.

2. H. virescens Spreng: lip lanceolate, crenate; segments of the perianth connivent obtuse; spur obtuse, didymous; bracts longer than the flower.—Orchis virescens Willd.

3. *H. huronensis* Spreng.: lip lanceolate, acuminate, incurved; segments of the perianth connivent, subulate; spur about the length of the lip, incurved; stem leafy.


4. *H. integra* Spreng.: lip oblong, very entire, longer than the inner segments of the perianth; spur subulate, longer than the germ; bracts shorter than the flower; stem leafy.—*Orchis integra* Nutt.

**Hab.** Swamps. N. J. July. 2f.—*Flowers* orange yellow, somewhat smaller than in *H. ciliaris*, to which this species is nearly allied.

5. *H. obsola Spreng.*: lip lanceolate, very entire; segments of the perianth erect; spur obtuse, didymous, as long as the germ; germ pedicillate; bracts very short; scape naked.—Orchis obsola Willd.

**Hab.** Shady places. N. Y. to Vir.; rare. July, Aug. 2f.—Bracts very short.

6. *H. bracteata Brown*: lip linear, retuse, obscurely 3-toothed at the extremity; segments of the perianth connivent; lateral ones ovate and broader; spur obtuse, very short, didymous; bracts spreading, much longer than the flower.—*Orchis bracteata* Willd.

**Hab.** Shady places. Vir. July, Aug. 2f.—Stem 8—12 inches high, leafy. *Flowers* green, in a loose spike.

7. *H. tridentata Hook.*: lip ovate-lanceolate, obtuse, 3-toothed; segments of the perianth connivent, obtuse; spur filiform, incurved, longer than the germ.—*Orchis tridentata* Willd.

**Hab.** Swamps. Penn. and Vir. June, July. 2f.—Stem 1—2 feet high. *Flowers* small, white.

8. *H. ciliaris Brown.*: lip oblong-lanceolate, pinnately ciliate, twice as long as the segments; spur longer than the germ.

**Hab.** Swamps. Can. to Car. June, July. 2f.—Stem 1—2 feet high, leafy, smooth. *Flowers* in a dense terminal spike, orange yellow. Lip finely laciniate or fringed.

9. *H. cristata Brown*: lip oblong, pinnately ciliate; segments of the perianth rounded; the two lateral ones toothed; spur shorter than the germ.—*Orchis cristata* Mich.

**Hab.** Swamps. Penn. to Car. June, July. 2f.—Stem 1—2 feet high, leafy. *Flowers* in a terminal spike, somewhat crowded, yellow. Distinguished from the former by its smaller flowers and more dense spike.

10. *blephariglottis Hook.*: lip lanceolate, fimbriate, as long as the upper segment of the perianth; spur filiform, pendulous, longer than the germ.—*Orchis blephariglottis* Willd.

**Hab.** Swampy grounds. N. J. to Car. June, July. 2f.—Stem 2 feet high. *Flowers* pure white. Resembles the former and is not very readily distinguished except by its white flowers.

11. *H. eiliottii Beck*: lip ovate, toothed and crenate; spur filiform,
attenuate, about as long as the germ; spike crowded; bracts as long as or a little longer than the flower.—*Orchis flava* Ell. — *O. flavo* Torr.

**Hab.** Low grounds. N. S. to Geor. July. 2 ft. — Stem 2 feet high. Flowers in a short crowded spike, yellow. Lip with the sides toothed or crenate, almost fimbriate. Spur subulate, nearly acute at the point.—This plant appears to differ much from the original *O. flavo* of Clayton. See Ell. Sk. ii. 435.

12. *H. fissa* Brown: lip 3-parted; lobes cuneiform, dentate; intermediate one 2-lobed; spur filiform, clavate at the extremity, ascending, longer than the germ.—*Orchis fissa* Willd.


13. *H. incisa* Spreng.: lip 3-parted; lobes cuneiform, incisely dentate, the intermediate one emarginate; lateral segments of the perianth obtuse, subdentate; spur subulate, ascending, as long as the germ.—*Orchis incisa* Willd.

**Hab.** Meadows. N. Y. to Vir. July. 2 ft. — Stem 2—4 feet high. Flowers purple.

14. *H. fimbriata* Brown: lip 3-parted; lobes all cuneiform and incisely fimbriate; segments of the perianth oval, spreading, fimbriate-toothed; spur filiform, clavate, longer than the germ.—*Orchis fimbriata* Ait.

**Hab.** Meadows. Can. and N. S. July. 2 ft. — Stem 2 feet high. Leaves broad-lanceolate. Flowers purple, in a large spike.

15. *H. psycodes* Spreng.: lip 3-parted, capillary, many-cleft; segments of the perianth obtuse; spur filiform, clavate, ascending, a little longer than the germ.—*Orchis psycodes* Linn.— *O. lacerum* Mich.

**Hab.** Meadows. Can. to Vir. July. 2 ft. — Stem 2 feet high. Leaves oblong. Flowers numerous, pale yellow, in a large terminal spike.

16. *H. fuscescens* Torr.: lip ovate, toothed at the base; segments of the perianth spreading; spur subulate, as long as the germ; bracts longer than the flower.—*Orchis fuscescens* Linn.

**Hab.** Mountain meadows. N. S. July. 2 ft. — Flowers in very long spikes, brownish-yellow. Bracts acuminate, very long.

17. *H. macrophylla* Goldie: lip linear-elongated, entire, acuminate; spur longer than the germ, terete, nearly straight; upper segments of the perianth ovate, acute; scape with broad oval suberect leaves at the base.


18. *H. grandiflora* Torr.: lip dependent, twice as long as the segments of the perianth, 3-parted; lobes cuneiform, fimbriate, the mid-
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die one largest, with the fimbriae connivent; lateral segments fimbriate; spur ascending, clavate, longer than the germ; leaves oval-oblong.—Orchis grandiflora Big.

Hab. Meadows, Mass. and N. H. Big. June. 2L.—Stem 2 feet high, thick and angular. Flowers in an oval-oblong spike, pale purple, twice the size of H. fimbriata, from which it also differs in the form of the lip.


T. discolor Nutt.—Orchis discolor Pursh.—Limodorum uniflorum Muhl.


***Pollen cohering in grains, which finally become waxy, and are definite in number.


1. L. liliifolia Rich.: leaves 2, ovate-oblong; scape angular; flowers racemose; segments of the perianth linear; lower ones setaceous, reflexed; lip concave, obovate, mucronate at the tip.—Malaxis liliifolia Swartz. Pursh.


2. L. correana Spreng.: leaves 2, ovate-oblong; scape angular; segments of the perianth revolute on the margin; lip oblong keeled, recurved and cordate at the apex.—Malaxis correana Bart. Nutt.


**M. ophioglossoides Nutt.:** scape 1-leaved; leaf ovate, amplexicaule; lip truncate, emarginate.

**Hab.** Roots of trees. N. S. June. **V. - Root bulbous. Scape a span high, 1-leaved, with a foliaceous sheath near the base, many-flowered. Flowers minute, greenish-white.**

16. CALYPSO. Salisb.

Segments of the perianth ascending, secund. **Lip ventricose, spurred beneath near the end. Column petaloid, dilated. Pollinia 4.**

**Gynandria. Monandria.**

**C. americana Brown:** lip narrowed and subunguiculate at base; spur semibifid, longer than the lip, with acute teeth; peduncle longer than the ovary.—**C. borealis Pursh.—**Limodorum boreale Willd.**

**Hab.** Near Montreal. N. to Nova Scotia. Near the outlet of Lake Michigan and W. to the Columbia river.—**Scape 6—8 inches high, 1-leaved, with a foliaceous sheath near the base, many-flowered. Radical leaf roundish-ovate, nerved. Flower large, purplish, somewhat resembling a species of *Cypripedium.*—I have received a specimen of this beautiful plant from Dr. Holmes, of Montreal, gathered near that place, and I have introduced the species in the hope that it may yet be found in the northern part of our state.

**** Lateral anthers fertile; the middle one sterile and petaloid.

17. CYPRIPEDIUM. Linn.

**Lip ventricose, inflated, saccate, obtuse. Column terminating in a petaloid lobe. Two under segments of the perianth united, (or 4 segments with the under one bifid.)**

**Gynandria. Diandria.**

1. *C. candidum Willd.:* stem leafy; leaves oblong-lanceolate; lobe of the style lanceolate, rather obtuse; lip compressed, shorter than the lanceolate segments of the perianth.

**Hab.** Penn. Muhl. May. **24.**—Resembles *C. calceolus*; but the flowers are white, and not half the size: the form of the leaves and the lobe of the style distinguish it sufficiently. **Pursh.**

**White Ladies Slipper.**

2. *C. parvisflorum Willd.:* stem leafy; lobe of the style triangular, acute; outer segments of the perianth ovate-oblong, acuminate; inner ones linear, contorted; lip compressed, shorter than the perianth.—**C. calceolus Mich.**

**Hab.** Woods. N. Y. to Car. May, June. **24.**—**Stem 12 inches high, erect. Leaves clasping, oval, nerved. Perianth green, spotted with dark purple; lateral segments linear, twisted, hairy on the side. Lip yellow, spotted. **Yellow Ladies Slipper.**

3. *C. pubescens Scartz:* stem leafy; lobe of the style triangular-ob-
long, obtuse; outer segments of the perianth ovate-oblung; acuminate; inner ones very long, linear, contorted; lip compressed, shorter than the petals.—C. calceolus var. Linn.


4. C. spectabile Swartz: stem leafy; lobe of the style elliptic-cordate, obtuse; outer segments of the perianth broad-oval, obtuse; lip cleft before, longer than the perianth.—C. canadense Mich.


5. C. acaule Ait.: scape leafless, 1-flowered; radical leaves 2, oblong, obtuse; lobe of the style roundish-rhomboidal, acuminate deflexed; segments of the perianth lanceolate; lip shorter than the segments, cleft before.—C. humile Swartz.

Hab. Shady woods. Subarc. Amer. to Car. May, June. 2f. —Scape a foot high. Flower very large; lip purple.

* ARIETINUM. Lip inflated, acute. Lower segments of the perianth not united, (or 5 segments distinct.)

A. americanum Beck: stem leafy; lobe of the style orbicular; the two lower segments linear-lanceolate, deflexed; two lateral linear, spreading; upper one oblong-oval, acute; lip as long as the segments, inversely conical.—Cypridium arietinum Ait.

Hab. Sphagnous swamps. Montreal, U. C. Fairhaven, Ver. Hallowell, Maine; rare. 2f.—Stem 6—8 inches high, with few alternate lanceolate leaves. Flowers much smaller than in any of the preceding. Flowers greenish-brown. Lip small, acute, reticulated.—I know not, but in the recent divisions of the Orchideous genera, this plant may have been separated from Cypridium; if it has not, it certainly should be, as it is so very different from all the species of that genus. This suggestion was first made by Dr. Bigelow in his Florula Bostoniensis, and I have ventured to propose the above name, which alludes to the resemblance of the shape of the flower to a ram's head.

ORDER CXVII. IRIDEÆ. Juss. Lind.
 licidal dehiscence. Seeds numerous; embryo cylindrical; enclosed within a fleshy or horny albumen; radicle pointing to the hilum.

Herbs, rarely undershrubs. Leaves equitant, distichous. Flowers with spataceous bracts.

1. IRIS. Linn.

Perianth 6-cleft; 3 of the segments larger and reflexed, the others erect. Stamens distinct. Style short or none. Stigmas 3, petaloid, covering the stamens.

Triandria. Monogynia.

1. I. versicolor Linn.: stem terete, more or less flexuous; leaves ensiform; perianth beardless; germ somewhat triangular.
   a. sulcata Torr.: stem slightly compressed; inner segments of the perianth longer than the stigmas; germ with the angles sulcate, the sides concave; capsule, oblong, ventricose; angles indistinctly furrowed.
   b. communis Torr.: stem erect, distinctly flexuous; leaves narrow-ensiform; inner segments of the perianth a little shorter than the stigmas; angles of the germ not grooved when young; side deeply concave; capsule cylindrical-oblong.


2. I. prismatica Pursh: stem round; leaves linear, long; perianth beardless; germs triangular, twice grooved on the sides.—L. virginica Torr. not of Linn.


3. I. lacustris Nutt.: leaves ensiform, shorter than the 1-flowered scape; perianth without a bearded crest; segments nearly equal, attenuated on the tube; capsule turbinate, 3-sided, margined; root tuberous.


2. SISYRINCHIUM. Linn.


1. S. mucronatum Mich.: scape simple, winged; spathe coloured; one of the valves ending in a long rigid point.

Hab. Wet meadows. N. Y. to Vir. July. 2L.—Stem 6—10 inches high, setaceous. Flowers 3 or 4 in each spathe, blue.

30*
2. *S. anceps* Linn.: scape simple, winged; spathe unequal, shorter than the flowers; segments mucronate.—*S. gramineum* Lam.


Blue-eyed Grass.

**ORDER CXVIII. AMARYLLIDÆ. Brown. Lind.**

*Perianth* petaloid, regular, 6-cleft; the outer segments overlapping the inner. *Stamens* 6, inserted on the perianth; *anthers* bursting inwardly. *Ovary* 3-celled, the cells many-seeded, sometimes 1—2; *style* 1; *stigma* 3-lobed. *Fruit* a 3-celled, 3-valved capsule, or a 1—3-seeded berry. *Seeds* with a thin and membranous, or thick and fleshy integument; *albumen* fleshy; *embryo* nearly straight; *radicle* next the hilum.

Generally bulbous, sometimes fibrous rooted. *Leaves* ensiform, with parallel veins.

1. AMARYLLIS. Linn.

*Perianth* 6-parted, petaloid, irregular. *Stamens* 6, arising from the orifice of the tube, declined or straight, unequal.

*Hexandria. Monogynia.*

*A. atamasco* Linn.: spathe bifid, acute; flower pedicellate; *perianth* subcampanulate, subequal, erect, short and tubular at the base; *stamens* declined, equal.


*Scape* 6 inches high. *Leaves* a foot long, linear, concave, smooth. *Flower* solitary, large, white and pink.

Atamasco Lilly.

**ORDER CXIX. HYPOXIDÆ. Brown. Lind.**

*Perianth* petaloid, usually 6-parted, regular; aestivation imbricate. *Stamens* 6, inserted into the base of the segments. *Ovary* inferior, 3-celled, many-seeded; *style* single; *stigma* 3-lobed. *Capsule* indehiscent, sometimes succulent. *Seeds* numerous, with a black crustaceous integument and a rostelliform hilum; *embryo* in the axis of fleshy albumen.

*Herbs* stemless or nearly so. *Leaves* plaited.

1. HYPOXIS. Linn.

*Spathe* 2-valved. *Perianth* superior, 6-parted, persistent.

H. erecta Linn.: hairy; leaves all radical, linear and gramineous, sparingly hirsute, longer than the scape; scape 2—4-flowered; segments of the perianth lanceolate.—H. erecta and H. graminea Pursh.—H. carolinensis Mich.


Flowers dioecious. Perianth 6-parted, equal. Stamens 6, inserted into the base of the segments of the perianth. Ovary 3-celled; ovules 1—2 in each cell; style deeply trifid; stigmas undivided. Fruit a thin compressed capsule, with two of its cells sometimes abortive. Seeds flat, compressed; embryo small, lying in a large cavity of a somewhat horny albumen, near the hilum.

Twining shrubs. Leaves usually alternate, mostly with reticulated veins.

1. Dioscorea. Linn.


1. D. villosa Linn.: leaves alternate, opposite and verticillate, cordate, acuminate, pubescent beneath, 9-nerved; lateral nerves simple.

—D. paniculata Mich.


Yam Root.

2. D. quaternata Walt.: leaves verticillate in fours, or alternate, cordate, acuminate, smooth on both sides, 7-nerved; lateral nerves bifid.

—D. glauca Muhl.


Flowers monoclinous or dioecious. Perianth petaloid, 6-parted, (4-parted in Styandra.) Stamens 6, (4 in Styran-
dra) inserted into the base of the divisions of the perianth, rarely hypogynous. Ovary 3-celled; ovules 1 or several in each cell; style usually trifid; stigmas 3. Fruit a roundish berry. Seeds with a membranaceous (not black or brittle) integument; albumen fleshy cartilaginous; embryo usually remote from the hilum.

Herbs or undershrubs usually climbing. Leaves sometimes with reticulated veins.

1. **SMILAX. Linn.**


*Dioecia. Hexandria.*

* Stem frutescent.

1. **S. quadrangularis Willd.** prickly; stem 4-angled, unarmed above; leaves unarmed, ovate, subcordate, acute, 5-nerved.

**Hab.** Dry woods. Penn. to Car. June, July. **2f.**—Berries black. **Pursh.**

2. **S. sarsaparilla Linn.** stem prickly, slightly 4-angled; leaves unarmed, ovate-lanceolate, cuspidate, somewhat 5-nerved, glaucous beneath; common peduncle longer than the petioles.


3. **S. rotundifolia Linn.** stem prickly, nearly round; leaves unarmed, roundish-ovate, acuminate, slightly cordate, 5-nerved; berries spherical.


4. **S. caduca Linn.** prickly; leaves ovate, mucronate, 5-nerved; common peduncles scarcely longer than the petioles.

**Hab.** Dry fields. Can. to Car. June. **2f.**—Stem flexuous, somewhat angled. Pedicels of the flowers as long as the common peduncle.

5. **S. laurifolia Linn.** prickly; branches unarmed; leaves coriaceous, oval-lanceolate, slightly acuminate, 3-nerved; umbels on very short peduncles.

**Hab.** Boggy woods. N. J. to Geor. June—Aug. **2f.**—Stem climbing to a great height. Leaves somewhat crowded, coriaceous and perennial. Pedicels scarcely as long as the pedicels.

6. **S. pandurata Pursh.** prickly; leaves ovate-panduriform, acuminate, 3-nerved; common peduncles twice as long as the petioles.—**S. tamnoides** Ell. not of Linn. **?**

7. *S. pseudo-china* Linn.: unarmed; leaves unarmed; cauline ones cordate; those of the branches ovate-oblong, 5-nerved; peduncles very long.

Hab. Sandy woods. N. J. to Car. May, June. ½.—Root large, tuberous. Stem climbing. Lower leaves distinctly cordate. **Stem herbaceous, unarmed.**

8. *S. herbacea* Linn.: stem angled, erect, simple; leaves on long petioles, oval and cordate-ovate, acuminate, nerved, pubescent beneath; the lower ones alternate; the upper ones verticillate and crowded; peduncles very long, compressed.

Hab. Woods. N. Y. to Car. June, July. ½.—Stem 2–3 feet high, with 1–2 small branches. Leaves, when young, oval or ovate; when old, slightly cordate. Berries black.

9. *S. peduncularis* Muhl.: stem round, climbing; leaves roundish-ovate, cordate, acuminate, 9-nerved; umbels on very long peduncles.


2. **STYRANDRA.** Raf.


Obs. After a most careful examination of the subject, I have determined to adopt the views of Mr. Rafinesque, in regard to the Linnaean genus *Convallaria.* The habit and flowers of these plants are so widely different, that it is almost impossible to present any collective characters. I am as much opposed as any one, to unnecessary division, but the very purpose of botanical arrangement is frustrated when a genus is allowed to have such an unnatural range.—See Raf. Med. Bot. ii. 84.

*S. bifolia* Raf.: stem 2-leaved; leaves on short petioles, cordate-oblong, very smooth on both sides; raceme simple, terminal; flowers tetrandrous.—*Convallaria bifolia* Linn.—*Smilacina canadensis* Pursh.—*Mayanthemum canadense* Desf.

Hab. Shady woods. Can. and N. S. May. ½.—Stem 4–6 inches high. Flowers white, small.—Agrees in habit with the next genus, but differs in being tetrandrous and in having a 2-celled berry.

3. **SMILACINA.** Desf.

Perianth 6-parted, spreading, Stamens 6, divergent, attached to the base of the segments. Berry globose, 3-celled. *Hexandria. Monogynia.*
1. *S. stellata* Desf.: leaves numerous, alternate, oval-lanceolate, clasping; raceme simple, terminal, 3—8-flowered.—*Convallaria stellata* Linn.

**Hab.** River banks. Can. and N. S. May, June. 2ft.—Stem a foot high. *Flowers* small, white, in an erect terminal raceme.

2. *S. trifolia* Desf.: stem smooth, angular, pubescent, about 3-leaved; leaves alternate, oval-lanceolate, contracted at the base; raceme simple terminal, few-flowered.—*Convallaria trifolia* Linn.

**Hab.** Alpine swamps. Can. and N. S. June, July. 2ft.—*Stem* 6 inches high. *Flowers* small, white, 4—6 in a terminal raceme, with the segments spreading.

3. *S. racemosa* Desf.: stem a little flexuous; leaves numerous, alternate, sessile, oblong-oval, acuminate, nerved, pubescent; flowers in a terminal racemose panicle, very small.—*Convallaria racemosa* Linn.


4. **CLINTONIA.** Raf.

**Perianth** 6-parted, campanulate. **Stamens** 6, inserted at the base. **Style** compressed. **Stigma** 2-lobed, compressed. **Berry** 2-celled; cells many-seeded. **Hexandria. Monogynia.**

**Obs.** This genus was named by Mr. Rafinesque in honor of the late Gov. Clinton. It differs from *Dracena* in its 2-lobed stigma, and its 2-celled and many-seeded berry. From *Smilacina*, with which it was associated by Defontaines, it differs not only in the above characters, but strikingly also in habit and colour.

1. *C. borealis* Raf.: subcaulescent; leaves elliptic-obovate, with the margins ciliate; scape pubescent; umbel terminal; pedicels nodding, without bracts.—*Dracena borealis* Ait.—*Smilacina borealis* Pursh.

**Hab.** Wet woods. Can. and N. S. May, June. 2ft.—*Scape* 6—8 inches high. *Leaves* radical or nearly so, 6 inches or more in length. *Flowers* large, campanulate. *Berries* oblong.

2. *C. multiflora* Raf.? : leaves radical oblong-oval, with the margin and keel ciliate; scape pubescent; umbel terminal; pedicels with minute bracts at base.—*Convallaria umbellulata* Mich. Torr.—*Smilacina umbellulata* Pursh. ELL.—*Dracena borealis* Big.

**Hab.** Alpine bogs. Can. to Car. May, June. 2ft.—Resembles the preceding, but considered distinct by Pursh and other authors. It is more common than the last. Mr. Rafinesque thinks that several distinct species are confounded under the name *C. umbellulata*, and I am in doubt whether this is the one which he designates by the above.

5. **POLYGONATUM.** Desf.

**Perianth** 6-cleft, cylindrical. **Stamens** 6, inserted on the upper part of the tube. **Berry** 3-celled; cells 2-seeded. **Hexandria. Monogynia.**
1. *P. multiflorum* Desf.: stem terete, smooth; leaves alternate, clasping, oblong oval, smooth on both sides; peduncles axillary, many-flowered._Convalaria multiflora_ Linn.


2. *P. biflorum* Ell.: stem terete, smooth; leaves alternate, sessile, elliptic-lanceolate, 3-nerved; peduncles axillary, solitary, 2-flowered._—Convalaria biflora_ Walt._Smilacina angustifolia_ Pursh.

_Hab._ Rocky situations. Penn. to Car. May, June. _H._—Stem 12—18 inches high. Flowers yellow, tipped with green. Perhaps only a variety of the preceding.

3. *P. pubescens* Pursh: stem nearly terete, furrowed; leaves alternate, clasping, ovate, pale arid pubescent beneath; peduncles axillary, filiform, mostly 2-flowered._—Convalaria pubescens_ Willd.

_Hab._ Rocks. N. Y. to Car. May, June. _H._—Stem 18 inches high, curved. Flowers yellowish-white, much smaller than in the preceding.

4. *P. canaliculatum* Pursh: stem channelled; leaves alternate, clasping, oblong, pubescent on the margin; peduncles axillary, 2-flowered._—Convalaria canaliculata_ Willd.

_Hab._ Shady woods. Near Boston. _Big._ Penn. to Virg. _Pursh._ June. _H._—Distinguished from the preceding by its angular stem.

5. *P. latifolium* Desf.: stem angular; leaves sessile, ovate, acuminate, smooth on both sides; peduncles one or many-flowered, long and recurved._—Convalaria latifolia_ Linn._—C. polygonatum_ Muhl.


_Perianth_ 6-parted; segments with a nectariferous pore at base. _Stamens_ 6. _Anthers_ longer than the filaments. _Stigma_ very short. _Berry_ subglobose, smooth, 3-celled. _Seeds_ few.


2. *S. distortus* Mich.: smooth; leaves clasping, smooth on the margin; pedicels distorted and geniculate in the middle; anthers sagittate, acuminate, much longer than the filaments._—*Uvularia amplexifolia_ Linn.

_Hab._ Shady alpine woods. Can. and N. Y. May, June. _H._—Stem 2 feet high. Flowers greenish-yellow, on filiform axillary pedicels which are longer than in the preceding.

Hab. Mountains. Penn. to Car. May. 2f.—Flowers much larger than in the preceding species, greenish.

7. **MEDEOLA.** Linn.


*Hexandria. Trigynia.*

*M. virginica* Linn.—*Gyromia virginica* Nutt.

Hab. Moist woods. Can. to Geor. May, June. 2f.—Stem 12–18 inches high, erect. Leaves in 2 whorls; one about the middle of the stem of 6–8 ovate lanceolate acuminate leaves; the other near the top of 2–3 ovate ones. Flowers 3–6 on pedicels arising from the upper whorl, yellow, reflexed.

*Cucumber Root.*

8. **TRILLIUM.** Linn.

Perianth 6-parted; 3 outer segments resembling a calyx, spreading; 3 inner petaloid, (petals.) Stamens 6, inserted at the base of the segments, nearly equal. Anthers linear. Style usually none. Stigmas 3, distinct or approximate. Berry 3-celled; cells many-seeded.

*Hexandria. Trigynia.*

* Flowers sessile.

1. *T. sessile* Linn.: leaves sessile, broad-ovate, acute; flowers closely sessile, erect; petals lanceolate, erect, twice as long as the calyx.

Hab. Fertile hills. Penn. to Car. Pursh. April, May. 2f.—Stem 8 inches high, smooth. Flowers dark purple.

2. *T. recurvatum* Beck: leaves ovate or obovate, subpetiolate, nerving; flower closely sessile; petals lanceolate-ovate, very acute, attenuate at base, erect, as long as the recurved calyx.

Hab. Shady woods. Miss. May. 2f.—Stem 8–10 inches high, smooth. Leaves smooth, clouded with dark green. Corol purple. Filaments very short.—I have been led to introduce this and the next species, described some years since, (Stills. Jour. xi. 178.) from the fact that under the name *T. sessile*, several distinct species have heretofore been included.

3. *viride* Beck: leaves ovate, acute, closely sessile, 3–5-nerved; flower erect, closely sessile; petals fleshy, narrow, somewhat spatulate, a little longer than the lanceolate or ovate obtuse erect calyx.


** Flowers pedunculate.

4. *T. erythrocarpum* Mich.: peduncle somewhat erect; petals oval-lanceolate, acute, recurved, nearly as long again as the narrow calyx;
leaves ovate, acuminate, rounded at the base, abruptly contracted into a short petiole.—*T. pictum Pursh.*—*T. undulatum Willd.*

**Hab.** Shady woods. *Can. to Car. May, June. 2.**—**Stem 6—8 inches high. Flowers white, with purple veins near the base, on peduncles about an inch long.

5. *T. pusillum Mich.*: peduncle erect; petals scarcely longer than the calyx; leaves oval oblong, obtuse, sessile.—*T. pumilum Pursh.*


6. *T. cornuum Linn.*: peduncle recurved; petals lanceolate, acuminate, flat, recurved, as long as the calyx; leaves dilated-rhomboid, abruptly-acuminate, on short petioles.


7. *T. erectum Linn.*: peduncle inclined; flower a little nodding; petals ovate, acuminate, flat, spreading, broader but scarcely longer than the calyx; leaves broad-rhomboid, acuminate, sessile.—*T. rhomboideum var. atropurpureum Mich.*—*T. atropurpureum Curt.*

b. album Pursh.: flowers smaller; petals white.—*T. rhomboideum var. album Mich.*

**Hab.** Shady rocks. *N. Y. to Car. W. to Miss. May. 2.**—**Stem 12—15 inches high. Flowers dark purple or white.—Var. b. is found near this city.

8. *T. pendulum Willd.*: peduncle inclined; flower pendulous; petals ovate, acuminate, spreading, about as large as the ovate acuminate calyx; leaves round, rhomboidal, acuminate, somewhat sessile.

**Hab.** Mountains. Penn. to Car. May. 2.**—**Stem a foot high. Flowers white, with pink veins.

9. *T. grandiflorum Salisb.*: peduncle a little inclined; flower nearly erect; petals spatulate-lanceolate, connivent at the base, much longer than the calyx; leaves broadly rhomboid-ovate, sessile, abruptly acuminate.—*T. rhomboideum var. grandiflorum Mich.*

**Hab.** Rocky banks of streams. *N. Y. to Car. W. to Miss. May. 2.**—**Stem 8—12 inches high. Flowers much larger than in any of the preceding, varying from white to rose colour.

9. **UVULARIA.** *Linn.*

**Perianth** inferior, 6-parted, erect; segments with a nectariferous cavity at base. **Stamens** 6; filaments very short, growing to the anthers. **Stigmas** 3, reflexed. **Capsule** 3-angled, 3-celled, 3-valved. **Seeds** many, subglobose, arillate at the hilum.

**Hexandria.** **Monogynia.**

1. *U. perfoliata Linn.*: leaves perfoliate, elliptic, obtuse; perianth campánulate, granular within; anthers awned.—*U. perfoliata var. minor Mich.*

**Hab.** Shady hills. *Can. to Car. W. to Miss. May, June.*

2. U. flava Smith: leaves perfoliate, elliptic-oblong, obtuse, undulate at base; perianth tapering at base, scabrous within; anthers awned.

Hab. Sandy soils. N. J. to Car. May, June. 25.—Flowers larger and of a deeper yellow than in the preceding.—Pursh. Perhaps only a variety.

3. U. grandiflora Smith: leaves perfoliate, oblong, acute; perianth smooth within; anthers without awns; nectaries nearly round; pistil shorter than the stamens.—U. perfoliata var. major Mich.—U. lanceolata Wild.

Hab. Rocky hills. Can. to Car. W. to Miss. May, June. 26.—Whole plant much larger than either of the preceding.

4. U. sessilifolia Linn.: stem smooth; leaves sessile, oval-lanceolate, glaucous beneath; segments of the perianth flat, smooth within; capsules ovate, peduncled.

Hab. Shady woods. Can. to Car. May. 27.—Stem 8—10 inches high, forked near the summit. Flowers 1—2 on a slender axillary peduncle, pale yellow.


Perianth petaloid, 6-parted, regular. Stamens 6, inserted upon the perianth, or hypogynous; 3 sometimes unlike the others or wanting. Ovary superior, 3-celled; ovules 2 or many in each cell; style 1; stigma entire or shortly 3-lobed. Fruit capsular or fleshy. Seeds with a black brittle and crustaceous integument; albumen fleshy; embryo included.

Herbs or trees with bulbous or fasciculated roots. Leaves with parallel veins.

1. Ornithogalum. Linn.

Perianth 6-parted, spreading above. Stamens 6, dilated at base, hypogynous. Hexandria. Monogynia.

O. umbellatum Linn.: corymb few-flowered; peduncles longer than the bracts; filaments subulate.


2. Hemerocallis. Linn.

3. **ALLIUM.** Linn.

Flowers umbellato, terminal, arising from a 2-leaved spathe. 
Perianth 6-parted, generally spreading.

*Hexandria. Monogynia.*

1. **A. vineale** Linn.: stem slender, a little leafy; cauline leaves rounded, fistulous; umbel bulbiferous; stamens alternately tricuspidate.
   
   **Hab.** Meadows. N. S. June, July. 2L.— *Scape* 2 feet high.  
   Flowers rose coloured. Introduced.

2. **A. triflorum** Raf.: scape naked, terete, shorter than the leaves; leaves lanceolate, nerved; umbel few-flowered.
   
   **Hab.** Mountains. Penn. Pursh. May, June. 2L.  
   Mountain Leeks.

3. **A. cernuum** Roth: scape naked, square, umbelliferous; leaves linear, nearly flat; umbel cernuous; stamens simple; germ 6-toothed.
   
   **Hab.** Banks of the Seneca Lake, N. Y. Gray. Penn. July. 2L.  
   — *Scape* 1—2 feet high. Flowers rose coloured.

4. **A. canadense** Linn.: scape naked, terete; leaves linear, flat, smooth; head bearing bulbs and flowers; stamens simple, as long as the perianth.
   
   **Hab.** Wet meadows. Can. to Car. May, June. 2L.— *Scape* 18 inches high. Leaves very long and narrow. Flowers rose coloured.

5. **A. tricoecum** Ait.: scape naked, nearly terete; leaves lanceolate-oblong, flat, smooth; umbel globose; seed solitary.
   
   **Hab.** Mountain woods. Mass. to Vir. June, July. 2L.— *Scape* a foot high. Flowers white, in a spreading umbel.

4. **ASPARAGUS.** Linn.


*Hexandria. Monogynia.*

1. **A. officinalis** Linn.: unarmed; stem herbaceous, erect, rounded, much branched; leaves setaceous, fasciculate and flexible; peduncles jointed in the middle.
   
   **Hab.** Rocky shores. N. Y. June. 2L.— *Scape* 1—2 feet high.  
   Flowers small, greenish-white, subaxillary, solitary, drooping.  
   Berries scarlet. Introduced.
5. **ALETRIS. Linn.**

*Perianth* tubular-ovate, 6-cleft, rugose. *Stamens* 6, inserted upon the margin of the orifice. *Style* triquetrous, 3-parted. *Capsule* 3-celled, many-seeded, opening at the summit.

**Hexandria. Monogynia.**

1. *A. farinosa* Linn.: leaves radical, broad-lanceolate, smooth; flowers pedicellate, oblong-tubular; the perianth when decaying nearly smooth.—*A. alba* Mich.
   

2. *A. aurca* Walt.: leaves radical, lanceolate, acuminate; flowers subsessile, short, subcampanulate; perianth when decaying rugose and very scabrous.
   

**Order CXXIII. LILIACEÆ. Juss. Lind.**

*Perianth* coloured, regular, 6-divided. *Stamens* 6, perigynous, opposite the segments of the perianth. *Ovary* superior; *style* 1; *stigma* simple, or 3-lobed. *Capsule* 3-celled, 3-valved, with a loculicidal dehiscence. *Seeds* numerous, usually flat, packed one above the other in 1 or 2 rows, with a spongy dilated integument; *embryo* straight, in the axis of fleshy albumen; *radicle* next the hilum.

Plants with scaly bulbs or arborescent stems. Leaves with parallel veins.

1. **LILIIUM. Linn.**

*Perianth* campanulate, deeply 6-parted; segments straight or reflexed, with a longitudinal nectariferous line. *Stamens* 6. *Stigma* entire.

**Hexandria. Monogynia.**

1. *L. catesbii* Walt.: leaves scattered, linear-lanceolate, very acute; stem 1-flowered; perianth erect; segments with long claws, undulate on the margin, reflexed at the summit.
   

2. *L. philadelphicum* Linn.: leaves whorled, linear-lanceolate; stem 1—2-flowered; perianth erect, campanulate, spreading; segments with claws.
LILIACEÆ.


3. *L. canadense* Linn.: leaves remotely whorled, lanceolate, 3-nerved; nerves hairy beneath; peduncles terminal, long, generally by threes; flowers nodding; perianth turbinate, campanulate, slightly revolute; segments lanceolate.


4. *L. superbum* Linn.: leaves whorled, linear-lanceolate, 3-nerved, smooth, the upper ones scattered; flowers in a pyramidal raceme, reflexed; segments revolute.

Hab. Wet meadows. Can. to Car. July. 2;—Stem 4—6 feet high. Flowers 3—20 or more in a large pyramidal raceme, orange, with dark spots.—Is not this a mere luxuriant variety of the last? Superb Lily.

2. ERYTHRIONIUM. Linn.

Perianth campanulate, 6-parted; segments reflexed; the 3 inner ones with a callous tooth on each side near the base, and a nectariferous pore. Stamens 6. Capsule substipitate. Seeds ovate. Hexandria. Monogynia.

1. *E. americanum* Smith: leaves lanceolate, punctate; segments of the perianth oblong-lanceolate, obtuse at the point; inner ones bidentate near the base; style clavate; stigma entire.—E. lanceolatum Pursh.—E. dens canis Mich.


2. *E. albidum* Nutt.: leaves elliptical-lanceolate, not punctate; segments of the perianth linear-lanceolate, obtuse; inner ones without dentures, subunguiculate; style filiform; stigma 3-cleft; lobes reflexed.

Hab. Wet meadows. Can. and N. Y. W. to Miss. April, May. 2;—Scape 6 inches high. Flower white, segments thick and somewhat obtuse.—Very abundant near Albany, N. Y., and also found in Canada by D. Thomas, Esq. I have observed a plant at New-Brunswick, N. J. which agrees with this in the absence of dentures and in the trifid stigma, but the perianth is yellow. It is probably the same which is alluded to by Mr. Nuttall, (Gen. Pl. i. 223,) and may prove distinct. White Erythronium.

3. *E. bracteatum* Big.: leaves lanceolate, unequal; scape bracted.

Hab. High mountains. Ver. June. 2;—Leaves very unequal, one being two or three times as large as the other. Scape shorter than the leaves, with a narrow lanceolate bract 1—2 inches below the flower, which is yellow, half as large as in No. 1; the segments gibbous at base.

Perianth petaloid, 6-divided, the margin of the segments, generally involute in aestivation. Stamens 6; anthers usually bursting outwards. Ovary 3-celled, many-seeded; style trid or 3-parted; stigmas three, undivided. Capsule generally divisible into three pieces, sometimes with a loculicidal dehiscence. Seeds with a membranous integment; albumen dense, fleshy.

Leaves sheathing at base, with parallel veins.

1. Melanthium. Linn.


1. M. virginicum Linn.: leaves long, linear-lanceolate, flat, smooth; panicle very large, pyramidal; petals ovate, somewhat hastate, flat; flowers mostly perfect.

Hab. Wet meadows. N. Y. to Car.; July. 2 ft. — Stem 3–4 feet high, leafy. Flowers greenish-white, in a panicle a foot or more in length. — This species has been found by Dr. Horton, in Orange county, N. Y.

2. M. glaucum Nutt.: root a tunicated bulb; leaves glaucous, gramineous, margined; raceme mostly simple, few-flowered; flowers perfect; segments of the perianth roundish, clawed, with 2 spots; seeds subulately winged.


3. M. hybridum Walt.: leaves long-linear, nearly smooth, embracing the stem; panicle long, composed of simple racemes; segments of the perianth orbicular, plaited, with long claws; glands united. — M. racemosum Mich.

Hab. Penn. Muhl. S. to Car. June, July. 2 ft. — Stem 2 feet high, leafy. Flowers in a long panicle, which is composed of simple racemes.

2. Tofieldia. Huds.


T. pubescens Pursh: leaves subradical, narrow-ensiform, smooth; rachis and pedicels scabrous; spike oblong, interrupted; capsule sub-
globose, scarcely longer than the involucre.—Narthecium pubens Mich.
Melanthium racemosum Walt.

**Hab.** Swamps. Del, to Car. July. 2 ft. — **Scape** 18 inches high. Leaves a foot long. Flowers greenish-white, in a racemed spike.

### 3. XEROHYLLUM. Mich.

Perianth subrotate, deeply 6-parted. Stamens 6, contiguous at base. Stigmas 3, revolute, partly united below. Capsule subglobose, 3-celled; cells 2-seeded, opening at the summit.

X. setifolium Mich.: leaves subulate-setaceous; flowers in a crowded oblong raceme; filaments dilated at the base, as long as the perianth.—Helenium asphodeloides Linn.

**Hab.** Sandy plains. N. J. to Car. June. 2 ft. — **Scape** 3—5 feet high. Radical leaves forming large tufts a foot long and very narrow. Flowers white, in a large terminal raceme.

### 4. HELONIAS. Linn.


1. *H. latifolia* Mich.: scape leafless; spike ovate, crowded; bracts linear-lanceolate; leaves lanceolate, mucronate, nerved.—*H. bullata* Linn.

**Hab.** Sandy swamps. N. J. to Vir. Pursh. May. 2 ft. — **Flowers** pale purple. **Anthers** blue.

2. *H. crythrosperma* Mich.: scape simple, leafy; leaves linear, very long, nerved; raceme oblong; bracts short; capsule shortened, with divaricate horns; seeds ovate, red.—Melanthium leuctum Ait.—*M. muscatoricum* Walt.

**Hab.** Shady woods. Penn. to Car. June, July. 2 ft. — **Stem** 2 feet high. Leaves very long and linear. **Flowers** white, in a simple terminal raceme.

3. *H. angustifolia* Mich.: scape leafy; leaves very long and narrow, linear, subulate; raceme oblong, lax; capsule oblong; with the summit appressed; seeds linear.

**Hab.** N. Y. Muhl. S. to Car. June. 2 ft. — **Stem** 2 feet high, smooth. Leaves narrower than in the preceding. **Flowers** in a simple terminal raceme.

4. *H. dioica* Pursh: scape leafy; leaves lanceolate; racemes dioecious, spiked, cernuous; pedicels very short, without bracts; segments of the perianth linear; stamens exserted.—*H. lutea* Ait.—Veratrum luteum Linn.—Melanthium dioicum Walt.

**Hab.** Damp grounds. N. J. to Geor. W. to Miss. June. 2 ft. — **Stem** 1—2 feet high. Leaves becoming broader near the root.
Flowers white, dioecious and polygamous, in a terminal spiked raceme.—It is doubtful whether it belongs to this genus.

Unicorn Plant,

5. VERATRUM. Linn.

Perianth 6-parted, spreading; segments sessile and without glands. Stamens 6, inserted upon the receptacle. Ovaries united at base, sometimes abortive. Styles 3, short, Capsule oblong, 2-valved, many-seeded. Seed with a mem- branaceous margin.

V. viride Ait.: racemes paniculate; bracts of the branches oblong-lanceolate; partial ones longer than the subpubescent peduncles; leaves broad-ovate, plaited lengthwise.—V. album Mich.


ORDER CXXV. PONTEDEREÆ. Kunth. Lind.

Perianth tubular, coloured, 6-parted, more or less irregular; Estivation circinate. Stamens 3 or 6, unequal, perigynous. Ovary free, or sometimes coherent at base, 3- (or rarely 1-) celled, 3-valved, with loculicidal dehiscence. Seeds indefinite, attached to a central axis; hilum small; embryo straight, in the axis of somewhat mealy albumen.

Aquatic or marsh plants. Leaves sheathing at the base, with parallel veins.

1. PONTEDERIA. Linn.

Perianth inferior, 6-parted, bilabiate; under side of the tube perforated with 3 longitudinal foramina, the lower part persistent, calicine. Stamens 6, unequally inserted, 3 of them upon the summit. Utricle muricate, 1-seeded.

Hexandria. Monogynia.

1. P. cordata Linn.: leaves subradical, oblong-cordate; flowers in crowded spikes; segments of the perianth oblong.


Pickerel Weed.

2. P. angustifolia Pursh: leaves elongated-triangular, truncate and subcordate at the base; segments of the perianth linear-lanceolate.—P. cordata var. angustifolia Torr.—P. mucronata Raf.

Hab. High mountain lakes. N. Y. to Car. Pursh. July. 2£.—


**RESTIACEÆ.**

*Flowers* blue, smaller than in the preceding species, of which it may be only a variety.—I have fine specimens collected by Dr. S. B. Mead in Westchester co. N. Y.

2. **HETERANTHERA.** R. & P.


3. **SCHOLLERA.** Schreb.


*S. graminea* Vahl.—*Leptanthus gramineus* Mich.—*Heteranthera graminea* Pursh.


**ORDER CXXVI. RESTIACEÆ.** Brown. Lind.

*Perianth* 2—6-parted, sometimes wanting. *Stamens* definite, 1—6; when half as many as the segments of the perianth, they are opposite the inner divisions; *anthers* mostly 1-celled. *Ovary* 1 or more celled. *Fruit* capsular or nucamentous. *Seeds* pendulous; *embryo* lenticular, on the outside of a mealy albumen, at the extremity remote from the hilum.

*Herbs* or undershrubs. *Leaves* simple, narrow, or none.

1. **ERIOCAULON.** Linn.


1. *E. pellucidum* Mich.: scape very slender, about 7-furrowed; *leaves*
linear-subulate, channelled, smooth, pellucid, 5-nerved, transversely striate; head small, globose; scales of the involucre oval, obtuse.

Hab. In ponds. Can. and N. S. Aug. 2ft.—Scape 4—8 inches high, very slender. Flowers white, Pipewort.

2. E. decangulare Mich.: scape 10-furrowed; leaves ensiform, smooth; head large, depressed-globose; scales of the involucre oval, acute, of the receptacle mucronate.


Order CXXVII. XYRIDEÆ. Kunth. Lind.

Perianth 6-parted, in 2 rows; outer glumaceous; inner petaloid, unguiculate. Stamens 6, 3 fertile inserted upon the apex of the claw of the segments of the inner row of the perianth; anthers bursting outwardly. Ovary single; style trifid; stigmas obtuse, multifid or undivided. Capsule 1-celled, 3-valved, many-seeded, with parietal placenta. Seeds numerous; embryo on the outside of the albumen at the extremity remote from the hilum.

Herbs with fibrous roots. Leaves radical, with dilated scarious bases.

1. XYRIS: Linn.


1. X. caroliniana Walt.: leaves linear, grass like; scape 2-edged; head ovate, rather acute; scales round.—H. junipetaceous. H. flexuosa Ell.


2. X. brevifoliae Mich.: leaves subulate, ensiform, short; head nearly globose; inner valve of the glume shorter than the outer one, slightly notched.


Order CXXVIII. JUNCEÆ. Juss. Lind.

Flowers monoclinous or diclinous. Perianth 6-parted, more or less glumaceous. Stamens 6, inserted into the base of the segments; sometimes only 3 and opposite the outer
series; anthers 2-celled. Ovary 1—3-celled, 1- or many-seeded, or 1-celled and 3-seeded; style 1; stigmas mostly 3, sometimes only 1. Fruit capsular, 3-valved, loculicide, sometimes indehiscent. Seeds with an integument neither black nor crustaceous; albumen firm, fleshy or cartilaginous; embryo within it. Herbs with fascicled or fibrous roots. Leaves fistular, or flat and channelled, with parallel veins.

1. JUNCUS. Linn.

Perianth 6-parted, glumaceous. Stamens 6. Capsule 3-celled, 3-valved; valves bearing the partitions down the middle, to which the numerous seeds are fixed.

* Hexandria. Monogynia.

* Leaves none.

1. J. acutus Linn.: scape naked, terete; involucre 2-leaved, erect, spinous; capsule nearly round, mucronate, as long again as the perianth.

Hab. Sandy sea coast. N. J. to Car. July. 2l.—Scape 2 or 3 feet high. Panicles 2—3 inches long, appearing as if lateral, though really terminal.

2. J. effusus Linn.: scape not rigid, finely striated; panicle loose, very much branched, spreading; capsule obovate, obtuse, shorter than the lanceolate acute leaves of the perianth.


** Leaves all radical. (Flowers terminal.)

4. J. squarrosus Linn.: leaves setaceous, rigid, grooved; panicle terminal, elongated, compound; capsule elliptical-ovate.

Hab. N. Y. Muhl. 2l.—Whole plant very rigid, 6—12 inches high.

5. J. nodosus Linn.: stem somewhat leafy; leaves nodose-articulate; heads mostly 2—globose, one of them lateral and pedunculate, the other sessile; leaflets of the perianth mucronate, shorter than the 3-sided acuminate capsule.


*** Stems leafy.

† Leaves nearly plane, channelled above.

7. *J. bulbosus* Linn.: stem simple, leafy, compressed; leaves mostly radical, linear-setaceous, grooved; panicle terminal, compound, subcymose, shorter than the involucre; leaflets of the perianth incurved, obtuse or acute, mostly shorter than the roundish ovate capsule.—*J. dichotomus* Ell.


8. *J. bufonius* Linn.: stem with a dichotomous panicle; leaves filiform-setaceous, grooved; flowers subsolitary, sessile, unilateral; leaflets of the perianth very acuminate, much longer than the elliptical-ovate capsule.


9. *J. marginatus* Rostk.: stem compressed; leaves flat, smooth; corymb terminal, simple, proliferous; heads 5–10-flowered; flowers triandrous; leaflets of the perianth about as long as the obtuse capsule; the outer ones and the bracts subaristate.—*J. aristulatus* Mich.—*J. triglumis* Walt.


10. *J. trifidus* Linn.: leaf mostly solitary near the summit, linear-setaceous; sheaths ciliate; bracts foliaceous, very long, grooved; heads about 3-flowered, terminal.

- *Hab.* White Hills, N. H. Big. July. 24. — Stem 6 inches high. Flowers in a single head supported by long bracts or terminal leaves.

11. *J. militaris* Big.: leaf one, jointed, longer than the stem; panicle terminal, proliferous, with sheathing lanceolate bracts at base; heads about 5-flowered.

- *Hab.* Ponds near Boston. Big.— Stem 2–3 feet high, with a long sheath or two at base and commonly another above the leaf. Panicle terminal, erect, with proliferous branches.

†† Leaves rounded or subcompressed, nodose-articulate.

12. *J. acuminatus* Mich.: stem leafy, erect; leaves terete, with knót-
like joints; panicle terminal, compound; heads 3—6-flowered, pedunculate and sessile; leaflets of the perianth linear-lanceolate, mucronate, shorter than the acute capsule.—J. sylvaticus Muhl.

Hab. Bogs. N. Eng. to Car. July. 2 ft.—Stem 12—18 inches high. Leaves few, shorter than the stem.

13. J. polycaphalus Mich.: stem leafy, erect; leaves compressed, with knot-like joints; panicle decompound; heads about 5-flowered, fascicate-verticillate; leaflets of the perianth somewhat awned, rather shorter than the triquetrous acute capsule.—J. echinatus Muhl.


14. J. subverticillatus Willd.: stem leaves subulate, with knot-like joints; panicle corymbose; heads about 5-flowered, fascicate-verticillate; leaflets of the perianth striate, as long as the obtuse capsule.—J. fluitans Mich.—J. verticillatus Pursh.


2. LUZULA. De Cand.

Perianth 6-parted, glumaceous. Stamens 6. Capsule 3-celled, 3-valved; valves without partitions; 1 seed in each cell, fixed to the bottom.—Leaves plane, generally hairy.

Hexandria. Monogynia.

1. L. pilosa Willd.: leaves hairy; panicle subcymose; peduncles 1-flowered, reflexed; leaflets of the perianth acuminate, shorter than the obtuse capsule.—Juncus pilosus Linn.


2. L. campestris De Cand.: leaves hairy; spikes sessile and peduncled; leaflets of the perianth acuminate, awned, longer than the obtuse capsule.—Juncus campestris Linn.


4. L. spicata De Cand.: leaves narrow, hairy at the throat; spike cernuous, compound; leaflets of the perianth acuminate, awned, about the length of the roundish capsule.—Juncus spicatus Willd.

Hab. White Hills, N. H. Big. Aug. 2 ft.—Stem a span high, slender, with an oblong nodding head.
3. NARThECIUM. Linn.

Perianth 6-parted, coloured. Stamens 6; filaments hairy.
Seeds numerous, ovate-oblong, appendiculate at each extremity.

Hexandria. Monogynia.

N. americanum Ker.: raceme sometimes interruptedly spiked, lax; pedicels with a setaceous bract below the flower, and another embracing its base; filaments with very short hair.—Phalangium ossifragum Muhl.

Hab. Sandy swamps. N.S. June, July. 2 ft.—Scape a foot high. Leaves narrow-ensiform. Flowers yellow, in a terminal spike.

Order CXXIX. HÆMORACEÆ. Brown. Lind.

Perianth petaloid, 6-cleft. Stamens inserted on the perianth, either 3 and opposite the inner segments, or 6; anthers bursting inwardly. Ovary with the cells 1-2- or many-seeded; style simple; stigma undivided. Fruit capsular, 3-valved, seldom indehiscent, somewhat nucamentaceous. Seeds definite and peltate or indefinite; testa papery; embryo minute, in farinaceous albumen; radicle next the hilum.

Leaves equitant or arranged spirally or alternately.

1. LACHNANTHES. Ell.


L. tinctoria Ell.—Dilatris tinctoria Pursh.

Hab. Sandy swamps. N.J. to Flor. July. 2 ft.—Stem erect, 2 feet high, hairy at the top. Leaves ensiform, shorter than the stem. Flowers in a corymbose panicle, woolly, yellow within.

Red Root.

2. LOPHIOLA. Ker.


Hexandria. Monogynia.

L. aurea Ker.—Conostylis americana Pursh.—Helonias tomentosa Muhl.

Hab. Sandy swamps. N.J. to Car. July. 2 ft.—Root creeping. Leaves radical, gramineous, ensiform, shorter than the scape. Scape erect, with 1 or 2 short leaves. Flowers yellow, in a crowded corymb.

Perianth tubular, 6-cleft, in 2 rows; outer persistent; inner petaloid, withering or deciduous. Stamens 6, inserted into the base of the segments of the perianth. Ovary free or somewhat cohering, 3-celled; style single; stigma 3-parted, often twisted. Fruit capsular or succulent, 3-celled. Seeds indefinite; embryo cylindrical, recurved, lying in the base of mealy albumen.

Stemless or short-stemmed plants. Leaves rigid, channelled, often thorny or toothed at the margin.

1. Agave. Linn.

Perianth tubular, funnel-form, adhering to the ovary, 6-parted. Stamens 6, exserted. Anthers versatile. Capsule ovate, attenuate at each end, obtusely triangular, 3-celled, many-seeded.

A. virginiaca Linn.: stemless, herbaceous; leaves with cartilaginous serratures; scape simple; flowers sessile.


Perianth in 2 rows; outer herbaceous, 3-parted; inner petaloid, 3-parted or trifid. Stamens 6 or fewer, hypogynous, some of them either deformed or abortive. Ovary 3-celled; cells few-seeded; style 1; stigma 1. Capsule 2—3-celled, 2—3-valved, loculicidally. Seeds often in pairs in each cell; hilum usually linear and lateral; albumen densely fleshy; embryo pully-shaped, lying in a cavity of the albumen, and at the opposite extremity from the hilum.

Herbs. Leaves usually sheathing at the base.

1. Commelina. Linn.

Perianth in 2 rows; outer one 3-parted, calycine; inner 3-parted, petaloid. Stamens 6, 3—4 sterile and furnished with cruciform glands. Capsule 3-celled, 3-valved; one of the valves often abortive.

Triandria. Monogynia.

1. C. angustifolia Mich.: assurgent; slender; inner segments of the perianth unequal, (one very minute); leaves linear-lanceolate; sheaths ciliate; bracts peduncled, short-cordate.—C. erecta Willd.

Day Flower.

2. **C. virginica** Linn.: inner segments of the perianth nearly equal; leaves lanceolate, somewhat petiolate, with the throat bearded; stem erect.—**C. longifolia** Mich.


2. **TRADESCANTIA.** Linn.

Perianth in 2 rows; outer one 3-parted; inner one 3-parted petaloid. Filaments 6, villous. Capsule superior, 3-celled, many-seeded. Hexandria. Monogynia.

1. **T. virginica** Linn.: stem erect, branching, smooth; leaves long-lanceolate, smooth; flowers in an imperfect umbel, sessile, pubescent.

—**T. cristata** Walt.

Hab. Shady woods. Penn. to Car. W. to Miss. May. 2f.—Stem a foot high. Flowers purple, in terminal compound clusters or umbels, with a large 2-leaved involucre at base.

Spider Wort.

2. **T. rosea** Mich.: erect, simple; leaves linear, long, smooth; peduncles elongated; calyx smooth.—**T. virginica** Walt.

Hab. Moist woods. Penn. to Geor. May. 2f.—Stem 8—12 inches high. Flowers smaller than in preceding, with the inner segments rose coloured, and three times as long as the outer ones.

**Order CXXXII. ALISMACEÆ.** Brown. Lind.

Perianth 6-parted, in two rows; outer herbaceous, inner petaloid. Stamens definite or indefinite, hypogynous. Ovaries of several 1-celled carpels; ovules erect or ascending, solitary or in pairs, at a distance from each other; styles and stigmas several. Fruit dry, not opening, 1 or 2-seeded. Seeds without albumen; embryo shaped like a horse-shoe; radicle next the hilum.

Floating plants. Leaves with parallel veins.

1. **SAGITTARIA.** Linn.


Monoecia. Polyandria.
1. *S. sagittifolia* Willd.: leaves sagittate, acute; lobes acute, straight, lanceolate.
   a. *latifolia* Torr.: leaves broad ovate, rather obtuse; lobes ovate, slightly acuminate, straight.—*S. latifolia* Pursh.
   b. *hastata* Torr.: leaves oblong-lanceolate, acute; lobes spreading, lanceolate, long, acuminate; flowers mostly dioecious.—*S. hastata* Pursh.
   c. *gracilis* Torr.: leaves linear; lobes much spreading, linear, very long and acute.—*S. gracilis* Pursh.
   d. *pubescens* Torr.: leaves and stem pubescent; bracts and calyx very pubescent.—*S. pubescens* Muhl.

**Hab.** Ponds. Can. to Car. July, Aug. 2 ft. — *Scape* 1—2 feet high. *Leaves* large. *Flowers* white, whorled in threes.—The above account of this species which is from Torrey’s Compendium, will show the very variable character of the plant.

*Arrow-head.*

2. *S. obtusa* Willd.: leaves sagittate, dilated-ovate, rounded at the extremity, mucronate; lobes approximate, oblong, obliquely acuminate, straight; flowers dioecious; sterile scape branched at base.

**Hab.** Ditches and ponds. Penn. to Vir. July. 2 ft. — *Leaves* the size of *Calla palustris*. *Flowers* white.—The plant affords a milky sap which hardens into a white and hyaline gum. *Nutt.*

3. *S. heterophylla* Pursh: leaves simple, linear and lanceolate, acute at each end, or elliptical and sagittate, with the lobes linear and variclate; scape simple, few-flowered; flowers monoecious, the fertile subsessile; bracts short, suborbiculate.

**Hab.** Bogs and ditches. Penn. to Vir. July. 2 ft. — *Scape* a foot high. *Leaves* 2 1-2 inches long.—The species is easily distinguished by its fertile flowers being sessile.

4. *S. rigida* Pursh: leaves narrow-lanceolate, carinate below, rigid, very acute at each end; scape branched; flowers monoecious.


5. *S. simplex* Pursh: leaves linear-lanceolate, acute, narrowed towards the base; scape simple, many-flowered; flowers dioecious; bracts and calyx obtuse and rounded.


6. *S. acutifolia* Pursh: leaves acutely subulate, sheathing at base, convex on the back; scape simple, few-flowered; flowers monoecious; bracts dilated, acuminate.

**Hab.** Muddy shores. Mass. N. Y. and Penn. July, Aug. 2 ft. — *Scape* 6 inches high. *Flowers* pedunculate.—Found by Dr. Bigelow near Boston, and by Dr. S. B. Mead at Peekskill, N. Y.

7. *S. pusilla* Nutt.: leaves linear, obtuse and short, the summits foliaceous; scape simple, shorter than the leaves; flowers monoecious,

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few; fertile one solitary, deflexed; stamens mostly 7.—*Alisma subulata* Pursh.


8. *S. natans* Mich.: leaves floating, elliptic-lanceolate, obtuse, 3-nerved, attenuated at base; lower ones subcordate; *scape* simple, few-flowered; lower peduncles elongated.


2. **ALISMA.** Linn.


*A. plantago* Linn.: leaves ovate-cordate, acute or obtuse, 9-nerved; flowers in a compound verticillate panicle; fruit obtusely triangular.

*b. parviflora* Torr.: leaves oval, 5–7-nerved, acuminate; flowers very small.—*A. parviflora* Pursh.

**Hab.** In water. Can. to Flor. July, Aug. 24.—*Scape* 1–2 feet high, triangular. *Leaves* all radical, on long petioles. *Panicle* much decompound in a verticillate manner. *Flowers* white, tinged with purple.—Var. *b.* has the flowers smaller and the leaves not more than 7-nerved. It generally grows near salt water.

Water Plantain.

**Order CXXXIII. JUNCAGINEÆ.** Rich. Lind.

*Perianth* herbaceous, rarely wanting. *Stamens* 6, hypogynous. *Ovary* of 3 or 6 carpels, cohering firmly together; *ovules* 1 or 2 in each carpel, erect, approximated at the base. *Fruit* dry. *Seeds* 1–2, erect; *albumen* none; *embryo* straight; *radicle* at the opposite extremity from the hilum; *plumule* emitted through a lateral cleft in the embryo.

*Herbs* growing in bogs. *Leaves* ensiform, with parallel veins.

1. **TRICHLOCHIN.** Linn.

TYPHACEÆ.

1. *T. palustre* Linn.: fruit of 3 united capsules, nearly linear, attenuated at the base.

Hab. Marshes. Salina, N. Y. N. to Arc. Amer. July. 2t.—Scape a foot long, very slender. Leaves very numerous, fleshy, nearly as long as the scape. Flowers small, greenish, in a terminal lax spike or raceme.

*Arrow Grass.*

2. *T. maritimum* Linn.: fruit ovate-oblong, of 6 united capsules—

Hab. Salt marshes. Can. and N. S. W. to Mich. July. 2t.—Scape 18 inches long, angled. Leaves all radical, narrow, sheathing at base, shorter than the scape. Flowers very small in a long terminal spike.

2. SCHEUCHZERIA. Linn.


*Hexandria. Trigynia.*

*S. palustris* Linn.


ORDER CXXXIV. TYPHACEÆ. Lind.

Flowers diclinous, arranged upon a naked spadix. Perianth 3-parted. Stamens 3 or 6; filaments long and slender; anthers wedge-shaped, erect. Ovary single, superior, 1-celled, ovule solitary, pendulous; style short; stigmas 1—2, linear, simple. Fruit dry, indehiscent, 1-celled, 1-seeded. Embryo in the centre of albumen straight, taper, with a cleft in one side, in which lies the plumule; radicle next the hilum.

Herbs growing in marshes or ditches. Stems without nodi. Leaves rigid, ensiform, with parallel veins.

1. SPARGANIUM. Linn.


Monoecia. Triandria.

1. *S. ramosum* Smith: leaves triangular at base, their sides concave; common flower-stalk branched; stigma linear.—*S. erectum* Linn.


*Burr Reed.*
2. *S. americanum* Nutt.: lower leaves equal with or exceeding the stem, which is nearly simple; floral ones concave at base and erect; stigma always simple, ovate-oblong, oblique, scarcely more than half the length of the style.—*P. simplex* Pursh.?

**Hab.** Ponds and lakes. N. Y. to Car. Aug. 24.—*Stem* a foot high, simple or divided at base. Lower leaves carinate. Floral ones concave at base and erect; stigma always simple, ovate-oblong, oblique, scarcely more than half the length of the style.

3. *S. natans* Smith: leaves floating, flat; common flower-stalk simple; stigma ovate, very short; head of sterile flowers subsolitary.—*S. angustifolium* Mich.

**Hab.** Lakes, &c. Can. and N. S. Aug. 24.—*Stem* long and slender. Leaves very long, pellucid.—Found by Mr. G. W. Clinton, in a lake on Catskill mountains.

2. **TYPHA.** Linn.

*Flowers* collected into a long dense cylindrical spike. **Sterile Fl.** Perianth none. *Stamens* 3, together upon a chaffy or hairy receptacle, united below into one common filament. **Fertile Fl.** Perianth none. Pericarp pedicellate, surrounded at base with hairs resembling a pappus.

**Monoecia.** **Triandria.**

1. *T. latifolia* Linn.: leaves linear, nearly flat; sterile and fertile spikes close together, both cylindrical.


**Cat Tail.** **Reed Mace.**

2. *T. angustifolia* Linn.: leaves linear, channelled; sterile and fertile spikes a little distant from each other; both cylindrical.

**Hab.** Marshes, &c. N. Y. to Vir. July, Aug. 24.—*Stem* 4—5 feet high. Leaves narrower than in the preceding.

**Order CXXXV. AROIDEÆ.** Juss. Lind.

*Flowers* diclinous, arranged upon a spadix, often naked. **Perianth** 4—6-parted, or wanting. **Stamens** definite or indefinite, hypogynous, very short; **anthers** 1-2- or many-celled, ovate, turned outwards. **Ovary** free, 1- rarely 3-celled; stigma sessile. **Fruit** succulent or dry, not opening. **Seeds** solitary or several; **embryo** in the axis of fleshy or mealy albumen, straight, cylindrical, with a cleft on one side in which lies the plumule; **radicle** next the hilum, rarely at the opposite extremity.

**Herbs** or shrubs. **Roots** often tuberous or thickened. **Leaves** sheathing at base, with parallel or branching veins.
1. **ACORUS. Linn.**


*Hexandria. Monogynia.*

*A. calamus Linn.:* spadix protruding from the side of an ensiform leaf.

*Han.* Swamps. Can. to Car. June. 2l.—*Leaves 2—3 feet long. Scape leafy above the spadix, Spadix cylindric, thick, covered with minute greenish-flowers. The root is aromatic.*

*Sweet Flag.*

2. **ORONTIUM. Linn.**


*O. aquaticum Linn.:* leaves all radical, lanceolate-ovate; scape cylindrical, spiked.—*Pothos ovata Walt.*

*Han.* In water. Can. to Flor. May. 2l.—*Leaves radical, becoming large, varying in breadth. Flowers yellow, in a close cylindrical spike, with a peculiar smell.*

*Golden Club.*

3. **ARUM. Linn.**

*Spathe 1-leaved, cucullate, convolute at base. Spadix naked at the extremity, with sessile anthers in the middle and ovaries at the base. Berry 1-celled, many-seeded.*

*Monoeia. Polyandria.*

1. **A. dracontium Linn.:** stemless; leaves pedate; leaflets lanceolate-oblung, entire; spadix subulate, longer than the oblong convolute spathe.

*Han.* Banks of streams. N. Y. to Flor. June, July. 2l.—*Scape about a foot long. Leaf 1, on a petiole as long as or longer than the scape. Spathe short, convolute.—Found on the banks of the Hudson, near Albany.*

*Green Dragon.*

2. **A. triphyllum Linn.:** stemless; leaves ternate; leaflets oval, acuminate, very entire; spadix clavate; spathe peduncled, ovate, acuminate, convolute below, flat and bent over above.

*Han.* Wet woods. Can. to Car. May, June. 2l.—*Root tuberous. Leaves 1—2, on long petioles. Spathe green or purple.—Whole plant acrid and almost caustic. Big. Med. Bot. i. 52.*

*Indian Turnip.*

3. **A. atrorubens Linn.:** stemless; leaves ternate; leaflets ovate, acuminate; spadix cylindrical; spathe sessile ovate, acuminate, spreading horizontally above.
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Hab. Swamps. Penn. to Vir. May, June. 2L.—Spathe dark brown; smell disagreeable.—Mr. Schweinitz informs me that this plant is found at Easton, Penn., and he thinks it distinct from the preceding.

4. RENSSELAERIA. Beck.


Monoecia. Polyandria.

Obs. This genus, proposed by Mr. William Cooper of New-York, was named by him Lecontia, in honor of the distinguished naturalist, Capt. John Le Conte, of the U. S. army. But this name, which was adopted by Dr. Torrey in his Compendium, is applied by A. Richard to a genus of the order Rubiaceae, and confirmed by De Candolle in his Prodromus. I have therefore changed that of Mr. Cooper's genus, by calling it after the Hon. Stephen Van Rensselaer; who, for his efficient patronage of the Natural Sciences, is entitled to the respect and gratitude of all their cultivators.


Hab. Swamps. N. Y. to Car. July. 2L.—Scapes several from one root, 12—18 inches long. Leaves on long petioles, oblanceolate-cordate, with the lobes obtuse, a foot or more long. Spathe lanceolate, involute, border undulate, closely embracing the spadix, which is long and slender. Berries 1-seeded.

5. CALLA. Linn.


Monoecia. Polyandria.

C. palustris Linn. : leaves cordate; spathe flat; spadix covered with perfect flowers.


6. SYMPLOCARPOS. Salisb.


Tetrandria. Monogynia.

S. fatidus Nutt.—Ictodes fatidus Big.—Pothos fatida Mich.

Hab. Wet meadows. Can. to Vir. Feb.—April. 2L.—Root

**Order CXXXVI. PISTIACEÆ. Rich. Lind.**

Flowers 2, naked, enclosed in a spathe. Stamens definite, 2—7. Ovary 1-celled, with one or more erect ovules; style short; stigma simple. Fruit membranous or capsular, not opening. Seeds 1 or more, with a fungous integument and a thickened indurated foramen; embryo either in the axis of fleshy albumen and having a lateral cleft for the emission of the plumule, or at the apex of the nucleus.

Floating plants, with very cellular, lenticular, or lobed stems and leaves confounded.

1. LEMNA. Linn.


Oes. For an excellent and detailed account of this singular genus, I would refer to Dr. Hooker's Flora Scotica.

1. *L. trisulca* Linn.: fronds thin, elliptic-lanceolate, caudate at one extremity, at the other serrate; root solitary.

Hab. Ditches and ponds. N. S.; rarely in flower. July. 🌪️—Fronds half an inch or more in length, thin, margin pellucid; young fronds produced from lateral clefts, of the same shape as the parent plant, and again proliferous before they are detached. Flowers very minute. Root a single fibre. *Duck's Meat.*

2. *L. minor* Linn.: fronds nearly ovate, compressed; root solitary.

Hab. Stagnant waters. N. S. June, July. 🌪️—Fronds a line and a half long, slightly convex beneath, somewhat fleshy, increasing rapidly by gemmae (young fronds) so as often completely to cover the surface of stagnant water.

3. *L. gibba* Linn.: fronds broadly ovate, almost flat above, hemispherical and pale beneath; root solitary.

Hab. Stagnant waters, near Liverpool, N. Y. Pursh. June, July. 🌪️—Distinguished from the former by its being pale and hemispherical beneath, and appearing reticulated.


Hab. Stagnant waters. June, July. 🌪️—Fronds 3—4 lines long, succulent, of a firm texture. Root a bundle of 8 or 10 simple fibres in the middle of the frond.
Flowers monoclinous or diclinous. Perianth 2- or 4-parted, often deciduous, rarely wanting. Stamens definite, hypogynous. Ovaries 1 or more, superior; ovule solitary; style 1 or none; stigma simple. Fruit dry, not opening, 1-celled, 1-seeded. Seed pendulous; albumen none; embryo straight or curved, with a lateral cleft for the emission of the plumule.

Water plants. Leaves very cellular, with parallel veins.

1. ZOSTERA. Linn.


Z. marina Linn.: leaves entire, somewhat 3-nerved; stem roundish.
Hab. Muddy shores. N. Y. to Car. Aug. 24.—Stem terete, flexuous, throwing out roots from the joints. Leaves very long and narrow. Spadix linear, with the flowers all on one side, in 2 rows.

2. CAULINIA. Willd.


1. C. fragilis Willd.: leaves ternate or opposite, linear-subulate, recurved, aculate-dentate, rigid.

2. C. flexilis Willd.: leaves whorled in sixes, linear, denticulate at the apex, spreading.

3. ZANNICHELLIA. Linn.


1. Z. palustris Linn.: anthers 4-celled; stigmas entire; pericarps toothed on the back.
FLUVIALES.


2. *Z. intermedia* Torr.: anther 2-celled; stigmas dentate-crenate; seed smooth, entire on the back.


4. **RUPPIA.** Linn.


*R. maritima* Linn.


5. **POTAMOGETON.** Linn.


* Upper leaves floating.

1. *P. natans* Linn.: upper leaves floating, coriaceous, on long petioles, oblong-ovate; lower ones membranous, linear-lanceolate, gradually tapering into a petiole. — *P. natans b. Mich.*

Hab. Ponds and lakes. N. S. July, Aug. 2l. — Stem varying in length. Leaves sometimes cordate. Spadix 1—2 inches long, rising above the water.

2. *P. fluitans* Linn.: upper leaves floating, subcoriaceous, ovate-lanceolate, obtuse, tapering into a rather short petiole; lower ones very long, lanceolate, membranous and sessile.

Hab. Ponds and streams. N. Y. to Car. July, Aug. 2l. — Stem varying in length. Leaves reddish, less coriaceous than in the preceding. Spadix an inch long, almost submerged.


Hab. Stagnant water. N. Y. to Car. Aug. 2l. — Smaller than the former. In flowing water the lower leaves are very long and narrow.

4. *P. diversifolium* Bart.: upper leaves floating, elliptical, petiolate,
MONOCOTYLEDONOUS PLANTS.

5-nerved; lower ones filiform; spadix axillary, almost sessile, few-flowered.—*P. setaceum* Pursh.

**Ponds and small streams. N. S. June. 2f.—Stems numerous, branched, filiform. Upper leaves scarcely an inch long. Spadix 4—6-flowered.**

**Leaves all submersed.**

5. *P. perfoliatum* Linn.: leaves clasping, cordate, ovate.

**Lakes, &c. Can. to Penn. Aug. 2f.—Stem dichotomous. Leaves an inch or more in length, appearing perfoliate. Spadix few-flowered, on a short peduncle.**


**Rivers and lakes. Can. to Car. Aug. If.—Stem dichotomous. Leaves large, very pellucid and finely veined. Spadix cylindrical, many-flowered.**

7. *P. densum* Linn.: leaves opposite, crowded, ovate, acuminate, sessile; stem forked; spike about 4-flowered, on very short peduncles.

**Pools, &c. Bethlehem, Penn. Schueteinich.**


**Lakes. Can. to Vir. Pursh. Aug. 2f.—Stem long, much branched. Leaves 1—1.2 inches long, 2—3 lines broad, crisp to the touch. Spadix 8—10 flowered.**

9. *P. compressum* Linn.: leaves linear, very obtuse, sessile; stem compressed, 4—6-flowered.

**In water. N. S. July, Aug. 2f.—Plant small. Stem much branched, thick. Leaves 2 inches long, linear.**

10. *P. pauciflorum* Pursh: leafy; leaves sessile, narrow linear, flat; the upper verticillate; spadix capitate, 4-flowered; stem slender, terete.—*P. gramineum* Mich.

**Ponds and rivers. N. Y. to Car. July, Aug. 2f.—Stem almost filiform, much branched, Leaves 2—3 inches long, not more than half a line broad.**

11. *P. pectinatum* Linn.: leaves distichous, setaceous, alternate, sheathing; stipules scarcely any; spadix few-flowered, interrupted.—*P. marinum* Mich.

**Ponds. Can. and N. S. June. 2f.—Stem filiform, much branched. Leaves very numerous, giving to the plant a pectinated appearance.**

Subclass II. GLUMACEÆ. Lind.

*Flowers* destitute of a true perianth, but consisting of imbricated bracts.

Order CXXXVIII. GRAMINEÆ. Juss. Lind.

*Flowers* usually monoclinous, sometimes monoecious or
polygamous; consisting of imbricated bracts, of which the most exterior are called glumes, (calyx of Linnaeus,) the interior immediately enclosing the stamens paleæ, (corol Linn.) and the innermost at the base of the ovary scales, (nectary Linn.) Glumes usually 2, alternate, sometimes single, most commonly unequal. Paleæ 2, alternate; the lower or exterior simple; the upper or interior composed of 2 united by their contiguous margins, and usually with 2 keels, together forming a kind of dislocated calyx. Scales 2 or 3, sometimes wanting; if 2, collateral, alternate with the paleæ, and next the lower of them; distinct or united. Stamens hypogynous, 1—6, or rarely indefinite; anthers versatile. Ovary simple; styles 2, rarely 1 or 3; stigmas feathery or hairy. Pericarp usually undistinguishable from the seed, membranous. Albumen farinaceous; embryo lying on one side of the albumen near its base.

Culms cylindrical, hollow, jointed. Leaves alternate, with a split sheath. Flowers in little spikes called locustæ, arranged in a spiked, racemed, or panicled manner.

Div. I. Agrostideæ. Inflorescence panicled, sometimes contracted, into the form of a spike. Spikelets solitary, 1-flowered. Glumes and paleæ of nearly similar texture, most usually with a keel. Lower paleæ either bearded or beardless, the upper never with 2 keels.

1. AGROSTIS. Linn.

Glume naked, beardless, 2-valved, 1-flowered; valves longer than the paleæ. Paleæ 2, membranous, often hairy at base, enclosing the seed. Triandria. Digynia.

1. A. stricta Wild. : panicle elongated, straight; valves of the glume equal; paleæ smaller than the valves, unequal, with an awn at the base of the outer one longer than the flower.


2. A. vulgaris Smith : panicle with smoothish and at length divaricate branches; paleæ unequal, outer one 3-nerved; stipule very short and truncate.—A. hispida Wild.


3. A. alba Linn. : panicle lax, with hispid and spreading branches;
paleae shorter than the glume, outer one 5-nerved; stipule oblong.—
A. decumbens Muhl.—A. stolonifera Smith.


4. A. lateriflora Mich.: culm erect, branched above, soboliferous at base; panicles lateral and terminal, contracted, dense, a little secund; glume acuminated; paleae longer than the glume, equal, pubescent at base, awnless.—A. mexicana Muhl.

b. filiformis Torr.: panicle very slender; paleae nearly equalling the glume.—A. filiformis Muhl.


5. A. sobolifera Muhl.: culm erect, branched; panicle contracted, filiform, simple, with appressed alternate branches; paleae longer than the equal glumes, equal, awnless, hairy at base, mucronate at the tip.


6. A. tenuiflora Willd.: culm nearly simple, pubescent about the joints; branches appressed; panicle contracted, filiform; paleae longer than the glume; lower one with an awn twice as long as the flower.


7. A. sylvatica Torr.: culm erect, much branched, diffuse, smooth; sheaths lacerate; panicle filiform; paleae longer than the glume; awns three times as long as the flower.—A. diffusa Muhl.

Hab. Rocks. N. J. Aug. 24.—Root creeping. Culm 2—3 feet high.—Resembles the preceding, but is distinguished by its branched diffuse culm.

8. A. compressa Torr.: whole plant very smooth; culm erect, compressed, simple; panicle oblong, subcontracted; glumes equal, shorter than the paleae, acute; paleae rather obtuse, smooth at the base.


9. A. serotina Torr.: culm filiform, much compressed; leaves very narrow, carinate, erect; panicle attenuate; glume unequal, half as long as the awnless paleae.

Hab. Sandy swamps. N. J. Sept. 24.—Culm 12—18 inches high. Leaves almost filiform. Panicule slender, with the branches flexuous.

10. A. juncea Mich.: leaves straight and erect, convolutely setaceous; panicle oblong-pyramidal, verticillate; paleae awnless, twice the length of the glume.—A. indica Muhl.
11. *A. virginica* Linn.: culms numerous, procumbent at base, assurgent; leaves subdistichous, involute, rigid; panicles lateral and terminal, spike-form; the lateral ones concealed; glume equal, about as long as the palea.—*A. pungens* Pursh.


12. *A. longifolia* Torr.: panicle contracted, spiked, generally concealed; palea much longer than the glume, subequal, smooth and spotless, without awns; leaves very long, filiform and recurved at the apex.


13. *A. clandestina* Spreng.: panicle spiked, partly concealed; palea unequal, much longer than the glume, hairy and spotted, slightlyawned; leaves very long.


14. *A. spica-venti* Willd.: outer palea with a very long straight awn; panicle spreading.

HAB. N. S. June. 2f.—Culm 18 inches high. Introduced.

15. *A. canina* Willd.: culm prostrate, somewhat branching; palea with a recurved dorsal awn.

HAB. Wet meadows. July. 2f.— Introduced.

2. TRICHODIUM. Mich.

Glume 2-valved, 1-flowered. Palea 1, shorter than the glumes, bearded and supported at the base by one or two fassicles of hairs. Seed loose, covered by the palea.

**Triandria. Digynia.**

1. *T. laxiflorum* Mich.: culm erect; leaves setaceous, and with the sheaths somewhat scabrous; panicle diffuse, capillary, with trichotomous branches; glumes unequal.—*Agrostis laxa* Muhl.

HAB. Dry fields. Subarc. Amer. to Car. May, June. 2f.—Culm 18 inches high. Panicle at length much spread and loose, pyramidal. Thin Grass.

2. *T. scabrum* Muhl.: culm geniculate at the base, assurgent, branch-ed; leaves linear-lanceolate, flat, striate, scabrous; sheaths mostly smooth; panicle verticillate and divaricate; glumes unequal; paleae ovate, acute, 3-nerved.—*Agrostris scabra* Willd.


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3. *T. elatum* Pursh: culm erect, firm; leaves narrow-linear, flat, scabrous; sheaths smooth; panicle verticillate, a little spreading; glumes nearly equal.

_Hab._ Sandy swamps. N. J. Aug. 24._—Culm 3 feet high._

Panicle exsert, purple.

4. *T. montanum* Torr.: culm cespitose, erect; leaves involute, filiform, and as well as the sheaths, scabrous; panicle capillary, loose, a little spreading; glumes equal.

_Hab._ Mountains. N. Y. July. 24._—Culm 8—12 inches high._

Panicle elongated.

3. POLYPOGON. Desf.

Glume 2-valved, 1-flowered; _valves_ nearly equal, obtuse at the end, with a long bristle. _Pales_ shorter than the glume; the lower one entire, with a short straight tender bristle, (sometimes awnless); upper one bifid, toothed._—Panicle contracted like a spike._

_Triandria. Digynia._

_P. racemosus* Nutt.: panicle dense, conglomerate, interrupted; bristles of the glume scabrous; _pales_ unarmed, hairy at the base; culm branched._—Agrostis racemosa* Mich._—_A. setosa* Muhl.

_Hab._ Bogs. N. S. W. to Miss. Aug., Sept. 24._—Culm 3—4 feet high, compressed. _Leaves_ scabrous and somewhat glaucous; flat. _Panicle_ 2 inches long, many-flowered, interrupted below.

4. TRICHOCHLOA. De Cand.

Glume 2-valved, 1-flowered, very minute. _Pales_ much larger than the glume, naked at base; lower one convolute at the base, terminating in a long awn not articulated._

_Triandria. Digynia._

*T. capillaris* De Cand.: leaves convolute-filiform, smooth; panicle diffuse, capillary, very slender; pedicels longer than the awns; awns 3—4 times the length of the flower._—_Stipa sericea* Mich. Pursh._—_Agrostis sericea* Muhl. Ell.

_Hab._ Sandy fields. Mass. to Car. June, July. 24._—Culms cespitose, 2 feet high, very slender. _Panicle_ 8—10 inches long, glossy and purple.

5. CINNA. Linn.

Glume naked, beardless, 2-valved, compressed, nearly equal. _Pales_ 2, nearly equal, compressed, shortly stipitate, naked at the base; lower one inclosing the upper, with a short awn near the summit. _Stamen_ 1. _Monandria._ _Monogynia._

_C. arundinacea* Wild._: panicle large, capillary, loose; leaves broad-linear; culm smooth._—Agrostis cinna* Pursh._
6. MUHLENBERGIA. Schreb.

Glume 2-valved; valves very minute, fringed. Paleæ much longer than the glume, ovate, obliquely truncate, gibbous; the lower one terminating in a slender bristle.—Panicle nearly simple.

1. M. *diffusa* Schreb.: culm diffuse (decumbent); leaves linear-lanceolate; panicle branched, appressed; awns as long as the paleæ.


2. M. *erecta* Schreb.: culm erect, simple, and with the leaves pubescent; panicle loose; paleæ 2, with a very long awn.—*Brachyelytrum aristatum* Beauv. Torr.


7. ALOPECURUS. Linn.

Glume 2-valved, 1-flowered; valves somewhat equal, connate, distinct. Paleæ united into a bladder-like glume, cleft on one side below the middle, generally bearded. Styles often connate.—Panicle spiked, cylindric. *Triandria. Digynia.*

1. A. *pratensis* Linn.: culm erect, smooth; panicle subspiked, cylindric, obtuse, thick; glumes ciliate, connate below the middle, as long as the paleæ.


2. A. *geniculatus* Linn.: culm ascending, geniculate; panicle spik-ed, cylindrical, obtuse; glumes connate at base, obtuse, hairy on the back and margin; paleæ truncate; styles free.


8. PHLEUM. Linn.

Glume 2-valved, much longer than the paleæ; valves equal, boat-shaped, rostrate or mucronate. Paleæ 2, included in
the glume, boat-shaped, awnless, truncate.—Panicle spiked, dense, cylindric.  

_P. pratense_ Linn. : spike cylindric; glumes truncate, mucronate, with a ciliate keel; awn shorter than the glume; culm erect.  


Introduced.  

_Herds Grass or Cat's-tail Grass._

9. _PHALARIS._ Linn.  

_Glume_ 2-valved, 1-flowered; _valves_ nearly equal, membranaceous, gibbous on the back, carinate. _Palea_ 2, coriaceous, hairy at the base, shorter than the glume. _Rudiments_ opposite, sessile, resembling valves. _Scales_ collateral.—Flowers generally in compound, ovate or elongated spikes.  

_Triandria._ Digynia.  

1. _P. americana_ Ell.: panicle oblong, spiked; glumes boat-shaped, serrulate; _paleae_ unequal; rudiments hairy.—_P. arundinacea_ Mich.— _Calamagrostis colorata_ Nutt.  


_American Canary Grass._  

2. _P. canariensis_ Linn.: panicle subspiked, ovate; glumes boat-shaped, entire at the apex; rudiments smooth.  

_Hab._ In pastures, &c. July. _Culm_ a foot and half high. _Leaves_ broad-linear. _Glumes_ nearly twice the length of the _paleæ_. _Culm_ 6—12 inches long, much branched from the base. _Leaves_ at first flat, striate, hairy on the upper surface. _Spikes_ lateral and terminal.  

_Introduced._  

_Canary Grass._

10. _CRYPSIS._ Aul.  

_Glume_ 2-valved, 1-flowered, compressed, unequal. _Palea_ 2, unequal, longer than the glume. _Stamens_ 2—3. _Seed_ loose, covered by the _paleae_.—Flowers in an oblong spike.  

_Triandria._ Digynia.  

_C. virginica_ Nutt.: spike oblong-cylindrical, thick and lobed; culm procumbent and geniculate; leaves at length involute, rigid, pungent.  


Div. II. _Paniceæ_. Inflorescence spiked or panicled. Spikelets either solitary, in pairs, or several together, one or more usually 2-flowered, one of the flowers being sterile or unisexual. Glumes usually of a thinner texture than the _paleæ_, which are more or less cartilaginous, the lower one half enfolding the upper, and either beardless or occasionally bearded; neither of them with a keel.
11. MILIUM. Linn.

Glume 2-valved, naked, beardless. Paleæ 2, oblong, concave, shorter than the glume, awnless. Seed coated with the indurated paleæ.—Flowers panicked. Triandria. Digynia.

1. M. effusum Linn.: panicle diffuse, compound; branches horizontal; glumes ovate, very obtuse; paleæ awnless, smooth and shining; leaves broad-linear.


Common Millet-grass.

2. M. amplicarpon Pursh: leaves linear-lanceolate, hairy, ciliate; panicle simple, contracted, bearing perfect flowers; fertile flowers in solitary elongated radical scapes, at length subterraneous.—M. ciliatum Muhl.

Hab. Sandy swamps. N. J. Aug., Sept. 2 ft. —Culms numerous, 1–2 feet high, assurgent. Panicle appressed. Glumes acuminate.—This species is well figured by Pursh.

3. M. pungens Torr.: culm erect; leaves lanceolate, very short, pungent, at length involute; panicle contracted; branches generally in pairs, 2-flowered; flowers awnless, ovate; paleæ hairy.


Dwarf Millet-grass.

12. PIPTATHERUM. Beauv.

Glume membranaceous. Paleæ cartilaginous, elliptical, shorter than the glume; lower one awned at the tip. Scales ovate, entire.—Flowers panicked. Triandria. Digynia.

P. nigrum Torr.: panicle simple; flowers racemose, ovate-lanceolate; paleæ black, hairy; awn as long again as the glume.—Oryzopsis melanocarpa Muhl.—Milium racemosum Smith. Big.


Black-seeded Millet-grass.

13. PANICUM. Linn.

Glume 2-valved; valves unequal, the lower one very small. Florets dissimilar, the lower one abortive, or antheriferous. Paleæ concave, equal, beardless. Seed coated with the hardened paleæ.—Panicle loose and scattered.

Triandria. Digynia.

* Flowers in dense racemes.

1. P. crus-galli Linn.: racemes alternate and in pairs, compound;
2. P. hispidum Muhl.: panicle compound, nodding; racemes alternate; glumes terminating in hispid bristles; sheaths hispid.


3. P. clandestinum Linn.: culm with short axillary branches; leaves broad-lanceolate, cordate at the base; sheaths hispid, enclosing the short panicles; abortive floret neutral, 2-valved; upper valve obtuse. —P. latifolium var. clandestinum Pursh.


4. P. pedunculatum Torr.: culm dichotomous; leaves broad-lanceolate, slightly hairy above, attenuate; sheaths hispid and papillose; panicle long-pedunculate, compound, smooth; spikelets ovate, smooth; abortive floret 2-valved; upper valve half the length of the lower.

HAB. Moist woods. N. Y. July. 21.—Culm 3—4 feet high, much branched above. Panicle terminal, spreading, on a peduncle.

5. P. latifolium Linn.: culm mostly simple, bearded at the joints; leaves oblong-lanceolate, smooth, or with the sheaths somewhat pubescent; panicle terminal, a little exsert, simple, pubescent; spikelets oblong-ovate; abortive floret antheriferous, 2-valved; upper valves sub-herbaceous, nearly as long as the lower, acute.


6. P. scoparium Lam.: whole plant softly villous; leaves lanceolate; panicle erect, compound, setaceous, much branched; spikelets turgid, ovate, pubescent.

HAB. N. J. to Car. 21.—Culm 2 feet high, mostly simple. Flowers larger than in any of our species.—Scarcey differs from the preceding.

7. P. nervosum Muhl.: culm simple; nodes smooth; leaves broad-lanceolate, smooth, a little ciliate on the margin; panicle much branched, smooth, many-flowered; spikelets oblong; abortive floret antheriferous, with the upper valve sub-herbaceous, shorter than the lower.

HAB. Bogs. N. Y. to Car. July. 21.—Culm 3—4 feet high. Panicle 4—5 inches long, decompound.—Allied to P. latifolium,
but is taller and has the joints smooth and the panicle decom-
pound and smooth.

8. *P. macrocarpon* Torr.: culm erect, simple; leaves linear-lanceo-
late, erect, a little hairy beneath; joints naked; sheaths hispid; pani-
cle rather compound, smooth; spikelets ovate-globose; abortive floret
neutral.

**Hab.** Banks of streams. N. J. and Mass. July. 2f.—Culm 3 feet high, straight. *Panicle* with few spreading flexuous branches.

9. *P. pubescens* Lam.: erect, much branched, leafy, softly pubescent;
leaves lanceolate, ciliate; panicle small, few-flowered, free; spikelets
subglobose-ovate, pubescent.

**Hab.** Shady woods. Penn. to Car. July. 2f.—Culm 18 inches high; nodes and leaves hairy. *Panicle* with horizontal branches.

10. *P. involutum* Torr.: culm cespitose, simple, or a little branched
at the base; leaves erect, somewhat rigid, very narrow, at length in-
voluté; panicle simple, few-flowered; florets acuminate; upper valve
of the neutral floret very small.

**Hab.** Near Deerfield, Mass. Torr. 2f.—Culm a foot high.
*Panicle* terminal, (rarely lateral,) consisting of a few flexuous
branches.

11. *P. depauveratum* Muhl.: culm cespitose, hairy at the joints;
leaves linear-lanceolate, smooth or hairy; sheaths pubescent; panicle
few-flowered; branches in pairs, one of them 2-flowered, the other 1-
flowered.

**Hab.** Sandy soils. N. Y. and N. J. May, June. 2f.—*Culm* a
foot high, jointed. *Panicle* terminal, erect, with tortuous
branches.

12. *P. dichotomum* Linn.: culm much branched and dichotomous
above; branches fasciculate; leaves very numerous, lanceolate, smooth;
panicle simple, capillary, lax; abortive floret neuter; upper valve
minute, bifid.

**Hab.** Dry woods. N. Y. to Car. July—Sept. 2f.—*Culm* erect,
sometimes decumbent, 8—12 or more inches long. *Panicles* lat-
eral and terminal, with spreading branches.—Dr. Torrey de-
cribes three varieties of this species.

13. *P. nitidum* Lam.: culm slender, simple, erect, smooth; sheaths
bearded at the throat; leaves very few, broad-linear; panicle capilla-
ry, rather crowded, compound, remote, smooth; spikelets minute, ob-
tuse, ovate, slightly pubescent; lower glume very small.

a. *ciliatum*: culm hairy; leaves linear-lanceolate, (the lowest one
broader) sparingly hirsute, ciliate on the margin; panicle with
the branches and flowers pubescent.

b. *ramulosum*: culm more branched; panicle contracted; branch-
es smooth.

c. *gracile*: culm very slender, smooth; leaves very narrow, and
with the sheaths smooth; panicle nearly simple, few-flowered,
smooth; upper valve of the abortive floret minute, entire.
d. *pilosum*: culm simple, very hairy; lower leaves approximate and broad-lanceolate; upper ones linear, rather rigid, somewhat hairy on the upper surface, ciliate at the base; sheaths villose and minutely papillose; panicle subcontracted; branches virgate and with the flowers pubescent.

e. *glaucum*: smooth on every part, except the base of the leaves, nearly simple; lower leaves short, approximate, subcartilaginous; panicle branched, almost verticillate; spikelets large; upper valve of the abortive floret entire.—*P. nitidum Schottm.*

f. *barbatum*: culm simple, smooth; nodes hairy, leaves linear-lanceolate; sheaths smooth, except on the margin; flowers minutely pubescent.—*P. discolor Mühl.*

Hab. Meadows, woods and pine barrens. N. S. June, July.

14. *P. agrostoides Mühl.*: culm compressed, smooth, erect; leaves very long; panicles lateral and terminal, pyramidal, spreading; branches bearing racemes; spikelets appressed; abortive floret neutral; valves nearly equal.—*P. clongatum Pursh.*


15. *P. virgatum Linn.*: whole plant very smooth; panicle diffuse, very large; flowers acuminate; valve of the abortive floret nearly equal.


16. *P. anceps Mich.*: culm compressed; sheaths ancipitous, pilose; panicle with nearly simple branches; spikelets subracemose, much acuminate; abortive floret neuter, with the upper valve bifid.


17. *P. rectum R. & S.*: panicle solitary, shorter than the terminal leaf; branches simple, flexuous; spikelets alternate, peduncled, obovate, turgid; glumes striate, acute; leaves linear, straight, tapering to a sharp point, striate and scabrous above, hairy beneath; sheaths with very long hairs.—*P. strictum Pursh.*


18. *P. verrucosum Mühl*: culm slender, decumbent and geniculate, branched below, and with the leaves smooth; panicle much spreading, few-flowered; flowers verrucose; abortive floret 1-valved.


19. *P. proliferum Lam.*: culm assurgent, geniculate at base, very smooth; panicles terminal and axillary, smooth; spikelets racemose; abortive floret 1-valved.—*P. dichotomiflorum Mich.*—*P. geniculatum Mühl.*
Hab. Wet meadows. Penn. to Geor. Sept. 2f.—Plant very smooth. Culm 2—4 feet long, succulent. Leaves a foot or more long. Panicles large and pyramidal.

20. P. capillare Linn.: culm nearly simple; sheaths very hairy; panicle large, capillary, expanding, loose; spikelets on long peduncles, acuminate, smooth; abortive floret 1-valved.

a. sylaticum Torr.: culm branched at the base, very slender; leaves linear.


21. P. longifolium Torr.: whole plant very smooth; culm compressed, erect, simple, slender; leaves very long and narrow; panicle simple, elongated, racemose; spikelets acuminate; abortive floret neutral, 2-valved.

Hab. Pine barrens. N. J. Sept., Oct. 2f.—Culm 2 feet high. Leaves a foot or more long, very narrow. Panicle few-flowered.

14. SETARIA. P. de Beauv.

Has the same character as Panicum, except that the panicle is spiked.

1. S. viridis P. de B. : spike cylindrical; involucre of 4—10 fasciculate bristles, scabrous upward; spikelets geminate; perfect floret smooth; sheaths pubescent.—Panicum viride Linn.

Hab. Sandy fields. N. S. July, Aug. 2f.—Culm 1 1-2 to 2 feet high, simple. Involucre longer than the flowers. Wild Timothy.

2. S. glauca P. de B. : spike cylindrical; involucre of many fascicled bristles, scabrous upward; perfect floret transversely rugose.—Panicum glaucum Linn.

b. purpurascens Ell.: sheaths hairy; glumes and bristles of the involucre hairy.


3. S. verticillata P. de B. : spike subverticillate; bristles of the involucre 2, retrosely scabrous; spikelets solitary; paleae of the perfect floret nearly smooth.—Panicum verticillatum Linn.

Hab. Sandy grounds. N. S. July. 2f.—Culm 18 inches high. Spike 2 inches long. Introduced.

4. S. italic a P. de B. : spike compound, interrupted at base, nodding; spikelets conglomerate; involucre many times longer than the flowers; rachis tomentose.—Panicum italicum Linn.

15. ORTHOPOGON. Brown.

Spike compound. Glume 2-valved, nearly equal, 2-flowered; valves unequally awned. Florets dissimilar; outer one staminiferous or neuter, 1- or 2-valved; inner pistiliferous surrounding the seed. Triandria. Digynia.

O. echinatus Spreng.: spikes alternate, secund, simple; rachis triquetrous, smoothish; glumes nerved, muricate-hispid; leaves and sheaths smooth, striate. — Panicum echinatum Willd.

Hab. Penn. 24.—Mr. Schweinitz informs me that a variety of this species occurs at Bethlehem, Penn.

16. DIGITARIA. Haller.

Inflorescence digitate or fascicled. Spikelets in pairs, on short bifid peduncles. Glume 2-valved, the lower very minute. Lower floret abortive, the paleae membranous. Upper floret perfect, the paleae subcoriaceous, hardened. Seed slightly furrowed. Triandria. Digynia.

1. D. sanguinalis Scop.: spikes digitate, erect, somewhat spreading; leaves and sheaths pilose; florets oblong, pubescent at the edge. — Panicum sanguinale Linn. Big.


Hab. Sandy fields. N. Y. to Vir. Aug., Sept. 8.—Culm a foot long, mostly decumbent. Spikes mostly 3, about 2 inches long.

3. D. scrotina Mich.: decumbent; leaves and sheaths very pubescent; spikes numerous, setaceous; spikelets all pedicellate; lower glume very minute. — D. villosa Ell.


4. D. filiformis Ell.: culm erect, filiform; leaves somewhat smooth; spikes 2—4, filiform, erect; spikelets in threes, all pedicellate; glumes 1-valved, as long as the abortive floret. — D. pilosa Mich. ?

Hab. Sandy fields. N. J. to Geor. Aug. 8.—Culm 1—2 feet high. Spikes mostly 2, alternate, long.

17. PASPALUM. Linn.

1. *P. ciliatifolium* Mich.: culm decumbent; leaves hairy and ciliate; sheaths hairy; spikes 1—2, rather lax, indistinctly 3-rowed.—*P. ciliatum* Pursh.


2. *P. setaceum* Mich.: culm erect; leaves and sheaths villous; spike mostly solitary; flowers in 2 rows.—*P. pubescens* Muhl.


3. *P. lece* Mich.: erect, very smooth; leaves short, very smooth; spikes numerous, (3—6,) alternate; flowers 2-rowed, smooth.

Hab. Dry meadows. Penn. to Car. Aug. 0.—*Culm* 2 feet long, branched, geniculate, stoloniferous. *Spikes* very numerous, (30—50.)

18. CENCHRUS. Linn.

*Involucre* 1—3-flowered, many-parted, bristly without, finally hardened. *Glume* 2-flowered, 2-valved; outer valve smallest. *Florets* dissimilar; the outer sterile, the other perfect. *Scales* none. *Triandria. Monogynia.*

1. *C. echinatus* Linn.: spikelets approximated; involucres 10-parted, villous.

Hab. Sandy soils. N. J. to Geor. Aug. 0.—*Culm* erect or procumbent, 1—2 feet long. *Spikes* consisting of 6—10 heads.

2. *C. tribuloides* Linn.: spike with alternate spikelets; involucres entire, spiny.

Hab. Sandy soils. N. J. to Flor. July, Aug. 0.—*Culm* 18 inches high.—Dr. Torrey thinks it a variety of the preceding.

19. TRIPSAČUM. Linn.


*Monoecia. Triandria.*

*T. dactyloides* Linn.: spikes 3, clustered; sterile florets near the top, fertile at the base.


Div. III. Stipaee. Inflorescence panicled. Spikelets solitary, 1-flowered. Glumes membranous, the lower paleae coriaceous, bearded, enfolding the upper, which has not two keels.

20. STIPA. Linn.

Glume 2-valved, membranous. Paleae 2, coriaceous, shorter than the glume; the lower involute, with a long beard at the apex; upper entire. Awn jointed at the base, deciduous. Seed furrowed.—Panicle almost simple, lax.

Triandria. Digynia.

S. avenacea Linn.: leaves setaceous; panicle spreading, somewhat secund; branches mostly in pairs, a little divided; glume as long as the seed; awn naked.—S. barbata Mich.


Div. IV. Bromee. Inflorescence panicled. Spikelets solitary, 2 or many-flowered. Glumes with a keel. Paleae of nearly the same texture as the glumes, the lower carinate or concave, always bearded, the upper with two keels.

21. ARISTIDA. Linn.

Glume 2-valved, membranous, unequal. Paleae 2, pedicellate, subcylindrical; lower one coriaceous, involute, 3-awned at the tip; upper one very minute or obsolete. Scales collateral.—Panicles contracted. Triandria. Digynia.

1. A. dichotoma Mich.: cespitose; culm dichotomous; flowers racemose-spiked; lateral awns very short, the intermediate one contorted.

Hab. Gravelly soil. N. Y. to Car. July. 3.—Culms 12—18 inches high, very slender. Racemes on clavate peduncles.

2. A. stricta Mich.: culm and leaves straight, erect; leaves pubescent; raceme long, somewhat spiked, crowded; awns twice as long as the paleae, spreading.

Hab. Rocky places. Penn. to Car. July. 24.—Culm 2—3 feet high, branching at base. Panicle long, with the flowers not crowded.

3. A. purpurascens Poir.: culm filiform, erect, simple; leaves very narrow, flat; flowers in a long spiked panicle; awns nearly equal, twice the length of the paleae, divaricate.—A. racemosa Muhl.

Hab. Sandy woods. N. S. Sept. 24.—Culm 2—3 feet high. Panicle elongated, loose.

22. CALAMAGROSTIS. Roth.

Glume 2-valved, 1-flowered; valves acute or acuminate.
Paleæ 2, mostly shorter than the glume, surrounded with a pubescence or long wool at the base; the dorsal one with or without an awn. 

Triandria. Digynia.

1. C. mexicana Nutt. : panicle oblong, loose; glumes scabrous, pubescent, as long as the paleæ, which are awned on the back; hairs at the base equalling the paleæ; culm and leaves smooth. — Arundo canadensis Mich. Torr. — A. cinnoides Muhl. — A. agrostoides Pursh.


3. C. canadensis Nutt. : panicle somewhat spiked, conglomerate; glumes a little longer than the paleæ, carinate; paleæ longer than the pappus, awned a little below the tip. — Agrostis coarctata Torr. — A. glauca Muhl.


4. C. brevipilis Beck : panicle diffuse, capillary; glumes unequal, shorter than the paleæ, bearded at the base; paleæ equal, awnless, hairy; pappus very short. — Arundo brevipilis Torr. — A. epigeios Muhl.


5. C. halleriana De Cand. : panicle loose, glumes acuminate; dorsal awn and hairs longer than the paleæ, but shorter than the glume. — Arundo pseudo-phragmites Schrad.

Hab. N. S. Schweinitz.

6. C. confinis Spreng. : panicle lanceolate, spreading; glumes nerves, acuminate; hairs equalling the paleæ; dorsal awn geniculate, longer than the glumes. — Arundo confinis Willd. Pursh.


23. PSAMMA. P. de Beauv.


Triandria. Trigynia.

P. arenaria P. de B. : panicle spiked; glumes acute; paleæ three times as long as the pappus; leaves involute. — Arundo arenaria Linn.

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24. ANTHOXANTHUM. Linn.

Glumes 2-valved, 3-flowered. Lateral florets imperfect, with one palea bearded; intermediate florets perfect, much shorter than the lateral ones. Paleæ obtuse, beardless. Stamens 2. Seed free.—Panicle contracted.

Diandria. Digynia.

A. odoratum Linn.: spike ovate-oblong; flowers pubescent, subpeduncled, shorter than their awns.


25. AIRA. Linn.

Glumes 2-3-flowered, beardless, 2-valved, equal to the florets or shorter; one of the florets peduncled. Paleæ 2, equal, enclosing the seed when ripe; outer one usually awned.—Panicle compound.

Triandria. Digynia.

1. A. flexuosa Linn.: panicle spreading, trichotomous; branches flexuous; glumes a little shorter than the paleæ and about the length of the awn; leaves setaceous; culm nearly naked.


2. A. cespitosa Linn.: panicle diffuse; paleæ about the length of the glumes; awn short, straight; leaves flat.


3. A. aristulata Torr.: panicle capillary, spreading; branches verticillate and flexuous; glumes 2-flowered, shorter than the paleæ; upper floret pedicellate; lower palea truncate, laciniate, with an awn a little below the middle scarcely exserted.


4. A. pumila Pursh: panicle small, fastigiate, few-flowered; pedicels short; paleæ awnless, obtuse, twice the length of the glumes, with membranous margins; leaves flat, smooth; culm erect, scarcely longer than the leaves.


26. AVENA. Linn.

Glumes membranous, 2—7-flowered, longer than the florets. Lower paleæ bilaciniate, or with the upper bifid-toothed;

**Triandria. Digynia.**

1. *A. praecox* P. de B.: panicle in a dense raceme; florets as long as the glumes; awn exserted; leaves setaceous.—*Aira praecox* Linn.


2. *A. elatior* Linn.: panicle equal, nodding; awn as long again as the floret; culm geniculate, smooth; root nodose.—*Arrhenatherum avenaceum* P. de B. Torr.

**Hab.** Fields. N. S.; rare. June 2f.—**Culm** 3 feet high. *Panicle* loose, with the branches in pairs or ternate.

27. **TRISETUM. Pers.**

Lower *palea* with 2 bristles and a tender flexuous beard above the middle of its back. *Scale* lanceolate.—(Other characters of *Avena.*)

**Triandria. Digynia.**

1. *T. pennsylvanicum* P. de B.: panicle attenuated; awn twice as long as the florets; seed villous.—*Avena pennsylvanica* Linn.—*Arrhenatherum pennsylvanicum* Torr.


2. *T. palustre* Torr.: panicle contracted, nodding, somewhat verticillate; glumes 2—3-flowered; florets smooth, acuminate; lower one awnless; lower palea of the upper floret bicuspidate, awned below the tip.—*Avena palustris* Mich.—*Aira pallens* Muhl.

**Hab.** Wet meadows. N. Y. to Flor. May–July. 2f.—**Culm** 1–2 feet high. *Panicle* with the lower branches in fives.

3. *T. purpurascens* Torr.: panicle very simple, somewhat racemose, few-flowered; glumes 3-flowered, very unequal, entire; culm and leaves smooth; stipule very short, truncate.—*Avena striata* Mich.?


**Hab.** Rocks and mountains. Little Falls, N. Y. Gray. White Mountains, N. H. Rocky Mountains. Arc. Amer. June. 2f.—**Culm** a foot high. *Leaves* narrow, 2–4 inches long. *Panicle* 2 inches long, somewhat spiked.—First noticed as an American plant by Dr. Torrey, in *Ann. N. Y. Lyc.* i. 154. The specimens which I have received from Dr. Gray, agree exactly with those from the White Mountains, collected by Dr. Pickering, but they are nearly three times the size of my specimen of *A. subspicata* from Switzerland; the panicle also is more loose and the glumes of a lighter colour.
28. HOLCUS. Linn.

Glumes 2-valved, 2-flowered, nearly equal. **Paeae** 2. Florets dissimilar, polygamous, one awned, the other awnless, without any imperfect one between them.—Panicles contracted.

**Triandria. Digynia.**

*H. lanatus* Linn.: perfect floret inferior and awnless; sterile one with a curved awn included in the glume; root fibrous.


**Soft Grass.**

29. HIEROCHLOA. Gmel.


**Triandria. Digynia.**


_Hab._ Wet meadows. Can. to Vir. N. to Subarc. Amer. May. _Culm_ 18 inches high. **Panicle** few-flowered, pyramidal, purple and brown.—Sweet-scented.

2. *H. alpina* R. & S.: panicle ovate, contracted; spikelets compressed, longer than the branches; glumes lanceolate, almost nerveless; lateral florets triandrous; one of them with an awn about as long as the valves; sides almost smooth; margin ciliate.

_Hab._ Summit of White Hills, N. H. Big. N. to Arc. Amer. June. _Culm_ 6—8 inches high. **Flowers** larger than in the preceding, purple.

30. URALEPSIS. Nutt.

Glumes 2—3-flowered, much shorter than the florets, which are stipitate and distinct. **Paeae** 2, very unequal, distinctly villous on the margins; the lower one tricuspidate; the central cusp produced into a short bristle; upper palea concave on the back and incurved. **Seed** gibbous, coated.—Panicle simple, racemose.

**Triandria. Digynia.**

_U. aristulata* Nutt.: lateral panicles concealed in the sheaths of the leaves; terminal ones partly exsert; glume 3-flowered; bristle of the palea as long as the lateral cusps.

_Hab._ Sea coast and sandy fields. N. Y. and Penn. Aug. _Culms_ cespitose, procumbent at base. **Flowers** axillary and terminal, purple.
31. ARUNDO. Linn.

Glume naked, beardless, 2-valved, unequal. Paleae membranous, surrounded with bristles at the base; lower one mucronate or slightly awned. Seed enclosed in the paleae.

Triandria. Digynia.

A. phragmites Willd.: glumes about 5-flowered, a little shorter than the florets.—Phragmites communis Trin. Torr.


Reed Grass.

32. DANThONIA. De Cand.

Glumes 2—5 flowered, longer than the florets, cuspidate. Paleae bearded at the base; lower one 2-toothed, with a twisted awn between the teeth; upper one obtuse, entire.—Panicle spiked.

D. spicata P. de B.: panicle simple, appressed; spikelets 7—9, about 7-flowered; lower palea hairy; leaves subulate; lower sheaths hairy at the throat.—Arena spicata Linn.


33. FESTUCA. Linn.

Glume 2-valved, many-flowered; valves unequal. Paleae 2, lanceolate; outer one acuminate or awned at the extremity.


1. F. myurus Linn.: panicle slender, crowded, equal; spikelets about 4-flowered; florets subulate, awned, hairy, monandrous.

Hab. Dry fields. N. J. to Car. June. —Culm 6—8 inches high, geniculate at base. Awn twice as long as the palea.

2. F. tenella Willd.: panicle spiked, very simple, secund; spikelets mostly 9-flowered; bristles shorter than the subulate florets; culm filiform, angular above; leaves setaceous.—S. bromoides Mich.

Hab. Sandy fields. N. Y. to Car. June. —Culms numerous, 8—12 inches high. Panicle racemose or spiked.

3. F. duriuscula Linn.: panicle secund, oblong, contracted; spikelets 5—6-flowered, nearly terete; florets terminated by short bristles; root fibrous.


4. F. rubra Linn.: panicle secund, erect, spreading; spikelets some-
what terete; florets longer than the bristle at their tips; leaves pubescent above; root creeping.


5. *F. clatior* Linn.: panicle spreading, much branched; loose; spikelets ovate-lanceolate, 4—5-flowered; florets slightly armed; leaves flat; root creeping.

Hab. Wet meadows. N. S. June. 2t.—Culm 3—4 feet high. Panicle 6—8 inches long, nodding when old.

6. *F. pratensis* Huds.: panicle spreading, branched; spikelets linear, many-flowered, acute; leaves linear; root fibrous.

Hab. Meadows and fields. N. S. June, July. 2t.—Culm 1—2 feet high, erect. Panicle subsecund, nearly simple. Introduced.

7. *F. nutans* Willd.: panicle, diffuse, at length nodding; branches long, geminate, naked below; spikelets ovate, 3—5-flowered; florets somewhat obtuse, unarmed, nerveless.


8. *F. fascicularis* Willd.: culm procumbent, geniculate; panicle subsecund; branches straight, spike-like; spikelets appressed, 8—10-flowered; florets armed; leaves very long.—*F. polystachia* Mich.—*F. procumbens* Muhl.

Hab. Brackish meadows. N. Y. and N. J. Aug. 2t.—Culm a foot long, branched from the base. Panicle erect, with spreading branches.


Hab. N. Y. Muhl.—Culm about 8 inches high. Leaves linear. Spikelets sessile and peduncled. Lower palea with a short bristle.

10. *F. diandra* Mich.: panicle close; branches simple, scattered; spikelets linear, 2—5-flowered; flowers acuminate, diandrous; stem very rough.—*Diarrhena americana* P. de B. Torr.

Hab. Banks of the Ohio. Raf. 2t.—Culm erect, nearly naked, slender. Panicle racemose.

11. *F. glabra* Spreng.: panicle spreading, with the branches secund; spikelets awnless, 6-flowered; leaves somewhat rigid and with the sheaths very smooth.


34. **CERATOCHLOA.** P. de Beauv.

Glumes 12—18-flowered; valves shorter than the florets. Palea bifid-toothed; the lower one mucronate between the teeth. Seed coated, furrowed, 3-horned.—Panicle nearly
Gramineae.

simple. Spikelets compressed. Florets imbricated in 2 rows.

Triandria. Digynia.

C. unioloides P. de B.: panicle nodding, spreading; spikelets oblong-lanceolate, compressed, 6—8-flowered; florets acuminate, unarmed; sheaths bearded at the throat, the lower one hairy; root fibrous.—Festuca unioloides Wild.


35. Dactylis. Linn.

Spikelets heaped into a unilateral head. Glume 2-valved, many-flowered; valves unequal, the larger one keeled. Palea 2, lanceolate, awnless; lower one emarginate, mucronate; upper bifid, toothed.—Panicle compound.

Triandria. Digynia.

D. glomerata Linn.: panicle secund, glomerate; leaves carinate.


Orchard-grass.

36. Tricuspid. P. de Beauv.

Spikelets terete, tumid; many-flowered. Glume 5—7-flowered, carinate, shorter than the florets. Lower palea bifid-toothed, between the teeth and on each side mucronate; upper one truncate, almost emarginate. Seed 2-horned.—Panicle compound.

Triandria. Digynia.

T. seslerioides Torr.: panicle expanding and flexuous; spikelets all pedunculate, about 6-flowered, lanceolate; lower palea ovate, 5-toothed.—Poa seslerioides Mich. Muhl.—Windsoria poaformis Nutt.


Red-top.


Spikelets compressed. Glume 2—3-flowered, beardless, 2-valved; valves shorter than the lowest floret. Palea 2, the outer beardless or bearded under the point.—Panicle spiked.

Triandria. Digynia.

1. K. pennsylvanica De Cand.: leaves flat and with the sheaths softly pubescent; panicle oblong, slender, rather loose; glumes 2-flowered, nearly equal; the lower one oblong, obtuse, and slightly mucronate; upper palea scabrous.—Aira mollis Muhl.

Hab. Rocky woods. Penn. to Car. May, June. ♀.—Culm 2 feet high, simple. Panicle long, with shining flowers.
2. *K. truncata* Torr.: leaves flat, smooth; panicle oblong, racemose; glumes 2-flowered, with a third abortive floret, unequal; lower glume a little scabrous, obtuse; paleae smooth.—*Aira truncata* Muhl.—*Holcus striatus* Linn.

b. *major* Torr.: panicle large, a little spreading; leaves broad-linear, very long.

Hab. Dry woods. N. Y. to Car. June. 2f.—Culm 2 feet high, slender. Panicle loose, racemose:

38. BROMUS. Linn.

Glumes 3—20-flowered. Valves shorter than the florets, which are imbricated in 2 rows. Lower palea cordate, emarginate below the end, sometimes torn in two, with a straight beard. Scales ovate, smooth. Triandria. Digynia.

1. *B. secalinus* Linn.: panicle spreading; a little branched; spikelets oblong-ovate, compressed; florets about 10, distinct, rather remote, longer than the flexuous bristles; leaves somewhat hairy.


2. *B. mollis* Linn.: panicle erect, contracted; spikelets oblong-ovate, somewhat compressed, pubescent; bristle straight, as long as the palea; leaves very soft pubescent.


3. *B. purgans* Linn.: panicle nodding; spikelets lanceolate, terete; florets hairy; bristle straight; leaves smooth; sheaths hairy.


4. *B. ciliatus* Linn.: panicle nodding; spikelets oblong, terete, 8—10-flowered; glumes acute, (not mucronate,) ciliate; paleae hairy; margin villously ciliate; bristle short.

Hab. River banks. Penn. to Car. June. 2f.—Culm 3 feet high, hairy at the joints. Panicle nodding, with 2 bracts at base.

5. *B. pubescens* Muhl.: panicle at length nodding; spikelets lanceolate, terete; florets pubescent; leaves and lower sheaths pubescent.


39. POA. Linn.

Spikelets oblong or linear, compressed, many-flowered, (3—20.) Glumes shorter than the florets. Paleae sometimes
woolly at the base, the upper bifid-toothed. *Scales* smooth.
—Panicle more or less branching or scattered.

*Triandria*. *Digynia*.

1. *P. annua* Linn.: panicle subsecund, divaricate; spikelets ovate-oblong, 5-flowered; florets free; culm oblique, compressed; root fibrous.


2. *P. fasciculata* Torr.: panicle expanding; branches straight, fasciculate, crowded; spikelets oblong, 3-flowered; florets free; glumes minute, unequal; culm oblique, terete; root fasciculate.

**Hab.** Salt marshes. N. Y. Aug. 2. *—Culm* 1—2 feet high. *Panicle* appressed.

3. *P. dentata* Torr.: panicle loose, somewhat spreading; branches capillary, virgate; spikelets lanceolate, 5-flowered; florets unequal; inferior glume obtuse, 3-nerved; lower palea 5-nerved, 5-toothed at the apex when old.

**Hab.** Swamps. N. S. June, July. 2. *—Root* creeping. *Culm* 3 feet high. *Panicle* large, nodding when young.

4. *P. aquatica* var. americana Torr.: panicle erect, semi-verticillate, diffuse; branches flexuous, smooth; spikelets linear, 6—8-flowered; florets ovate, obtuse, free; leaves broad-linear, and as well as the sheaths, smooth.—*P. aquatica* Pursh.

**Hab.** Wet meadows. Can. and N. S. Aug. 2. *—Culm* 4—5 feet high, thick and leafy. *Panicle* very large, purple.

5. *P. maritima* Huds.: panicle branched, somewhat crowded; spikelets about 5-flowered, terete; florets rather obtuse, indistinctly 5-nerved; root creeping.

**Hab.** Salt marshes near Boston, Mass. Big. June. 2. *—Culm* a foot high. *Panicle* erect, with the branches in pairs and flexuous.

6. *P. brevifolia* Muhl.: panicle loose; branches in pairs, horizontal; glumes 3—4-flowered; palea pubescent; leaves very short; stipules, acuminate.


7. *P. pungens* Torr.: culm compressed; leaves very short, cuspidate; panicle somewhat simple, spreading; spikelets ovate, 3—4-flowered; florets webbed, rather obtuse, obscurely 5-nerved.—*P. flexuosa* Muhl.

**Hab.** Rocky woods. Penn. April. 2. *—Culm* 18 inches high, subancipitous. *Panicle* small, semiverticillate.

8. *P. pratensis* Linn.: panicle diffuse; upper leaves much shorter.
than the smooth sheaths; florets acute, 5-nerved, webbed at the base; stipule short, truncate; root creeping.


9. *P. viridis Muhl.*: leaves flat, linear, abruptly acute; panicle somewhat crowded; spikes ovate, acute, 4-flowered.

**Hab.** Meadows. Penn. to Car. July. 2lf.—Culm erect, 3 feet high, oblique at base. Panicle diffuse, with 3 or 4 branches at each joint.—Differs from the preceding in the compression and almost pungent acuteness of the glumes and paleæ, (Nutt.) but is perhaps only a variety. *Green-grass.*

10. *P. parviflora Pursh.*: panicle diffuse, capillary; spikes small, generally 3-flowered; florets rather obtuse, striate, caducous; leaves distichous, flat.


11. *P. conferta Ell.*: panicles terminal and axillary, erect, compressed, with the florets clustered; spikelets 8-flowered, smooth.—*P. glomerata Walt.*

**Hab.** Penn. Schweinitz. S. to Car. 2lf.—Culm erect, geniculate, 2—3 feet high. Leaves smooth, flat, serrulate on the margin. Panicles 4—8 inches long.

12. *P. trivialis Linn.*: panicle equal, diffuse; spikelets oblong-ovate, about 3-flowered; florets webbed at the base, 5-nerved; culm and sheaths roughish; stipule oblong; root creeping.—*P. stolonifera Muhl.*

**Hab.** Wet meadows. N. S. June—Aug. 2lf.—Culm 2—3 feet high. Panicle large, pyramidal, whorled.

13. *P. compressa Linn.*: panicle contracted, somewhat secund; spikelets oblong, 3—6-flowered; florets webbed; glumes nearly equal; culm oblique, compressed; root creeping.

b. *sykestris Torr.*: panicle loose, spreading; spikelets 2—3-flowered; culm slender, nearly erect.

**Hab.** Fields and woods. N. S. June, July. 2lf.—Root creeping. Culm procumbent or geniculate. Panicle almost spiked. *Blue-grass.*

14. *P. serotina Ehrh.*: panicle elongated, diffuse, at length somewhat secund; spikelets ovate-lanceolate, 2—3-flowered; florets a little webbed at the base, yellow at the tip, obscurely 5-nerved; root creeping.—*P. palustris Muhl.*


15. *P. nemoralis Linn.*: panicle attenuated, weak; branches flexuous; spikelets ovate, about 3-flowered; florets loose, slightly webbed, acute, obsolete nerved; stipule almost wanting.

**Hab.** Woods. N. S. July. 2lf.—Culm 2 feet high. Panicle with capillary branches.
16. *P. nervata* Willd.: panicle equal, diffuse; branches weak, and at length pendulous; spikelets 5-flowered; florets free, conspicuously 7-nerved, obtuse.—*P. striata* Mich.—*Briza canadensis* Nutt.

Hab. Wet meadows. N. S. June. 2f.—*Culm* 3—4 feet high. *Panicle* large, with ovate spikelets.

17. *P. elongata* Torr.: panicle elongated, racemose; branches solitary, appressed; spikelets ovate, obtuse, tumid, 3-flowered; florets free; stipules almost wanting.


18. *P. obtusa* Muhl.: panicle ovate, contracted; spikelets ovate, tumid, 5—7-flowered; florets free; glumes scarious; palea ovate, smooth, obtuse; lower one indistinctly 7-nerved; leaves as long as the culm, and with the sheaths smooth.


19. *P. canadensis* Torr.: panicle large, effuse; spikelets semi-verticillate, flexuous, at length pendulous; spikelets ovate, tumid, 5—8-flowered; florets free; lower palea somewhat acute, 7-nerved; upper one very obtuse; stamens 2.—*Briza canadensis* Mich.


20. *P. capillaris* Linn.: panicle very large, loose, expanding, capillary; spikelets 3-flowered, ovate, acute; florets free; culm branched at the base; leaves hairy.

Hab. Sandy fields. N. Y. to Car. Aug. ☺.—*Culm* a foot or more high. *Panicle* large, pyramidal, much branched.

21. *P. hirsuta* Mich.: culm erect, compressed, simple; sheaths hairy; panicle very large, capillary; branches expanding, at length reflexed, bearded in the axils; spikelets oblong, about 5-flowered; palea ciliate on the margin.


22. *P. pectinacca* Mich.: culm cespitose, oblique; leaves hairy at the base; panicle capillary, expanding, pyramidal, hairy in the axils; spikelets linear, 5—9-flowered; florets free, acute; upper palea persistent.—*P. pilosa* Muhl.—*P. tenella* Pursh.


23. *P. reptans* Mich.: dioecious; culm branched, creeping; panicle fascicled; spikelets linear-lanceolate, 12—20-flowered; florets acuminate.
Hab. Swamps. N. Y. to Car. July, Aug. 24.—Culm 6—8 inches long, rooting at the joints. Panicle 1—2 inches long, with the spikelets compressed.

24. *P. eragrostis* Linn.: panicle equal, spreading, the lower branches hairy in the axils; spikelets linear-lanceolate, 9—15-flowered; florets obtuse; root fibrous.—*P. obtusa* Nutt.—*Briza eragrostis* Muhl.  

40. GLYCERIA. Brown.  
Spikelets slender.  
Glume 5—7-flowered; valves 2, truncate, with transparent membranous edges, shorter than the florets. Lower palea eroded or many-toothed, embracing the upper, which is bifid-toothed. Scales connate. Seed furrowed.—Panicle nearly simple.  
Triandria. Digynia.

1. *G. fluitans* Brown: panicle secund, slightly branched; spikelets linear-terete, appressed, 8—12-flowered; florets very obtuse, 7-nerved; leaves long, flat.—Festuca fluitans Linn.  
Panicle nearly a foot long.

2. *G. acutiflora* Torr.: panicle simple, elongated, appressed; spikelets linear-terete, 4—6-flowered; florets attenuated, acute, indistinctly nerved; leaves short, erect.—Festuca brevifolia Muhl.  
Hab. Overflowed meadows. N. S. June. 24.—Culm 18 inches high. Panicle long and slender, nodding.—Dr. Gray has found it in Ontario county, N. Y.

41. UNIOLA. Linn.  
Spikelets compressed. Florets imbricated in 2 rows, the lower only abortive. Glume 3—20-flowered, shorter than the florets. Lower palea boat-shaped at the end, abruptly cut off and mucronate between the lobes; the upper subulate, somewhat bifid-toothed. Scales emarginate. Seed with 2 horns.—Panicle compound, loose.  
Triandria. Digynia.

1. *U. latifolia* Mich.: leaves broad and flat; panicle loose, nodding; spikelets on long peduncles; florets somewhat falcate, monandrous; the lowest one abortive.  

2. *U. gracilis* Mich.: panicle elongated, racemose, appressed; spikelets 3-flowered; florets spreading; straight, monandrous; the lowest one abortive.—*Holcus laxus* Linn.  
Hab. Sandy swamps. N. Y. to Car. Aug. 24.—Culm 3—4
feet high, slender, leafy. **Panicle** long, slender, with short remote branches.

3. *U. spicata* Linn.: panicle spiked, straight; leaves involute, distichous, spreading; spikelets 5—9-flowered; florets triandrous.—**Festuca distichophylla** Mich.

_Hab._ Salt marshes. N. J. to Car. Aug., Sept. 2f.—Root creeping. **Culm** 18 inches high, branched at base, leafy. **Panicle** contracted into a dense spike.

42. BRIZA. Linn.

**Spikelets** cordate-ovate, many-flowered. **Glume** shorter than the florets, which are imbricate in two rows. **Paelea** ventricose; lower one cordate at base, embracing the upper, which is nearly round and much shorter. **Seed** beaked.—**Panicle** compound, loose, with pendulous branches.

**Triandria. Digynia.**

*B. media* Linn.: panicle erect; spikelets at length cordate, about 7-flowered; glume smaller than the florets.

_Hab._ Near Boston; naturalized. Big. Penn. Muhl. May. 2f. —**Culm** 18 inches high, naked above. **Panicle** few-flowered; branches purple.

43. MELICA. Linn.

**Glume** unequal, 2—5-flowered, membranous, nearly as long as the florets, of which the upper are incomplete and abortive. **Scales** truncate, fimbriate. **Seed** loose, not furrowed.—**Panicle** simple or compound. **Triandria. Digynia.**

*M. speciosa* Muhl.: smooth; panicle loose, erect, few-flowered; branches simple; florets obtuse.—*M. glabra* Mich.

_Hab._ Mountains. Penn. to Car. June. 2f.—**Culm** 3—4 feet high. **Panicle** subsecund, with solitary branches. **Melica Grass.**

44. CYNODON. Rich.

**Spikelets** 1-sided, in a simple row. **Glumes** membranous, persistent, shorter than the florets and only embracing them at the base. **Fertile floret** with the upper **palea** bifid-toothed. **Rudiment** minute, pedicellate. **Scales** truncate. **Seed** loose, not furrowed.—**Spike** digitate, with filiform spikelets. **Triandria. Digynia.**
C. dactylon Pers.: culm creeping; spikes digitate, (4—5,) spreading; keel of the glume scabrous; leaves hairy on the margin and towards the base; sheaths hairy. — Digitaria dactylon Ell. Muhl.

Hab. Low grounds. Penn. to Car. Aug. 21. — Culm prostrate, a foot or more long. Leaves narrow, somewhat distichous.

Bermuda Grass.

45. ATEROPOGON. Muhl.

Spikes in a unilateral raceme. Glume 2-valved, membranous, 2-flowered; lower one setiform. Perfect Fl. Palea 2; lower one 3-toothed, or 3-bristled; upper bifid. Abortive Fl. Palea 2—3-bristled, pedicellate.

Triandria. Digynia.

A. apludoides Muhl.: spikes racemose, distant, pendulous; perfect floret with the lower palea tricuspidate; lateral bristles in the abortive floret half the length of the terminal one. — Chloris curtipendula Mich.


46. ELEUSINE. Gart.


Triandria. Digynia.

E. indica Lam.: spikes straight, erect, in pairs or quaternate; rachis linear; spikelets lanceolate, about 5-flowered; culm compressed, declined. — Cynosurus indica Linn.


Wire Grass.

Div. VI. Cerealæ. Inflorescence spiked. Spikelets solitary, in pairs, or several together, 1- or many-flowered. Glumes opposite, equal. Lower palea bearded or beardless, upper with two keels.

47. HORDEUM. Linn.

Spikelets 3 at each joint of the rachis, 1-flowered, all perfect, or the lateral ones abortive. Glumes 2, subulate. Palea 2, the lower bearded. Scales 2. Stigmas feathery. Seed coated.—Habit similar to Elymus. Triandria. Digynia.
H. jubatum Linn. : lateral florets abortive, neuter; bristles of the glume and palea 6 times as long as the flowers.


3. —Culm 2 feet high, simple, slender. Spikes 2 inches long.

Squirrel-tail Grass.

48. SECALE. Linn.

Spikelets in each tooth of the rachis solitary, 2—3-flowered; the 2 lower florets fertile, sessile, opposite; the upper abortive. Glumes subulate, opposite, entire, shorter than the florets. Lower palea entire, with a very long bristle; upper bifid-toothed. Scales obovate, hairy. Seed coated, furrowed.

Triandra. Digynia.

S. cereale Linn.: glumes and bristles scabrous-ciliate; palea smooth.


Rye.

49. ELYMUS. Linn.

Spikelets 2 or more at each joint of the rachis, 3—9-flowered. Glume 2-valved, nearly equal, rarely (as in E. hystrix,) absent or nearly so. Lower palea entire, with a bristle which is sometimes very short; upper somewhat bifid-toothed. Scales ovate, hairy. Seed furrowed.—Spike simple.

Triandra. Digynia.

1. E. virginicus Linn.: spike erect, coarctate; spikelets in pairs, 2—3-flowered; florets smooth; glumes lanceolate, nerved.


Lime Grass.

2. E. canadensis Linn.: spike nodding at the extremity, patulous; spikelets 3—5-flowered; florets hairy; glumes linear-lanceolate.

b. glaucifolius Torr.: leaves glaucescent.—E. glaucifolius Willd.


3. E. villosus Muhl.: spike a little nodding at the extremity, patulous; rachis and florets hispid-pilose; spikelets geminate, 2—3-flowered; glumes linear, pilose-ciliate, 2-nerved, shorter than the florets.


4. E. hystrix Linn.: spike erect; spikelets diverging; glumes none.


5. E. striatus Willd.: spike erect; spikelets 2-flowered, awned, his-
pid, in pairs; glumes linear, nerved, awned, nearly as long as the spikelets; leaves and sheaths smooth.

**Hab.** Shady woods. Penn. and Virg. Pursh & Schweinitz. June. 2f.—**Culm** erect, 8 inches high, striate. Leaves lanceolate, acuminate, scabrous above. Spike erect, somewhat spreading, with the rachis pubescent.

50. **TRITICUM.** Linn.

*Spikelets* sessile on the teeth of the rachis, many-flowered. *Glumes* 2-valved; *valves* nearly equal, beardless or with one beard enclosing the florets. *Palaæ* 2, one of them bearded from the end. *Seed* enclosed in the palæ.—*Flowers* spiked. *Triandria. Digynia.*

1. **T. aestivum** Linn.: spike parallel, compressed; glumes 4-flowered, ventricose; bristles generally much longer than the florets.


2. **T. repens** Linn.: spikelets oblong, 5-flowered; glumes subulate, many-nerved; florets acuminate; leaves flat; root creeping.—*Agropyron* repens P. de B. Torr.


3. **T. caninum** Linn.: spikelets about 5-flowered, compressed; glumes 3-nerved, and as well as the florets armed with a bristle at the tip; root fibrous.—*Agropyron caninum* R. & S. Torr.


4. **T. cristatum** Schreb.: spike oblong, compressed; spikelets opposite, compressed, distichously imbricated; about 5-flowered, smoothish, spreading; florets subulate-awned; culm erect, smooth.—*Bromus cristatus* Linn.

**Hab.** Penn. Schweinitz.

51. **LOLIUM.** Linn.

*Spikelets* sessile, to the lowest a glume of 1-valve, to the uppermost of 2 opposite valves. *Lower palaea* with a mucro or bristle at the end; upper membranous, bifid-toothed. *Scales* with 2 unequal teeth. *Seed* furrowed.—*Spike* compound. *Triandria. Digynia.*

1. **L. perenne** Linn.: floret much longer than the glume, unarmed, linear-oblong, compressed; root perennial.

2. *L. temulentum* Linn.: florets shorter than the glumes, as long as the bristle at their extremity; root annual; culm scabrous above.

**Hab.** N. Eng. and Penn. *Muhl.* July. — *Culm* 2 feet high. 
*Spikelets* much compressed.

52. **SPARTINA. Schreb.**


1. *S. cynosuroides* Wild. : spikes numerous (10—40,) pedunculate, panicled, spreading; leaves broad, flat, at length convolute; one glume with a short awn; style 2-cleft at the summit. — *S. polystachya* *Muhl.*


2. *S. juncea* Wild. : leaves distichous, convolute, spreading; spikes few, (1—3,) pedunculate; peduncles smooth; paleae rather obtuse; styles 2. — *Limnetis juncea* Pursh.


3. *S. glabra* *Muhl.* : leaves concave, erect; spikes alternate, sessile, erect, appressed; paleae nearly smooth on the keel; style cleft about half way down.


Div. VII. **Saccharineæ.** Inflorescence spiked or panicled, jointed. *Spikelets* generally in pairs, 1 or 2-flowered, the one sessile, the other peduncled and usually monochious. Glumes of a stouter texture than the palea, neither keeled nor opposite. *Palea* very delicate and membranous, not with a keel, the lower commonly bearded.

53. **ANDROPOGON. Linn.**

*Flowers* spiked. *Spikelets* in pairs, polygamous; the lower one abortive, on a bearded pedicel. *Glumes* and *palea* often very minute or wanting. Upper spikelet sessile, 1-flowered, perfect. *Glume* subcoriaceous. *Palea* 2, shorter than the glume, membranous; lower one generally awned.

**Triandria. Digynia.**

1. *A. scoparius* Mich. : spike simple, lateral and terminal, peduncu-
MONOCOTYLEDONOUS PLANTS.

late, in pairs; rachis hairy; abortive floret neuter; valves awned.—*A. purpureascens* Muhl.


2. *A. virginicus* Linn. : culm compressed; superior leaves and sheaths smooth; spikes short, 2—3 from each sheath, partly concealed at the base; rachis subterete; abortive flower a mere pedicel without valves; perfect flower monandrous.—*A. dissitiflorum* Mich.


Hab. Swamps. N. J. to Car. Sept. 2ft.—Culm 3 feet high, much branched towards the top. *Spikes* in large clustered panicles, partly concealed.

4. *A. furcatus* Muhl. : spikes digitate, generally in fours; abortive flowers staminiferous, awnless, resembling the perfect one, the awn of which is subcontorted.


54. GYMNOPOGON. *P. de Beauv.*

*Glume* 2-valved, carinate, nearly equal, longer than the floret. *Palea* nearly equal; the lower one with a straight bristle a little below the tip. *Rudiment* aristiform.—*Spike* paniced.


55. LEERSIA. *Linn.*

*Spikelets* 1-flowered. *Glume* none. *Palea* 2, beardless,
keeled, compressed. **Scales 2. Stigmas very finely cut. Seed loose.**

**Triandria. Digynia.**

1. *L. virginica* Wild.: panicle simple; the lower branches diffuse; flowers appressed, monandrous, sparingly ciliate on the keel.

**Hab.** Wet woods. Can. to Car. Aug. 24.—**Culm** 2—4 feet high, geniculate, erect or procumbent. **Panicle** terminal, much exert; branches few and solitary.

**White Grass.**

2. *L. oryzoides* Swartz.: panicle diffuse, sheathed at the base; flowers triandrous, spreading; keel of the glumes conspicuously ciliate.

**Hab.** Ditches and swamps. N. Y. to Car. Aug., Sept. 24.—**Culm** 3—5 feet high, erect or procumbent at base. **Panicle** much branched, spreading.

**White Grass.**

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**56. ZIZANIA.** Linn.

**Monoecious. Glume none. Sterile Fl. mixed with the fertile. Palea 2, subawned. Fertile Fl. Palea 2, culcullate and awned. Style 2-parted. Seed 1, enveloped in the plaited palea.**

**Monoecia. Hexandria.**

1. *Z. aquatica* Lamb.: panicle pyramidal, divaricate and sterile at the base, spiked and fertile above; pedicels of the flower clavate; awns long; seed linear.—*Z. clavulosa* Mich.

**Hab.** In water. Can. to Flor. W. to Miss. Aug. 24.—**Culm** 4—6 feet high, jointed. **Leaves** broad-linear. **Panicle** a foot or more in length, the lower branches spreading.

**Wild Rice. Water Oats.**

2. *Z. miliacea* Mich.: panicle effuse, pyramidal; glumes with short awns; sterile and fertile florets intermixed; style 1; seed ovate, smooth; leaves glaucous.

**Hab.** In water. Penn. to Car. Aug. 24.—**Culm** erect, 6—10 feet high. **Leaves** very long, narrow. **Flowers** in a large terminal pyramidal panicle.

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**57. HYDROCHLOA.** P. de Beauv.

**Monoecious. Glume none. Sterile Fl. Palea 2, awnless. Fertile Fl. Palea 2, awnless. Stigmas 2, very long. Seed 1, reniform.**

**Monoecia. Hexandria.**


**Hab.** In water. Can. and N. S. July. 24.—Floating. **Culm** long, slender, branching. **Leaves** linear, flat. **Spike** solitary, axillary, setaceous, about 4-flowered.

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**58. ORYZOPZIS.** Mich.

**Glume 1-flowered, 2-valved; valves membranaceous, nearly equal, loose, obovate, awnless. Palea 2, coriaceous, ey-
lindric-ovate, hairy at the base; the lower one awned at the tip. Scales linear-elongated.—Flowers panicked.

Triandria. Monogynia.

_0. asperifolia_ Mich.: culm nearly naked; leaves erect, rigid, pungent at the point; flowers in a racemose panicle.

_Hab._ Mountain meadows. N. S. N. to Subarc. Amer. April, May. _—_Culm 18 inches high, purple at base. _Panicle_ very simple, flexuous. _Mountain Rice._

**Order CXXXIX. CYPERACEÆ. Brown. Lind.**

Flowers monoclinous or diclinous, consisting of imbricated solitary bracts, very rarely enclosing other opposite bracts at right angles with the first, called _glumes_. _Perianth_ none, unless the glumes when present be so considered, or the hypogynous _setæ_. _Stamens_ hypogynous, definite, 1—1½; _anthers_ fixed by their base, entire, 2-celled. _Ovary_ 1-seeded, often surrounded by bristles called hypogynous _setæ_, probably constituting the rudiments of a perianth; _ovule_ erect; _style_ single, tridif or bifid; _stigmas_ undivided, occasionally bifid. _Nut_ crustaceous or bony. _Albumen_ of the same figure as the seed; _embryo_ lenticular, undivided, enclosed within the base of the albumen; _plumula_ inconspicuous.

_Roots_ fibrous. _Stems_ very often without joints, 3-cornered or taper. _Leaves_ with their sheaths entire.

**Div. I. True Cyperaceæ.**

1. **Cyperus. Linn.**

_Spikelets_ compressed, distinct. _Glumes_ imbricated in two rows, nearly all enclosing flowers. _Style_ deciduous. _Nut_ 1, without bristles at its base. _Triandria. Monogynia._

1. _C. tenellus_ Linn.: culm capillary; spike solitary and in pairs; involucre 1-leaved.—_C. minimus_ Thurb.

_Hab._ N. J. and Penn.—This minute species has been found in Monmouth county, N. J. by Mr. Z. Collins—on the Delaware, near Philadelphia, by Dr. Isaac Cleaver. _See Bart. Fl. Phil._ i. 26, and _Nutt. Gen._ i. 35.

2. _C. fasciculatus_ Ell.: spikelets ovate-oblong, many-flowered, in terminal fascicles; involucre 2-leaved, and with the leaves linear and very narrow.

_Hab._ Shores of the Delaware. _Schweinitz._ S. to Geor.—_Culm_ 6 inches high, 3-angled. _Leaves_ 1—2, almost setaceous. _Spikelets_ 5—7, sessile, many flowered.
3. *C. inflexus* Muhl.: umbel 2–3-rayed, or conglomerate and simple; involucre 3-leaved, very long; spikelets collected into ovate heads, oblong, 8-flowered; glumes squarrose at the tip.—*C. uncinatus* Pursh.

_Hab._ Banks of streams. Ver. to Vir. Aug., Sept. 3.—Culm 2–3 inches high, triquetrous. Heads consisting of many ovate spikes, yellowish.

4. *C. flavaescens* Linn.: spikes linear-lanceolate, in fascicles of 3–4; glumes obtuse; style 2-cleft; seed lenticular; involucre 3-leaved, longer than the spikes.


5. *C. nuttallii* Torr.: culm acutely triangular; umbel radiate or nearly sessile, loose; rays short; involucre 4-leaved; 2 of the leaves very long; spikelets linear-lanceolate, compressed, acute; stamens 2; style 2-cleft; seed oblong, obtuse, compressed.

_Hab._ Salt marshes. N. S. Aug., Sept. 2f.—Culms cespitose, 5–12 inches high. Spikelets very acute, green and brown.

6. *C. diandrus* Torr.: culm slender, obtusely triangular; umbel sessile, or 1–2-rayed; involucre 3-leaved, 2 of the leaves much longer than the umbel; spikelets lanceolate-oblong, much compressed, many-flowered (14–16); glumes margined, rather acute, keeled; stamens 2; style 2-cleft; seed oval, compressed.

_Hab._ Salt marshes and wet grounds. N. S.—Culm 8–12 inches high, slender. Umbel resembling a small panicle.

7. *C. dentatus* Torr.: umbel compound, (6–10-rayed); involucre 3-leaved, longer than the umbel; spikelets 3 on each ray, alternate, ovate, compressed, 8-flowered; glumes acute, nervose, spreading at the points; seed triquetrous.—*C. pareiiformis* Muhl.

_Hab._ Swamps and marshes. N. S. Sept. 2f.—Culm 10–12 inches high. Spikelets much compressed, the tips of the glumes spreading.

8. *C. erythrochilos* Muhl.: umbel decumbent; involucrum 3–6-leaved, very long; spikes alternate, linear, horizontal, about 12-flowered, nearly terete; style 3-cleft; seed triquetrous.


9. *C. strigosus* Linn.: spikelets linear, compressed, acute, alternate; glumes lanceolate, nervose; umbel simple or compound; involucre about 6-leaved, pubescent on the margin; root globose.


10. *C. tenus* Muhl.: spikes lanceolate, acute, 10–17-flowered; umbel simple; involucre 3–4-leaved, longer than the rays; root tuberous.

_Hab._ Penn. and Vir. Muhl.—Culm 8 inches high, slender. Spikelets lanceolate, many-flowered, yellow.
11. *C. phymatodes* Muhl.: umbel simple or decompound; involucre 3—9-leaved; 3 of the leaves very long; peduncles compressed; spikelets distichous, linear, the lower one branched, about 15-flowered; sides rather convex; glumes oblong, obtuse; radicles tuberous at the extremity.—*C. tuberosus* Pursh.—*C. repens* Ell.


12. *C. compressus* Linn.: spikes digitate, somewhat by fours, lanceolate; glumes mucronate, broad, membranaceous.

**Hab.** Low meadows. Penn. to Car. Pursh. July. 21.—**Culm** 3—8 inches high. **Spikelets** nearly sessile, many-flowered.

13. *C. viridus* Mich.: culm acutely triangular; umbels decompound; spikelets ovate-lanceolate, in compact heads; involucre very long.

**Hab.** Meadows. Penn. to Geor. Sept. 21.—**Culm** 1—2 feet high. **Spikelets** many-flowered, laterally compressed into compact heads.

14. *C. mariscoides* Ell.: umbel simple, or with 1—2 rays; spikelets collected into globose heads, linear, 7—8-flowered; glumes loose, obtuse.—*Scirpus cyperiformis* Muhl.


15. *C. odoratus* Linn.: spikelets corymbed, subulate, remote, distichous; glumes somewhat distant; smaller umbels spreading widely, about the length of their involucels.

**Hab.** Banks of rivers. Penn. to Flor.; rare. Aug. 21. **Pursh.**

16. *C. flavicomis* Mich.: culm triquetrous; umbel compound; spikes linear-lanceolate, 7-flowered; glumes obtuse; involucres very long, reflexed.


**Spikes** somewhat racemose, axillary; **spikelets** linear-lanceolate, rather compressed. **Glumes** distichous, sheathing. **Style** very long, bifid; base persistent. **Nut** with bristles at the base. **Triandria. Monogynia.**

*D. spathaceum* Pers.: culm terete; leaves spreading in three directions; spikelets spreading.—*Scianus spathaceus* Linn.—*Scirpus spatha-
cceus* Mich.

**Hab.** Swamps and ponds. Throughout the U. S. Aug. 21.—**Culm** 18 inches high, round below, triangular above. **Leaves** linear, flat. **Flowers** in subulate spikelets, forming axillary ra-
cemes.
CYPERACEÆ.

3. KYLLINGIA. Linn.


*Triandria. Monogynia.*

*K. monocephala* Linn.: stem filiform, 3-angled; head globose, sessile; involucres 3-leaved, very long.

**Hab.** N. J. to Geor. June. 24.—Root creeping, stoloniferous. *Culm* 3—12 inches high. *Head* always single.—Supposed to be distinct from the foreign plant.

**Div. II. Scirpeæ.**

4. FIMBRISTYLIS. Vahl.


*Triandria. Monogynia.*


2. *F. spadicea* Vahl.: culm compressed, nearly naked, umbel terminal; involucre rigid, 2 leaved, one of the leaves longer than the umbel; leaves subterete; spikes ovate-oblong, terete.—*Scirpus spadicus* Linn. Muhl. Torr.


3. *F. coarctata* Schv.: culm filiform; umbel compound, crowded; spikes small, linear-lanceolate; involucre setaceous, with one of its leaves longer than the umbel; leaves filiform, concave on one side. —*Scirpus coarctatus* Ell.—*S. castaneus* Muhl.


4. *F. cylindrica* Vahl.: spikes cylindric, very obtuse; involucre about 1-leaved, rigid, as long as the simple umbel.

**Hab.** Quaker’s Bridge, N. J. Schweinitz. 24.

5. SCIRPUS. Linn.

*Glumes* imbricating the spike on all sides, one or two of the outer ones occasionally without flowers. *Seed* or *nut* naked, or with bristles at its base.

*Triandria. Monogynia.*
* Seed with bristles or hypogynous scales at the base.
† Spikes terminal, solitary.

1. *S. palustris* Linn.: culm terete, inflated; spike oblong-lanceolate; glumes somewhat obtuse; seed roundish, punctate and rugose; bristles scabrous.

   **Hab.** Marshes and low meadows. N. Y. to Car. N. to Arc. Amer. June. 24. — **Culm** 1—2 feet high, erect, leafless, with 3 sheaths at base. **Spike** sometimes oblique, the lower glumes larger. **Club Rush.**

2. *S. capitatus* Linn.: culm terete or somewhat compressed; spike ovate, obtuse; seed oval, compressed, smooth.

   **Hab.** Bogs and meadows. N. Y. to Car. July, Aug. 24. — **Culms** cespitose, erect, 8—18 inches high. **Spike** very obtuse; sometimes nearly globose. **Glumes** round. **Bristles** 6, as long as the glumes.

3. *S. tuberosus* Mich.: culm columnar, striate; glumes very obtuse, loosely appressed; nut somewhat 3-angled; tubercle sagittate, larger than the nut.

   **Hab.** Wet grounds. N. J. *Schuieinitz.* S. to Car. July. 24. — **Culm** 12 inches high, sheathed at base with 1 or 2 scales. **Spike** ovate-lanceolate. **Bristles** 6, as long as the tubercle.

4. *S. acicularis* Linn.: culm setaceous, quadrangular; spike ovate, acute, 3—6-flowered; glumes somewhat obtuse; stamens 3; style bifid; seed obovate.

   **Hab.** Margins of ponds. N. Y. to Car. June, July. 24. — **Culm** 3—6 inches long, cespitose. **Spikes** about 4-flowered. **Bristles** 4, rarely wanting.

5. *S. intermedius* Muhl.: culms cespitose, quadrangular, sulcate; spike ovate-oblong, acute; glumes rather acute; stamens 3; style 2-cleft; seed broad-oboate, compressed; tubercle distinct.

   **Hab.** Marshes and swamps. N. S. Sept. 24. — **Root** creeping. **Culms** slender, 3—4 inches long. **Spikes** dark brown. **Bristles** 6, longer than the seed.—Closely allied to the preceding.

6. *S. cespitosus* Linn.: culms cespitose, terete; spikes ovate, few-flowered; lower glumes bracteiform, as long as the spike; sheaths with rudiments of leaves.

   **b. callosus** Big.: glumes thickened and cartilaginous at the tips.

   **Hab.** White Hills, N. H. *Big.* Arc. Amer. July. 24. — **Culm** 8 inches high, slender. **Spike** 4—5-flowered, compressed. **Glumes** with whitish tips.


   **Hab.** Salt marshes. N. Y. to Car. July. 24. — **Culm** 1—3 inches high, slightly furrowed. **Nut** crowned by a conic tubercle. **Bristles** 6.—Grows in large patches like moss.

8. *S. glaucescens* Willd.: culm angular, compressed, glaucous; spike
lanceolate, compressed; glumes lanceolate, obtuse; sheaths truncate.

_S. glaucus_ Torr.?

_Hab._ Salt marshes. N. Y. July. _2f._—Culm a foot high, slender. _Glumes_ obtuse, brownish. _Bristles_ 4, longer than the tubercle.—Dr. Torrey’s name had been appropriated to a British species by Dr. Smith.

9. _S. tenuis_ Willd.: culm very slender, quadrangular; spike elliptical, acute at each end; glumes ovate, obtuse; stamens 3; styles 3-cleft; seed rugose.


10. _S. planifolius_ Muhl.: culm triquetrous; radical leaves flat, nearly equalling the culm; spike terminal, oblong, compressed, shorter than the cuspidate bracts at the base.

_Hab._ Swamps. N. S. June. _2f._—Culms cespitose, 8 inches high, scabrous on the angles. _Spike_ lanceolate. _Bristles_ 3—4, longer than the nut.

11. _S. subterminalis_ Torr.: culm floating, sulcate, inflated, leafy below; spike solitary, somewhat terminal, lanceolate; style 2-cleft; seed triquetrous.

_Hab._ Ponds, &c. Mass. Aug. _2f._—Culm 3 feet long, spongy. _Leaves_ very narrow. _Spike_ shorter than the bract. _Bristles_ 6, nearly as long as the triangular nut.

†† _Spikes_ numerous, _aggregated._

12. _S. debilis_ Muhl.: culms cespitose, deeply striate; spikes about 3, lateral, ovate, sessile; glumes ovate, obtuse, mucronate.

_Hab._ Margins of ponds. N. Y. to Car. Aug., Sept. _2f._—Culms 8—12 inches high, with a few subulate leaves at base. _Spikes_ short, ovate, 2—3 inches from the top of the culm. _Bristles_ 4—5.


_Hab._ Marshes and wet banks. N. Y. to Car. July. _2f._—Culm 2—5 feet high, slender, 3-sided. _Spikes_ a short distance from the top, ferruginous. _Bristles_ 6.

14. _S. lacustris_ Linn.: culm terete, attenuated above, naked; panicle subterminal; spikes peduncled, ovate.—_S. validus_ Pursh.

_Hab._ Ponds and marshes. N. Y. to Car. N. to Subar. Amer. June. _2f._—Culm 4—8 ft. high. _Spikes_ in an unequal subdivided panicle or cyme. _Bristles_ 4—6, hispid.

15. _S. acutus_ Muhl.: culm terete, (not attenuated,) spotted; peduncles numerous, sublateral; spikes oblong; glumes pubescent, mucronate.

_Hab._ Swamps. N. S. June, July. _2f._—Culm 4 feet high,
with brown spots. Spikes in a proliferous cyme or panicle, brown.—It is quite doubtful whether this is distinct from the preceding.

16. S. maritimus Linn.: culm triquetrous, leafy; corymb clustered; involucre about 3-leaved, very long; spikes oblong; glumes ovate, 3-cleft, the middle segment subulate and reflexed; style 3-cleft.—S. robustus Pursh.—S. macrostachyos Muhl. Torr.


17. S. brunnneus Muhl.: culm leafy, obtusely triangular; cyme compound; involucre 3—4-leaved; spike round-ovate, clustered in about sixes; glumes ovate, obtuse.—S. exaltatus Pursh.


18. S. atrovirens Muhl.: culm triangular, leafy; cyme terminal, compound, proliferous; involucre 3-leaved; spikes conglomerate, ovate, acute; glumes ovate, mucronate, pubescent.

Hab. Wet meadows. N. S. June, July. 2L.—Culm 2 feet high. Spikes crowded into small heads, brown, smaller than in the preceding. Bristles 4, longer than the seed.

** Seed without bristles at the base.

19. S. capillaris Linn.: culm nearly naked, triquetrous, capillary: spikes ovate, 2—3 of them pedunculate, with an intermediate sessile one.—S. ciliatifolius Ell.


20. S. autumnalis Linn.: culm compressed, acipitous; umbel compound; involucre 2-leaved; spikes lanceolate, acute, somewhat 4-sided.—S. mucronulatus Mich.—Fimbristylis autumnalis Vahl.


6. TRICHOPHORUM. Pers.

Spikelets nearly ovate, imbricated in all directions. Bristles of the seed usually 6, finally very much lengthened and exserted.

Triandria. Monogynia.


Hab. Wet grounds. Can. to Car. Aug. 2L.—Culm 3—5 feet high, smooth. Involucre 4-leaved. Panicle terminal, much divided and proliferous.—This seems to be the connecting link
between Scirpus and Eriophorum, but I think it nearest the latter.

2. T. lineatum Pers.: culm 3-angled, leafy; panicles terminal and lateral, decompound, at length nodding; involucre 1—2-leaved; spikes ovate; glumes lanceolate, somewhat carinate.—Scirpus lineatus Mich.—S. lineatus and pendulus Muhl.


7. ERIOPHORUM. Linn.

Glumes chaffy, imbricated in all directions. Seed surrounded by very long dense wool. Triandria. Monogynia.

* Spike solitary.

1. E. alpinum Linn.: culm triquetrous, somewhat scabrous, naked; leaves very short, subulate; spike oblong; woolly hairs crisped, few. —E. hudsonianum Mich.—Trichophorum alpinum Pursh. Muhl.


2. E. vaginatum Linn.: culm terete below, obtusely triangular above, smooth and rigid; sheaths inflated; spike oblong-ovate; glumes scarious; wool straight, dense.—E. cespitosum Pursh.


** Spikes numerous.

3. E. polystachyum Linn.: leaves flat, triquetrous at the extremity; culm nearly terete; spikes on scabrous peduncles, nodding.—E. tenuilum Nutt.


4. E. virginicum Linn.: culm nearly terete below, obtusely triangular above; leaves flat, very long; spikes clustered, erect, nearly sessile; involucre 2—3-leaved.

b. gracile Torr.: culm very slender; leaves almost filiform.


5. E. angustifolium Roth.: culm somewhat triangular; leaves channelled and triquetrous; peduncles very smooth.

8. SCHČENUS. Linn.

Glumes fascicled into a spike, the lower ones empty. Style deciduous. Seed naked. Triandria. Monogynia.

S. mariscoides Muhl.: culm terete or a little sulcate, leafy; leaves channelled, semiterete; umbel terminal; fascicles on spikes, 3 on each peduncle; seed naked, rounded at the base.


9. RHYNCHOSPORA. Vahl.

Glumes fascicled into a spike, the lower ones empty. Seed 1, crowned with the persistent style; its base surrounded with bristles. Triandria. Monogynia.

1. R. alba Vahl.: spikes in corymbose fascicles; culm triangular above; leaves setaceous; seed somewhat lenticular; bristles about 10. —Schcnus albus Linn.


2. R. fusc a Vahl.: culm triquetrous; leaves linear, carinate; fascicles of spikes alternate, peduncULATE; spikes ovate; glumes ovate, brown; seed ovate, with an acute black tubercle.—Schcnus fuscus Linn.

Hab. N. Y. Muhl. 2l.—Culm 2 feet high. Leaves smooth. Glumes mucronate. Seed brown, rugose, as long as the hispid bristles.

3. R. glomerata Vahl.: spikes in corymbose fascicles, very distant, by pairs; culm obtusely triangular; leaves flat; seed obovate-cuneiform, very smooth; as long as the tubercle.—Schcnus glomeratus Linn.


4. R. capillacea Torr.: spikes 3—5, nearly terminal; culm triquetrous, somewhat leafy; leaves setaceous; seed stipitate, a little rugose.—Schcnus setaceus Muhl.


5. R. sparsa Vahl.: culm triquetrous, leafy; corymbs axillary and terminal, compound, loose; peduncles capillary; seed obovate, rugose, much longer than the tubercle.—Schcnus sparsus Mich. Muhl.


7. *R. laxa* Vahl.: culm triquetrous; corymbs leafy, decomposed, loose; spikes subulate; seed obovate, pointed with the long persistent style. — *R. longirostris* Ell. — *Schenus longirostris* Mich.


10. MARISCUS. Vahl.


1. *M. retrofractus* Vahl.: umbel simple; rays long; spikes obovate, retrospectly imbricate; spikelets subulate, at length bent backwards; involucre 3-leaved. — *Scirpus retrofractus* Linn.


b. *tenellus* Torr.: culm acutely triangular, slender; involucre 3—5-leaved, 3 of the leaves many times longer than the umbel.


11. FUIRENA. Linn.

Glumes awned, imbricated on all sides into a spike. *Palea* 3, (or perianth 3-valved,) petaloid, cordate, awned, unguiculate. — *Triandria. Monogynia.*

1. *F. squarrosa* Mich.: spikes clustered, (5—6,) ovate; culm smooth; leaves ciliate; sheaths hairy; valves of the perianth cordate-ovate.

HAB. Bogs. N. J. to Car. Aug., Sept. 21. — Culm 1—2 feet high, angular, slender at the top. Spikes clustered into 2 heads. the lateral one upon a long peduncle.


Div. III. Sclereae.

12. Scleria. Linn.


1. S. triglomerata Mich.: culm erect, acutely triquetrous, scabrous; leaves broad-linear, subsessile and a little hairy; spikes lateral and terminal, fasciculate; glumes ciliate, mucronate; nuts smooth and polished.


2. S. pauciflora Mich.: stem triquetrous and with the narrow leaves smooth; spikes lateral and terminal, few-flowered; the lateral ones pendulous, terminal, fasciculate; glumes smooth; seed roughened.

Hab. Low meadows. Penn. to Car. Aug. 2L — Culm 2 feet high, slender. Lateral spikes 2, on long pendulous peduncles.

3. S. verticillata Mich.: stem simple, triquetrous, and with the leaves smooth; spike glomerate, naked, the clusters alternate, distant; glumes smooth; seed globose, mucronate, transversely corrugate.


Div. IV. Carinæe.

13. Carex. Linn.

Monoecious, (rarely dioecious.) Flowers collected into an imbricated ament. Glume 1-flowered. Corol (or nectary or perianth) ventricose, 1-valved, persistent, enclosing the coriaceous nut or caryopsis.

Monococia. Triandria.

Obs. Two excellent Monographs of the North American species of this genus, have been published. The one by Prof. Dewey, is contained in Silliman's Journal, from the 7th to the 14th volumes, inclusive; — the other by Mr. Schweinitz and Dr. Torrey, in the first volume of the Annals of the New-York Lyceum. I shall adopt the latter, with a few additions.

A. Inflorescence dioecious.

1. C. sterilis Willd.: spikes dioecious; sterile 3—5; fertile about 6, (sometimes androgynous;) fruit ovate, compressed, triquetrous; margin ciliate-serrate; apex recurved and bicuspidate.

B. Inflorescence monocious.

† All the spikes androgynous.

* Spike solitary.

a. Summit staminiferous.

2. C. fraseri Sims: spike simple, ovate; fruit ovate-subglobose, entire at the point, longer than the oblong glume; leaves lanceolate, undulate, crenulate; scape-sheathed at the base.—C. lagopus Muhl.

Hab. Mountains. Penn. N. Car. April. 2ι.—Leaves broad, radical.

3. C. wilddenovii Schlecht.: spike simple, ovate; sterile and fertile flowers about 6; fruit ovate, subglobose at the-base, rostrate; glumes ovate, acuminate, the inferior ones very long and foliaceous, much exceeding the culm:

Hab. Rocky woods. Penn. to N. Car. May, June. 2ι.—Culm 8–12 inches high. Lower glumes foliaceous and much longer than the spike.

4. C. polytrichoides Muhl.: spike simple; fruit oblong-lanceolate, compressed, triquetrous, obtuse, emarginate; glumes oblong-obtuse, mucronate.

Hab. Dry hills and bog. Can. to Penn.; common. May. 2ι. Culm a foot high, very slender. Leaves subradical, very narrow.

5. C. pauciflora Light.: spike about 4-flowered; sterile flower subsolitary, terminal; fruit lanceolate, terete, reflexed; fertile glumes caducous.

Hab. Sphagnous swamps. May, June. 2ι.—Culm 8 inches high. Fruit large, pale yellow, caducous.

b. Summit pistilliferous.

6. C. squarrosa Linn.: spike mostly simple, (sometimes spikes 2–3,) very thick, oblong-cylindrical; fruit imbricate, at length horizontal, smooth, subsquarrose, bidentate at the point, longer than the lanceolate glume.—C. typhina Mich.

Hab. Bogs. Can. to Geor. W. to Miss. May, June. 2ι.—Culm 2 feet high. Spike nearly an inch long and half an inch thick.

** Spikes several, aggregated into a head.

7. C. cephalophora Muhl.: spikes collected into an elliptical head; fruit ovate, scabrous on the margin above, about equal to the ovate subaristate glume.

Hab. Oak woods. Can. to Car.; common. May. 2ι.—Culm 1–2 feet high, wiry, leafy at base. Spikes forming a trifid head.

*** Spikes distinct, (not aggregated into a head.)

a. Summit staminiferous.

1. With 2 stigmas.

8. C. bromoides Schlecht.: spikes 4–6, alternate, oblong, erect, uppermost one sterile above, the rest pistilliferous or androgynous (sterile
above and below;) fruit erect, lanceolate acuminate, scabrous, nervet, bifid, longer than the ovate-lanceolate glume.

HAB. Bogs. N. S.; common. May. 2f.—Culm 12—18 inches high, slender and scabrous. Spikes subdistichous, half an inch long.

9. C. retroflexa Muhl. : spikes about 4, subapproximate, ovate, the lowest one with a short bract; fruit ovate-lanceolate, bidentate, scabrous on the margin, spreading and reflexed, as long as the ovate acute glume.

HAB. Meadows, &c. N. S. May. 2f.—Culm 8—12 inches high, nearly 6-sided. Spikes 3—5, rarely 9; the lower one distant.

10. C. rosea Schrk.: spikes 4—6, remote, about 9-flowered, the lowest one with a setaceous bract overtopping the culm; fruit ovate, acuminate, diverging and radiate; scabrous on the distinct margin, twice as long as the ovate obtuse glume.

HAB. Moist woods. N. S.; common. May. 2f.—Culm a foot high. Spikes 3—6, yellowish-green; lower ones distant.

11. C. disperma Dew.: spikes about 3, rather remote, mostly 2-flowered, somewhat erect, the lowest one bracteate; fruit ovate, rather obtuse, nervet, plano-convex, smooth, with a scabrous margin, entire at the point, twice as long as the ovate, obtuse-submucronate glume.

HAB. Mountain woods. N. Y. Mass. May, June. 2f.—Culm 6—12 inches high. Fruit small. Var. tetrasperma has the fertile spikes 3—4 flowered.

12. C. muhlenbergii Schrk.: spikes about 5, ovate, crowded at the summit of the culm, bracteate at the base; fruit broad-ovate, compressed, nervet, bifid, somewhat diverging, scabrous on the margin, rather shorter than the ovate mucronate glume.

HAB. Rocky woods. N. Y. S. Car. May. 2f.—Culm 1—2 feet high, thick. Plant dark green.

13. C. stipata Muhl.: spike compound, oblong; spikelets numerous, (10—15,) oblong, aggregated, bracteate; bracts a little longer than the spikelets; fruit lanceolate, subterete and smooth below, spreading, bidentate at the point, which is scabrous, twice as long as the glume.

HAB. Wet meadows. Throughout the U. S. April, May. 2f.—Culm 1—3 feet high, thick and succulent, smooth. Spike consisting of many crowded spikelets.

14. C. sparganioides Muhl.: spikelets about 8, many-flowered; upper ones approximate, lower ones subdistant, bracteate; fruit ovate, compressed, acuminate, bifid, diverging, scabrous on the margin, twice as long as the ovate mucronate glume.

HAB. Wet meadows. Throughout the U. S.; rather rare. May. 2f.—Culm 2 feet high. Lower spikes remote.

15. C. multiflora Muhl.: spike oblong, decompound, bracteate, interrupted; spikelets glomerate, ovate-oblong, obtuse; fruit ovate acu-
minate, compressed, crowded, bifid, 3-nerved, serrulate on the margin, at length diverging, rather shorter than the ovate cuspidate glume.

**Hab.** Wet meadows. N. Y. to Car.; common. May. 2. —
*Culm* 2 feet high, obtusely triangular. *Spike* subpaniculate.

16. *C. setacea Decr.* : spike oblong, decompound, bracteate; spikelets glomerate, ovate, obtuse; fruit ovate, acuminate, compressed, bifid, subdiverging, as long as the ovate-lanceolate awned glume.

**Hab.** Wet meadows. Mass. Decr. June, July. 2. —*Culm* 18—30 inches high, acutely triangular, sulcate. —Resembles the preceding, but its fruit is less ovate, longer and more compressed.

17. *C. paniculata Linn.* : spike decompound, paniculate, interrupted, the branches alternate and somewhat remote; fruit ovate, acuminated, spreading, margined above, bifid.


18. *C. teretiuscula Good.* : spike decompound or paniculate, dense, subacute, (often dioecious, at length brown); spikelets with short bracts at the base; fruit ovate, acuminate, somewhat gibbous at the base, bidentate, ciliate-serrulate on the margin.

**Hab.** Marshes and bogs. N. Y. and N. Eng. May.—*Culm* 18 inches high. *Spike* narrow. *Fruit* and *glume* brown.

2. With 3 stigmas.

19. *C. pedunculata Muhl.* : spikes about 4, on long peduncles, very remote; fruit obovate, triquetrous, obtuse, smooth, entire at the orifice; glumes ovate, mucronate, (purple and green.)


20. *C. ovata Rudg.* : spikes about 5, pedunculate, ovate, pendulous; fruit obovate, acute at each end, as long as the ovate acute glume.

**Hab.** Canada. 2. —*Culm* acute, triangular. *Spikes* densely imbricate. *Glumes* brown, as long as the fruit.

b. Summit pistilliferous.

1. With 2 stigmas.

21. *C. deceyana Schw. & Torr.* : spikes about 3, sessile, loose, two of them approximate, the third distant, with long bracts at the base, (except the highest); fruit oblong-lanceolate, subcompressed, rostrate, bifid at the point; beak serrulate; culm flaccid.

**Hab.** Woods. N. Y. and N. Eng. June. 2. —*Culm* 1—4 feet high, weak and slender, subprocumbent.—Plant yellowish-green.

22. *C. loliacea Linn.* : spikes about 4, rather distant, few-flowered; fruit elliptical, obtuse, nerved, compressed, erect.


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23. *C. trisperma* Dew.: spikes 3, remote, alternate, sessile, ovate, uppermost one without a bract; fruit oblong, acute (or short-rostrate) entire at the point, many-nerved, subscabrous above, somewhat diverging, longer than the oblong acute hyaline glume.

Hab. Mountain swamps. N. Eng. June. 2f.—Culm 18 inches high, filiform, prostrate. Whole plant pale green.—Allied to the preceding, but differs in the glume and fruit.

24. *C. arida* Schv. & Torr.: spikes 8, (large) subapproximate, dry; fruit elliptical, compressed, winged, terete in the middle, acuminate at each end, divergingly bifid; culm leafy.

Hab. Meadows. Ohio and W. June. 2f.—Culm 2—3 feet high. Leaves very long, dark green. Spikelets very large, gray.

25. *C. lagopodioides* Schk.: spikes numerous, (10—16,) elliptic, crowded; bract beneath the lowest overtopping the culm; fruit lanceolate, acuminate, erect, bicuspidate, with a narrow serrulate glume, twice as long as the ovate-lanceolate glume.

Hab. Wet meadows. N. Y. to Car. May. 2f.—Culm 1—2 or more feet high. Leaves long and narrow. Fruit tawny when mature, not winged, 9-nerved.

26. *C. scoparia* Schk.: spikelets mostly 5, (sometimes 6 or 7,) ovate, sessile, approximate, aggregate, lowest one bracteate; fruit ovate-lanceolate, margined, nerved, smooth, bicuspidate, longer than the lanceolate acuminate glume.

Hab. Swamps. N. Y. to Car. May. 2f.—Culm 1—2 feet high. Leaves long and narrow. Fruit tawny when mature, not winged, 9-nerved.

27. *C. straminea* Willd.: spikes about 5, (4—7,) roundish, approximate, with short bracts at the base; fruit roundish-ovate, rostrate, compressed, broadly ovate, bidentate, serrulate, longer than the lanceolate glume.


28. *C. fanea* Muhl.: spikes numerous, (8—10,) inferior ones distinct, upper ones aggregated and confluent; fruit ovate, acuminated, winged, bidentate, somewhat longer than the ovate glume.


29. *C. cristata* Schv. & Torr.: spikes numerous, (8—15,) aggregated into a kind of head; fruit ovate-lanceolate, winged, diverging, serrate, longer than the ovate-lanceolate glume.

Hab. Wet woods. N. Y. Mass. Penn.; common. June. 2f.—Culm 2 or more feet high. Spikelets crowded into an ovate head.
30. *C. festuacea* Schk.: spikes obovate, (5—8,) subapproximate, bracteate; fruit roundish-ovate, rostrate, bidentate, winged, serrulate on the margin, longer than the ovate-lanceolate glume.

**Hab.** Meadows and woods. Throughout the U. S. May. 2f. — *Culm* 30 inches high, sometimes decumbent. *Fruit* silvery white or pale green, not becoming tawny.

31. *C. stellulata* Good.: spikes 3—4, rather remote, upper one attenuate at the base, the rest ovate; fruit ovate, plano-convex, spreading, and at length reflexed, short-acuminate, scabrous on the margin.

**Hab.** Wet grounds. N. Y. to Car. May. 2f. — *Culm* 8—18 inches high, slender. *Fruit* broad ovate, almost cordate when ripe.

32. *C. scirpoides* Schk.: spikes 4, ovate, obtuse, approximate, uppermost one clavate; fruit ovate, bidentate, plano-convex, erect, and a little spreading, but not reflexed, subcordate, serrulate, longer than the ovate obtuse glume.

**Hab.** Wet meadows. N. Y. to Car. May. 2f. — *Culm* 6—12 inches high, stiffly erect. *Fruit* erect or spreading horizontally.

33. *C. eurta* Good.: spikes about 6, subremote, somewhat cylindric-ovate, tumid, sessile; fruit short-ovate, plano-convex, rather acute, erect, entire at the point.

**Hab.** Wet meadows. Can. and N. Y. May. 2f. — *Culm* 2 feet high, nodding at the top. *Glumes* whitish, with a green keel.

34. *C. tenera Decr.*: spikes about 5, obovate, rather remote, sessile attenuate at the base, the lowest bracteate; fruit ovate, compressed, rostrate, serrulate, longer than the oblong-lanceolate glume.

**Hab.** Moist meadows. Mass. N. Y. May. 2f. — *Culm* 15—30 inches high. *Spikes* nodding, brownish.—Resembles *C. scoparia*, but differs in the form of the fruit. Dr. Torrey queries whether it is not *C. sterilis*.

35. *C. remota* Linn.: spikes alternate, remote; bracts leafy, very long; fruit ovate acuminate, bifid, somewhat compressed.

**Hab.** Woods. Penn.? Torr. N. to Arc. Amer.

2. With 3 stigmas.

36. *C. atrata* Linn.: androgynous spikes 3, pedunculate, crowded, subpendulous in fruit, (black; ) fruit roundish-ovate, with a short beak, bidentate.


c. Summits of the highest and lowest spikes staminiferous—the middle spikes entirely staminiferous.

1. With 2 stigmas.

37. *C. siccata* Decr.: terminal spikes obtuse; lower ones mostly in fours, ovate, somewhat acute; fruit ovate-lanceolate, acuminate, compressed, scabrous on the margin, bifid, nerved, nearly equal to the ovate-lanceolate scale.

†† Terminal spikes androgynous; the rest pistilliferous; stigmas 3.

38. C. virescens Muhl. Spike 3, oblong, erect; upper one pedunculate, sterile below, the rest fertile, sub sessile and bracteate; fruit ovate, obtuse, costate, pubescent.

b. posteta S. & T.: spikes larger; fruit strongly costate; exterior sheaths purple.


39. C. hirsuta Willd.: spikes 3, erect, approximate, densely fruited, upper one ovate-oblong, on a short peduncle; the rest ovate, sub sessile, bracteate; fruit roundish-ovate, nerved, obtuse, smooth, orifice entire, longer than the ovate acuminate glumes; leaves and sheaths pubescent.

Hab. Rocky woods and meadows. Can. to Geor. W. to Mich. May. 2l.—Culm 12—18 inches high. Fruit pubescent when young.—Resembles C. virescens, but differs in its shorter and thicker spikes and in the fruit being smooth when mature.

40. C. buxbaumii Wahl.: spikes about 4, obovate, sub remote, upper one androgynous and pedunculate, the rest sessile, with very long bracts; fruit ovate, obtuse, rather compressed, orifice entire, shorter than the ovate acuminate (brown) glume.


41. C. digitalis Muhl.: spikes mostly 4, distant, slender, pedunculate, loosely-flowered, nodding; uppermost androgynous, fertile above; the rest all fertile; fruit oblong, sub triquetrous, obtuse, smooth, longer than the oblong mucronate glume.—C. gracillima Dew.


42. C. formosa Dew.: spikes 4, oblong, thick, distant, on exsert peduncles, nodding, uppermost one sterile at the base; fruit oblong, triquetrous, somewhat inflated, rather acute at each end; orifice nearly entire or 2-lobed, obscurely nerved, twice as long as the ovate acute glume.


43. C. torreyana Dew.: spikes 4, filiform, pedunculate, somewhat nodding, uppermost one sterile at the base; fruit oblong, triquetrous.
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Acute at each end, slightly 2-lobed, shorter than the oblong awned glume; leaves and sheaths pubescent.


†† Staminiferous and pistilliferous spikes distinct.

* Staminiferous spike solitary.

1. With 2 stigmas.

44. C. nova anglica Schu. & Torr.: sterile spike on a short peduncle; fertile 2—3, sessile, ovate, few-flowered, rather remote; fruit ovato-subtriquetrous, rostrate, minutely pubescent, longer than the ovate-mucronate glume; culm slender, subdecumbent.

Hab. Saddle Mountain. Mass. June. 2f.—Culm 6—8 inches high, with very small and narrow leaves. Spikes usually 4-flowered, lower ones distant.

45. C. aurea Nutt.: fertile spikes mostly 3, oblong, loose flowered, subpendulous, rather approximate, lower ones pedunculate; fruit obovate or pyriform, obtuse, nerved, entire at the orifice, longer than the ovate acute glume.


2. With 3 stigmas.

§ Pistilliferous spikes sessile, or with the peduncles inclosed.

46. C. varia Muhl.: fertile spikes 2—3, approximate, few-flowered, ovate, subsessile; sterile spike sessile, (or on a short peduncle;) fruit subglobose, acuminate, bifid, obtusely triangular, hispidly pubescent, as long as the ovate acuminate glume.

Hab. Dry woods. Hudson’s Bay to Geor. April. 2f.—Culm 8—12 inches high, erect, filiform. Fruit ventricose, nearly globose.

47. C. marginata Muhl.: sterile spike pedunculate; fertile spikes mostly 2, approximate, subglobose, subsessile; fruit globose, woolly, bidentate, longer than the ovate-oblong glume.


48. C. vestita Willd.: sterile spike mostly solitary, (rarely geminate, with the upper one elongate,) pedunculate, cylindrical-oblong; fertile 2, ovate-oblong, sessile, subapproximate, sometimes sterile at the summit; fruit ovate, subtriquetrous, nerved, with a short rostrum, pubescent, rather longer than the ovate mucronate glume.


49. C. pubescens Muhl.: sterile spike subsessile; fertile 3, oblong, erect, rather loosely-flowered, the lowest on a short peduncle; fruit 37*
ovate triquetrous, rostrate, pubescent, orifice nearly entire, as long as the ovate mucronate glume; leaves and culm pubescent.


50. *C. flava* Linn. : sterile spike on a short peduncle; fertile mostly 3, ovate, subapproximate, (the lowest rather remote,) on short included peduncles; fruit ovate, densely imbricate, bidentate, with a curved and reflexed rostrum, shorter than the ovate-lanceolate glume.


51. *C. aderi* Linn. : sterile spike on a short peduncle; fertile about 3, ovate, approximate, subpedunculate, densely flowered; fruit ovate-globose, horizontal, with a straight rostrum.

Hab. Rocky banks. Hudson's Bay, Can., N. Y. and N. J. June. 2L. —Culm 8—12 inches high.—Resembles *C. flava*, but differs in having the spikes more densely flowered and the fruit smaller.

52. *C. tentaculata* Muhl. : fertile spikes 2—3, (rarely 4,) sessile, ovate or ovate-cylindrical, approximate, horizontal; bracts very long; fruit ovate, ventricose, nerved, with a very long rostrum, orifice bidentate, longer than the lanceolate glume.


53. *C. nigra* All. : sterile spike pedunculate; fertile 2—3, (rarely 4,) rather remote, oblong (black) sessile, erect; fruit obovate, compressed-triquetrous, subacute, orifice entire, as long as the ovate glume.


54. *C. lupulina* Muhl. : sterile spike on a short peduncle, (rarely geminate;) fertile 3, subsessile, ovate-oblong, erect, approximate; bracts very long and leafy; fruit ovate, inflexed, nerved, long-rostrate, bicuspidate, much longer than the ovate glume.

b. *polystachia* T. & S. : fertile spikes 5, oblong-cylindric, lowest one remote, on a long peduncle.

c. *pedunculata* Gray: fertile spikes all pedunculate; the lower long-pedunculate, distant, the 3 upper subumbellate.

Hab. Swamps. Hudson's Bay to Geor. June. 2L. —Culm 2—3 feet high, very thick, smooth and leafy. Spikes very thick. —Var. c. was found by Dr. Gray on the shores of Lake Erie. It flowers in July.

55. *C. folliculata* Linn. : sterile spike pedunculate; fertile 2, (often solitary,) roundish, approximate, few-flowered, upper one sessile, lower one short peduncled; bracts leafy; fruit ovate, acuminate-rostrate, ovate, reflexed and diverging, bicuspidate.

56. C. zanthophyza Wahl.: fertile spikes 3—4, ovate, very remote, pedunculate, few-flowered; fruit oblong-conical, somewhat inflated, striate, horizontal when mature, acute, bifid, longer than the ovate acuminate-glume.

HAB. Swamps. N. Y. to Car. June. Culm 2—4 feet high, slender, leafy. Fruit 1-2 inch long, tapering into a long acute point. — Plant at length yellow-green.

57. C. subutila Mich.: sterile spikes short-pedunculate; fertile mostly 4, sessile, or with included peduncles, very remote, few-flowered, sterile at the apex; fruit subulate, reflexed, much longer than the lanceolate glume; culm very slender.

HAB. Cedar swamps. N. J. July. Culm 2 feet or more high. Spikes 3—5-flowered. Fruit with a long slender beak.

58. C. alpestris All.: fertile spikes 3, 5-flowered, the 2 uppermost approximate and sessile, the lowest radical, on a long peduncle; fruit obovate-oblong, triquetrous, scarcely rostrate, subpubescent, orifice oblique, as long as the oblong-glume.


59. C. collecta Dcne.: sterile spike solitary, erect, loosely imbricate, slender, subpeduncled; fertile spikes mostly in threes, ovate, few-flowered, bracted; lower one on a short peduncle; fruit ovate, beaked, sub-bidentate, somewhat pubescent, longer than the ovate acute scale.

HAB. Bogs. Mass. May. Culm 6—10 inches high, procumbent when mature. Plant light green. — Allied to C.novaangliae, but differs in number of stigmas and in other characters. From C. varia it differs in its staminate spike, its manner of growth, scale, and in its fruit being more ovate, &c.

§§ Pistilliferous spikes on exsert peduncles, partly sheathed at the base.

60. C. alba Hanke.: sterile spike pedunculate; fertile 2—3, pedunculate, about 5-flowered; fruit ovoblate, with a short rostrum, obliquely truncate; sheath at the base of the culm hyaline, leafless.


61. C. plantaginica Lam.: fertile spikes mostly 4, on peduncles scarcely exserted, loosely flowered; fruit oblong-cuneiform, triquetrous, recurved at the apex; culm sheathed at the apex; sheaths of the culm all leafless, (coloured;) leaves broad.


62. C. anceps Muhl.: fertile spikes mostly 3, remote, subcylindric, loosely flowered, lower ones pedunculate; fruit ovate, triangular,
acute, striate, narrowed at the base, orifice obscurely bidentate, about as long as the ovate cuspidate glume.—C. plantaginеа Muhl. Ell.

**Hab.** Woods. Can. to Car. April, May. Culm 12—14 inches high. *Leaves* sometimes very broad; hence this plant has been confounded with the preceding.

63. *C. oligocarpa* Schk.: fertile spikes 3, pedunculate, few-flowered: lower peduncles elongate; fruit short-ovate, acutely triangular, with a short rostrum, orifice entire, longer than the ovate glume.

**Hab.** Rocky woods. Hudson’s Bay to Penn. May. *Culms* in tufts, 6 inches high, slender, with the angles very prominent. *Leaves* subglacous. *Spikes* 5—8-flowered.

64. *C. scabrata* Schr. & Torr.: fertile spikes 5, subremote, cylindrical, mostly erect, lower ones long-pedunculate; fruit ovate, with an acuminate rostrum, subventricose, scabrous, orifice oblique and somewhat bifid, longer than the ovate-lanceolate ciliate glume.


65. *C. conoidea* Schk.: fertile spikes 2—3, oblong, remote, rather loose, uppermost subsessile, lower ones on long peduncles; fruit oblong-conical, obtuse, recurved at the apex, as long as the awned glume.—*C. luda* Dew.


66. *C. tetanica* Schk.: sterile spike long-pedunculate; fertile 2—3, remote, rather densely flowered, upper one subsessile, lowest on a long peduncle; fruit ovate-oblong, acute at each end, nerved, subgibbous at the summit, oblique, orifice entire, longer than the ovate mucronate glume.—*C. granularoides* Dew.


67. *C. laxiflora* Lam.: sterile spike subsessile; fertile mostly 3, rather loose, remote, pedunculate, erect; fruit ovate oblong, ventricose, obtuse, somewhat shining, longer than the ovate cuspidate glume.


68. *C. granularis* Muhl.: sterile spike sessile or short-pedunculate; fertile mostly 3, remote, cylindrical, dense; uppermost subsessile, lowest on a long peduncle; fruit globose-ovate, nerved, orifice entire; rostrum very short and recurved.


69. *C. sylvatica* Huds.: fertile spikes mostly 4, remote, filiform, dense, peduncles nodding; fruit ovate, rostrate, bifid, twice as long as the ovate mucronate glume.
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70. C. flexuosa Muhl.: fertile spikes 4, remote, filiform, on nodding peduncles; fruit distant, alternate, oblong, acute at each end, rostrate, bifid, twice as long as the ovate-mucronate glume.


71. C. washingtoniana Dec.: sterile spike solitary, erect; fertile spikes oblong, cylindric, subsessile, subremote, erect; flowers somewhat scattered; fruit oval, acute at each end, compressed, shortly beaked, with a smooth and entire orifice, about equaling the ovate-oblong, acutish scale.


72. C. halseyana Dec.: sterile spikes mostly 2, oblong, erect, sessile, lower ones shorter; fertile spikes remote from the sterile, solitary, oblong; cylindric, on a long peduncle, erect, loosely flowered, (rarely 2, distant and with the upper one staminiferous above;) fruit oval-ovate, shortly beaked, subtriquetrous, inflated, nerved, smooth, orifice oblique, a little longer than the ovate acutish scale.


§§§ Pistilliferous spikes on long peduncles, nearly destitute of sheaths.

73. C. umbellata Schk.: cespitose; fertile spikes mostly 4, ovate, few-flowered, one sessile at the summit of the culm, the rest on radical peduncles and appearing subumbellate; fruit ovate, acuminate-rostrate, subpubescent, as long as the ovate acuminate glume.


74. C. miliacea Muhl.: fertile spikes 3, slender and cylindrical, nodding, slender and filiform; fruit ovate, triangular, without nerves, slightly rostrate, orifice entire, as long as the ovate-lanceolate glume.


75. C. pallescens Linn.: fertile spikes 2—3, ovate-cylindrical, dense, at length somewhat nodding; fruit obovate-oblong, obtuse; sheaths and culm pubescent.


76. C. hystericina Willd.: sterile spike pedunculate; fertile 2—3, thick, at length cuneous, upper one inclusely pedunculate, the rest on exsert peduncles; fruit ovate, inflated, subhorizontal, many-nerved, rostrate, orifice bifid, twice as long as the oblong awned glume.
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77. C. pseudo-cyperus Linn.: fertile spikes 4, cylindrical, pedunculate, upper ones subgeminaté; fruit oblong-lanceolate, rostrate, reflexed, many-nerved; apex divaricate-bifid.


78. C. limosa Linn.: fertile spikes mostly 2, ovate or oblong-ovate, pedunculate, somewhat distant, pendulous; fruit suborbicular-elliptic, compressed, with a very short rostrum, (green,) orifice entire, as long as the ovate mucronate glume.—C. lenticularis Mich. Dec.


79. C. hitchcockiana Decn.: sterile spike solitary, erect, peduncled; fertile ones mostly in threes, erect, pedunculate, lower one remote; flowers few and scattered; fruit subtriquetrous, oval, inflated, alternate both sides, recurved at the apex, striate, with a short truncate and open beak, nearly equal to the oblong or ovate mucronate scale.


** Staminiferous spikes 2 or more.

1. With 2 stigmas.

80. C. cespitosa Linn.: sterile spike subsolitary, (or geminaté;) fertile mostly 3, cylindrical, obtuse, distant, the lower on a short exert peduncle; bracts strict; fruit ovate, somewhat acute, densely fruited in about 8 rows; orifice minute, longer than the ovate (black and margined) glume; leaves spreading.


81. C. crinita Lam.: sterile spikes geminaté, (sometimes androgynous;) fertile 4, distant, pendulous, cylindrical, dense; fruit roundish-ovate, ventricose, slightly rostrate, orifice entire, much shorter than the linear glume.

b. gynandra S. & T.: fertile spikes 3, oblong-cylindrical; fruit short-ovate, somewhat longer than the awned glume.


Var. b. has the culm about a foot and the fruit yellowish when mature.

82. C. acuta Linn.: sterile spikes 1—3; fertile mostly 3, subpedunculate, somewhat nodding, cylindrical, remote; fruit oblong, entire at the orifice, as long as the oblong acute glume.

53. C. aquatilis Wahl.: sterile spikes numerous or one erect, oblong, about 3-sided; fertile mostly 3, on short peduncles, cylindric, thick-clavate-above, dense flowered, suberect, sometimes sterile at the apex; fruit elliptic, sublenticular, smooth, with the orifice entire and protruded, about equal to the ovate acutish scale.


2. With 3 stigmas.

84. C. barrattii Schue. & Torr.: sterile spikes subgeminate; fertile about 3, oblong-cylindrical, sterile at the summit, nodding, distant; fruit oblong, subtriquetrous, somewhat scabrous, orifice subentire; a little shorter than the ovate lanceolate glumes; leaves glaucous.


85. C. trichocarpa Muhl.: sterile spikes 2—4, pedunculate, (sometimes sterile at the summit;) fertile 3, distant, pedunculate, erect, oblong-cylindrical; fruit ovate-lanceolate, acuminate, bicuspidate, hairy, longer than the ovate acuminate glume.


86. C. filiformis Linn.: sterile spike geminate; fertile 2, ovate-oblong, sessile, distant; fruit elliptical, villous, bifurcate, as long as the ovate-lanceolate somewhat awned glume; leaves convolute.


87. C. vesicaria Linn.: sterile spikes 3; fertile mostly 2, pedunculate, cylindric; fruit oblong, inflated, acuminate-rostrate, bicuspidate, longer than the lanceolate glume; culm acutely triquetrous.


88. C. ampullacea Willd.: sterile spikes 3; fertile 2—3, cylindric, short pedunculate, erect; fruit subglobose, inflated, rostrate, bifu-ray, longer than the lanceolate glume; culm obtusely triangular.

Hab. Meadows. Mass. N. to Arctic Amer.

89. C. retrorsa Schue. & Torr.: sterile spikes about 3, lower one often fertile at the base; fertile spikes about 5, approximate, (and clustered in a subcorymbose manner,) oblong-cylindrical, inclusely pedunculate, lowest one often remote; fruit ovate, inflated, reflexed, rostrate, half as long as the lanceolate glume.


90. C. schweinitzii Decr.: sterile spikes 2, upper one elongate, pedunculate; fertile 3, oblong-cylindrical, subpendulous, rather remote,
inclusely pedunculate; fruit oblong-ovate, acuminate-rostrate, inflated, bifurcate, longer than the lanceolate attenuate glume.


91. *C. bullata* Schk.: sterile spikes 3; fertile 2, oblong-cylindrical, rather loose, exsertly pedunculate and somewhat nodding, distant; fruit ovate-globose, inflated, erect, smooth, costate, rostrate-acuminate, orifice bifid, twice as long as the lanceolate glume.


92. *C. pellita* Muhl.: sterile spikes 2, oblong; fertile 2, cylindrical, remote, erect, upper one sessile; fruit ovate, subtriquetrous, short-rostrate, hairy, bicuspidate, equal to the oblong awned glume.


93. *C. lacustris* Wild.: sterile spikes about 4; fertile 2—3, erect, oblong-cylindrical, short pedunculate; fruit oblong, many-nerved, sub-rostrate, smooth, bifurcate, somewhat longer than the oblong mucronate glume.


94. *C. longirostris* Schw. & Torr.: sterile spikes 3, short; fertile 2—3, cylindrical, loose, at length pendulous, long-pedunculate, sub-distant; fruit ovate, subglobose at the base, smooth, bifid, rostrum very long, longer than the lanceolate glume.

CELLULARES, OR FLOWERLESS PLANTS.

Plants without flowers and spiral vessels, composed chiefly of cellular tissue—Acotyledones, Juss.—Cryptogamous or Ætheogamous Plants of Authors.

Div. I. FILICOIDEÆ, OR FERN-LIKE PLANTS.

Obs. The following account of our Filicoid plants is the result of long and attentive study. In addition to my own collection, which embraces most of the American, and many foreign species, I have carefully examined the specimens in the herbarium of Muhlenberg, and in that of Mr. Schweinitz, which were generously loaned to me by that gentleman. I have also received specimens from friends in different parts of our country, especially from Dr. Asa Gray, N. Y., Dr. T. R. Ingalls, Louisiana, Prof. Hitchcock, Mass. To Dr. A. F. Holmes, of Montreal, I am indebted for an almost entire suite of Canadian ferns.

Order CXL. EQUISETACEÆ. De Cand. Lind.

Fructification in terminal spikes, composed of peltate several-sided scales, producing on their inner surface 4—7 elongated involucres, which contain the seeds. Seeds or sporules numerous, globose, surrounded by four elastic clavate filaments, which are dilated at the extremity.

Leafless plants, with whorled branches. Stem fistular, jointed; the joints separable and surrounded by membranous toothed sheaths.—The cuticle abounds in silex.

1. EQUISETUM. Linn.

Obs. The only genus of the order; the character therefore need not be repeated.

1. E. palustre Linn. : stems deeply furrowed, smooth; branched; branches simple, 5-sided, curved upwards; sheath subappressed, distant, cut at the apex into 10 fuscous teeth; spike oblong, blackish.
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Hab. Swamps. Arc. Amer. to Vir. May, June. 2f.—Stems 12—18 inches high, deeply sulcate and roughish; branches whorled and nearly erect. Spike an inch long, slender and blackish.

2. *E. syllecticum* Linn. : branches of both the fertile and sterile stems compound, scabrous, curved downwards, 3- or 4-sided; sheath loose, deeply cleft into membranous segments.

Hab. Low grounds. N. S. N. to Arc. Amer. May. 2f.—Stems 12—18 inches high.—Well characterized by its 4 or 5 whorls of compound branches.

3. *E. hyemale* Linn. : stems all simple, erect, very rough, naked, bearing spikes at the apex; sheaths short, whitish, black at the base and apex; teeth awned, at length caducous.


Hab. Borders of swamps. N. S. July. 2f.—Stems 2—3 feet high, erect, simple or with a few whorls of branches at the top. Sheaths numerous, short, with 15—20 narrow acute teeth. Spike brown, scarcely an inch long.

5. *E. fluviatile* Linn. : sterile stems branching, somewhat scabrous; branches numerous, angled; fertile ones with broad sheaths; teeth long, cuspidate.—E. telmateia Ehrh.

Hab. Buffalo, N. Y., and the shores of Lake Superior. Torr. 2f.—Fertile stems appearing first, a foot high. Sterile stems 2—5 feet high; with numerous joints and many long verticillate branches. Spike oblong.

6. *E. arvense* Linn. : sterile stems somewhat decumbent, with simple, square and scabrous branches; fertile ones erect, simple; sheaths incisely toothed, cylindrical; teeth acute.

Hab. Moist grounds. N. S. N. to Arc. Amer. April, May. 2f.—Fertile stems appearing first, 6—8 inches high, with large ovate brownish spikes. Sheaths 3—5, swelling, whitish at base, ending in 6—8 long acute teeth. Sterile stems a foot or more high, jointed, with whorls of ascending branches, which are 3 or 4-cornered.

7. *E. variegatum* Smith : cespitose; stems somewhat branched at base, naked, filiform, scabrous, bearing a blackish spike at the top; sheaths 3-toothed, blackish; teeth membranaceous, lanceolate, whitish, deciduous at the tips.—E. scirpoides Mich. Pursh.

Hab. Woods on high grounds. Can. and N. S. N. to Arc. Amer. July. 2f.—Stems 3—6 inches high, many from the same root, simple, filiform, 5-sided. Spike small, ovate, blackish.—Our plant differs in no respect from the foreign, except in its smaller size.
Order CXLI. FILICES. Juss. Lind.

Fructification only of one kind on the same individual. Capsules spiked or racemed, or mostly collected into clusters of various shapes (sori) upon the back of the leaf or frond, naked or covered with an involucre, often surrounded by an elastic ring and opening irregularly, or without a ring and opening with a regular fissure. Seeds or sporules minute.

Leafy plants with a horizontal stem or caudex (rhizoma.) Fronds before expansion, circinate, simple or variously branch-ed and divided.

Div. I. Polypodiaceæ. Capsules furnished with a vertical usually incomplete ring, bursting irregularly and transversely.

1. POLYPODIUM. Linn.

Sori roundish, scattered on various parts of the lower surface of the frond. Involucre none.

1. *P. vulgare* Linn.: frond smooth, deeply pinnatifid; segments oblong-obtuse, slightly serrate, the upper ones becoming gradually smaller; sori solitary—and *P. virginianum* Willd.


2. *P. hexagonopterum* Mich.: frond bipinnatifid, rather smooth, the lower divisions deflexed; segments lanceolate, obtuse, ciliate; lower ones deeply crenate; upper ones very entire; the lowest adnate-decurrent; sori minute; stipe smooth.

Hab. Moist woods. Can. to Car. July. 2f.—Fern 12—18 inches high. Frond forming a triangle in its circumference, connected by a sort of hexagonal membrane; the 2—3 lower divisions often deflected. Sori very minute.

3. *P. phegopteris* Linn.: frond bipinnatifid, the two lower divisions deflexed; segments linear-lanceolate, obtuse, entire, ciliate, the lower-most ones adnate-decurrent; veins hairy; sori solitary, marginal.—*P. connectile* Willd. and the American authors.

Hab. Shady woods. Throughout the U. S. July, Aug. 2f.—A careful comparison of specimens has satisfied me that our plant is not distinct from the foreign one. It differs from the preceding in having a chaffy stipe and larger sori. The whole fern also is smaller.
*** Frond ternate, bipinnate.

4. *P. dryopteris* Linn.: frond ternate, bipinnate, spreading and de-flexed; segments obtuse, somewhat crenate; sori marginal; root filiform, creeping.

**Hab.** Hanover, N. H. Big. Arc. Amer.; rare. July. 2f.—Fern a foot high. Root black, creeping and slender. Stipe slender, smooth and erect. Frond drooping, tender and of a light green colour.—Often confounded with the next, from which it is distinct.


**Hab.** Wet shady grounds. Can. to Penn. July. 2f.—Differs from the preceding in its more rigid habit, its somewhat duller green and paler confluent sori, as was first shown by Sir J. E. Smith. Mr. Charles S. Parker, of Liverpool, a very accurate botanist, informs me that *P. dryopteris* and *calcareum* are found in one locality, near Matlock, (Eng.) and that they preserve their distinct characters in cultivation.

2. **ONOCLEA.** Linn.

Capsules covering the whole lower surface of the frond. *Involucre* formed of the frond turned inwards, resembling a berry, opening but not expanding.

1. *O. sensibilis* Linn.: sterile fronds pinnate; pinnae lanceolate, acute, laciniate, upper ones united; fertile fronds bipinnate, resembling a compound spike, with recurved globular segments; rachis smooth.

**Hab.** Moist woods. Can. to Flor. July. 2f.—Fronds several, 12—18 inches high, with a long and smooth stipe; the fertile ones very narrow.

2. *O. obtusilobata* Schh.: sterile fronds pinnate; pinnae opposite, pinnatifid; segments rounded, lower ones gradually smaller, upper ones united; fertile fronds bipinnate; pinnules incised, recurved-globose, villose; stipe scaly.—*O. sensibilis var. obtusilobata* Torr.

**Hab.** Low grounds. Penn. Pursh. N. Car. Schweinitz. July. 2f.—Smaller than the preceding, and has the pinnae opposite, with rounded segments.—Mr. Schweinitz considers it quite distinct.

3. **ASPIDIUM.** Swartz.

Sori roundish or elliptical, scattered. *Involucre* roundish or kidney-shaped, umbilicated or opening on one side.

* Frond pinnate.

1. *A. acrostichoides* Willd.: frond pinnate; pinnae lanceolate, falcate, acute, ciliate-serrate, auricled at the upper angle of their base,
subsessile, upper ones smaller and alone fertile; sori at length confluent; stipe and rachis chaffy. — *Nephrodium acrostichoides* Mich.


2. *A. schweinitzii* Beck: frond pinnate; pinnae linear-lanceolate, falcate, doubly serrate, auricled at the upper angle of their base; sori on the upper pinnae, distinct, in two rows, one on each side of the midrib.

 Hab. N. J. *Schweinitz.* Near Philadelphia. Conrad.—Fern larger than the preceding and differing considerably in its appearance. Pinnae, especially the lower ones, deeply and doubly dentate-serrate, the teeth or scallations armed with stiff bristles. *Sori* continuing perfectly distinct.—Nearly allied to *A. auriculatum* of *Swartz,* and may be the same as that mentioned by Sir J. E. Smith under the description of that plant, (*Rees' Cyc. Supp. art. Aspidium,* said to have been brought from the N. W. Coast by Menzies.

** Frons bispinatifid.

3. *A. thelypteris* Willd.: frond pinnate; pinnae lanceolate, deeply pinnatifid, distinct, but sometimes crossing each other at base; segments oblong, acute, somewhat crenate, ciliate; sori marginal, at length confluent.

 Hab. Wet woods and swamps. Can. and N. S. July. 2f.—Fern a foot or more high. *Root* creeping. *Stipe* smooth; rachis and midrib often a little hairy. *Frond* lanceolate, deep green and delicate.

4. *A. noveboracense* Willd.: frond pinnate; pinnae linear-lanceolate, deeply pinnatifid; segments oblong, obtuse, entire, ciliate; sori marginal; stipe smooth.— *A. thelypteroides* *Swartz.*— *Nephrodium thelypteroides* Mich.

 Hab. Damp woods. Can. to Car. July. 2f.—Fern about the size of the last but of a more rigid habit. Segments of the *pinnae* usually quite entire and obtuse. *Sori* at length confluent and partly covered by the margin of the frond.—Closely resembles the preceding, from which it may still not be distinct.

5. *A. cristatum* Willd.: frond pinnate, nearly bipinnate, lanceolate-ovate; pinnae subcordate, oblong, pinnatifid; segments oblong, obtuse, dentate-serrate; stipe scaly.— *Nephrodium cristatum* Mich.

 Hab. Moist grounds. Can. and N. S. July. 2f.—Fern a foot or more high. *Frond* pale green, with a lanceolate-ovate outline. *Sori* large, in double rows, tawny when mature, mostly on the upper half of the frond.

6. *A. lanceaustriense* Spreng.: pinnae subopposite, lower ones triangular-ovate; segments toothed; stipe nearly naked.

 Hab. Woods. N. Y. Mass. N. J. ; not common. July. 2f.—Fern 18—24 inches high. *Stipe* nearly smooth. *Frond* large, much narrower and more rigid than in the preceding; it is also

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of a darker green. Sori large, distinct, very dark when mature.

7. A. goldianum Hook.: frond pinnate; pinnae deeply pinnatifid, lanceolate, acuminate; segments oblong, subacute, somewhat falcate, mucronate-serrate; sori in rows, one between the midrib and either margin of the segments.—A. flix mas Pursh.

Hab. Woods. Can. and N. S. July. 2f.—Fern 1 1-2—3 feet high.—Resembles A. cristatum more than any of our species, but can at once be distinguished by the greater breadth of the frond, giving it a different outline, and by the form of the pinnae, which are never broader at base; the segments also are longer and narrower, and slightly falcate.

*** Fronds bipinnate.

8. A. fragile Willd.: frond bipinnate; pinnules oblong, rather obtuse, incisely serrate or subpinnatifid; segments subentire; rachis winged; stipe chaffy at base.—A. tenue Pursh.—A. atomarium Willd. —Cyathea fragilis Smith.—Nephrodium tenue Mich.—Athyrium fragile Richardson.

Hab. Moist rocks. N. Y. Ver. Mass. N. to Arc. Amer. June, July. 2f.—A beautiful little fern, growing in lax tufts, 6—14 inches high. Stipe long and slender, dark coloured and a little chaffy at base. Frond delicate, deep green. Pinnules very variable in shape and in their divisions, some being quite acute, others obtuse and wedge-shaped. Sori large, numerous, pale, near the margins of the segments. Involucre somewhat cyathiform, at length lacerate and reflexed.—Our plant agrees precisely with the foreign, and I have no doubt of their identity.

9. A. marginale Willd.: frond bipinnate; pinnae lanceolate; pinnules oblong, obtuse, decurrent, crenate, lower ones almost pinnatifid at base; sori marginal; stipe chaffy.—Nephrodium marginale Mich.

Hab. Rocky woods. Can. to Car. July. 2f.—Fern 12—18 inches high. Stipe chaffy especially near the root. Frond light green, the upper part only fruit-bearing. Involucre orbicular, with a lateral sinus.

10. A. spinulosum Willd.: frond bipinnate; pinnules oblong, decurrent, with deep cut prickly serratures; involucre orbicular, with a lateral sinus—and A. aculeatum Pursh.?

Hab. Shady woods. Penn. to Vir. July. 2f. Pursh.—Stipe long, scaly at the lower part. Frond broad, with the segments decurrent so as to form a border to the partial rachis. Sori small and rather distinct.—Doubtful as an American plant.


Hab. Shady woods. Can. and N. S. July. 2f.—Fern 1—2 feet high. Stipe long and chaffy. Frond varying in the division of the pinnae, being sometimes scarcely bipinnate, but sometimes almost tripinnate. Sori numerous, rather large, distinct, brownish when mature.
12. A. bulbiferum Willd.: frond bipinnate, lanceolate, attenuate above; segments opposite, oblong, obtuse, serrate, the lower ones pinnatifid; rachis bearing bulbs; sori minute.—Nephrodium bulbiferum Mich.


13. A. filix-famina Willd.: frond bipinnate; pinnules oblong-lanceolate, incisely serrate; serratures few-toothed, somewhat acute; sori oblong, straight.—Asplenium filix-famina Spreng.

Hab. Low shady grounds. Can. to Vir. Pursh. Bethlehem, Penn. and N. W. Terr. Schweinitz. July. 2f.—Fern growing in tufts, 1 1/2—2 feet high. Frond with the general outline oblong-lanceolate. Sori small, one on each segment of the pinnules, inserted laterally into its minute midrib, oblong and straight, but at length by the pushing back of the involucre becoming kidney shaped and appearing nearly round, but always remaining distinct.

14. A. asplenioides Willd.: frond bipinnate; pinnules linear-lanceolate, incisely serrate; serratures 2—3-toothed; sori oblong, lunate, at length confluent.—Nephrodium asplenioides Mich.—Asplenium athyrium Spreng.

Hab. Shady woods. Throughout the U. S. and Can. July. 2f.—Resembles the preceding, but has a broader outline, and has the sori longer and lunate and parallel to each other, giving it the appearance of an Asplenium. The involucre is larger and remains firmly attached to the frond, &c.

15. A. angustum Willd.: frond bipinnate; pinnules lanceolate, incisely-serrate; serratures sub-bidentate; lower tooth longer; sori oblong lunate; stipe smooth.—Nephrodium filix-famina Mich.—Asplenium michauxii Spreng.

Hab. Shady woods. Can. to N. Car. July. 2f.—Though allied to the two preceding, this appears to be a good species. The frond is smaller, being seldom more than a foot high; it has also a narrower outline.—Dr. Hooker, however, considers it a narrow-fronded variety of A. filix-famina.

4. WOODSIA. Brown.

Sori roundish, scattered, having beneath an involucre which is cut at the edge into many capillary segments.

1. W. icleensis Brown: frond pinnate; pinnæ lanceolate, deeply pinnatifid, with numerous nearly uniform oblong segments.—Polypodium icleense Willd.

Hab. Rocky banks of streams. Can. and N. S. June. 2f.—Fern 4—6 inches high, in dense tufts. Stipe brownish and scaly below. Frond oblong or lanceolate; pinnæ about 12, alternate. This is not the W. icleensis of Pursh.

2. W. hyperborea Brown: frond pinnate; pinnæ somewhat cordate,
rounded, pinnatifid; segments rounded, unequal.—Polypodium hyperboreum Willd.

HAB. Rocks. Can. and N. S. July. 24.—Resembles the preceding, but is sometimes quite small, and differs in having the pinnæ as well as the segments more rounded and less deeply pinnatifid, except at their base, where the bottom pair of segments are often so deeply separated as to form two little pinnules.

3. W. rufidula Beck: frond bipinnate; pinnules hairy, oblong, obtuse, pinnatifid, with obtuse segments; sori at length confluent; stipe and rachis hairy.—Aspidium rufidulum and Woodsia ilicensis Pursh.—Nephrodium rufidulum Mich. Woodsia ilicensis? Big. Richardson's App. Hab. Rocks. Subare. Amer. to Car. July. 24.—Fern 6—8 inches high. Stipe dark brown, densely clothed with lighter coloured woolly hairs. Frond decidedly bipinnate in full grown specimens, hairy on both sides.—The W. ilicensis and hyperborea of Brown resemble each other closely. This differs from both in its bipinnate frond and in its hairy instead of scaly stipe, rachis and frond.

4. W. perriniana Hook. & Grev.: minutely glandular-pilose; frond bipinnate; pinnules pinnatifid; segments rounded, bidentate; sori submarginal; involucre subhemispheric, at length with dentate spreading segments; spike somewhat chaffy.—Alsophila perriniana Spreng.—Hypopeltis obtusa Torr. Aspidium obtusum Willd. Pursh.

HAB. Rocks. N. Y. to Car.; rather rare. July. 24.—Fern 8—10 inches high, erect. Stipe straw coloured. Sori at length much crowded together.—Habit similar to the Woodsias, "and except that the involucre is larger in proportion to the sorus, and that in the young state it covers more fully the capsule, and is not margined with hairs, there is not a difference even in the characters of the fructification."—Hook. & Grev. Icon. Filic.

5. ASPLENIUM. Linn.

Sori linear, transverse, scattered. Involucre arising from the lateral veins and opening towards the central nerve or rib.

* Frond undivided.

1. A. rhizophyllum Willd.: frond lanceolate, stipitate, subcrenate, auriculate-cordate at base, the point very long filiform and rooting.

   b. pinnatifidum Muhl: fronds pinnatifid at base; lobes roundish-ovate; the lower ones crenate.—A. pinnatifidum Nutt.

HAB. Wet rocks. Can. to Car. July. 24.—Fronds several from the same root, 6—10 inches long, somewhat triangular, with a very long and linear point, which is bent to the ground and strikes root. Var. b. passes into the former by scarcely perceptible variations.

** Frond pinnate.

2. A. angustifolium Mich.: frond pinnate; pinnæ alternate, upper ones subopposite, linear lanceolate, serrate towards the point, some-
what repand, the base truncate on the upper side, rounded on the lower.

**Hab.** Moist woods. Can. and N. S. July. 2f.—Fern 12—18 inches high. Sterile fronds forming a circle with the fertile ones smaller and central. Sori diverging like veins from the midrib, at length confluent.

3. **A. ebeneum Willd.** : frond pinnate; pinnae sessile, lanceolate, somewhat falcate, serrate, auricular on the upper side of their base; spike smooth and polished.—**A. trichomanoides Mich.**—**A. polypodioides Swartz. Muhl.**


4. **A. trichomanes Linn.** : fronds pinnate; pinnae roundish-oblong, obtuse, crenate, the base truncate and somewhat cuneate; stipe smooth and dark coloured—and **A. melanocaulon Willd.**

**Hab.** Shady rocks. Can. to Car. July. 2f.—A delicate fern 4—8 inches high. Stipe shining, blackish-purple. Frond dark green. Sori linear, 5—6 to each pinnule, becoming roundish when old.—Distinguished from the preceding by its smaller size and by having the pinnae roundish, and acute at base.

*** Frond bipinnatifid.

5. **A. thelypteroides Mich.** : frond pinnate; pinnae lanceolate, sessile, acuminate, pinnatifid; segments oblong, obtuse, denticulate.

**Hab.** Shady banks of streams. Can. to Car. July. 2f.—Fern 1—2 feet high. Stipe smooth, not coloured. Frond ovate, fine green; pinnae long, pinnatifid. Sori oblong and oblique, forming two rows, one on each side of the partial ribs.—Resembles Aspidium thelypteris.

**** Frond bipinnate.

6. **A. ruta-muraria Linn.** : frond bipinnate at the base, simply so at the top; segments rhomboid-wedge-shaped, obtusely denticulate at the extremity.

**Hab.** Rocks. N. Y. to Car.; not common. July. 2f.—A small fern growing in tufts, 2—4 inches high. Frond spreading, rather rigid, glaucous green, bi- and tri-pinnate. Sori linear, slightly oblique, at length darker and confluent.

7. **A. montanum Willd.** : frond smooth, bipinnate; pinnules oblong-ovate, pinnatifid; segments 2—3 toothed at the apex.—**A. adiantum nigrum Mich.**

**Hab.** Mountain rocks. Bethlehem, Penn. S. to Car. Schweinitz. July. 2f.—A fern growing in tufts, 4—8 inches high. Frond having a narrow outline, mostly bipinnate; but more or less divided according to its size. Sori linear, at length confluent.—Differs from the foreign **A. adiantum nigrum** in being much smaller, and in having the segments more obtuse.
6. WOODWARDIA. Smith.

*Sori* oblong, distinct, parallel with the ribs of the frond on either side. *Involucre* superficial, arched, separating towards the rib.

1. *W. onocleoides* Willd.: sterile frond pinnatifid; segments lanceolate, repand, slightly serrulate; fertile frond pinnate; segments linear, entire, acute.—*W. angustifolia* Smith. Muhl.

**Hab.** Swamps. Can. to Flor.; not common. Aug. 24.—Fern a foot high, growing in tufts. *Frond* lanceolate, tapering at the top. *Sori* a 1-4 of an inch long, at length nearly covering the back of the pinnae.

2. *W. virginica* Willd.: frond very smooth, pinnate; pinnae sessile, lanceolate, pinnatifid; sori in interrupted lines near the midrib of the pinnae and segments.—*W. banisteriana* Mich.

**Hab.** Swamps. N. Y. to Geor. July. 24.—Fern 2 feet high. *Stipe* smooth. *Frond* having a lanceolate outline, light green, with the segments acute and falcate. *Sori* in double lines, at length confluent.

7. SCOLOPENDRIUM. Smith.

*Sori* linear, transverse, scattered. *Involucre* double, occupying both sides of the *sorus*, superficial, at length opening longitudinally.

*S. officinari*um Willd.: frond simple, ligulate, entire, cordate at base.—Asplenium *scolopendrium* Linn.

**Hab.** Shady woods among loose rocks near Onondago, N. Y. Pursh. July. 24.—Fern rather a short stipe, 8–15 inches long, 2–3 wide, fine green, paler beneath. *Sori* 1–2 to 3–4 of an inch long, oblique to the midrib.—Pursh could hardly have been mistaken in this plant, and yet it is singular that it has never been found in our country by any other botanist.

8. PTERIS. Linn.

*Sori* in a continuous marginal line. *Involucre* formed of the inflected margin of the frond, opening inwards.

1. *P. atropurpurea* Linn.: frond pinnate; lower divisions ternate or pinnate; segments lanceolate, obtuse, very entire, obliquely truncate or subcordate at base.


2. *P. gracilis* Mich.: frond pinnate; pinnae lanceolate, obtuse, alternate, sessile, lower ones pinnatifid; fertile ones entire; sterile ones crenate, round-obtuse.—*Cheilanthes gracilis* Spreng.
FILICES.

Hab. On rocks. Can. and N. S. Aug. 24.—Smaller and of a much more delicate habit than the last. Frond with the stipe 4—6 inches high, smooth and shining.—Specimens of this plant which I found in abundance on the rocks near Whitehall, N. Y., were collated by Dr. Hooker and determined to be the true P. gracilis, and he also remarks that he cannot comprehend why Kaulfuss and Sprengel should make it a Cheilanthes.

3. P. aquilina Linn.: frond 3-parted; branches bipinnate; pinnae linear-lanceolate, lower ones pinnatifid, upper ones undivided; segments oblong, obtuse.

Hab. Dry woods. Can. to Flor. July. 24.—Fern 2—6 feet high, according to the soil. Stipe angular, dark coloured and polished, dividing into large opposite branches. Frond very large, pale green.—Dr. Hooker thinks that the plant which passes under this name among our botanists is the next.

4. P. caudata Linn.: frond pinnately 3-parted; sterile divisions bipinnate, with the segments linear, long, obtuse, and very entire; fertile divisions pinnate; segments rather remote, the lower ones pinnatifid, dentate at the base.

Hab. Rocky woods near streams. Penn. to Car. Pursh. Aug. If Dr. Hooker’s opinion is correct, this species is very common in the N. S.

9. ADIANTUM. Linn.

Sori oblong or roundish, marginal. Involucre membranaceous, arising from distinct portions of the frond turned in, opening inwards.

A. pedatum Linn.: frond pedate; divisions pinnate; pinnae oblong, somewhat lunate, with the upper margin incised; sori linear, stipe smooth.


10. CHEILANTHES. Swartz.

Sori roundish, distinct, situated at the margin of the frond. Involucre of membranous distinct inflexed scales, opening inwards.

C. vestita Willd.: frond bipinnate, hairy on both sides; pinnules pinnatifid; segments rounded, oblong, very entire; stipe and rachis hairy.


11. HYMENOPHYLLUM. Smith.

Sori in separate spots at the margin of the frond. Capsules sessile, inserted on a common cylindrical receptacle, within a
ACOTYLEDONOUS PLANTS.

2-valved involucre of the same texture as the frond; valves plane, outer one free.

_H. ciliatum Smith_: frond pinnate; lower divisions larger; upper ones gradually smaller, pinnatifid; segments linear-obtuse, bifid, ciliate, hairy on the veins; stipe and rachis winged and ciliate.—_Trichomanes ciliatum Stearns._

_Hab._ Trunks of trees in shady places. Penn. and Vir. 2f.—Pursh.

12. STRUTHIOPTERIS. Willd.

_Capsules_ densely covering the back of the frond. _Involucre_ scaly, marginal, opening internally.

_S. germanica Willd._: sterile fronds pinnate; pinnae pinnatifid, sessile; segments entire, rather acute; the lower ones somewhat elongated—and _S. pennsylvanica Willd._—_Onoclea struthiopteris Stearns._—_O. nodulosa Schk. Mich._

_Hab._ Low grounds. Can. and N. S. July. 2f.—One of our largest ferns, the _sterile fronds_ being often 3 feet high and arranged in a circular form, with a few much smaller _fertile_ ones in the centre.—I think there can be no doubt of the identity of our plant with the foreign _S. germanica._

13. DICKSONIA. L’Herit.

_Sori_ punctiform, marginal, roundish and distinct. _Involucre_ double; outer one superficial, opening outwards; the other marginal and opening inwards.


_Hab._ Shady places. Can. to Vir.; common. July. 2f.—Fern 2—3 feet high, growing in tufts, of a delicate habit. _Stipe_ nearly smooth below, but becoming hairy as it passes into the rachis. _Frond_ large and long, lanceolate, somewhat acuminate, yellowish-green. _Sori_ solitary, minute, near the divisions of the segments.—A true Dicksonia.

Div. II. OSMUNDACEÆ. _Capsules_ destitute of a ring, reticulated, striated with rays at the apex, opening lengthwise and usually externally.

14. OSMUNDA. Linn.

_Capsules_ subglobose, pedicelled, radiate-striate, or wrinkled, 2-valved, with a hinge at the joining of the valves, either occupying the lower surface of the contracted frond, or disposed in the shape of a raceme or panicle. _Involucre_ none.
* Leafy frond bearing fruit.

1. *O. claytoniana* Linn.: frond pinnate; pinnae pinnatifid, with smaller fertile ones at the top.

_Hab._ Wet grounds. Cambridge, N. Y. _Stevenson._ Penn. _Conrad._ May. 2d.—Frond 12–18 inches high; pinnae obtuse, tomentose at the axils; segments entire. Fruit terminal, bipinnately panicked, erect, ferruginous.—Identified by Muhlenberg with *O. interrupta* Mich., and by Pursh with *O. cinnamomea*. From the former it differs in having the fructification terminal, and from the latter by having the pinna more obtuse, the segments closer and not so deep, and by not being lanuginous. See _Conrad in Jour. Phil. Acad._ vi. 39.

2. *O. interrupta* Mich.: frond pinnate, smooth; pinnae nearly opposite, pinnatifid; segments oblong, subacute, entire; some of the intermediate pinnae fruit-bearing.

_Hab._ Low grounds. Can. to Vir. June. 2d.—Fern 1–2 feet high. Frond with 2 or 3 central pairs of pinnae fertile dark brown and shorter than the sterile ones.

3. *O. spectabilis* Willd.: frond bipinnate, all fruit bearing at the summit; pinnales oblong, distinct, serrulate; raceme very large, decom- pound.—*O. regalis* Mich. _Torr._

_Hab._ Low grounds and swamps. Can. to Flor. July. 2d.—Fern 3–4 feet high, of a grayish colour, with numerous spreading branches.—Diffsers from the foreign *O. regalis* by its being smaller, and of a more rigid texture, and by the distinct petiolation of the pinnales which are not lobed at base.

** Fertile fronds separated.

4. *O. cinnamomea* Linn.: sterile frond pinnate; pinnae pinnatifid; segments ovate-oblong, obtuse, very entire; fertile frond bipinnate, woolly, contracted; stipe woolly.

_Hab._ Low grounds. Can. to Flor. Aug. 2d.—Sterile fronds from 2–5 feet high, arranged in bundles or circles, with a few much smaller fertile ones in the midst.

15. **LYGODIUM.** _Swartz._

_Capsules_ sessile, ovate, in 2-ranked little spikes, which issue from the margin of the frond, radiate-striate, or wrinkled, opening on the inner side, from the base to the summit. _In-volute_ scale-like, covering each capsule.

_L. palmatum_ _Swartz._: stem flexuous and climbing; fronds conjugate, cordate, palmate, with 5 lobes; lobes entire, obtuse; spikelets oblong-linear, in a compound terminal spike.—_Hydroglossum palmatum_ Willd. _Pursh._—_Cleisium paniculatum_ _Mich._

_Hab._ Low woods. Mass. to Car.; rare. July. 2d.—Stem climbing, 3–4 feet long, smooth and slender. _Petioles_ alternate, forked at a short distance from the stem, and supporting 2 leaves or fronds, which are divided into 5–9 oblong obtuse
lobes. *Fertile fronds* variously divided into small linear segments, with the sori in 2 imbricated rows.

16. SCHIZEA. Smith.

*Spikes unilateral, flabellate, aggregate. Capsules* with radiating furrows at the top, somewhat turbinate, bursting laterally, sessile. *Involucre* continuous, formed of the inflexed margin of the spikes.

*S. pusilla* Pursh: frond simple, linear-compressed, tortuous; spikes few, conglomerated at the summit of a long slender stipe.—*S. tortuosa* Muhl.

Hab. Pine barrens near Quakers' Bridge, N. J. Aug. 2f.—A very small fern, with numerous cespitose *fronds*, which are about 2 inches long. *Stipe* 3—5 inches long, filiform, with a few brownish second spikes.—It has been found in Newfoundland and in the Falkland Islands, but the only intermediate locality known is that of N. J.—Cooper in *Ann. N. Y. Lyc.* ii. 266.

Div. III. Ophioglossae. *Capsules of one cell, adnate at the base, subglobose, coriaceous, opaque, destitute of a ring, not cellular, (sometimes connate,) half 2-valved.*

17. OPHIOGLOSSUM. Linn.

*Capsules* round, smooth, 1-celled, 2-valved, transversely opening, disposed upon an articulated 2-ranked spike.

1. *O. vulgatum* Linn.: spike cauline; frond simple, oblong-ovate, obtuse, closely reticulate.

Hab. Low woods. N. S. June. 2f.—Fern smooth and succulent, 6—8 inches high, bearing a single entire subsessile frond. *Spikes* about an inch long, on a slender peduncle.—Dr. Gray has found 2 or 3 specimens of a fern which resembles this in its specific character, but is scarcely 2 inches high. It may prove on further examination to be a distinct species. If so, I would propose for it the name of *O. Grayi*.


Hab. Low grounds. N. J. to Car. May. 2f.—Fern 6 inches high. *Frond* 1 1-2 inch long and an inch broad, reticulate.

18. BOTRYCHIUM. Swartz.

*Capsules* subglobose, 1-celled, 2-valved, distinct, sessile, smooth, coriaceous, disposed in spikes or racemes, opening transversely.

1. *B. simplex* Hitchcock: scape with one frond above; frond ternate, pinnatifid; segments cuneate, obovate, incised.

Hab. Dry woods. Can. N.Y. & Mass. June. 2f.—Fern 2—6 in-
ches high. Frond solitary, from a torn membranaceous sheath, divided into 3 or 4 unequal segments or pinnatifid; the segments often much cut. Spike subcompound, unilateral and interrupted.—See Hitchcock in Sill. Jour. vi. 103.

2. B. fumarioides Willd. : scape naked; frond smooth, radical, 3-parted, bipinnate; pinnules lunate, crenate; spikes bipinnate, and B. obliquum Muhl.—B. fumarioides var. obliquum Torr.—Botrypus lunarioides Mich.

Hab. Shady woods. N. Y. to Car. June. 2f.—Fern 9—12 inches high. Frond petioled, mostly ternate, but often more compound; segments lunate, closely resembling those of B. lunaria. Capsules in double rows on the branchlets.—I have carefully examined an authentic specimen of B. obliquum in the herbarium of Mr. Schweinitz, but can observe nothing to distinguish it from this species.

3. B. dissectum Willd. : scape with the frond near the base; frond ternate, thrice pinnatifid; segments decurrent, linear, wedge-shaped, sharply toothed at the end.


4. B. Virginicum Scwartz: scape bearing the frond in the middle; frond 3-parted, bipinnatifid; segments obtuse, about 3-toothed; spikes bipinnate, divaricate—and B. gracile Pursh.—Botrypus Virginicus Mich.

Hab. Shady woods. Can. to Car. June, July. 2f.—Fern often 18—20 inches high. Frond near the middle of the stipe, divided into 3 principal branches, which are again variously divided. Spike pinnate or bipinnate, smooth or a little hairy.

Order CXLII. LYCOPODIACEÆ. De Cand. Lind.

Fructification axillary or spiked, composed of two kinds of 1—3-celled, 2—3-valved capsules, some containing minute granules, others a few larger corpuscles. Stems herbaceous or woody, simple or branched, erect or creeping. Leaves undivided, small, numerous.

1. LYCOPODIUM. Linn.

Capsules 1-celled, axillary, sessile; some 2-valved, filled with a farinaceous substance; others 3-valved, containing 1—6 globose corpuscles.

* Spikes peduncled.

1. L. Carolinianum Linn.: stem creeping; leaves somewhat 2-ranked, spreading, lanceolate, very entire; peduncle erect, solitary, elongated, 1-spiked; bracts sublanceolate, entire.

Hab. Low grounds. Mass. to Car. July. 2f.—A creeping
plant, keeping close to the ground in muddy soils. Peduncle erect, 3—4 inches high, slender, with a single spike.

2. *L. clavatum* Linn.: stem creeping, with ascending branches; leaves scattered, incurved, ending in hairs; spikes in pairs, rarely in threes, cylindrical, pedunculate; scales ovate, acuminate, erosely denticulate.—*L. tristachium* Nutt. not of Pursh.—*L. integrifolium* Goldie.

Hab. Pine woods. Can. and N. S. W. to Michigan. July. 2f.—Stem closely trailing on the ground, very long, rooting and throwing up fertile branches 4—6 inches high. Leaves linear-lanceolate, entire or serrulate. Spikes yellowish, erect.

3. *L. complanatum* Linn.: stem trailing, with dichotomous branches; leaves 2-rowed, connate, spreading at the tips; superficial ones solitary, appressed; peduncles elongated, supporting 4 terete cylindrical spikes.

Hab. Woods. Can. to Car. N. to Arc. Amer. July. 2f.—Stem 2—10 feet long, dichotomously branched. Leaves 4-rowed, short; two larger 2-rowed; smaller ones close pressed to the flattened sides of the stem. Spikes 2—4, on elongated peduncles.

4. *L. sabinefolium* Willd.: stem erect; branches alternate, dichotomous; leaves lanceolate, acute, in 4 rows, appressed, convex; spikes terete; scales subcordate, acuminate.—*L. alpinum* Mich.

Hab. White Mountains, N. H. N. to Labrador. W. to Michigan. July. 2f.—This species, of which I have specimens from the White Mountains, which agree in all respects with those in the Herbarium of Mr. Schweinitz, differs strikingly in appearance from *L. alpinum*.—The stem is erect, the leaves are large and somewhat spreading, lanceolate, acute or acuminate, sometimes denticulate. The whole plant also is larger, and the branches much longer.

**Spikes sessile.
† Leaves in all directions.

5. *L. dendroides* Mich.: stem erect; branches alternate, crowded, dichotomous, erect; leaves linear-lanceolate, in 6 equal rows, spreading; spikes numerous, terminal, sessile.

b. *obscurum* Torr.: branches spreading; spike mostly solitary, sessile.—*L. obscurum* Linn. Big.

Hab. Shady woods. Can. to Car. July. 2f.—Stem 6—8 inches high, with numerous erect branches. Spikes 1—4 on each plant, an inch long, with broad ovate scales.

6. *L. annotinum* Linn.: stem creeping; branches ascending, dichotomous; branches simple; leaves in 5-rows, linear-lanceolate, mucronate, serrulate, spreading; spike oblong, solitary, sessile, terminal.

Hab. Mountain woods. N. S. N. to Arc. Amer. July. 2f.—Stem creeping, sending up 4—8 ascending branches, which are 6—8 inches high. Leaves spreading and somewhat reflexed
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when the plant is advanced. Spike solitary, about an inch long.
—Resembles L. sabinfolium, but may be distinguished by its leaves.

7. L. inundatum Linn.: stem creeping, somewhat branching; branches simple, solitary, erect, with a single sessile leafy spike at the extremity; leaves linear, scattered, acute, entire, curved upwards.


8. L. selaginoides Linn.: stem filiform, creeping; branches suberect, the flowering ones simple; leaves scattered, lanceolate, somewhat spreading, ciliate-denticulate; spike terminal, solitary, sessile, leafy.


9. L. alopecuroides Linn.: stem creeping, somewhat branched; branches nearly simple, elongated, ascending, with a single sessile leafy spike at the summit; leaves linear-subulate, ciliate-dentate at base, spreading.

Hab. Sphagnous swamps. N. Y. to Flor. Aug. 2f.—Stem long; branches densely leaved, 6—8 inches high. Leaves narrow, shining and somewhat spreading. Spike solitary, more than an inch long, very leafy.

Walking Fern.

10. L. rupestre Linn.: stem creeping, with ascending subdivided branches; leaves scattered, imbricate, linear-lanceolate, ciliate, ending in hairs; spike solitary, sessile, terminal.

Hab. Rocks and side hills. Can. to Car. July. 2f.—A small creeping plant of a grayish-green colour, differing much in appearance from the other species. Leaves many-rowed, ending in hairs, which give the summit of the branches a whitish aspect. Spike short, square, and scarcely distinguishable from the stem below.

† Leaves 2-ranked.

11. L. apodum Linn.: stem branching and rooting near the base; leaves 2-rowed, roundish-ovate, membranaceous, acute, denticulate, flat; with superficial ones alternate, acuminate; spikes terminal, sessile, subsolitary,—and L. albidatum Muhl. Willd. Pursh.

Hab. Wet rocky places. N. Y. to Flor. July, Aug. 2f.—A small creeping species, which can be recognized at once by its 2-ranked, thin and membranaceous leaves.—Probably identical with the foreign L. helveticum.

*** Capsules axillary.

12. L. lucidulum Mich.: leaves in 8-rows, linear-lanceolate, denticulate, acute, spreading or reflexed; stem ascending, bifid; fruit axillary, not in a spike.

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Hab. Low grounds. Can. to Car. July. 4. — Stem 8—12 inches long, nearly erect, simple or bifid, dark green. Leaves longer than in any of the preceding. Fruit axillary, sessile, about an inch from the top of the stem, semicircular. — The stem often bears bulbs instead of capsules.

13. L. selago Linn.: stem erect, fastigiate, dichotomously branched; leaves scattered, linear-lanceolate, pungent, entire, imbricate, rigid; fruit axillary — and L. recurvum Willd.

Hab. Highest summits of the White Hills, N. H. Big. Arctic Amer. 2l. — Stem 3—8 inches high, rigid, with the branches of the same thickness from top to base. Leaves in about 8 rows, spreading, shining.

2. ISOETES. Linn.

Capsule membranaceous, not opening, immersed at the base of the frond, one-celled. Seeds angular, attached to numerous filiform receptacles.

L. lacustris Linn.: leaves subulate, flat, somewhat terete, fleshy, dilated and imbricate at base.

Hab. Bottoms of rivers, near Oswego Falls, N. Y. Pursh. Penn. Nutt. & Schult. 2l. — Root broad and fistulous, with simple fibres. Fronds 2—5 inches long, dilated and imbricate at base, all radical, flat above, convex beneath. Fruit monoecious; sori cordate-oval, immersed in a corresponding cavity at the base of the frond.

Order CXLIII. MARSILEACEÆ. Brown. Lind.

Fructification radical. Involucre subspherical, not opening, coriaceous or membranaceous, 1 or many-celled. — Aquatic.

1. SALVINIA. Micheli.

Involucre 4—9, imbricate, connate, resembling an unilocular capsule. Spores inserted upon a central receptacle.

S. natans Willd.: leaves elliptic, subcordate, obtuse, with facicles of hairs above; fruit sub sessile, aggregated. — Marsilea natans Linn.


2. AZOLLA. Lamk.

Monoecious. Sterile ovate, of two cells separating transversely; the upper containing several angular stalked bodies. Fertile on the same plant; capsules numerous,
stalked, globose, of one cell and one valve, and in an ovate, close involucre. **Seeds** several, angular.

*A. caroliniana* Willd.: leaves two-ranked, imbricate, ovate-oblong, obtuse, spreading, red beneath.

**Hab.** Lakes, &c. N. S. and throughout the Southern and Western States. ©.—A small plant floating on water, and somewhat resembling a Jungermannia. Leaves all radical, 2—5 inches long, subulate, fleshy, semi-cylindrical.

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**ADDITIONS AND CORRECTIONS.**

Page 18, 5th line from the top, for "radicals" read radical.

Page 93, 7th line from the top, for "Teprosia," read Tephrosia.

Page 96, 1st line, for "CERASSUS" read CERASUS.

Page 114, 16th line from the top, for "declinous" read diclinous.

Page 125, 20th line from the top, after "many-seeded" add when mature.

Page 222, before VACCINEÆ, insert

12. LEIOPHYLLUM.


Decandria. Monogynia.

*L. buxifolium* Ell.—*Ledum buxifolium* Ait.—*Ammyrsine buxifolium* Pursh.

**Hab.** Pine barrens, N. J. and high mountains, S. Car. May, June. ©.—A small evergreen shrub 6—18 inches high, branching, smooth. Leaves small, oval-lanceolate, entire, smooth, coriaceous, with the margin revolute. *Flowers* numerous, white, in small terminal corymbs. Sand Myrtle.

Page 277, 17th line from the bottom, for "radicle" read radical.

Page 308, 9th line from the top, after "Style simple," add Nut.

Page 310, 17th line from the top, for "common" read common.

Page 326th, 22d line from the top, for "Bchela" read Betula.

Page 337 and 339, for "coniferae" read coniferae.

Page 390, 19th line from the top, for "Agrostris" read Agrostis.

Page 394, after the 6th line, insert

**Flowers in panicles.**

Page 417, 12th line from the top, "Lymnetis" read Limnetis.

Page 420, 11th line from the bottom, for "Thrb." read Thumb.

Page 429, 22d line from the bottom, for "Killingia" read Kyllingia.
The Names of the Orders are printed in small capitals—the Genera in roman—Synonyms in italic. The figures occurring after the letter s, also refer to the Synonyms of the Genus.
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*Note: The index entries are not converted to natural text format.*