Manual of botany, for the Northern and Middle States of America : containing generic and specific descriptions of the indigenous plants and common cultivated exotics, growing north of Virginia ; to which are prefixed, the natural and artificial classes and orders of Linneus ; and the natural orders of Jussieu, with the medicinal properties of each order / by Amos Eaton, A.M.

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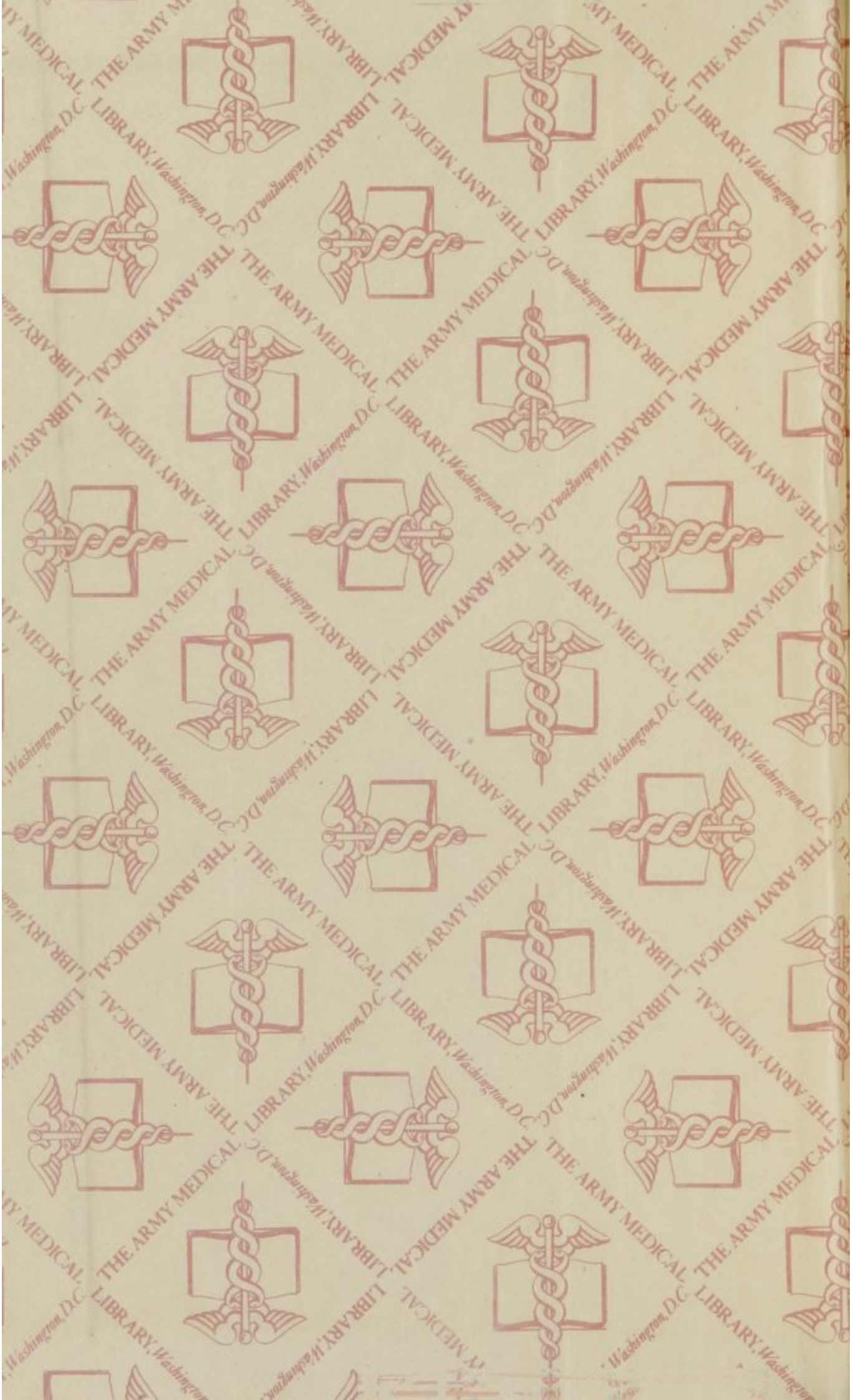
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MANUAL

OF

BOTANY,

FOR THE

NORTHERN AND MIDDLE STATES OF AMERICA.

CONTAINING GENERIC AND SPECIFIC DESCRIPTIONS OF THE INDIGENOUS PLANTS AND COMMON CULTIVATED EXOTICS, GROWING NORTH OF VIRGINIA.

TO WHICH ARE PREFIXED,

THE NATURAL AND ARTIFICIAL CLASSES AND ORDERS OF LINNEUS; AND THE NATURAL ORDERS OF JUSSIEU, WITH THE MEDICINAL PROPERTIES OF EACH ORDER.

BY AMOS EATON, A. M.

Professor of Botany and Chemistry in the Vermont Medical Institution, which is connected with Middlebury College, and Lecturer in the Troy Lyceum; Member of the American Geological Society; Corresponding Member of the New-York Lyceum of Natural History, and Honorary Member of the Hudson Lyceum.

"THAT EXISTENCE IS SURELY CONTEMPTIBLE, WHICH REGARDS ONLY THE GRATIFICATION OF INSTINCTIVE WANTS, AND THE PRESERVATION OF A BODY, MADE TO PERISH." *Linneus.*

THIRD EDITION, REVISED AND CORRECTED.

ALBANY:

PRINTED AND PUBLISHED BY WEBSTERS AND SKINNERS.

1822.

ANNEX
BOTANY

NORTHERN DISTRICT OF NEW-YORK, ss.

BE IT REMEMBERED, That on the twelfth day of May, in the forty-first year of the Independence of the United States of America, WEBSTERS & SKINNERS, of the said district, have deposited in this office the title of a book, the right whereof they claim as proprietors, in the words following, to wit:

"A Manual of Botany for the Northern and Middle States. Part. I. Containing Ge-
"neric Descriptions of the Plants to the North of Virginia, with references to the Natu-
"ral Orders of Linnæus and Jussieu. Part II. Containing Specific Descriptions of
"the Indigenous Plants, which are well defined and established; and of the Cultivated
"Exotics. By Amos Eaton, A. M. Lecturer on Botany, Mineralogy and Chemistry;
"Corresponding Member of the Lyceum of Natural History of New York. Second
"edition, corrected and enlarged."

In conformity to the act of the Congress of the United States, entitled "an act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned," and also to an act entitled "an act supplementary to an act entitled an act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned, and extending the benefits hereof to the arts of designing, engraving, and etching historical and other prints."

RICHARD R. LANSING,
Clerk of the N. District of New-York.

PREFACE

TO THE THIRD EDITION.

The plan of this Manual having received the public sanction, which has been manifested by the rapid sale of the last edition, no material alterations are now made. Though synonyms and authorities are given, they are so economically introduced, by abbreviations and marginal notes, that the simplicity of the work is not affected by them.

The localities are greatly improved. There has been more done in regard to the correct location of plants, indigenous to our Northern and Middle States, since the second edition of this work was prepared for the press, than ever before. We are now enabled to assume a general character for our mountainous or highly elevated districts, and perhaps very nearly to settle the true limits to our *omnibus locis* character.* Particular localities may now almost be classified; and it is to be hoped two years more will enable us to adopt a set of characters more satisfactory than those which refer to artificial districts.†

The plants at Boston and New-Haven are so nearly

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* See page 151.

† I mean characters analagous to those on page 151, which represent mountainous and maritime districts. The following are some of the resources to which I am indebted for improvements in the localities of plants:—Dr. Torrey, Mr. Cooper, and others, have minutely examined the plants in the vicinity of New-York. Those growing in the vicinity of Philadelphia have been attentively examined by Dr. W. P. C. Barton, Z. Collins, Esq. and Mr. Nuttall. Near Newburgh and Poughkeepsie, by the botanical classes of Mr. P. Dudgeon—near Hudson and Catskill, by my class at Hudson, and the Hudson and Catskill Lyceums—near Troy, Albany, Schenectady and Waterford, by Mr. Tracy, and Drs. James, Beck, Hale, Robbins, Marvin and Watkins—that part of Vermont, and of this

similar, that I have left out the abbreviated character for Boston; but have given the name in full, when a reference to the latter place was necessary.

In the preface to the second edition it was observed, that the cryptogamous part, beyond the Ferns, was very defective. That part of the science was then in such a state of fluctuation and uncertainty, that the editors of the Edinburgh Encyclopoedia declared, they could find nothing on that subject which it would be prudent to adopt. The present edition of this Manual happens at the precise time to be first in presenting to American botanists a correct system of the Cryptogamia.

Acharius has given his latest improvements in the order Lichenes. Bridel has completed his arrangement of the Musci; and Agardh has closed his excellent system of Algae. By adding the Hepaticae from De Lamarck and De Candolle, and the Fungi from Persoon's Synopsis methodica Fungorum, together with a few later improvements, a very satisfactory system is obtained. All these, as far as they are known to apply to our district, I have translated into familiar English, to correspond with the Phenogamous part of this work.

The localities of Cryptogamous plants beyond Filices,

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state which lies between the foot of the Green Mountains and the river Hudson and Lake Champlain, including the counties of Washington, Essex and Rutland, by Dr. M. Stevenson, the students of the Vermont Medical Institution, and my botanical class at Rutland—near Middlebury College, by Professor Hall and Dr. Edwin James—near Williams College, by Professor Dewey—near Connecticut river, between Northampton, Mass. and Brattleborough, Vt. by Drs. Cooley, Williams and Allen, and the Rev. E. Hitchcock—the mountain range in Plainfield, Hawley and Cummington, Mass. by Dr. Porter—in the middle and southern part of Berkshire county, by Dr. Emmons, and my classes in Pittsfield, Lenox, Stockbridge and G. Barrington—near N. Haven, by Dr. Munson—in the vicinity of Litchfield, Con. by Mr. Brace—in various parts of New-Hampshire and the eastern part of Vermont, by the classes of Dr. Locke—in the vicinity of Hartford, Con. by the pupils of Dr. Sumner. I have examined several collections, made by my own pupils in the western part of the state of New-York, and about the shores of Lakes Erie, Huron, St. Clair, &c. I have, however, derived more benefit from those received by Dr. Torrey, than from those received by myself.

are not given. All the species described here, have been found in our district. Most of them have been sent to the greatest Cryptogamists in Europe, and their names returned. But *particular localities* have not yet been sufficiently explored to furnish an useful guide to students in that particular. Let them search for all they find described in this work, in all parts of our district.

A considerable number of species and a few genera, described in the second edition, have been rejected from this ; and many additional ones introduced. This was to be expected in a progressive science, which depends on continued research and the accurate examination of such a multitude of individuals.

Here I might leave the reader with a sufficient view of the improvements attempted ; and with an impression favorable to my industry. But I am compelled to acknowledge, that though I have done all in my power, I can claim as my own, but a small proportion of the improvements, excepting as it respects localities. Dr. Torrey of New-York, suggested the most valuable corrections and improvements to be found in this edition. And I believe I may encourage the reader with the hope, that the extensive collection of materials in his possession will, very soon, appear before the public in the form of an enlarged system of the Botany of the Northern States. Such an extended view of the subject would be an invaluable treasure to all lecturers, private teachers, and to all others, who are disposed to enter deeply into the study.*

It would require more room than it would be expedient to occupy in a preface, to express separately the obligations I am under to individual botanists in our district. They will please to accept my thanks in behalf of

* Dr. Torrey has almost completed the materials for his first number.

those who, through the aid of the Manual, study this kingdom of nature. To Professor Dewey, however, I am under such particular obligations, that I owe him more than an ordinary acknowledgment.

The Natural Orders of Jussieu are considered of high importance in the study of vegetable materia medica, as well as in the study of botanical affinities as a science. I have therefore given a translation of their characters, as far as they apply to our district. I have introduced many improvements from De Lamarck and De Candolle, and some from the reflections of Nuttall, Ives and Rafinesque. But I have retained the original numbers for the convenience of reference.

Though the properties of the Natural Orders are given in few words, the student in vegetable materia medica will derive great advantages from an arrangement of his materials according to Jussieu. The short historical account subjoined to some of the most important natural orders were derived chiefly from Parkinson, published in the year 1640, in English ; and Tragus, published in 1551, in German.

The language throughout this work is strictly my own. I acknowledge there is a kind of quaintness in the style, calculated to furnish a good subject for our liliputian reviewers. This is absolutely necessary in pursuance of my design. And I profess to have saved the student more than three fourths of the labor of learning our frightful terminology, by adopting an uniform set of expressions.* Elliott, Torrey, Barton and others, among our most distinguished botanists, seem inclined to adopt Nuttall's genera as a standard for American plants. I confess I follow on with considerable reluctance. He is certainly

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* All the echnical terms employed in this work are familiarly explained in the small Botanical Dictionary, published at New-Haven, by Howe and Spalding, price 1 dollar.

too fond of innovation.* The first maxim in the Linnean creed, "let the genus give the character," seems to be too little regarded in his otherwise excellent work. I have followed him servilely through the Umbelliferae and Orchideae; excepting that I have arranged the former by sections upon a plan of my own.

I have made free use of all the approved authorities within my reach. And I have not thought proper to burden the work with such a multitude of references as individual credits would require. I have consulted Michaux, (the elder and younger,) Pursh and Nuttall more than any other authors.†

Dr. Hosack's letter, which I published in the second edition, has been so highly approbated by the readers of the Manual, that I again take the liberty to publish it.

New-York, August 30th, 1810.

Dear Sir,

I received yours of the 8th instant, and am happy to be informed of the progress of the Botanical Institution at Catskill under your direction. You have set an example that, I do not doubt, will be followed by many, if not most, of the academies throughout the state. I am satisfied, there is no study so well calculated to occupy the young mind, as the study of natural history. It affords an agreeable exercise to the memory, at the same time it teaches us the habit of attentively observing those objects which otherwise we pass by with careless indifference. We acquire by this study a habit of analysis, or investigation, that cannot be attained by those pursuits, that are usually made the objects of education at this early age.

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* He proposes 18 new genera for our district, without pretending to have founded but one on a new discovery.

† The following authors I had before me, in addition to the above, while preparing this edition. Persoon's Synopsis Fungorum and Fungorum, Turton's Linneus, Muhlenburg's Catalogue and Grasses, Torrey's Catalogue of New-York plants, Barton's Flora of Philadelphia, Bigelow's Boston Flora, De Lamarck and De Candolle's French Flora, Phelps' British plants, Hosack's Catalogue, part of the numbers of Elliott's Botany, Sprengel's Cryptogamia, Bridel's Mosses, Agardh's Algae, Achariu's Lichens MS. from Hedwig's Mosses, Rafinesque's Flora Ludoviciana, Smith in Ree's Cyclopoedia, Barton's and Bigelow's Medical Botany. Several periodical works were consulted also—as Silliman's Journal of Science, New-York monthly Magazine, Journal of the Academy of Natural Science, &c. &c.

Since my acquaintance with the principles upon which the subjects of natural history are arranged, I certainly look with very different eyes upon every object that falls under my view, whether it be the production of nature or of art.

In early life, before our external senses are completely evolved ; when we are, in truth, endeavoring to bring them into exercise and use ; it has always appeared to me a very absurd practice in our schools, to occupy children with studies of an abstract nature, and which require faculties to comprehend them, that are no yet unfolded.

You have adopted, in my opinion, the true system of education ; and very properly address yourself to the senses and to the memory, instead of the faculties of judgment and of reason, which are comparatively of slow growth. By this system of instruction their minds will be stored with truths, that cannot fail to prove useful : not only as they exercise their faculties in acquiring them ; but from the information which they also thereby receive upon a very interesting subject of human learning.

But this is not all. In proportion as the mind attaches itself to subjects of this sort, it is diverted from those vicious propensities and pursuits, which otherwise attract attention at this early period of life. Studies of this nature too are no less calculated to improve the morals of youth ; inasmueh as the mind is naturally led from the contemplation of the beauties of creation to that intelligence and power which gave them birth. Thereby improving their virtue, as well as their wisdom ; which should always be kept in view, inasmuch as happiness is the great end of all our pursuits.

Lord Kaimes, in his Elements of Criticism, has very properly observed, that " among " the many branches of education, that, which tends to make deep impressions of virtue, " ought to be a fundamental object in a well regulated government. For depravity of " manners will render ineffectual the most salutary laws ; and in the midst of opulence, " what other means to prevent such depravity, but early and virtuous discipline."

Such is the system you are pursuing, independent of the wide field to which you will hereafter lead your pupils, wherein they will learn the uses of plants as articles of medicine, of agriculture, and of the arts. At the same time they will acquire a knowledge of the native productions of our own soil and country, which are yet unexplored.

The state of New-York having passed an act for the purchase of the Botanic garden in the neighborhood of this city, I hope to see among its fruits the establishment of many similar institutions throughout the state ; as so many scions from this parent stock. By the diffusion of botanical knowledge, I anticipate the discovery of many valuable plants ; which are this moment trodden under foot as unworthy of regard.

To your pupils and their teacher, as first in the field, much praise is due. I doubt not they will reap both pleasure and profit, as the reward of their enterprise. If I can contribute to either, I shall be happy to do it, in any manner that you may suggest.

You have stated to me, that it is the intention of the trustees of your academy to set apart two or three acres for the cultivation of plants, to be made the subjects of instruction ; and to erect a green-house for the more valuable exotics. If these be effected, I shall have it in my power to supply you with the necessary plants from the Botanic garden here. Its produce will be sufficient in a short time to furnish plants for a small garden, connected with every academy throughout the state.

I sincerely wish your example may be followed. Nothing could so effectually tend to the investigation of the native products of our country.

I am yours, respectfully,

D. HOSACK.

Amos Eaton, Esq.

The recommendation of the study of botany to the attention of ladies, subscribed by the late governor Strong of Massachusetts, and others, which was published in the second edition, is unnecessary at this day; for I believe more than half the botanists in New-England and New-York are ladies.

Troy, (New-York,) Jan. 17*th*, 1822.

ARTIFICIAL CLASSES.

1. Monandria, 1 stamen in a flower.
2. Diandria, 2 stamens.
3. Triandria, 3 stamens.
4. Tetrandria, 4 stamens.
5. Pentandria, 5 stamens.
6. Hexandria, 6 stamens.
7. Heptandria, 7 stamens.
8. Octandria, 8 stamens.
9. Enneandria, 9 stamens.
10. Decandria, 10 stamens.
11. Dodecandria, 12 to 19 stamens.
12. Icosandria, about 20 or more, standing on the calyx.
13. Polyandria, always 20 or more, on the receptacle.
14. Didynamia, 4 stamens, 2 of them the longest.
15. Tetradynamia, 6 stamens, 4 of them the longest.
16. Monadelphia, stamens united by their filaments in one set, authers remaining separate.
17. Diadelphia, stamens united by their filaments in two sets (sometimes in one set, with papilionaceous corols.)
18. Syngenesia, stamens 5, united by their anthers in one set, flowers compound.
19. Gynandria, stamens stand on some part of the pistil, separate from the base of the calyx and corol.
20. Monoecia, stamens and pistils in separate flowers on the same plant.
21. Dioecia, stamens and pistils on separate plants.
22. Cryptogamia, stamens and pistils too minute for inspection.—This class is composed of six natural families.

ORDERS OF EACH CLASS.

	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	10th.	13th.	16th
Class 1	Mon.	Dig.	——	——	——	——	—	—	—	—	—
2	Mon.	Dig.	Tri.	——	——	——	—	—	—	—	—
3	Mon.	Dig.	Tri.	——	——	——	—	—	—	—	—
4	Mon.	Dig.	——	Tet.	——	——	—	—	—	—	—
5	Mon.	Dig.	Tri.	Tet.	Pen.	——	—	—	—	—	—
6	Mon.	Dig.	Tri.	Tet.	——	Hex.	—	—	—	—	—
7	Mon.	Dig.	——	Tet.	——	——	Hep.	—	—	—	—
8	Mon.	Dig.	Tri.	Tet.	——	——	—	—	—	—	—
9	Mon.	——	Tri.	——	——	Hex.	—	—	—	—	—
10	Mon.	Dig.	Tri.	——	Pen.	——	—	—	—	—	—
11	Mon.	Dig.	Tri.	Tet.	Pen.	——	—	—	—	—	—
12	Mon.	——	——	——	Pen.	——	—	—	—	Pol.	—
13	Mon.	Dig.	——	——	Pen.	——	—	—	—	Pol.	—
14	Gym.	Ang.	——	——	——	——	—	—	—	—	—
15	Silic.	Siliq.	——	——	——	——	—	—	—	—	—
16	——	——	Tri.	——	Pen.	——	—	—	Dec.	Pol.	—
17	——	——	——	——	——	Hex.	—	Oct.	Dec.	—	—
18	Æq.	Sup.	Frus.	Nec.	Seg.	——	—	—	—	—	—
19	Mon.	Dia.	——	——	Pen.	Hex.	—	—	—	—	—
20	Mon.	Dia.	Tri.	Tet.	Pen.	Hex.	—	—	—	Pol.	Mon.
21	——	Dia.	Tri.	Tet.	Pen.	Hex.	—	Oct.	—	Pol.	Mon.
22	Filices.	Musci.	Hepaticae.	Algae.	Lichenes.	Fungi.	—	—	—	—	—

Note. The numbers at the head of this page are used to express the orders directly under them, throughout the following system of genera.

EXPLANATIONS OF THE ABBREVIATIONS ON THE PRECEEDING PAGE.

1 Mon. Monogynia, 1 style, or 1 sessile stigma.
2 Dig. Digynia, 2 styles, &c.
3 Tri. Trigynia, 3 styles, &c.
4 Tet. Tetragynia, 4 styles, &c.
5 Pen. Pentagynia, 5 styles, &c.
6 Hex. Hexagynia, 6 styles, &c.
7 Hep. Heptagynia, 7 styles, &c.
10 Dec. Decagynia. 10 styles, &c.
13 Pol. Polygania, more than 10 styles, &c.
1 of Class 14. Gym. Gymnospermia, seeds naked.
2 of Class 14. Ang. Angiospermia, seeds in capsules.
1 of Class 15. Silic. Siliculosa, having pods whose length and breadth are nearly equal.
2 of Class 15. Siliq. Siliquosa, having pods whose lengths are more than double their breadths.

In the 16th, 17th, 19th, 20th, 21st classes, the names and characters of preceding classes, are taken for orders. In which, Mon. Monandria. Dia. Diandria. Tri. Triandria. Tet. Tetrandria. Pen. Pentandria. Hex. Hexandria. Oct. Octandria. Dec. Decandria. Pol. Polyandria. Mon. Monadelphia.

In the 18th class. 1. Æq. Polygamia Æqualis. 2. Sup. Polygamia Superflua. 3. Frus. Polygamia Frustranea. 4. Nec Polygamia Necessaria. 5. Seg. Polygamia Segregata.

The 1st order in the 18th class is distinguished by having *all the florets* perfect. The 2d, by having those of the *disk* perfect, while those of the *ray* are pistillate. The 3d, by having those of the *disk* perfect, while those of the *ray* are neutral. The 4th, by having those of the *disk* staminate, while those of the *ray* are pistillate. The 5th, by having the florets all perfect, while each floret has a *perianth*.

In the 22d class, the orders are distinguished by natural family characters 1. *Filices*, (ferns) which bear fruit on the back of the leaves, or in which some part of the leaves seem as it were metamorphosed into a kind of fruit-bearing spike. The sub-order, *Apteres*, includes the Pteriodes, which bear fruit on a peculiar appendage, or in the axils of leaves. 2. *Musci*, (mosses) which bear, on leafy stems and branches, one-celled capsules, opening at the top, where they are covered by a peculiar lid. 3. *Hepaticae*, (liverworts) which bear, on

herbaceous fronds, four-celled capsules opening with four valves. 4. *Algae*, (seaweeds, &c.) which bear in an aquatic or gelatinous frond, vesiculous or filamentous fruit. 5. *Lichenes*, (lichens) which bear fruit on fibrous, compact or gelatinous fronds; contained in clefts, spangles, puffs, buttons, tubercles, hollows, cellules, globules, shields' targates, orbs, or knobs. 6. *Fungi*, (mushroom, &c.) which are destitute of herbage, consisting of a spungy, pulpy, leathery or woody substance, and bear fruit in a naked dilated membrane, or within the substance of the plant.

For further descriptions of the orders of this class, see Natural Orders of Jussieu, 1, 2, 3, 4, and 5.

EXPLANATIONS OF THE CHARACTERS ANNEXED TO THE GENERIC DESCRIPTIONS.

The *first number* following the generic description is the number of the natural order of Linneus, to which the genus belongs; the *second number* is that of Jussieu. By referring to the natural orders, the qualities of plants may be so far ascertained, as they depend on botanical affinities; especially those of Jussieu.

(*) Placed before one or more generic names, at the end of an order, indicates that these genera sometimes vary from the classes and orders to which they belong, and have strayed as it were into the class and order under which their names are thus set down. They must be referred back to their proper places for descriptions.

RULES FOR DISTINGUISHING POISONOUS PLANTS FROM THOSE WHICH ARE NOT POISONOUS.

Plants not poisonous.

1. Plants with a *glume* calyx, never poisonous. As Wheat, Indian-corn, Foxtail-grass, Sedge-grass, Oats. Limeus.

2. Plants whose stamens *stand on the calyx*, never poisonous. As Currant, Apple, Peach, Strawberry, Thorn. Smith, page 304, Big. ed.

3. Plants with *cruciform* flowers, rarely if ever poisonous. As Mustard, Cabbage, Watercress, Turnip. Smith, page 337, Big. ed.

4. Plants with *papilionaceous* flowers rarely, if ever, poisonous. As Pea, Bean, Locust-tree, Wild-indigo, Clover. Smith, page 344, Big. ed.

5. Plants with *labiate* corols bearing seeds without pericarps, never poisonous. As Catmint, Hyssop, Mint, Motherwort, Marjoram Smith, page 335, Big. ed.

6. Plants with *compound* flowers rarely poisonous. As Sunflower Dandelion, Lettuce, Burdock. Milne.

Poisonous Plants.

1. Plants with 5 stamens and one pistil, with a dull-coloured *lurid* corol, and of a nauseous sickly smell, always poisonous. As Tobacco, Thorn-apple, Henbane, Nightshade. The degree of poison is diminished where the flower is brighter coloured and the smell is less nauseous. As potatoes are less poisonous, though of the same genus with nightshade. Smith, page 320, Big ed.

2. *Umbelliferous plants* of the aquatic kind and of a nauseous scent are always poisonous. As Water-hemlock, Cow-parsley. But if the smell is pleasant and they grow in dry land, they are not poisonous. As Fennel, Dill, Coriander, Sweet-cicily. Smith, page 322, Big. ed.

3. Plants with *labiate* corols, and seeds in capsules, frequently poisonous. As Snap-dragon, Fox-glove.

4. Plants, from which issues a *milky juice* on being broken, are poisonous, unless they bear compound flowers. As Milk-weed, Dog-bane. Milne's Contortæ and Lactescentia.

5. Plants having any *appendage* to the calyx or corol, and eight or more stamens, generally poisonous. As Columbine, Nasturtion. Linneus.

General Rule.

Plants with few stamens, not frequently poisonous, except the number be five; but if the number be 12 or more, and the smell nauseous, heavy and sickly, the plants are generally poisonous. Milne's Multisiliquæ and Sapor.

Note. Many plants possess some degree of the narcotic principle, which are still by no means hurtful. But the use of such plants is to be deferred, till fully investigated. In some species the herbage is poisonous, when the root and fruit is wholesome.

NATURAL ORDERS OF LINNEUS.

1. PALMÆ. Palms and their relatives; as Cocoanut, Frog's bit. *Farinaceous diet.*

2. PIPERITÆ. Pepper and its relatives. In crowded spikes; as Indian-turnip, Sweet-flag. *Tonics* and *Stomachics.*

3. CALAMARIÆ. Reed-like grasses, with culms without joints; as Cat-tail, Sedge. *Coarse cattle fodder.*

4. GRAMINA. The proper grasses with jointed culms; as Wheat, Rye, Oats, Timothy-grass, Indian-corn. *Farinaceous diet* and *cattle fodder.*

5. TRIPETALOIDEÆ. Corol 3-pettalled or calyx 3-leaved; as Water-plantain, Rush-grass, Arrow-head.—*Tonics* and *rough cattle fodder.*

6. ENSATÆ. Liliaceous plants with sword-form leaves; as Iris, Blue-eyed grass, Virginian spiderwort. *Antiscorbutics* and *Tonics.*

7. ORCHIDEÆ. With fleshy roots, stamens on the pistils, pollen glutinous, flowers of singular structure with the germ inferior; as Ladies-slipper, Arethusa. *Farinaceous diet* and *Stomachics.*

8. SCITAMINEÆ. Liliaceous corols, stems herbaceous, leaves broad, germ blunt-angular; as Ginger, Turmeric. *Warming Stomachics.*

9. SPATHACEÆ. Liliaceous plants with spathes; as Daffodil, Onion, Snow-drop. *Secernant Stimulants* *

10. CORONARIÆ. Liliaceous plants without spathes; as Lily, Tulip, Star-grass. The nauceous scented and bitter are *Antiscorbutic* and *Cathartic*, the others *Emollient.*

11. SARMENTACEÆ. Liliaceous corols with very weak stems; as Smilax, Asparagus, Bell-wort. *Tonics* and *Secernant Stimulants.*

12. OLERACEÆ, or HOLERACEÆ. Having flowers destitute of beauty, at least of gay colouring; as Beet, Blight, Pigweed, Dock, Pepperage. If nauceous, *Cathartic*; others, *mild Stimulants* and *Nutrientics.*†

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* Which promote the secretion of perspirable matter, &c. &c.

† Nutrientic of Darwin, which serve as nutriment merely, without producing any extraordinary effects.

13. Succulentæ. Plants with very thick succulent leaves; as Prickly-pear, House-leek, Purslain. *Antiscorbutic* and *Emolient.*

14. Gruinales. Corols with 5 petals, capsules beaked; as Flax, Wood-sorrel, Cranebill. *Tonics* and *Refrigerants.*

15. Inundata. Growing under water and having flowers destitute of beauty; as Hippuris, Pond-weed.—*Astringents.*

16. Calycifloræ. Plants without corols, with the stamens on the calyx; as Poet's cassia, Seed buckthorn. *Astringents* and *Refrigerants.*

17. Calycanthemæ. Calyx on the germ or growing to it, flowers beautiful; as Willow-herb, Ludwigia, Œnothera. *Tonics.*

18. Bicornes. Anthers with two strait horns; as Whortleberry, Spicy and Bitter Wintergreen, Laurel. *Astringents.*

19. Hesperides. Sweet-sented, leaves evergreen; as Myrtle, Cloves, Mock-orange. *Astringent* and *Stomachic.*

20. Rotaceæ. Corols wheel-form; as St. John's wort. *Tonics.*

21. Preciæ. Plants with early spring flowers of an elegant specious appearance; as Primrose. *Astringents.*

22. Caryophylleæ. Plants with caryophyllous corols; as Pink, Cockle. *Astringents* and *Secernant Stimulants.*

23. Trihilatæ. Flowers with three stigmas, capsules inflated and winged, and generally 3 seeded with distinct hilums; as Nasturtion, Horse-chesnut. *Tonics* and *Nutrientics.*

24. Corydales. Corols spurred or anomalous; as Fumatory, Touch-me-not. *Narcotic* and *Antiscorbutic.*

25. Putamineæ. Plants which bear shell-fruit; as Caperbush. *Detergent* and *Antiscorbutic.*

26. Multisilique. Having several pod-form capsules to each flower; as Columbine, Larkspur, Rue, American cowslip. *Cathartic, narcotic* and *Caustic.*

27. Rhœadeæ. Plants with caducous calyxes, and capsules or siliques; as Poppy, Bloodroot, Celandyne. *Anodyne* and *Antiscorbutic.*

28. Luridæ. Corols lurid, mostly monopetalous;—flowers Pentandrous, or Didynamous with capsules; as

Tobacco, Thorn-apple, Nightshade, Foxglove. *Narcotic* and *Antiscorbutic.*

29. CAMPANACEA. Having bell-form corols, or those whose general aspect is somewhat bell-form; as Morning glory, Bell-flower, Violet, Cardinal flower. *Cathartics* and *Secernant Stimulants.*

30. CONTORTÆ. Corols twisted or contorted; as Milk-weed, Periwinkle, Choak-dog. *Cathartics* and *Antiscorbutics.*

31. VEPRECULÆ. Having monophyllous calyxes, coloured like corols; as Leatherwood, Thesium. *Antiscorbutic* and *Emetic.*

32. PAPILIONACEÆ. Having papilionaceous flowers; as Peas, Beans, Locust tree, Clover. *Emollient, Diuretic, Nutrientic.*

33. LOMENTACEÆ. Having legumes or loments, but not perfect papilionaceous flowers with united filaments; as Cassia, Sensitive plant. *Emollient, Astringent, Cathartic.*

34. CUCURBITACEÆ. Fruit pumpkin-like, anthers mostly united; as Melons, Cucumbers, Passion-flower. *Cathartic* and *Refrigerant.*

35. SENTICOSÆ. Prickly or hairy, with polypetalous corols and a number of seeds either naked or slightly covered; as Rose, Raspberry, Strawberry. *Astringent* and *Refrigerant.*

36. POMACEÆ. Having many stamens on the calyx, and drupaceous or pomaceous fruit; as Pear, Currant, Cherry, Peach. *Refrigerants.*

37. COLUMNIFERÆ. Stamens united in the form of a column; as Hollyhoc, Mallows, Cotton. *Emollient.*

38. TRICOCCÆ. Having 3-celled capsules; as Castor-oil plant, Spurge, Box. *Cathartic.*

39. SILIQUOSÆ. Having silique pods; as Cabbage, Mustard, Shephard-purse. *Diuretic, Antiscorbutic, Nutrientic.*

40. PERSONATÆ. Having personate corols; as Snap-dragon, Monkey-flower. *Deobstruents* and *Cathartics.*

41. ASPERIFOLIÆ. Corols monopetalous, with 5 stamens, seeds 5, naked, leaves rough; as Comfrey, Stone-seed (lithospermum.) *Astringents* and *Deobstruents.*

42. VERTICILLATA. Having Labiate flowers; as Sage Thyme, Catmint, Motherwort. *Stomachics* and *Astringents.*

43. Dumosæ. Bushy pithy plants with small flowers, petals in 4 or 5 divisions; as Sumach, Elder, Holly.—*Tonic* and *Cathartic.*

44. Sepiariæ. Having mostly tubular divided corols with few stamens; being ornamental shrubs; as Lilac, Jasmine. *Astringent.*

45. Umbellatæ. Flowers in umbels with 5-petalled corols, stamens 5, styles 2, and 2 naked seeds; as Fennel, Dill, Carrot, Poison-hemlock. *Stomachic* and *Narcotic.*

46. Hederaceæ. Corols 5-cleft, stamens 5 to 10, fruit berry-like on a compound raceme; as Grape, Ginseng, Spikenard. *Tonics* and *Refrigerants.*

47. Stellatæ. Corols 4-cleft, stamens 4, seeds 2, naked, leaves mostly whorled; as Bedstraw, Dogwood, Venus' pride. *Tonics* and *Deobstruents.*

48. Aggregatæ. Having aggregate flowers; as Buttonbush, Marsh-rosemary. *Tonics* and *Secernant Stimulants.*

49. Compositæ. All the compound flowers; as Sunflower, Boneset, Tansey, Thistle. *Tonics* and *Secernant Stimulants.*

50. Amentaceæ. Bearing pendant aments; as Hazle, Oak, Chesnut, Willow. *Astringents.*

51. Coniferæ. Bearing strobiles; as Pine, Juniper, Cedar. *Tonics* and *Stomachics.*

52. Coadunatæ. Several berry-like pericarps, which are adnate; as Tulip-tree, Magnolia. *Tonics.*

53. Scabridæ. Leaves rough, flowers destitute of beauty; as Nettle, Hemp, Hop, Elm. *Astringents.*

54. Miscellaneæ. Plants not arranged by any particular character; as Pond-lily, Poke-weed, Amaranth. Their qualities are *various*; but see Jussieu's orders.

55. Filices. All ferns; as Brakes, Maidenhair. *Secernant Stimulants.*

56. Musci. All mosses; as Polytrichum. *Cathartics* and *Secernant Stimulants*

57. Algæ. All Liverworts, Lichens and Sea-weeds; as Jungermannia, Fucus, Usnea. *Tonics.*

58. Fungi. All fungusses; as Mushroom, Toadstool, Puffball, Touchwood, Mould. *Tonics* and *Cathartics.*

NATURAL ORDERS OF JUSSIEU.

First Division.

ACOTYLEDONS,

OR PLANTS WITH GONGYLOUS SEEDS.

Order I. Fungi.

Plants of this order are never strictly aquatic, though some of them grow in water and in both damp and dry places indifferently. They never exhibit the verdure of green herbage: but are generally corky, fleshy or mould-like. They vary much in form and colour: being spherical, hemispheric, columnar, clavate, filamentous, lamellar, capsular, pulverulent; white, yellow, red, black, greenish, &c. The fruit of some is external, of others internal, of others its place can hardly be demonstrated. No plant of this order gives off oxygen gas by the action of light.

Generic names. Sphaeria, Stilbospora, Hysterium, Xylome, Naemaspora, Tubercularia, Sclerotium, Tuber, Geastrum, Bovista, Tulostoma, Lycoperdon, Scleroderma, Lycogala, Fuligo, Physarum, Trichia, Arcyria, Stemonitis, Tubulina, Mucor, Onygena, Accidium, Uredo, Puccinia, Trichoderma, Conoplea, Cyathus, Phallus, Amanita, Agaricus, Merulius, Dedalius, Boletus, Sistotrema, Hydnum, Thelephora, Merisma, Clavaria, Geoglossum, Spathularia, Leotia, Helvella, Morchella, Tremella, Peziza, Aegerita, Isaria, Monilia, Dematium, Erineum, Racodium, Himantia, Mesenterica.

Properties. Tonics if dry or corky, cathartics and narcotics if juicy. An alkaline juice exudes from some.

Order II. Algae.

First division. The proper *algae* are mostly aquatics. They are filamentous or membranous and nearly similar in all their parts. They absorb circulating fluids through their immersed parts only, which are not transfused through other parts. They are generally green or reddish, and give off oxygen gas from the parts under water which are exposed to the sun.

Generic names. Fucus, Chordaria, Laminaria, Delesseria, Sphaerococcus, Halymenia, Ulva, Vauche-

ria. Hutchinsia, Ceramium, Lemania, Conferva, Zygnema, Oscillatoria, Batrachospermum, Rivularia, Nostoc.

Second Division. The proper *lichens* are various in texture, form and colour. They are leathery, woody, lamellated, leaf-like, filamentous, white, yellow, greenish, black, &c. Often they appear like green herbage, especially if wet. Some appear like leprous spots on stones and trees, speckled with black, white, or yellow dots.—Others in greenish or bluish patches on old fences and walls; and others in strong light green filaments, suspended from branches of trees, which are falsely called mosses.

They absorb circulating fluids, which are transfused through every part of their substance. Their fructification is in the form of clefts, spangles, puffs, buttons, tubercles, hollows, cellules, globules, shields, targets, orbs, or knobs.

Generic names. Spiloma, Arthonia, Gyalecta, Lecidea, Calicium, Gyrophora, Opegrapha, Graphis, Verrucaria, Endocarpon, Porina, Pyrenula, Variolaria, Urceolaria, Lecanora, Parmelia, Borrera, Cetraria, Sticta, Peltidea, Nephroma, Evernia, Cenomyce, Baemyces, Isidium, Stereocaulon, Rhizomorpha, Alectoria, Ramalina, Collema, Cornicularia, Usnea, Lepraria.

Properties. Tonics—some contain useful colouring matter, and some are nutritive.

Order III. Hepaticae.

Plants of this order have green or greenish fronds; some resembling the fronds of *lichens*, others those of *mosses*, but more succulent and cellular. They are always monoecious or dioecious. The barren or staminate flowers contain globules, aggregated together in a kind of calyx, filled with a liquid analagous to pollen. The fertile or pistillate flowers have germs or capsules, either naked or surrounded with pericheths, which are mostly peduncled. The seeds generally adhere to spirally twisted fibres. The capsules are always 4-celled and destitute of lids; which characters distinguish this order from the next.

Generic names. Riccia, Anthoceros, Marchantia, Jungermannia.

Properties. Tonics and refrigerants.

Order IV. Musci.

Plants of this order are monoecious, dioecious or perfect. The flowers are lateral or terminal, mostly elevated on peduncles. In early flowers Sprengel says, that by the help of a magnifying glass, "organs may be distinctly seen, which consist partly in oblong bud-like gemmae, supposed formerly to be anthers; and partly in an aggregation of pistils, intermixed with succulent filaments."

Their capsules are always 1-celled, and open at top by *operculi*, or lids. Over the lids, calyptres are generally placed. Under the lids and surrounding the mouths may be seen a kind of filamentous or denticulate fringe or edging, called the teeth.

The seeds are very numerous, resembling fine dust adhering to the inner surfaces of the capsules. The herbage is green and perennial; the leaves are minute and generally imbricated. Mosses flourish most in damp shady situations; and mostly flower early in the spring or late in autumn.

Generic names. Sphagnum, Phascum, Gymnostomum, Schistidium, Anoectangium, Tetraphis, Grimmia, Weissia, Trematodon, Dicranum, Campylopus, Racomitrium, Trichostomum, Barbula, Syntrichia, Didymodon, Splachnum, Ornithotrichum, Ulota, Bartramia, Bryum, Arrhenopterum, Mnium, Timmia, Diplocomium, Meesia, Diphyscium, Buxbaumia, Funaria, Pterigynandrum, Lasia, Leucodon, Neckera, Cryphaea, Pilotrichum, Climacium, Leskia, Pterigophyllum, Hypnum, Fontinalis, Fissidens, Polytrichum, Catharinaea.

Properties. Mostly secernant stimulants; some few are cathartic.

*Order V. Filices.**

Plants of this order are herbaceous and take root in the earth; but bear numerous minute dust-like seeds, like other cryptogamous plants.

First division. The *pterous ferns* bear spherical or reniform 1-celled capsules on the back of winged fronds or on what appears like leaves metamorphosed into fruit-bearing spikes. The leaves are sub-radical, with alter-

* De Lamarck and De Candolle place this order and the next, among the Monocotyledons.

nate leafets, or alternate divisions or indentations. They are mostly coiled, or more or less rolled in at their tips, when they first spring from the earth.

Generic names. Acrostichum, Polypodium, Onoclea, Blechnum, Pteris, Asplenium, Scolopendrium, Woodwardia, Adiantum, Aspidium, Athyrium, Dicksonia, Isoetes, Woodsia, Cheilanthes, Schizaea, Osmunda, Lycopodium, Botrychium, Ophioglossum.

Second division. The *Apteres* bear fruit on spikes or in the axils of leaves, having no proper winged frond. They are either very leafy or totally leafless. Neither the leaves nor any other parts of apterous ferns are ever coiled.

Generic names. Lycopodium, Equisetum.

Properties. *Secernant stimulants.*

*Order VI. Naiades.**

Plants of this order are tender aquatics, with few axillary flowers containing few minute stamens.

Generic names. Caulinia, Chara, Najas, Saururus, Podostemum, Lemna.

Properties. *Astringent.*

Second Division.

MONOCOTYLEDONS,

or plants with 1-lobed seeds.

CLASS FIRST. Stamens below the pistil.

Order VII. Aroideae.

Plants of this order all bear monoecious flowers, which are sessile on a spadix, and destitute of perianth calyxes. Stamens and pistils are intermixed and stand on the spadix. Fruit a roundish berry. They are almost stemless, with sub-radical leaves ; and support the flowers on scapes or scape-like stalks.

Generic names. Ictodes, Calla, Zostera, Arum, Orontium.

Properties. *Warming stomachics ; if nauceous, antispadmodics.*

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* De Lamarck and De Candolle say that this order is artificial and ought to be abolished.

Order VIII. Typhae.

Plants of this order bear monoecious flowers with 3-leaved perianths. Stamens 3 and styles one. Fruit 1-seeded, seed fleshy or ferinaceous. They are always aquatics, stems jointless, and leaves somewhat sheathing.

Generic names. Typha, Sparganium.

Properties. Weak tonics.

Order IX. Cyperoideae.

Flowers glumaceous, in spikes or spikelets, glumes 1-valved. The flowers have no proper perianth calyxes: stamens 3, style 1, with two or three stigmas: seeds single, farinaceous, without pericarp. Plants grassy, perennial, of a coarse texture; culm triangular or cylindric; leaves with *closed sheaths* or destitute of sheaths.

Generic names. Kyllingia, Schoenus, Rhynchospora, Cyperus, Mariscus, Dulichium, Scirpus, Eriophorum, Tricophorum, Fuirena, Limnetis, Carex, Scleria.

Properties. Tonics. Used for coarse cattle fodder.

Order X. Gramineae.

Flowers glumaceous, generally in spikes or spikelets, but sometimes solitary. Outer glumes generally 2-valved, which serve as calyxes to spikelets, or to single flowers when solitary. Stamens 3; stigmas 2, plumose or capillary. Seeds single, farinaceous, without pericarps. Culms cylindric, jointed; leaves alternate, with *sheaths always cleft* throughout their whole extent, on the side opposite to the direction of the leaf.

Generic names. Cinna, Anthoxanthum, Cenchrus, Oryzopsis, Panicum, Digitaria, Cynodon, Paspalum, Aristida, Stipa, Alopecurus, Phalaris, Crypsis, Hordeum, Milium, Agrostis, Saccharum, Muhlenbergia, Leersia, Trichodium, Phleum, Aira, Uralepsis, Elmymus, Melica, Eleusine, Secale, Triticum, Lolium, Atheropogon, Uniola, Briza, Sorghum, Dactylis, Poa, Windsoria, Festuca, Bromus, Avena, Danthonia, Arundo, Andropogon, Holcus, Oryza, Zea, Tripsacum, Coix, Zizania, Hierochloa.

Properties. Feeble tonics. The herbage furnishes the best of cattle fodder; and the largest seeds are used for farinaceous diet.

CLASS SECOND. Stamens surrounding the pistil, and standing on the calyx or corol. Sometimes they are merely attached at the base.

Order XI. Palmae.

We have no plants of this order in the Northern States. The cocoanut, palm, and several other tropical plants belong to this order.

Properties. Weak tonics, and yield farinaceous diet.

Order XII. Asparagi.

Flowers with petaloid perianths, generally 6-parted or 6 cleft. Stamens adhering to the same base with the coral or calyx. Berry 3 or 4-celled, 1 to 3-seeded. Leaves often alternate, rarely whorled, never sheathing.

Generic names. Asparagus, Convallaria, Dracaena, Gyromia, Smilax, Trillium.

Properties. Mild tonics and secernant stimulants.

Order XIII. Junci.

Plants of this order generally bear flowers with small spathes, or spathe-like bracts, and free 6-parted perianths.

First division. The proper *Junci* resemble the Cyperoideae in habit; having sheathing leaves and glumaceous spathes or bracts. The flowers are in panicles or corymbs; stamens 3 or 6, and each flower has but a *single germ.*

Generic names. Juncus, Xyris, Acorus, Tradescantia, Commelina, Helonias, Xerophyllum, Veratrum, Tofieldia.*

Second division. The *Alismaceae* are all aquatics, and each flower contains *more than one germ.*

Generic names. Alisma, Sagittaria, Triglochin, Scheuchzeria, Eriocaulon, Potamogeton, Zanichellia.

Properties. Generally secernant stimulants. The sweet-scented are warming stomachics, and the nauceous are antiscorbutics.

Order XIV. Liliaceae.

Plants of this order have no perianths. They have 6-

* The two last are placed in a distinct order by De Lamarck and De Candolle.

petalled corols of the liliaceous form. Stamens 6, standing against the divisions of the corol and often attached to it. Style 1, stigmas 3, or 3-lobed. Germs free. Capsules 3-celled, 3-valved, with transverse partitions ; *seeds flat.* Leaves generally with simple nerves.

Generic names. Lilium, Tulipa, Fritillaria, Erythronium, Uvularia, Streptopus.

Properties. Emollients and weak secernant stimulants.

Order XV. Bromeliae.

We have no plants of this order, excepting rare exotics, growing in the Northern States. The pine apple (Bromelia ananas) belongs here.

Properties. Refrigerants.

Order XVI. Asphodeli.

No perianths, but some have spathes. Corols 6-parted or 6-cleft. Stamens 6, standing against the divisions of the corol and attached to it. Germs free ; *seeds round* or *angled.*

Generic names. Asphodelus, Hemerocallis, Ornithogalum, Allium, Aletris, Narthecium, Hyacinthus.

Properties. Expectorants and demulcents. The strong-scented are secernant stimulants, and the bitter are tonic and cathartic.

Order XVII. Narcissi.

No perianths, but most have spathes. Corols 6-parted or 6-petalled. Stamens 6, standing against the divisions of the corol and attached to it. *Germ attached to the corol,* and generally supporting it.

Generic names. Narcissus, Amaryllis, Galanthus, Polyanthes, Agave, Hypoxis, Leptanthus, Pontederia, Heteranthera.

Properties. Weak tonics and emollients.

Order XVIII. Irides.

Corol 6-cleft or 6-parted : stamens 3 : style 1, with 1 or 3 stigmas : germ attached to the corol. Leaves ensiform or linear. Roots bulbous or tuberous.

Generic names. Iris, Ixia, Crocus, Dilatris, Sisyrinchium.

Properties. Antiscorbutics and tonics.

CLASS THIRD. Stamens standing on the pistil.

Order XIX. Musae.

We have no plants of this order in the Northern States. The bread tree (Artocarnus incisa) belongs here.

Properties. Tonics.

Order XX. Cannae.

No plants of this order in our district. Ginger (Amomum) is placed here.

Properties. Warming stomachics.

Order XXI. Orchideae.

Plants of this order have superior, 5-petalled corols, 3 external and 2 internal. There is also in each corol a petal-like organ, called the lip, various in form and direction. Anthers always 1 or 2, and from 1 to 4-celled, sessile upon the side or apex of the style. The pollen is easily removed from the cells in agglutinated masses. Styles simple, with viscous stigmas of various forms and positions. Capsules 1-celled, 3-valved, 3-keeled. Seeds numerous, dust-like. Leaves entire, and generally nerved and clasping. Flowers more or less spiked and bracted.

Generic names. Orchis, Goodyera, Neottia, Listera, Pognoia, Triphora, Cymbidium, Arethusa, Tipularia, Malaxis, Microstylus, Corallorhiza, Cypripedium.

Properties. Emollients, and the roots of some are stomachic. Dioscorides, Galen, and Pliny, speak of the roots as affording excellent farinaceous diet, and as of great use in discussing swellings and cleansing ulcers.

Order XXII. Hydrocharides.

Plants of this order are all aquatics. Germs simple; stigmas 3 to 6, bifid. Capsules 1 or 6-celled, many seeded. Rather an artificial order.

Generic names. Proserpinaca, Floerkea, Vallisneria.

Properties. Weak tonics.

Third Division.

DICOTYLEDONS,

or plants with 2-lobed seeds.

CLASS FIRST. Flowers without petals, and the stamens standing on the germ.

Order XXIII. Aristolochiae.

Perianth 1-leaved adhering to the germ. Stamens numerous, (6 or 12) definite, attached to the germ. Style short, stigma divided. Capsule many-celled (generally 6) many-seeded.

Generic names. Asarum, Aristolochia.

Properties. Warming stomachics and active tonics. Galen set a high value on the tonic powers of this order of plants.

CLASS SECOND. Flowers without petals; and the stamens surrounding the germ, being attached to the calyx.

Order XXIV. Aeleagni.

Calyx adheres to the germ, monophyllous, tubular, generally leafy outside and corol-like within. Stamens stand towards the top of the calyx, and are equal to the number of its division or double that number. Fruit 1-seeded.

Generic names. Thesium, Nyssa, Hippophae.

Properties. Weak tonics.

Order XXV. Thymeleae.

Calyx free, 1-leaved, 4 or 5-lobed, coloured. Stamens inserted towards the upper part of the calyx and are double the number of its divisions. Fruit 1-seeded. Stems woody; leaves simple, entire and alternate.

Generic names. Dirca, Daphne.

Properties. Mild emetics and antiscorbutics.

Order XXVI. Proteae.

No plants of this order grow in our district. The silver-tree (Protea) is placed here.

Properties. Weak tonics.

Order XXVII. Lauri.

Calyx free, monophyllous, permanent, 4 to 6-cleft, or 6-parted. Stamens inserted at the bottom of the divisions of the calyx, sometimes 6 in a single row, sometimes 12 in two rows, generally varying in number; anthers adnate to the filaments, dehiscent from their bases to their apexes. Germ 1, style 1, stigma simple, or divided. Drupe or berry 1-celled, 1-seeded. Stems woody, leaves alternate.

Generic name. Laurus.

Properties. Warming stomachics and active secernant stimulants.

Order XXVIII Polygoneae.

Calyx free, monophyllous, divided, often coloured. Stamens inserted on the bottom of the calyx; anthers 2-celled and 4-groved, laterally dehiscent into a double chink. Germ 1, styles or sessile stigmas several; seed single, farinaceous, naked, with the corcle inside.

Generic names. Polygonum, Rumex, Rheum.

Properties. Mild cathartics and demulcents. The strong-scented are antiscorbutic and discussient.

Order XXIX. Atriplices.

Calyx free, monophyllous, parted. Stamens inserted on the bottom of the calyx, and equalling the number of its divisions. Germ 1, style 1 or several. Seed often farinaceous, with corcles outside of it. Leaves alternate, simple, destitute of stipules or sheathes. Flowers small, greenish, and of a dull appearance.

Generic names. Salicornia, Blitum, Salsola, Chenopodium, Beta, Atriplex, Spinacia, Acnida, Phytolacca.

Properties. The strong-scented are active cathartics. The others are mildly aperient.

CLASS THIRD. Flowers without petals, and the stamens standing below the germ.

Order XXX. Amaranthi.

Calyx free, permanent, divided, often coloured. Stamens 3 or 5. Germ 1, capsule 1-celled. Seed farinaceous. Flowers small.

Generic names. Amaranthus, Gomphrena.

Properties. Secernant stimulants and weak tonics.

Order XXXI. Plantagines.

Calyx double, outer one 4-parted, inner one tubular. (Rather, the outer is a proper calyx, and the inner a dull membranceous corol.) Stamens 4, adhering to the inner calyx, exsert. Germ simple, style 1. Capsule opening transversely, 2 to 4-celled. Seed coneous. Flowers in spikes. Leaves nerved and generally radical.

Generic names. Plantago.

Properties. Emollients.

Order XXXII. Nyctagines.

Involucre perianth-like, monophyllous; perianth monophyllous, coloured, permanent, contracted above the germ so as to appear altogether like a corol standing on the germ. Stamens attached to the gland-like base of the inner calyx, (corol?) which encloses the germ. Style 1, capitate. Seed farinaceous.

Generic names. Mirabilis.

Properties. Emetics and cathartics.

Order XXXIII. Plumbagines.

Calyx double, permanent; outer one monophyllous, tubular; inner one (rather the corol) coloured, 1 or many-petalled. Stamens 5, adhering to the inner calyx (corol.) Germ simple, free, styles many, or one with many stigmas. Capsule 1-seeded. Seed farinaceous.*

Generic name. Statice.

Properties. Cathartic and tonic.

CLASS FOURTH. Flowers with monopetalous corols inserted below the germs.

Order XXXIV. Lysimachiae.

Calyx monophyllous, permanent, 4 or 5-lobed. Corol with the limb divided, and bearing the stamens opposite, and equal in number, to the divisions. Germ free, style 1, stigma simple. Capsule 1-celled, many-seeded, seeds attached to a free columella, the corcle strait and within the fleshy seed. Leaves simple.

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* Here in the three last orders we see, that the advocates for the natural arrangement are compelled to force a corol to become a calyx. But the Linnean artificial system will guide the student to the true genus, thence to the natural order, and thus secure to him its advantages.

Generic names. Lysimachia, Anagallis, Trientalis, Primula, Dodecatheon, Samolus, Hottonia, Buchnera.
Properties. Tonics and weak secernant stimulants.

Order XXXV. Pediculares.

Calyx divided, permanent, often tubular. Corol irregular, often ringent. Stamens 2 or 4, inserted on, or attached to, the corol; when 4, two are shorter. Germ free, style simple; capsule 2-valved. Seed with semiterete cotyledons. Flowers bracted.
Generic names. Polygala, Veronica, Callistachia, Bartsia, Rhinanthus, Obolaria, Euphrasia, Melampyrum, Erinus, Pediculares, Orobanche, Epiphegus. [The two last have been placed in a sub-order, and distinguished by their capsules being 1-celled, and bearing seeds on a longitudinal nerve.]
Properties. Deobstruents, cathartics and mild tonics. Ancient authors, as Dioscorides, Pliny and others, valued most plants of this order for their efficacy in healing wounds, by external application.

Order XXXVI. Acanthi.

Calyx divided, permanent, often bracted. Corol irregular. Stamens 2 or 4. Germ free, style 1, stigma 2-lobed. Capsule 2-celled. Seed with foliaceous cotyledons.
Generic names. Justicia, Ruellia.
Properties. Emollients.

Order XXXVII. Jasmineae.

Calyx tubular. Corol tubular, except in Fraxinus. Stamens 2, excepting Fraxinus, inserted in, or attached to, the corol. Seed with a flat corcle. Stems woody.
Generic names. Jasminum, Ligustrum, Syringa, Chionanthus, Fraxinus.
Properties. Mild tonics and secernant stimulants. Petals of the Syringa contain prussic acid.

Order XXXVIII. Vitices.

Calyx tubular. Corol tubular. Stamens 4, 2 of them shorter—rarely 2 or 6. Germ free, style 1, stigma simple or 2-lobed. Corcle of the seed strait. Leaves opposite.
Generic name. Verbena.

Properties. Deobstruents and secernant stimulants. Parkinson, and the older authors, considered them as antidotes to the poison of serpents, &c.; but the moderns do not ascribe to them any very active powers.

Order XXXIX. Labiatae.

Calyx tubular, 5-cleft or 2-lipped. Corol tubular, irregular, often 2-lipped—the upper lip mostly 2-cleft and the lower one 3-cleft. Stamens sometimes 2, mostly 4, with two of them shorter; they are always inserted under the upper lip of the corol. Germ free, 4-lobed; each lobe becoming a naked seed at the bottom of the calyx, with a strait corcle and flat cotyledons. Style 1, stigma 2-cleft. Stems generally, or perhaps always, 4-sided; leaves opposite. Flowers often whorled and sometimes spiked.

Generic names. Lycopus, Monarda, Rosmarinus, Salvia, Collinsonia, Teucrium, Isanthus, Lavandula, Lamium, Pycnanthemum, Nepeta, Hyssopus, Mentha, Stachys, Galeopsis, Satureja, Leonurus, Marrubium, Ballota, Cunila, Hedeoma, Glechoma, Melissa, Trichostema, Ocymum, Scutellaria, Origanum, Thymus, Clinopodium, Prunella, Phryma, Molucella.

Properties. Very active secernant stimulants, embracing all the most valuable sudorifics. The sweet-scented are warming stomachics, and the bitter ones are tonics. Ancient physicians seem to have drawn a large proportion of their vegetable *materia medica* from this order. They established the medicinal virtues of these plants very nearly as they are now understood. To those virtues ascribed to them by modern physicians they added, however, that they are efficient as vermifuges, and in the cure of epilepsy, hemorhagy, bites of serpents and stings of scorpions.

Parkinson, who wrote almost two centuries ago, cites as authorities for the above, the trials and practice of Theophrastus, Dioscorides, Galen and Pliny among the ancients; and Matthiolus, Clusius, Camerarius, Agrippa, Dodoneus and many others among the oldest of the moderns.

Order XL. Scrophularia.

Calyx divided, often permanent. Corol irregular,

limb divided. Stamens rarely 2, mostly 4, with two of them shorter, inserted on the corol. Germ free, style 1, stigma simple or 2-lobed. Capsule 1 or 2-celled, 2-valved, valves concave. Seeds numerous, affixed to the middle of the partition, with a strait corcle and semi-cylindric cotyledons. Flowers bracted.

Generic names. Utricularia, Gratiola, Lindernia, Hemianthus, Erinus, Dracocephalum, Schrialbea, Limosella, Zapania, Scrophularia, Antirrhinum, Collinsia, Gerardia, Digitalis, Mimulus.

Properties. Deobstruents, absorbents and mild narcotics. Ancient physicians applied them to the wounds externally. Parkinson used the Digitalis in the epilepsy two centuries ago with great success.

Order XLI. Solaneae.

Calyx 5-cleft or 5-parted, often permanent. Corol regular, 5-cleft, mostly of a lurid hue. Stamens 5, attached to the base of the corol, and alternating with its lobes. Germ free, style 1, stigma simple or sub-cleft. Fruit 2-celled, many-seeded, either a 2-valved capsule or a berry. Seeds with spiral corcles and semi-terete cotyledons. Leaves alternate.

Generic names. Lycium, Datura, Nicotiana, Verbascum, Atropa, Phacelia, Hyoscyamus, Solanum, Physalis, Capsicum, Diospyros.

Properties. Cathartic, discussient, emetic, and antiscorbutic. The nauceous-scented are very strong narcotics; pungent-scented are warming and deobstruent. Several centuries ago they were much used, externally and internally, in gouts and rheumatisms.

Order XLII. Borragineae.

Calyx 5-lobed, permanent. Corol 5-lobed, mostly regular, having a border and a tube; with the upper entrance of the tube, called the throat, naked and open, or more or less choaked up with scales. Stamens 5, attached to the tube of the corol. Germ free, with 4 lobes which become 4 naked seeds; style simple, permanent, springing up from among the lobes of the germ; stigma entire or 2-lobed. Seeds attached laterally to the style; corcle strait, cotyledons foliaceous. Leaves alternate, mostly scabrous.

Generic names. Pulmonaria, Cerinthe, Lithospermum, Cynoglossum, Batschia, Anchusa, Myosotis, Heliotropium, Onosmodium, Borago, Symphitum, Echium, Hydrophyllum.

Properties. *Astringent and vulnerary.*

Order XLIII. Convolvuli.

Calyx 5-lobed, permanent. Corol regular, 5-lobed. Stamens 5, attached to the corol and alternating with its divisions. Germ free, having one or many-styles. Capsule generally 3-valved and 3-celled, sometimes 2 to 4-celled and 2 to 4-valved; columella central, 3-cornered. Seed bony, cotyledons folded together. Leaves alternate. Stem often twining or climbing.

Generic names. Convolvulus, Diapensia, Ipomaea, Pyxidanthera, Cuscuta.

Properties. *Cathartics, mostly very mild.*

Order XLIV. Polemonia.

Calyx divided. Corol regular, 5-lobed. Stamens 5, attached to the middle of the tube of the corol, alternating with the divisions. Germ free, style simple, stigmas generally 3 or 3-cleft. Capsule surrounded with the permanent calyx, 3-celled, 3-valved, many seeded; columella central, 3-cornered. Seed with a strait corcle and oval, foliaceous cotyledons. Leaves opposite.

Generic names. Phlox, Polemonium.

Properties. *Feeble tonics.*

Order XLV. Bignoniae.

Calyx divided. Corol irregular, ringent and inflated. Stamens rarely 2, all others 4, with two of them shorter —an odd filament-like organ accompanies them. Capsule 2 or 4-celled, 2-valved.

Generic names. Bignonia, Catalpa, Martynia, Pentstemon, Chelone.

Properties. *Mild narcotics, deobstruents and cathartics.*

Order XLVI. Gentiana.

Calyx monophyllous, divided, permanent. Corol regular, often marcessent; limb equally divided into a number of parts equal to those of the calyx and of the stamens, which are mostly 5. Stamens attached to the corol. Germ free, style 1 or 2, stigmas simple or 2-lobed.

Capsule 1 or 2-celled, 2-valved, many-seeded—seeds inserted on the inflexed margins of the valves. Herbage glabrous, bitter; leaves opposite.

Generic names. Gentiana, Spigelia, Swertia, Frasera, Sabbatia, Menyanthes, Villarsia.

Properties. Tonics and mild cathartics. The Spigelia is considered as a vermifuge. Dioscorides, Galen, and other ancient physicians considered the Gentiana as a vermifuge and an antidote to poison.

Order XLVII. Apocyneae.

Calyx 5-lobed. Corol 5-lobed, regular; often furnished with 5 nectariferous appendages. Stamens 5, inserted in the bottom of the corol, or suspended from the angles of the stigma*. Germs free, double, style 1 or none, stigma capitate. Follicles elongated, generally in pairs, 1-celled. Seed attached to the longitudinal margins of the follicle. Herbage generally milky.

Generic names. Apocynum, Asclepias, Cynanchum, Periploca, Vinca, Nerium, Gonolobus.

Properties. Active deobstruents, cathartics, antiscorbutics, and narcotics. Ancient physicians used the Asclepias, Apocynum, &c. as counter poisons.

Order XLVIII. Sapotae.

No plants of this order grow in our district. The southern ironwood (Bumelia) is placed here.

Properties. Feeble antispasmodics and cathartics.

CLASS FIFTH. Flowers with monopetalous corols surrounding the germ, and generally inserted on the calyx.

Order XLIX. Guaiacanae.

No plants of this order grow in our district. The lignum vitae and benjamin tree are placed here.

Properties. Very active tonics and warming stomachics.

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* The celebrated Robert Brown says, that in the young state the anthers of the Asclepias syriacus are not attached to the stigmas.—The reader is requested to examine the anthers at all stages from the first swelling of the flower-bud. He will find that although the anthers or masses of pollen adhere to their cases, they may be separated without lacerating the cuticle of any organ; but that they cannot be separated from the stigma in any stage without rupturing capillary fibres or vessels. Therefore the anthers certainly grow on the stigma only. A magnifying power of at least one hundred is required for this examination.

Order L. Rhododendra.

Calyx 4 or 5-lobed, permanent. Corol inserted in the base of the calyx, 4 or 5-parted. Stamens definite, distinct. Germ free, style 1, stigma 1. Capsule 4 or 5-celled, 4 or 5-valved. Seeds numerous, minute, corcle strait. Stems woody ; leaves alternate.

Generic names. Azalia, Itea, Menziesia, Rhodora, Rhododendron, Kalmia, Ledum, Leiophyllum, Diospyros.

Properties. Tonics. Kalmia is said to be narcotic.

Order LI. Ericae.

Calyx permanent, 4 or 5-parted, often free. Corol 4 or 5-parted or cleft, inserted on the calyx or calycine gland, often marcescent and permanent. Stamens definite, distinct, inserted on the bottom of the corol or calycine gland ; anthers often 2-horned. Germ often free ; style 1, stigma 1. Fruit many-celled, many-seeded ; berries or many-valved capsules. Seeds minute, with strait corcles and fleshy cotyledons. Stems more or less woody ; leaves often evergreen.

Generic names. Oxycoccus, Erica, Clethra, Pyrola, Chimaphila, Arbutus, Gaultheria, Epigaea, Vaccineum, Empetrum, Andromeda.

Sub order. Destitute of leaves or green herbage ; being ivory white, yellowish white, or reddish.

Generic names. Pterospora, Hypopithis, Monotropa.

Properties. Valuable astringents. Some bear refrigerant berries. Gerard, and other old physicians, particularly the old Germans, applied plants of this order to cancerous ulcers and in hemorhagy, two centuries ago.

Order LII. Campanulaceae.

Calyx adhering to the germ, limb divided. Corol inserted near the top of the calyx, often marcescent. Stamens inserted on the calyx below the corol, often 5, alternating with the divisions of the corol ; anthers either distinct, united, or so thickened as to press against each other. Germ glandular above, style 1, stigma simple or divided. Capsule 2 to 6-celled, many-seeded, laterally dehiscent. Seeds affixed to the inner angles of the cells ; corcle strait. Leaves alternate.

Generic names. Campanula, Lobelia.

Properties. The nauceous scented are cathartic, emetic, deobstruent and narcotic. The others are mildly aperient.

CLASS SIXTH. Flowers with monopetalous corols standing on the top of the germ. Stamens with united anthers.

This class includes all plants with COMPOUND FLOWERS, and corresponds with the class SYNGENESIA of Linneus. The flowers have broad receptacles, flat or convex, naked (when the florets are removed) or chaffy, supporting many florets. Egret generally supplies the place of the calyx to each floret, and is inserted on the top of the germ. The corol is tubular or lingulate, often 5-toothed. Germ simple, style 1, stigmas generally 2. Seed single, naked, corcle strait, cotyledons flat.

This class is divided into three orders.

Order LIII. Cichoraceae.

Florets all ligulate and perfect. Leaves alternate; juice in most is milky. Corols mostly yellow; rarely blue.

Generic names. Troximon, Apargia, Leontodon, Krigia, Prenanthes, Lactuca, Hieracium, Sonchus, Hyoseris, Cichorium.

Properties. Mild aperients and weak anodynes.

Order LIV. Cinarocephalae.

Corols all tubular. Receptacles fleshy and chaffy. Stigma, above the style, articulated. Egret somewhat rigid. Leaves alternate, often spinose. Flowers capitate.

Generic names. Echynops, Cynara, Liatris, Cnicus, Carthamus, Onopordon, Carduus, Arctium, Centaurea.

Properties. Tonics. The nauceous scented are cathartic.

Order LV. Corymbiferae.

Florets tubular and ligulate, mostly radiated. Receptacle scarcely fleshy. Stigma, above the style, not articulated. Inflorescence often a corymb.

Generic names. Scorzonera, Picris, Tolpis, Scholymus, Vernonia, Sparganophorus, Bidens, Kuhnia, Eupatorium, Mikania, Chrysocoma, Cacalia, Balsamita, Baccharis, Conyza, Gnaphalium, Artemisia, Tanacetum, Chrysanthemum, Zinnia, Tagetes, Bellis, Pyrethrum,

Doronicum, Inula, Erigeron, Solidago, Senecio, Tussilago, Cineraria, Aster, Heliopsis, Buphthalmum, Helenium, Boltonia, Matricaria, Anthemis, Achillea, Verbesina, Rudbeckia, Helianthus, Coreopsis, Silphium, Polymnia, Calendula, Iva, Elephantopos.

Properties. Most valuable tonics and secernant stimulants. Two or three centuries ago the physicians considered plants of this order as the most sovereign remedies for flesh wounds. Parkinson makes a class of them, which he denominates VULNERARY or WOUND HERBS. Dioscorides and Galen deemed them very efficacious in pulmonary complaints.

CLASS SEVENTH. Flowers with monopetalous corols standing above the germs. Stamens with anthers distinct, and with filaments attached to the corol.

Order LVI. Dipsaceae.

Flowers aggregated on a common receptacle, and surrounded by a many-leaved involucre. Calyx double, outer one not adhering to the germ; the inner membranaceous or pappose calyx closely contracting around its apex. Corol inserted on the top of the inner calyx. Stamens 3 to 5, attached to the bottom of the tube of the corol, and alternating with its divisions. Seed with a strait corcle and oblong cotyledons. Leaves opposite.

Generic names. Valeriana, Fedia, Dipsacus, Scabiosa, Cephalanthus.

Properties. Weak tonics.

Order LVII. Rubiaceae.

Calyx adhering to the germ, 4 or 5-lobed. Corol regular, inserted on the germ, 4 or 5-lobed. Stamens 4 or 5, inserted on the corol. Style 1, stigmas 2. Seeds generally 2, corcle strait, cotyledons foliaceous. Leaves entire, whorled.

Generic names. Galium, Rubia, Houstonia, Mitchella.

Properties. Aperients and tonics. Some abound in colouring matter.

Order LVIII. Caprifolia.

Calyx adhering to the germ, often 2-bracted at the base. Corol regular, 4 or 5-cleft, or 4 or 5-petalled with

the petals broader at the base. Stamens equalling the number of divisions of the corol. Style 1 or none, stigmas 1 to 3. Berry or capsule often crowned with the permanent calyx. Stems mostly woody ; leaves opposite and sometimes connate.

Generic names. Lonicera, Xylosteum, Shmpyoria, Diervilla, Viburnum, Sambucus, Cornus, Hedera, Linnaea, Triosteum.

Properties. Tonics ; and the strong-scented are cathartic.

CLASS EIGHTH. Flowers polypetalous. Stamens standing on the germ and alternating with the petals.

Order LIX. Araliae.

Calyx superior, 5-toothed, permanent. Stamens 5, styles 2 to 5. Fruit a berry. Inflorescence an umbel. Leaves compound.

Generic names. Panax, Aralia.

Properties. Valuable tonics and expectorants.

Order LX. Umbelliferae.

Calyx attached to the germ. Petals 5, inserted on the germ or on a gland covering the top of the germ. Stamens 5, alternating with the petals. Styles 2, often permanent. Fruit bipartible, becoming 2 seeds, often ribbed or groved on their outsides and on their joining sides (the commissure.) Stems herbaceous. Leaves alternate, often compound. Inflorescence an umbel, with the radiating peduncles often surrounded at their origin and sub-divisions with involucres.

Generic names. Eryngium, Hydrocotyle, Crantzia, Daucus, Ammi, Conium, Selinum, Imperatoria, Heracleum, Pastianaca, Ligusticum, Angelica, Sium, Erigenia, Cicuta, Myrrhis, Uraspermum, Chaerophyllum, Smyrnium, Thaspium, Oenanthe, Carum, Apium, Anethum.

Properties. Deobstruents and narcotics ; excepting the sweet-scented, which are stomachics. In the time of Dioscorides, Pliny and Galen, (during the first and second centuries) the sweet-scented plants of this order were in common use as remedies in cases of dispepsia, flatulency,

cholic and epilepsy. And the narcotic kinds* were used as antidotes to poison, and as remedies in liver complaints, gouts and rheumatisms; and by way of external application in the resolution of inflamed tumors.

CLASS NINTH. Flowers polypetalous. Stamens inserted below the germ.

Order LXI. Ranunculaceae.

Calyx many-leaved, or none. Petals many, often indefinite. Stamens often indefinite in number. Germs often numerous, rarely solitary, inserted on the receptacle, each having a single style. Seed with a minute corcle at the apex or base of a corneous albumen.

Generic names. Zanthorhiza, Actaea, Macrotys, Podophyllum, Delphinium, Aconitum, Aquilegia, Nigella, Hydrastis, Clematis, Atragene, Thalictrum, Caulophyllum, Helleborus, Anemone, Hepatica, Nelumbium, Ranunculus, Trollius, Adonis, Hydropeltis, Caltha, Paeonia, Coptis.

Properties. Deobstruent, cathartic, caustic and narcotic. The two last genera have astringent roots.

Order LXII. Papaveraceae.

Calyx free, often 2-leaved and caducous, sometimes about 5-leaved. Stamens many. Germ single; style often wanting; stigma divided or lobed, permanent. Fruit a capsule or pod, 1-celled, many-seeded; seeds attached to lateral columellas, albumen fleshy, corcle strait.

Generic names. Chelidonium, Papaver, Sanguinaria, Argemone, Nymphaea, Nuphar, Sarracenia ? Fumaria, Corydalis.

Properties. Deobstruent, cathartic, caustic, antiscorbutic, narcotic, and anodyne. The Papaver was in use as an anodyne in the time of Theophrastus, between three and

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* The root of the Cicuta maculata is a most deadly poison early in the spring. On the 10th of April, 1820, Asa H. Manley and Amos Ramsdel, of Rutland, Vermont, ate a small quantity of the root of this plant. The former died in two hours, the latter in 36. They were both under ten years of age. I examined the plant in the ensuing summer, and took specimens which grew from the remainder of the same root; and was particular in questioning the parents and neighbors respecting the above facts at the same time.

four hundred years before the Christian era. Dioscorides used the Fumaria and Chelidonium as antiscorbutics.

Order LXIII. Cruciferae.

Calyx 4-leaved. Petals 4, disposed in the form of a cross and alternating with the leaves of the calyx. Stamens 6, two of them outer and shorter. Germ single, sitting on the disk-like receptacle which supports the stamens; style 1 or none, stigmas 1 or 2. Fruit a silique or silicle. Seeds with incurved corcles. Stems herbaceous; leaves alternate.

Generic names. Cakile, Draba, Alyssum, Lepidium, Thlaspi, Lunaria, Cochlearia, Iberis, Isatis, Dentaria, Cardamine, Barbarea, Sisymbrium, Erysimum, Cheiranthus, Hesperis, Arabis, Turritis, Raphanus, Brassica, Sinapis.

Properties. Aperient, diuretic, antiscorbutic, nutrientic and emollient. Plants of this order have been used as emollients and diuretics, and as remedies in the jaundice, for several centuries.

Order LXIV. Capparides.

Calyx polyphyllous, or monophyllous and parted. Petals 4 or 5. Stamens often indefinite. Germ stiped, style short or none, stigma simple. Pod or berry many-seeded. Corcle of the seed incurved.

Generic names. Reseda, Parnassia, Cleome.

Properties. Feeble aperients; excepting the Cleome, which is an active cathartic and emetic, and considerably narcotic.

Order LXV. Sapindi.

We have no plants of this order in our district. The soap-berry of the Southern States is placed here.

Properties. Emollient.

Order LXVI. Acera.

Calyx monophyllous, permanent, 5-cleft. Petals 5 (or none) with claws, inserted on a disk below the germ and alternating with the lobes of the calyx. Stamens distinct and inserted on the disk with the corol. Germ free. Stigmas 1 or 2. Capsules 2 or 3-celled, 1-seeded. Stems woody; leaves opposite.

Generic names. Acer, Aesculus.

Properties. Aperient.

Order LXVII. Malpighiae.

We have no plants of this order in our district.
Properties. *Aperient.*

Order LXVIII. Hyperica.

Calyx monophyllous, 4 or 5-parted. Petals 4 or 5. Stamens numerous, sometimes united by their filaments in several parcels. Germ single, free; styles 3 to 5. Capsule 1 to 5-celled, 3 to 5-valved with inflexed margins, many-seeded. Seed without albumen, corcle strait. Leaves opposite, often glandular; flowers yellow or yellowish.

Generic names. Hypericum, Ascyrum, Dionaea, Drosera.*

Properties. *Tonic and vulnerary.*

Order LXIX. Guttiferae.

We have no plants of this order in our district.
Properties. *Expectorants and secernant stimulants.*

Order LXX. Aurantia.

Calyx monophyllous. Petals 4 or 5; stamens often united by their filaments in several parcels. Berry many-seeded. Corcle strait. Stems woody; leaves glandular.

Generic names. Citrus.
Properties. *Tonics* and *refrigerants.*

Order LXXI. Melia.

Calyx monophyllous. Petals 4 to 9, often adhering at the base. Stamens sometimes adhering by their filaments, equal in number to the petals or double. Germ single, free; style 1. Berry or capsule many-celled. Seed without albumen, corcle strait. Stems woody; leaves alternate.

Generic names. Melia, Thea.
Properties. *Astringent and feebly narcotic.*

Order LXXII. Vites.

Calyx monophyllous, short, subentire. Petals 4 to 6, broader at the base. Stamens equal in number, and opposite to the petals, and inserted on a disk beneath the germ. Germ single, free; style 1 or none. Berry one

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* See Nuttall, page 279.

or many-celled, one or many-seeded. Seed bony and destitute of albumen, corcle strait, cotyledons flat. Stems woody and climbing; leaves alternate; tendrils opposite to the leaves.

Generic names. Vitis, Ampelopsis.

Properties. *Tonics and refrigerants.*

Order LXXIII. Gerania.

Calyx permanent, 5-parted or 5-leaved. Petals 5, with claws, generally unequal or irregular. Stamens 3 to 10; filaments often unequal, sometimes united at the base. Germ single, free, often 5-angled, sometimes surrounded by a gland; style 1, stigmas often 5. Seed without albumen, corcle incurved. Stems herbaceous; leaves often stipuled.

Generic names. Geranium, Pelargonium, Erodium.

Geranioids. Oxalis, Impatiens, Tropeolum.

Properties. *Tonics, refrigerants and feeble narcotics.* The geranioids ought to be disposed of differently.

Order LXXIV. Malvaceae.

Calyx often double with the inner one monophyllous. Petals 5, regular, generally adhering to the base of the filaments. Stamens innumerable, united by their filaments. Germ free, simple, often lobed, stigmas many. Fruit many-capsuled or many-celled. Seed without albumen; corcle lobed, incurved and wrinkled. Leaves alternate, simple, stipuled.

Generic names. Gordonia, Napaea, Sida, Hibiscus, Malva, Althaea, Lavatera, Gossipium.

Properties. *Emollient and aperient.* Plants of this order were used as aperients and for sheathing the stomach when any acrid substance had been taken into it, by Dioscorides and other ancient physicians; and Hippocrates valued them highly for their vulnerary qualities.

Order LXXV. Magnoliae.

Calyx 3-leaved. Petals 6 or 9. Stamens many, not united. Germs many, arranged on an elongated receptacle in the form of a cone. Capsules many, 1 or 2-seeded. Seed with fleshy albumen and strait corcle. Stems woody; leaves alternate, having caducous stipules.

Generic names. Magnolia, Liriodendron.

Properties. *Tonics.*

Order LXXVI. Annonae.

Calyx 3-leaved. Petals 6. Stamens many. Germs 2 or more. Berries or capsules 2 or more 1-seeded. Seed compressed, corcle minute, albumen solid. Stems shrubby ; leaves alternate and destitute of stipules.

Generic names. Porcelia.

Properties. Tonics.

Order LXXVII. Menisperma.

Calyx 4 or 6-leaved. Corol none or more than 5-petalled. Flowers dioecious—stamens adnate—germs and styles 3 to 6. Drupes or berries 1-seeded. Seed with fleshy albumen, corcle at the summit. Stems woody, mostly twining or climbing. Leaves alternate, simple, destitute of stipules.

Generic names. Menispermum.

Properties. Weak narcotics.

Order LXXVIII. Berberides.

Calyx polyphyllous or deeply parted. Petals equalling the divisions of the calyx in number. Stamens equalling the petals in number and opposite to them. Germ simple, free ; style 1 or none. Fruit 1-celled, often many-seeded. Seed affixed to the bottom of the cell ; albumen fleshy, corcle strait. Stems woody ; leaves alternate. Flowers yellow.

Generic names. Berberris, Hamamelis.

Properties. Astringents and refrigerants.

Order LXXIX. Tiliaceae.

Calyx polyphyllous or many-parted. Petals alternating with the divisions of the calyx. Stamens innumerable. Germ simple, free. Berry or capsule 1 or many-celled, 1 or many-seeded. Seed with fleshy albumen ; corcle subincurved, flat. Stems woody ; leaves alternate, simple, stipuled.

Generic names. Tilia.

Properties. Emollient and aperient.

Order LXXX. Cisti.

Calyx 5-parted. Petals 5. Stamens 5 or more. Germ single, free ; style 1. Capsule with many seeds attached to the middle of the valves or base of the cells. Albumen fleshy or corneous. Leaves stipuled.

First division. Petals equal. Stamens more than 5. Seed with a curved or spiral corcle.

Generic names. Cistus, Hudsonia.*

Second division. Petals unequal. Stamens 5. Seed with a strait corcle.

Generic names. Viola.

Order LXXXI. Rutaceae.

Calyx monophyllous, 5-lobed. Petals 5, alternating with the lobes of the calyx. Stamens 10 or 15. Germ simple, free; style 1. Fruit many-capsuled or many-celled. Seed with flat cotyledons and strait corcle.

Generic names. Ruta.

Properties. Caustic and cathartic.

Order LXXX I. Caryophylleae.

Calyx often permanent, 4 or 5-toothed, or 4 or 5-leaved. Petals 4 or 5 (sometimes wanting) with claws, alternating with the divisions of the calyx. Stamens often double the number of the petals; sometimes equal and alternating with them. Germ simple, sometimes substiped; styles 3 to 5. Capsule many-valved, dehiscent at the top. Seeds affixed to the centre of the base of the capsule; albumen farinaceous; corcle involute. Stems with joints; leaves opposite, entire.

Generic names. Dianthus, Saponaria, Lychnis, Agrostemma, Silene, Cucubalus, Cerastium, Arenaria, Spergula, Linum, Sarothra, Sagina, Lechea, Mollugo, Queria, Stellaria.

Properties. Emollient and aperient. This order comprises those plants which are called pinks, chickweeds and flax. Flax-seed has been used as an emollient and aperient more than two thousand years.

CLASS TENTH. Flowers polypetalous. Stamens surrounding the germ and attached to a monophyllous calyx.

Order LXXXIII. Sempervivae.

Calyx free, parted. Corol inserted at the base of the calyx; petals (or the deep divisions) equalling in number the divisions of the calyx. Stamens equal or double the

* See Nuttall, vol. 2. p. 4.

number of petals. Germs equalling the number of petals, or having an equal number of lobes. Capsules (or follicles) 1-celled, opening on one side longitudinally, many-seeded. Seed with a slender, fleshy albumen, and strait corcle. Stems herbaceous; leaves mostly fleshy; inflorescence a cyme.

Generic names. Sedum, Sempervivum, Penthorum, Tillaea.

Properties. Emollient and vulnerary.

Order LXXXIV. Saxifragae.

Calyx adhering, rarely free, limbs 5-lobed. Petals 4 or 5, (sometimes wanting) inserted on the top of the calyx, and alternating with its divisions. Stamens inserted with the petals, and are equal or double in number. Styles 2, permanent. Capsule 2-beaked, 2-valved, 1 or 2-celled, dehiscent by a terminal pore. Seeds inserted on the base of the capsule or the inflexed edges of the valves; albumen fleshy, corcle strait.

Generic names. Heuchera, Hedyotis, Saxifraga, Tiarella, Mitella, Chrysosplenium, Hydrangea? Hortensia?

Properties. Tonics.

Order LXXXV. Cacti.

Calyx adhering to the germ, 5-cleft. Petals inserted on the calyx. Style 1, stigma cleft. Berry 1-celled, many-seeded.

First division. Petals indefinite. Stamens indefinite. Style tubulose, stigma many-cleft. Berry umbilicate. Seed without albumen, corols incurved.

Generic names. Cactus.

Second division. Petals 5. Stamens 5. Style 2-cleft. Berry globose. Seed with corneous albumen, corol strait.

Generic names. Ribes.

Properties. Refrigerants and emollients.

Order LXXXVI. Portulaceae.

Calyx divided at the top. Corol inserted on the calyx, 1 or 5-petalled (rarely wanting.) Stamens inserted on the corol. Germ free or adhering at the base; style 1 to 3, or none. Capsule 1 or many-celled, 1 or many-seeded. Seed with an incurved or ring-like corcle, surrounding a farinaceous albumen.

Generic names. Portulacca, Claytonia, Scieranthus, Crypta.

Properties. Emollient.

Order LXXXVII. Ficoideae.

Calyx parted, free or adhering to the germ. Petals inserted on the top of the calyx, sometimes adhering a little at the base. Stamens indefinite in number, inserted with the petals. Styles many. Capsule or drupe many-celled. Seed affixed to the inner angles of the cells. Corcle incurved and surrounding a farinaceous albumen. Leaves succulent.

Generic names. Mesembryanthemum.

Properties. Refrigerant and emollient.

Order LXXXVIII. Onagrae.

Calyx adhering to the germ, tubular, divided at the top. Petals generally 4, (rarely none) inserted on the top of the calyx. Stamens inserted with the petals, equalling or double their number. Germs many ; style 1. Fruit many-celled, many-seeded ; seeds affixed to the top of the cells ; albumen wanting, corcle strait, rostel superior and longer than the cotyledons.

Generic names. Circaea, Ludwigia, Isnardia, Gaura, Epilobium, Oenothera, Myriophyllum, Serpicula. *Onagraoids, with single germs.* Callitriche, Hippuris.

Properties. Tonics and aperients.

Order LXXXIX. Myrti.

Calyx adhering to the germ, permanent, divided. Petals generally 5, inserted on the top of the calyx. Stamens 20 or more, inserted on the calyx under the petals. Style 1. Fruit many-seeded, 1 or many-celled. Seed without albumen, corcle strait or curved ; cotyledons flat. Stems woody ; leaves generally opposite, and often with pellucid punctures.

Generic names. Philadelphus, Myrtus.

Properties. Tonics.

Order XC. Melastomae.

Calyx tubular, 4 or 5-cleft. Petals equal in number to the divisions of the calyx and alternating with them, inserted on the top of it. Stamens double the number of petals. Germ enclosed by the calyx. Seed without albumen, corcle incarved. Stems herbaceous ; leaves opposite, simple, nerved.

Generic names. Rhexia.
Properties. Feebly tonic.

Order XCI. Salicariae.

Calyx free, tubular, permanent. Petals inserted at the top of the calyx, sometimes wanting. Stamens inserted in the middle of the calyx, equalling, or double, the number of divisions. Germ single, style 1. Capsule covered by the calyx, 1 or many-celled. Seeds numerous, affixed to a central columella; without albumen, corcle strait, rostel inferior. Leaves mostly opposite.

Generic names. Lythrum, Glaux, Ceratophyllum, Ammannia, Cuphea, Crypta.

Properties. Deobstruent and cathartic.

Order XCII. Rosaceae.

Calyx mostly permanent, divided, covering the germ, either adhering or free. Petals inserted on the top of the calyx, generally 5, alternating with the divisions of the calyx. Stamens indefinite in number. Germs single or many. Fruit various. Seed with a lateral hilum under the apex, to which the funicule is attached springing from the bottom of the pericarp; albumen none, corcle strait. Stems woody or herbaceous; leaves alternate.

First division, Pomaceae. Calyx 5-celled. Petals 5. Germ single, adhering to the calyx. Styles many. Pome umbilicate, crowned with the lobes of the calyx, many-celled. Seed with the rostel inferior. Stems woody. Flowers complete and perfect. Stamens about 20.

Generic names. Pyrus, Aronia, Punica, Crataegus, Mespilus, Sorbus.

Second division, Rosae. Germs many, 1-seeded, concealed within the calyx which is contracted at the neck; style 1 to each germ. Rostel of the seed superior. Stem woody. Flowers complete and perfect. Stamens about 20. Leaves pinnate, with stipules adhering to the petioles.

Generic names. Rosa.

Third division, Agrimoniae. Germs generally 2, each with 1 style, and 1 seeded, concealed within the urceolate calyx. Rostel of the seed superior. Stems herbaceous or woody. Flowers sometimes apetalous and monoeceous. Leaves pinnate or digitate.

Generic names. Poterium, Sanguisorba, Agrimonia.

Fourth division, Dryadeae. Germs many; each 1-

seeded, free, inserted on a general receptacle, style 1 to each. Rostel of the seed superior. Stems herbaceous, or suffruticose. Stamens about 20.

Generic names. Potentilla, Fragaria, Dalibarda, Comarum, Geum, Rubus, Calycanthus.

Fifth division, Ulmariae. Germs many, free, each having 1 style. Capsules equal in number to the germs, 1 or many-seeded. Rostel of the seed superior. Flowers mostly complete and perfect. Stamens indefinite in number.

Generic names. Spiraea, Gillenia.

Sixth division, Drupaceae. Germ single, free, style 1. Drupe with a 1 or 2-seeded nucleus; internal membrane of the seed somewhat fleshy and tumid. Rostel superior. Stems woody. Flowers complete and perfect. Stamens indefinite in number, Leaves simple, having glandular bases or petioles. Calyx 5-lobed; petals 5.

Generic names. Prunus, Armeniaca, Amygdalus.

Properties. Refrigerants, tonics and astringents.

Order XCIII. Leguminosae.

Calyx often 5-cleft or 5-parted. Corol 5-petalled, inserted on the calyx, consisting of a banner, two wings and a keel. Stamens generally 10, mostly united in two sets, 9 and 1, sometimes in one set, and sometimes they are free. Germ free, style 1. Legume generally 2-valved, 1-celled; sometimes transversely divided into several cells. Seeds affixed to the suture of one side; without albumen, cotyledons thick. Stem woody or herbaceous; leaves alternate, often compound, stipules axillary —leafets often close up at evening.

First division. Stamens all distinct.

Generic names. Cassia, Cercis, Baptisia.

Second division. Stamens united by their filaments in one set.

Generic names. Ulex, Mimosa, Genista, Crotolaria, Arachis, Amorpha, Lupinus, Spartium.

Third division. Stamens united, 9 in one set, and one separate. Legume 1-celled. Cotyledons always rise up out of the earth, when the plant commences its growth, and become succulent leaves. Leaves ternate or pinnate with a terminal leafet.

Generic names. Trifolium, Melilotus, Medicago, Trigonella, Phaseolus, Glycine, Galactia, Vexillaria, Glycirhiza, Galega, Indigofera, Robinia, Colutea.

Fourth division. Stamens united, 9 in one set, and one separate. Legume partly divided by an imperfect longitudinal partition.

Generic names. Astragalus, Dolichos?

Fifth division. Stamens united, 9 in one set, and one separate. Legumes 1-celled. Cotyledons do not rise out of the ground nor become leaves. Leaves pinnate without a terminal leafet; but the general petiole terminates in a tendril or filament.

Generic names. Lathyrus, Pisum, Vicia, Ervum.

Sixth division. Stamens united, 9 in one set, and one separate. Legume transversely divided into many cells, each cell 1-seeded, not dehiscent spontaneously.

Generic names. Coronilla, Gleditschia, Hedysarum, Lespedeza, Stylosanthes, Aeschynomene.

Properties. Emollient, diuretic and aperient. In the time of Dioscorides and Galen the same properties were ascribed to this order of plants as at this day.

Order XCIV. Terebintaceae,

Calyx often free, parted. Petals inserted on the base of the calyx and alternating with its divisions (often wanting.) Stamens inserted with the petals, equal or double in number. Fruit various. Seed without albumen, rostel reflexed into lobes. Stems woody; leaves alternate. [This order is not satisfactorily defined.]

Generic names. Rhus, Juglans, Carya, Zanthoxylum.

Properties. Cathartic, emetic and narcotic.

Order XCV. Rhamni.

Calyx divided. Corol many-petalled, (sometimes none and sometimes deeply divided) inserted on the calyx, and equalling the divisions of the calyx in number. Stamens of the same number. Germ single, free, surrounded by the calyx. Fruit a berry or capsule, many-celled. Seed with fleshy albumen, corcle strait, rostel inferior. Stems woody; leaves stipuled.

Generic names. Staphylea, Euonymus, Ilex, Ceanothus, Rhamnus, Prinos.

Properties. Cathartic, and somewhat tonic.

CLASS ELEVENTH. Flowers generally without petals; stamens and pistils mostly in different flowers. [An imperfect definition; for many plants of this class have petals.]

Order XCVI. Euphorbeae.

Flowers solitary, spiked or encircled by involucres. Perianth (or corol) many-parted; sometimes wanting in the pistillate. Stamens inserted on the receptacle, filaments often articulated in the middle. Germ free, often stiped; styles 1 to 3, 2-cleft. Capsules 2 or 3-seeded, valves elastically dehiscent. Seeds arilled, affixed at the top of a central columella; corcle flat, involved in a fleshy albumen; rostel superior.

Generic names. Ricinus, Euphorbia, Phyllanthus, Acalypha, Buxus.

Properties. Cathartics and mild emetics. The seeds of the Ricinus communis had been long in use as a cathartic, before the time of Dioscorides in the first century.

Order XCVII. Cucurbitaceae.

Calyx adhering to the germ, contracted above and then dilated into a 5-cleft limb. Corol bellform, inserted on the top of the germ, 5-lobed, at length withering and permanent. Stamens 3 to 5, inserted on the contracted part of the calyx, often united, anthers 1-celled, oblong, attached to the top of the filament; the staminate flowers have abortive germs. Germ single. Fruit a berry, with a solid bark, which is often corneous. Seeds many, without albumen; corcle strait; cotyledons flat. Stems herbaceous, mostly climbing; leaves petioled, alternate, broad; tendrils are often inserted in the axils of the leaves.

Generic names. Passiflora, Momordica, Sycios, Cucurbita, Cucumis, Melothria.

Properties. The fruit is mostly refrigerant; the herbage and nauceous fruit are emetic and cathartic.

Order XCVIII. Urticae.

Flowers small, greenish, solitary, in aments or surrounded by involucres. Calyx (or corol) 1-leaved, lobed. Stamens inserted on the base of the calyx. Germ single, free; styles 1 or 2, cleft Leaves mostly hispid.

First division, Artocarpae. Flowers aggregated, sitting on a general receptacle. Fruit fleshy. Seed having fleshy albumen and curved corcle.

Generic names. Ficus, Morus.

Second division, Urticeae. Flowers solitary, on aments

or spikes. Fruit never fleshy. Seed without albumen; corcle often strait.

Generic names. Urtica, Boehmeria, Parietaria, Cannabis, Humulus, Ambrosia, Xanthium.*

Properties. *Tonics.*

Order XCIX. Amentaceae.

Staminate flowers in aments, furnished with scales on which the stamens are inserted. Pistillate flowers have scales or perianths: germs free; stigmas many. Fruit bony or membranaceous. Seed without albumen; corcle strait, flat. Stems woody; leaves alternate and caducous. [This description is defective in its application to Celtis and Ulmus.]

First division. Flowers dioecious.

Generic names. Salix, Populus, Myrica.

Second division. Flowers monoecious.

Generic names. Betula, Alnus, Carpinus, Ostrya, Fagus, Castanea, Corylus, Quercus, Platanus, Liquedambar, Comptonia.

Third division. Flowers perfect.

Generic names. Fothergillia, Celtis, Ulmus.

Properties. *Tonics and astringents.*

Order C. Coniferae.

Staminate flowers in aments; each furnished with a scale or perianth, supporting the stamens. Pistillate flowers in strobiles; each furnished with a hard scale. Fruit bony, or membranaceous. Seed with a cylindric corcle in the center of fleshy albumen. Stems woody; leaves evergreen; juice resinous.

Generic names. Pinus, Cupressus, Thuja.

Sub-order, Juniperi. Fruit a berry or drupe.

Generic names. Juniperus, Taxus.

Properties. *Secernant Stimulants and expectorants.* The resinous juice obtained from these plants has been applied as a remedy to wounds and old ulcers for more than two thousand years. Various preparations, as tar-water, decoctions of the bark, &c. has been used with various success from the time of Dioscorides, and probably much earlier, in pulmonary complaints.

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* Some botanists place the two last genera in the order Corymbiferae—als in the Linnean class Syngenesia. I see no good reason for these innovations. See De Lamarck and De Candolle, p. 183.

A

SYSTEM OF GENERA,

FOR THE

NORTHERN AND MIDDLE STATES.

CLASS I. MONANDRIA.

Order I. Monogynia.

Salicornia. Calyx inflated, entire, 3 or 4-sided : corol o : seed 1, inclosed in the calyx. 12. 29—(samphire.)

Hippuris. Calyx superior, obsolete, with a 2-lobed margin : corol o : seed 1 : stigma simple : style in a groove of the anther. 15. 88—(marestail.)

* Scirpus, Cyperus.

Order II. Digynia.

Callitriche. Calyx inferior, 2-leaved : capsule membranaceous and margined : seeds 4, naked, compressed : (flowers sometimes monoecious, and by some the calyx is called the corol.) 12. 88—(water-starwort.)

Blitum. Calyx 3-cleft, or 3-parted, berry-like : corol o : seed 1. 12. 29—(blite.)

Cinna. Calyx, 1-flowered glume, 2-valved : corol a 2-valved glume : linear, short-stiped, naked at the base ; one valve including the other and having a small awn near the summit. seed 1. 4. 10.

* Uniola, Saccharum.

CLASS II. DIANDRIA.

Order I. Monogynia.

A. *Corol inferior. 1-petalled regular : border, except in Jasminum, 4-parted.*

Jasminum. Corol salver-form, 5 to 8-cleft : berry 2-seeded, each seed solitary, arilled. 44. 37—(jasmine.) Exotic.

LIGUSTRUM. Calyx 4-toothed: corol with ovate divisions: berry 1-celled, 2 to 4-seeded. 44. 37—(prim.)

CHIONANTHUS. Corol 4-parted, with very long divisions: nucleus of the drupe striate-fibrous. 44. 37—(fringe tree.)

SYRINGA. Corol salver-form: capsule 2-celled. 44. 37—(lilac.) Exotic.

B. *Corol inferior, 1-petalled, irregular; fruit capsular.*

UTRICULARIA. Calyx 2-leaved or 2-parted, equal: corol ringent, with a sub-cordate palate, the upper lip bearing the stamens, spurred: capsule, 1-celled, globular. 24. 40—(bladder-wort.)

CATALPA. Corol 5-cleft, somewhat bell-form: calyx 2-leaved: capsule 2-celled. 40. 45—(catalpa tree.)

JUSTICIA. Calyx simple or double, 5-parted: corol ringent or nearly equal: capsule 2-celled, bursting with an elastic claw: partitions transverse. 40. 36—(malabar nut.) Exotic.

GRATIOLA. Calyx 5-leaved, sometimes with a 2-leaved calycle: corol 2-lipped, reversed: tubular, sometimes 4 or 5-cleft: stamens 4; (2 of them barren) stigma 2-lipped; capsule 2-celled. 40. 40, (hedge hyssop.)

LINDERNIA. Calyx 5-parted, equal: corol tubular, ringent, the upper lip very short, the lower one 3-cleft, 2-keeled at the base: anthers cohering by pairs: stigma bilamellate: capsule 2-celled, 2-valved, the partition parallel to the valves. 40.

HEMIANTHUS. Calyx tubular, border 4-toothed, cleft on the under side: corol with the upper lip obsolete; lower one 3-parted, with the middle segment linear or strap-like and truncate, long, closely incurved. Stamens with 2-cleft filaments bearing the anthers on the lateral branches: capsules 1-celled, 2-valved, many-seeded—seeds ovate, shining. 40. 40.

VERONICA. Calyx 4-parted: corol 4-cleft, lower division smaller: capsule obcordate, few-seeded, 2-celled. 40. 35—(speedwell.)

CALLISTACHIA.* Calyx 5-parted: corol tubular, 4-cleft, with one division smaller: capsule ovate, 2-celled. 40. 35—(Culver's physic.)

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* Mr. Rafinesque, who first separated this genus from the Veronica, says that the same name is given to a foreign genus. Perhaps we ought now to adopt Nuttall's name, LEPTANDRA.

C. *Corol inferior, 1-petalled, irregular: seeds naked.*

LYCOPUS. Calyx tubular, 5-cleft or 5-toothed: corol tubular, 4-cleft, nearly equal, 1 division broader and emarginate: stamens distant: seeds 4, retuse. 42. 39—(water hore-hound.)

MONARDA. Calyx cylindric, straited, 5-toothed: corol ringent, tubular, upper lip linear, involving the filaments. 42. 39—(Oswego tea, mountain-mint.)

ROSMARINUS. Corol ringent, upper lip 2-parted: filaments long, curved, simple, with a tooth. 42. 39—(rosemary.)

SALVIA. Calyx tubular, striait, 2-lipped, underlip 2-toothed: corol ringent: filaments transversely or laterally affixed to a pedicel. 42. 39—(sage.)

COLLINSONIA. Calyx tubular, 2-lipped: corol funnelform, unequal, underlip many-celft, capillary: one perfect seed. 40. 39—(horse-balm.)

D. *Corol superior.*

CIRCAEA. Calyx 2-leaved or 2-parted: corol 2-petalled: capsule hispid, 2-celled, not gaping; cells 1-seeded. 48. 88—(enchanter's nightshade.)

* Cunila, Schoenus, Scirpus, Verbena.

ORDER II. DIGYNIA.

ANTHOXANTHUM. Calyx, glume 2-valved, 1-flowered: corol glume 2-valved, accuminate, awned nearer the base. 4. 10—(sweet vernal grass.)

CRYPTA. Calyx 2-leaved, inferior: corol 2 or 3-petalled, closed: styles none; stigmas 2 or 3, very minute: capsule 2 or 3-celled, 2 or 3-valved; cells 4 or 5-seeded; seeds subcylindric, striate, incurved. 13. 86. (mud purslane.) The corol appears like a capsule with an aperture at the top, when examined without a lens.

* Holcus, Festuca, Saccharum.

CLASS III. TRIANDRIA.

ORDER I. MONOGYNIA.

A. *Corol or perianth superior.*

VALERIANA. Calyx 0, or with an extremely small margin: corol 1-petalled, 5-cleft, base gibbous: seed 1:

stamens, 1, 2, 3 and 4, exsert. 48. 56—(valerian.) Exotic.

Fedia. Calyx 3 to 6-toothed : corol tubular, 5-cleft or 5-parted : nut 2 or 3-celled : seed naked, or crowned with a tooth. 48. 56—(lamb-lettuce.)

Crocus. Spathe radical : corol funnel-form, with a long slender tube : stigma deep-gashed, crested. 6. 18—(saffron.) Exotic.

Ixia. Spathe 2 or 3-valved, ovate, short : corol 6-parted or 6-petalled ; sometimes tubular : stamens strait or incurved : stigmas subfiliform. Exotic.

Iris. Calyx spathe 2 or 3-valved : corol 6-parted, divisions alternately reflected : stigmas 3, petal-like. 6. 18—(flower-de-luce, iris or flag.)

Dilatris. Perianth petal-like, hirsute outside, permanent : the third filament less than the rest : stigma simple : capsule globose, 3-celled.

B. *Corol inferior.*

Commelina. Calyx, spathe cordate ; perianth 3-leaved : corol 3-petalled : nectaries 3, cross-form, inserted on peculiar filaments : capsule sub-globose, 3-celled. 6. 13—(day-flower.)

Leptanthus. Calyx, spathe 1-flowered : corol long-tubular ; border 6-parted with the stamens on the divisions, anthers uniform, filaments equal : capsule 3-celled, many seeded, gaping at the angles. 6. 17.

Heteranthera. Calyx, spathe 2 or 3-flowered : corol membranaceous with a long slender tube, border 4 to 6-parted : 2 anthers attached to the divisions of the corol, and a third (much larger) attached to the top of the style : stigma sub-capitate, one-sided : capsules 3-celled, many seeded, dehiscent at the angles. 6. 17—(slime plantain.)

Xyris. Calyx 2 or 3-valved, in a head : corol 3-petalled, equal, crenate : capsule 3-valved, many-seeded. 6. 13—(yellow-eyed-grass.)

C. *Flowers grassy : valves of the calyx glume-like.*

Kyllingia. Spike (or ament) roundish-oblong, imbricate sessile, or umbel-like : calyx of 2 unequal leaves, or valves, 1-flowered : corol 2-valved, or 2-leaved, great-

er than the calyx : seed 3-sided. (stamens and stigmas vary from 1 to 3.) 3. 9—(false bog-rush.)

SCHOENUS. Spikelets sub-convolute, acute ; scales heaped in fasicles, outer ones dry, shinning, empty : corol 0 : seed 1, roundish, naked ; style caducous. 3. 9. (bog-rush.)

RHYNCHOSPORA. Scales of the calyx fascicled into a spike, lower ones empty : corol 0 : styles permanent at the base : bristles surrounding the base of the seed. 3. 9.

CYPERUS. Corol 0 : calyx scales imbricated 2-ways : seed single, beardless : spikelets compressed. 3. 9.

MARISCUS. Flowers distinct, subimbricate in a few-flowered spike : calyx 2-valved, 3 to 8-flowered : corols 1-valved, the lower corol embracing the upper : style 3-cleft. 3. 9.

DULICHIUM. Spikes sub-racemed, proceding from the axils of the leaves ; spikelets linear-lanceolate, sub-compressed : scales somewhat 2-ranked, closely embracing : styles very long, 2-cleft : germ with small bristles rough backwards. 3. 9.—(galingale.)

SCIRPUS Glume chaffy, scales imbricated every way : style filiform, caducous : corol 0 : seed single, naked, or surrounded with hairs or bristles. 3. 9—(club rush.)

ERIOPHORUM. Glume chaffy, imbricated every way : corol 0 : seed beset round with very long dense woolly hairs. 3. 9—(cotton grass.)

TRICHOPHORUM. Calyx, scales imbricated every way : seed beset with capillary bristles, which at length project out, and present a woolly or hairy appearance as the seed ripens ; always 6 in number : spikelets ovatish. 3. 9—(clump-head.)

FUIRENA. Scales of the calyx mucronate, every where imbricate in a spike : corol 0 : seed beset round with broad chaff-like scales, sometimes awned. 3. 9.

LIMNETIS. Calyx 2-valved, compressed, one of them keeled and longer than the other : corol 2-valved : flowers in unilateral spikes, somewhat imbricated in 2 rows. 3. 9—(salt grass.)

CENCHRUS. Involucre divided, echinate, 3 or 4-flowered : glumes 2-valved, 2-flowered, one flower barren : corol 2-valved, awnless : style 2-cleft. 4. 10—(hedge-hog-gress.)

* Juncus, Gallium, Oryzopsis, Queria.

Order II. Digynia.

The proper Grasses.

A. *Glume 1-flowered.*

Oryzopsis. Calyx 2-valved, lax, obovate: corol coriaceous cylindric-ovate, surrounded with hairs at the base; valves 2, outer one awned at the tip: seed with 2 linear appendages, or one 2-parted: styles often united in one with 2 diverging or reflexed stigmas. 4. 10—(mountain-rice.)

Panicum. Calyx 3-valved, the third valve dorsal and very minute, with a second neutral floret: corcle 2-valved, sub-membranous and permanent: inflorescence a panicle. 4. 10—(cockfoot grass, panic-grass.)

Pennisetum.* Calyx 2-valved, sometimes with a second staminate or neutral floret: inflorescence a spike, with a many-bristled involucre. 4. 10—(bristled panic.)

Digitaria. Calyx 2 or 3-valved, concave: the outer one very small or none, the inmost one of the length of the corol: corol 2-valved, oblong-ovate, awnless: style very long; spikes digitate, linear: flowers in pairs. 4. 10—(finger-grass.)

Cynodon.† Calyx 2-valved, lanceolate, spreading: corol 2-valved, longer than the calyx; the outer valve larger and somewhat oval: nectary truncate. Spikes digitate, flowers solitary. 4. 10—(dwarf finger-grass.)

Paspalum. Calyx 2-valved, valves roundish, of the form of the corol: flowers unilateral. 4. 10—(paspalon.)

Aristida. Calyx 2-valved: corol 1-valved, with 3 awns at the tip. 4. 10—(beard grass.)

Stipa. Calyx 2-valved: corol 2-valved, shorter than the calyx; valves involute truncate; awn terminal, very long, caducous, twisted at the base. 4. 10—(feather-grass.)

Alopecurus. Calyx 2-valved: corol 1-valved, simple at the tip; sometimes awned at the base. 4. 10—(foxtail-grass.)

Phalaris. Calyx 2-valved, valves keeled, nerved, equal in length, including the 2-valved pilose corol. 4. 10—(ribbon-grass, canary-grass.)

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* Panicum. 2d Ed. † Digitaria. 2d Ed.

HORDEUM. Calyx lateral, 2-valved, 1 or 2-flowered; florets in threes, the middle one sessile, lateral ones often barren: corol 2-valved, acute, outer valve awned. 4. 10—(barley.)

MILIUM. Calyx 2-valved, 1 flowered, ventricose: corol 2-valved, very short: stigmas villose. 4. 10—(millet.)

AGROSTIS. Calyx 2-valved, 1-flowered, valves acute a little less than the corol: corol 2-valved: stigmas longitudinally hispid or plumose, florets spreading. 4. 10—(redtop.)

SACCHARUM. Calyx involucred with long wool at the base, 2-valved: corol 1 or 2-valved: stamens 1 to 3. 4. 10—(sugar-cane.) Exotic.

ANDROPOGON. Calyx glume 2-valved: corol 3-valved: flowers in pairs; one sessile perfect, the other peduncled staminate awnless—rarely neutral. 4. 10. (beard-grass.)

MUHLENBERGIA. Calyx 1 or 2-valved, very minute: corol 2-valved, base hairy, outer valve awned at the tip: seed 1, oblong acuminate: flowers panicled. 4. 10—(dropseed grass.)

LEERSIA. Calyx 0: corol 2-valved, closed; valves compressed, boatform, awnless, stamens 1 to 6. 4. 10—(cut-grass.)

TRICHODIUM. Calyx 2-valved, valves nearly equal, acute; keel with small spines; corol 1-valved, awnless, shorter than calyx: stigmas nearly sessile, sub-hispid. Panicled. 4. 10—(thin-grass.)

PHLEUM. Calyx hard, 2-valved, sessile, linear, truncate, bicuspidate: corol inclosed. 4. 10—(timothy-grass.)

B. *Glumes 2 or 3-flowered; panicled.*

AIRA. Calyx glossy, 2-valved, 2-flowered: corol 2-valved, awnless, or awned at the base. 4. 10—(hair-grass.)

URALEPSIS. Calyx scariose, 2-valved, 2 or 3-flowered: corol 2-valved, stiped; outer valve with hairy nerves, much longer than the calyx and tricuspidate, with the middle cusp longest and terminated with an awn; inner valve short and arched: seed arilled. Florets alternate and distinct, both flowers and culm purple. 4. 10—(purple hair-grass.)

HOLCUS. Calyx glume 2-valved, opake, nerved: co-

rol smaller than the calyx, 2-valved; the outer one awned under the tip; nectary linear, 2-parted; stigma subsessile. 4. 10—(sweet seneca, or soft grass.)

HIEROCHLOA. Calyx valves membranaceous, almost of the length of the florets; in staminate ones which are lateral, corol 2-valved, lower one mucronate, upper one bifid-toothed; the intermediate perfect ones often have but 2 stamens: nectaries sub-orbiculate: germ beaked. 4. 10.

ANTHOPOGON. Calyx with 2 rigid, subulate, unequal valves, 2-flowered; one flower barren, consisting of a minute pedicelled valve terminating in an awn: the fertile flower 2-valved, outer valve with a long strait awn: panicle composed of setaceous spikes. 4. 10.

C. *Glumes 2-flowered or more; close-spiked.*

ELYMUS. General calyx involucre-like, generally 4-leaved, with spikelets in pairs; partial calyx lateral, 2-valved, many-flowered. 4. 10—(lime grass, wild rye.)

MELICA. Calyx 2-valved, unequal, coloured, obtuse: corol smaller, 2-valved, ventricose; it has the rudiment of a third flower. 4. 10—(melic-grass.)

ELEUSINE. Calyx awnless, keeled, 5 to 9-nerved, many-flowered: inflorescence an unilateral digitate spike: corol 2-valved, awnless. 4. 10—(dog-tail-grass.)

SECALE. Calyx 2-valved, 2 or many-flowered, opposite, solitary: glumes linear-lanceolate, smooth or channelled both sides. 4. 10—(rye.) Exotic.

TRITICUM. Calyx 2-valved, about 3-flowered, alternate; florets obtusish and pointed: glumes beardless or interruptedly bearded: spikelets shortish. 4. 10—(wheat.)

LOLIUM. Calyx 1-leafed, permanent, many-flowered: florets in a 2-rowed simple spike. 4. 10—(darnel-grass.)

ATHEROPOGON. Calyx 1-valved, 2-flowered, and an inner bristleform valve: corol 2-valved, with the outer valve 3, and the inner valve 2-toothed or awned. Generally a neutral 1-valved corol. 4. 10—(hairy-beard.)

D. *Glumes many-flowered; in panicles.*

UNIOLA. Spikelets flat, 2 edged, ovate: calyx 3 to 5-glumed: corol 2-valved, awnless, inner one smallest: stamens 1 to 3: appendages 2, somewhat 2-horned. 4. 10—(sea-rush-grass.)

Briza. Calyx 2-valved, many-flowered: spikelets of the panicle 2-ranked: valvelets inflated, heart-form, obtuse; inner one minute. 4. 10—(quake-grass.)

Sorghum. Florets in pairs; one perfect with a 3-valved corol, and sessile, the other staminate or neutral and pedicelled. 4. 10—(broom-corn.) Exotic.

Dactylis. Calyx 2-valved, keeled, compressed, somewhat awned, one valve smaller: corol 2-valved, awnless, compressed, carinate: style long: panicles strait; spikelets imbricate with lateral florets. 4. 10—(orchard-grass.)

Poa. Calyx 2-valved, many-flowered: corol ovate; valve 2-coloured, acutish, scarious at their margins; spikelets of the panicle ovate, awnless. 4 10—(meadow-grass, blue-grass.)

Windsoria. Calyx 2-valved, keeled, 1-nerved, scariose, acute or cuspidate: corols 2-valved; outer valves having nerves with mucronate points, teeth between the points, and ciliate below; inner valves mostly naked, emarginate. Flowers closely imbricated 2-ways in a thick spike. 4. 10.

Danthonia. Calyx 2-valved, longer than the included spikelet: corol 2-valved, outer one split at the tip, with a twisted awn on the back. 4. 10—(wild oats.)

Festuca. Calyx 2-valved, many-flowered; spikelets compressed-teretish, or diverging when mature; awnless or furnished with a terminal awn: seed growing to the corol. 4. 10—(fescue-grass.)

Bromus. Calyx 2-valved; spikelets terete-2-ranked; corol, outer valves awned below the tip; inner valve pectinate-ciliate. 4. 10—(chess, broom-grass.)

Avena. Calyx 2-valved, 2, 3, or many-flowered: corol, valves with a twisted awn on the back: glumes membranaceous and somewhat follicle-like. 4. 10—(oats.)

Arundo. Calyx 2-valved, one or many-flowered, glabrous: florets heaped together: corol surrounded with wool. 4. 10—(reed.)

* Stellaria.

Order III. Trigynia.

Lechea. Calyx 3-leaved: petals 3, linear: stigmas 3, plumose: capsule 3-celled, 3-valved, with 3 inner valvelets: seed 1. 22. 82—(pinweed.)

MOLLUGO. Calyx 5-leaved, inferior: coloured inside: corol 0: capsule 3-celled, 3-valved, many-seeded. 22. 82—(carpet-weed.)

QUERIA. Calyx 5-leaved or 5-parted, segments oblong, inferior: capsule 1-celled: seed 1. Stigmas subcapitate: corol 0. The capsule is bladder-like and the seed somewhat reniform. 22. 82—(fork chickweed.)

PROSERPINACA. Calyx 3-parted superior: corol 0: nut 3-sided, 3-celled, crowned by the calyx. 15. 22—(mermaid-weed.)

* Zanthoxylon, Stellaria, Eriocaulon.

CLASS IV. TETRANDRIA.

ORDER I. MONOGYNIA.

A. *Flowers 1-petalled, inferior, calyx 4-cleft.*

SPERMACOCE. Calyx 4-toothed: corol funnel-form, 4-cleft: seeds 2, 2-toothed. 48. 57.

PLANTAGO. Corol 4-cleft reflexed; capsule 2-celled, opening transversely: stamens exsert very long. 54. 31—(plantain, ribwort.)

LYCIUM. Corol tubular, having the throat closed by the beards of the filaments: stamens often 5: berry 2-celled, many-seeded. 28. 41—(matrimony.)

FRASERA. Corol 4-parted, spreading; segments with bearded glands in the middle: capsule compressed, submargined, 2-valved: seeds few, imbricated. 20. 46—(pyramid flower.)

BARTONIA. Corol 4-cleft or 4-parted, bell-form, permanent: stigma thick, glandulous sub-bifid: capsule 1-celled, 2-valved, many-seeded. 20. 46.—(screw-stem.)

HOUSTONIA. Calyx half-superior: corol salver-form: capsule 2-celled, 2-seeded. 47. 57—(Venus' pride.)

B. *Flowers 1-petalled, superior.*

MITCHELLA. Calyx 4-toothed: corols 2 on each germ, tubular: berry double, 4-seeded: stigmas 4. 48. 57—(partridge-berry, checker-berry.)

CEPHALANTHUS. Inflorescence in a head: general calyx none: proper calyx superior: corol funnel-form: receptacle globular, hairy: capsules 2 to 4-partible: seed solitary, oblong. 48. 57—(button-bush.)

LINNAEA. Calyx double; that of the fruit 2-leaved,

inferior : that of the flower 5-parted : corol bell-form, 5-lobed : stamens somewhat didynamous : berry 3-celled, dry. 48. 58—(twin-flower.)

HEDYOTIS.* Calyx 4-toothed : corol funnel-form : capsule 2-celled, many-seeded ; receptacle adnate to the partition. 13. 84.

RUBIA. Calyx 4-toothed : corol 4 or 5-cleft, bell-form : berries 2, one-seeded, (stamens 4-5 ; leaves stellate.) 47. 57—(madder.) Exotic.

SCABIOSA. Common calyx many-leaved ; proper one double, superior : receptacle chaffy or naked. (Flowers aggregate.) 47. 56—(scabious.) Exotic.

GALIUM. Calyx 4-toothed : corol flat : fruit dry : seeds 2, roundish : (leaves stellate.) 47. 57—(bedstraw.)

DIPSACUS. Common calyx many-leaved ; proper calyx 1-leaved superior : receptacle chaffy : seed 1, crowned : inflorescence an ovate head. 48. 56—(teasel.)

C. *Flowers 4-petalled, inferior.*

AMMANNIA. Calyx tubular, plaited, 8-toothed : petals 4, or none, on the calyx : capsule 4-celled—(sometimes 2-celled and 8-stamened.) 17. 91—(tooth-cup.)

D. *Flowers 4-petalled, superior.*

CORNUS. Calyx 4-toothed : drupe with a 2-celled nut. Some species have a 4-leaved involucre. 45. 58—(dogwood, false box.)

LUDWIGIA. Calyx 4-parted, the divisions long, permanent : capsule 4-cornered, 4-celled, perforated at the top, many-seeded—(petals sometimes wanting.) 17. 88—(seed-box.)

E. *Flowers not complete.*

ICTODES.† General calyx a spathe : perianth o : spadix simple, covered with flowers : corol 4-petalled or deeply 4-parted, permanent, becoming thick and spongy : berries globose, 2-seeded, inclosed in the spongy spadix receptacle. 2. 7—(skunk-cabbage.)

ISNARDIA. Calyx bell-form, 4-parted, superior : corol o : capsule 4-celled, 4-cornered, many-seeded, surrounded by the calyx. 17. 88—(water-purslane.)

* Convallaria, Cardamine, Prinos.

* Oldenlandia, 2d Ed. † Pothos, 2d Ed.

Order II. Digynia.

Sanguisorba. Calyx inferior, 2-leaved, bract-like: corol superior, 4 parted: capsule between the calyx and corol. Flowers in spikes or oblong heads. 54. 92—(burnet saxifrage.)

Hamamelis. Involucre 3-leaved: perianth 4-leaved, 4-cleft: petals 4, very long, linear: nut 2-celled, 2-horned. 54. 78—(witch hazel.) Flowers in autumn, and perfects its seed the following spring.

* Cuscuta, Swertia, Oldenlandia, Gentiana.

Order IV. Tetragynia.

Ilex. Calyx minute, 5-toothed; corol 4-parted, wheel-form; style o; berry 4-celled, cells 1-seeded. 43. 95—(holly.)

Ruppia. Calyx o: corol o: seeds 4, pedicelled.

Sagina. Calyx 4-leaved; petals 4 often caducous; capsules 4-celled, 4-valved, many-seeded. 22. 82—(pearl-wort.)

Tillaea. Calyx 3 or 4-parted: petals 3 or 4, equal: capsules 3 or 4, two or many-seeded. 13. 83—(pigmy-weed.)

Potamogeton. Calyx 4-leaved: petals o: style o: seeds 4. 15. 13—(pond-weed)

CLASS V. PENTANDRIA.

Order I. Monogynia.

A. *Flowers 1-petalled, inferior; having 4 naked seeds.* Rough-leaved plants.

Pulmonaria. Calyx prismatic, 5-angled: corol funnel-form, with an open throat: stigma emarginate: seeds roundish, obtuse. 41. 42—(lung-wort.)

Lithospermum. Calyx 5-parted: corol funnel-form, with an open throat: stigma 2-cleft: seeds ovate, pointed, stony: stamens and pistils inclosed. 41. 42—(stone-seed or gromwell.)

Cynoglossum. Calyx 5-parted: corol funnel-form, vaulted, throat closed by 5 converging convex processes: seeds depressed, affixed laterally to the style. 41. 42—(hound-tongue.)

Batschia. Calyx about 5-cleft: corol salver-form, with a strait tube longer than the calyx; having a beard.

ed ring within at the base ; throat naked, or partly closed, with rounded divisions : seeds hard and shining. 41. 42—(false bugloss.)

ANCHUSA. Calyx 5-parted : corol funnel-form, vaulted, throat closed : seeds marked at the base, and their surface generally veined. 41. 42—(bugloss.) Exotic.

MYOSOTIS. Calyx half 5-cleft : corol salver-form, curved, 5-cleft, vaulted, the lobes slightly emarginate ; throat closed with 5 convex converging scales : seeds smooth or echinate. 41. 42—(scorpion-grass.)

HELIOTROPIUM. Calyx tubular, 5-toothed : corol salver-form, 5-cleft, with teeth or folds between the divisions ; throat open. (Spikes recurved, involute.) 41. 42—(turnsol.)

ONOSMODIUM. Calyx deeply 5-parted : corol oblong, somewhat bell-form, with the acute divisions converging, the upper part of the corol being ventricose and half 5-cleft, throat open : anthers sessile enclosed : styles exsert. (Spikes revolute.) 41. 42—(false gromwell.)

BORAGO. Corol wheel-form, the throat closed with rays. 41. 42—(borage.) Exotic.

SYMPHITUM. Limb, or upper part of the corol, tubular-swelling, the throat closed with subulate rays. 41. 42—(comfrey.)

ECHIUM. Calyx 5-parted : corol bell-form, obliquely and unequally 5-lobed, tube short, throat naked : stigma cleft. 41. 42—(viper's bugloss.)

B. *Flowers 1-petalled, inferior : seeds covered : calyx generally 5-parted or 5-toothed.*

(Capsules 1-celled.)

HYDROPHYLLUM. Corol bell-form, 5-cleft, with 5 longitudinal honey-bearing groves inside : capsule globose, 2-valved : stamens exsert, filaments bearded in the middle : stigma 2-cleft. 41. 42—(water leaf, burr-flower.)

SABBATIA.* Calyx 5 to 12-parted : corol wheel-form, 5 to 12-parted : stigmas 2, spiral or coiled : anthers becoming revolute : capsule 2-valved, many-seeded. 20. 46—(centaury.)

ANAGALLIS. Corol wheel-form, deeply 5-parted : capsule opening transversely : stamens hairy. 20. 34—(scarlet pimpernel.)

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* Chironia, 2d Ed.

LYSIMACHIA. Corol wheel-form: capsule globular, 5 or 10-valved, mucronate: stigma obtuse. (In some species the filaments are united at the base.) 20. 34—(loose-strife.)

DODECATHEON. Corol wheel-form, reflexed capsule oblong: stamens on the inside of the tube: stigma obtuse. 20. 34—(false-cowslip.)

MENYANTHES. Corol hairy, funnel-form: capsule ovate: stigma 2-cleft. 21. 46—(buck bean.)

VILLARSIA. Capsule 1-celled, valveless: corol wheel-form; divisions bearded at the base, margin inflexed. 21. 46—(spur-stem, heart water-shield.)

PRIMULA. Umbellets involucred: tube of corol cylindric, throat open, divisions of corol emarginate: capsule 1-celled with a 10-cleft mouth: stigma globular. 21. 34—(primrose, cowslip.)

HOTTONIA. Corol salver-form: stamens on the tube of the corol: stigma globular: capsule 1-celled, globose, acuminate. 21. 34—(feather-leaf.)

(Capsules 2-celled.)

SPIGELIA. Corol funnel-form, border equally 5-cleft: anthers converging: twin capsules 4-valved, 2-celled: stigma simple: seeds many. 47. 46—(pink-root.)

CONVOLVULUS. Corol funnel-form, plaited: stigma 2-cleft or double: cells of the capsule 2 or 3; each 2-seeded. 29. 43—(bind-weed.)

DATURA. Calyx tubular, angled, caducous: corol funnel-form, plaited; capsule 4-valved, 2-celled, and each cell half-divided; generally thorny. 28. 41—(thorn-apple.)

NICOTIANA. Calyx urceolate: corol funnel-form, limb plaited: stigma notched: stamens inclined: capsules 2-celled, 2 to 4-valved. 28. 41—(tobacco.) Exotic.

VERBASCUM. Corol wheel-form, 5-lobed, somewhat irregular: stamens declined, hairy: capsules 2-celled, 2-valved; valves inflexed, when ripened: many seeded. 28. 41—(mullein.)

ATROPA. Corol bell-form: stamens distant: berry globular, 2-celled, sitting on the calyx. 28. 41—(deadly nightshade.) Exotic.

PHACELIA. Corol somewhat bell-form, 5-cleft, with 5 longitudinal honey-bearing grooves inside: styles filiform,

stigmas 2 : stamens exsert : capsule 2-celled, 2-valved, 4-seeded. 28 41.

Hyoscyamus. Calyx tubular : corol funnel-form, obtuse, irregular : stamens inclined : capsule 2-celled, covered with a lid. 28. 41—(henbane) Exotic.

(Capsules 3-celled.)

Diapensia. Calyx imbricated with leafets : corol salver-form ; limb flat, 5-cleft : stamens crowning the tube of the corol : stigmas 3 : capsule 3 valved, many seeded. 21. 43—(mountain box.)

Phlox. Calyx prismatic : corol salver-form ; with a tube somewhat curved : filaments unequal in length : stigmas 3-cleft : capsule 1-seeded. 20. 44—(lichnedia.)

Polemonium. Calyx half 5-cleft : corol wheel-form, 5-parted : stamens on 5 valves closing the bottom of the tube : stigma 3-cleft. 29. 44—(Greek-valerian, false jacob's ladder.)

Ipomoea. Corol funnel or bell-form, with 5 folds : stigma globe-headed, papillose : capsule 2 or 3-celled, many-seeded. 29. 43—(cypress vine, morning glory.)

(Capsules 5-celled.)

Azalea. Corol tubular, half 5-cleft, somewhat oblique ; stamens on the receptacle, declined ; stigma declined, obtuse, usually ending with 5 short papillae. 18. 50—(wild honey-suckle.)

Vinca. Corol salver form, twisted, border 5-cleft, with oblique divisions ; throat 5-angled ; seed naked, oblong : follicles 2, erect, terete, narrow. 30. 47—(periwinkle)

(Berry 2-celled, juicy or dry.)

Solanum. Calyx permanent : corol bell or wheel-form, 5-lobed, plaited : anthers thickened, partly united, with two pores at the top : berry containing many seeds. 28. 41—(potatoe, nightshade, bitter-sweet.)

Physalis. Corol bell or wheel-form, tube with 5 concave impressions : anthers converging ; berries contained in an inflated calyx : seeds numerous. 28. 41—(winter cherry.)

Capsicum. Corol wheel-form : berry juiceless, inflated : anthers converging : calyx angular. 28. 41—(red pepper.) Exotic.

C. *Flowers 1-petalled superior : calyx 5-cleft.*

(Stems woody.)

LONICERA. Corol tubular, 5-cleft, unequal : berry 2 or 3-celled : seeds many 48. 58—(trumpet honey-suckle.)

XYLOSTEUM. Corol tubular, border 5-parted, nearly equal : berries in pairs, united at their bases or combined in one ; 2-celled. 48. 58—(fly honey-suckle, twin-berry.)

SYMPHORIA. Calyx small, 4-toothed, bracted at the base : corol tubular, short, 5-cleft, sub-equal : stigma globose : berry ovate, small, crowned with the permanent calyx, 4-celled : 4-seeded. (Sometimes two of the cells are abortive.) 48. 58.

DIERVILLA. Calyx oblong with 2 bracts : corol twice as long as calyx, funnel-form, border 5-cleft, spreading : capsule oblong, 4-celled, many seeded. 48. 58—(bush honey-suckle.)

(Stems not woody.)

CAMPANULA. Corol bell-form, closed at the bottom by valves bearing the stamens : stigma 3 to 5-cleft : capsule 3 to 5-celled, opening by lateral pores. 29. 52—(bell-flower.)

LOBELIA. Corol irregular, often irregularly slitted : anthers cohering and somewhat curved : stigma 2-lobed : capsule 2 or 3-celled. 29. 52—(cardinal flower, wild tobacco.)

MIRABILIS. Corol funnel-form, coarctate below : calyx inferior : germ between the calyx and corol : stigma globular. 54. 32—(four o'clock.) Exotic.

TRIOSTEUM. Calyx permanent, of the length of the corol : corol tubular, 5-lobed : stigma capitate, sub-5-lobed : berry 3-celled, 3-seeded. 48. 53—(feverwort, horse ginseng.)

SAMOLUS. Calyx half-superior, permanent : corol salver-form, 5-lobed, with 5 intermediate scales fencing up the stamens between them : capsule 1-celled, 5-toothed, many-seeded. 21. 34—(brookweed.)

D. *Flowers 5-petalled, inferior.*

(Stems woody.)

RHAMNUS. Calyx cup-form, 4 or 5-cleft ; corol consists of scales fencing in the stamens and inserted on the

calyx (sometimes wanting:) stigma either simple, 2 or 4-cleft; berry 3 or 4-seeded; (sometimes polygamous or dioecious.) 43. 95—(buck-thorn, dwarf-alder.)

CEANOTHUS. Petals scale-like, vaulted, claws long, standing in the cup-form calyx: stigmas 3: berry or capsule dry, 3-grained. 43. 95—(New-Jersey tea.)

CELASTRUS. Calyx flat: corol spreading: capsule 3-angled, 3-celled, berry-like: stamens standing around a glandular 5-toothed disk: style thick, stigma 3-cleft: seeds calyptred. 43. 95—(staff tree, false bittersweet.)

EUONYMUS. Calyx 5-parted, flat: corol flat inserted on the outer margin of a glandular disk: capsule 5-angled, 5-celled, 5-valved, coloured: seeds calyptred. 43. 95—(spindle tree.)

VITIS. Calyx 5-toothed: petals cohering at the tip, hood-like, withering: style o, stigma capitate: berry 5-seeded, globular. (Often dioecious.) 46. 72—(grape vine.)

AMPELOPSIS. Calyx 5-toothed: petals reflexed, spreading: germs surrounded with a glandular disk: berry 2-celled, 2 to 4-seeded. 46. 72—(false grape, creeper.)

ITEA. Calyx 5 cleft, bearing the 4 long linear reflexed petals: stigma capitate, 2-lobed: capsule 2-valved, many-seeded; the valves bearing the seeds and having inflexed margins. 18. 50.

(Stems not woody.)

GOMPHRENA. Calyx 5-leaved coloured; exterior one 3-leaved; two leafets converging, keeled: petals 5, villose (or rather no corol) nectary cylindric, 5-toothed: capsule opening transversely, 1-seeded: style semibifid—(bachelor's buttons.) Exotic.

IMPATIENS. Calyx 2-leaved: corol irregular, spurred: anthers cohering: capsule elastic, 5-valved. 24. 73—(jewel weed, touch-me-not, or balsam weed.)

VIOLA. Calyx 5-leaved: corol irregular, with a horn behind (sometimes the horn is wanting:) anthers attached by a membranous tip: capsule 1-celled, 3-valved. 29. 80—(violet.)

CLAYTONIA. Calyx 2-leaved or 2-parted, the leaves valve-like: stigma 3-cleft: capsule 1-celled, 3-valved, 3-seeded. 13. 86—(spring beauty.)

DROSERA. Calyx 5-cleft, permanent: petals marces-

cent: style 1, deeply divided; stigmas 3 to 5: capsule round, 1-celled, many-seeded, valves equalling the number of stigmas. 14. 68—(sundew.) The leaves of all the species are beset with glandular hairs resembling dew.

E. *Flowers 5-petalled, superior.*

RIBES. Corol and stamens inserted on the calyx: style 2-cleft: berry many-seeded. 36. 85—(currant, gooseberry.)

HEDERA. Petals oblong: berry 5-seeded, surrounded by the calyx: style simple. 46. 58—(European ivy.) Exotic.

F. *Corols wanting.*

GLAUX. Calyx inferior, 5-lobed, coloured: capsule 1-celled, 5-valved, 5-seeded, surrounded by the calyx: receptacle rounded and punctured. 17. 91—(sea-milk wort.)

THESIUM. Calyx superior, half 5-cleft with petal-like edging attached to its margin: anthers adhering to the edging by means of filamentous tufts: nut or capsule 1-seeded, covered with the permanent calyx. 31. 24—(false toad-flax.)

* Queria, Lycium, Rubia.

ORDER II. DIGYNIA.

A. *Follicles 2: corol 1-petalled, with a five-parted border.*

NERIUM. Calyx 5-parted, small, permanent; coro funnel-form; throat with a lacerated crown: follicles converging, long, acuminate—(oleander.) Exotic.

PERIPLOCA. Nectary pitcher-form, 5-cleft, putting out 5 threads, surrounding the stamens: corol wheel-form: stigma capitate, 5-cornered. 30. 47—(milk vine.)

APOCYNUM. Corol bell-form: stamens, with converging anthers, adhering to the stigma, alternating with 5 nectaries: stigma thick, almost sessile; follicles long-linear. 30. 47—(dog-bane, Indian hemp.)

B. *Capsules 1 or 2-celled, 2-valved: corol 1-petalled: calyx 5-cleft or 5-parted.*

SWERTIA. Calyx 4 or 5-parted: corol wheel-form, with nectariferous pores at the base of the divisions: germ tapering to a point, terminating in 2 stigmas: capsule 1-celled. 20. 46—(false gentian.)

GENTIANA. Corol with a tubular base, bell-form, without pores: capsule 1-celled, oblong: columellas 2, longitudinal. 20. 46—(gentian.)

CUSCUTA. Corol 4 or 5-cleft: capsule 2-celled, dividing transversely at the base: seeds binate. 29. 53—(dodder.)

C. *Corol 5-petalled.*

HEUCHERA. Calyx inferior, 5-cleft: corol on the calyx: capsule 2-beaked, 2-celled. 13. 84—(alum root.)

PANAX. Polygamous. Umbelled. Involucre many-leaved: calyx 5-toothed, superior: berry heart-form, 2 or 3-seeded: calyx, in the staminate flowers, entire. 46. 59—(ginseng.)

D. *Corol* 0.

(Stem herbaceous, except Atriplex halimus.)

SALSOLA. Calyx 5-parted with a capsular base: capsule 1-celled, with a spiral seed. 12. 29—(saltwort.)

CHENOPODIUM. Calyx 5-parted, 5-angled, inferior: seed 1, lens-like, invested by the calyx. 12. 29—(pigweed, oak of Jerusalem.)

BETA. Calyx 5-leaved: seed kidney-form within the fleshy substance of the base of the calyx. 12. 29—(beet.) Exotic.

ATRIPLEX. Calyx 5-leaved, or 5-parted, inferior; style 2-parted: seed 1, depressed. Pistillate flowers are intermixed, in which the calyx is 2-leaved. 12. 29—(orach.)

(Stems woody.)

ULMUS. Calyx bell-form withering, border 4 or 5-cleft: seed 1, enclosed in a flat membranaceous samara. (Stamens vary from 4 to 8.) 53. 99—(elm.)

CELTIS. Polygamous Calyx 5-parted: styles thickish, spreading: drupe 1-seeded: staminate flowers beneath the perfect ones, with 6-parted calyxes, stamens 6. 53. 99—(nettle-tree.)

E. *Plants* UMBELLIFEROUS. *Flowers 5-petalled, superior, 2-seeded.*

(Seeds prickly or hispid.)

SANICULA. Seeds hispid with hooked prickles: calyx 5-parted: petals entire, petals and stamens inflexed:

umbels at first capitate, becoming somewhat expanded. 45. 60—(sanicle.)

Daucus. Seeds striate on their joining sides; outer sides convex, having hispid ribs: involucre pinnatifid. 45. 60—(carrot.)

Uraspermum. Seeds sublinear, solid, acute-angled, not striate; angles a little furrowed, hispid; the joining sides furrowed, and attached to a 2-cleft columella-like receptacle: style subulate, permanent, rendering the seed caudate: involucre none. 45. 60—(sweet cicily.)

Eryngium. Fruit oval-oblong, with chaff-like scales, often hispid: calyx 5-parted, permanent: petals oblong, inflexed at the apex and adnate at the base: flowers sessile, capitate, intermixed with chaff: involucre many-leaved. 45. 60—(sea holly.)

(Seeds winged, or with wide lateral ribs of a wing-like appearance.)

Selinum. Seeds 5-ribbed, the 2 lateral ones a little prominent or sub-alated; germ roundish, emarginate base, glabrous: general and partial involucres many-leaved. 45. 60—(milk parsley.)

Imperatoria. Seeds 3-ribbed, and having winged margins; germ roundish-oval, emarginate base: general involucre none. 45. 60—(masterwort.)

Heracleum. Seeds with winged margins and three grooves on their outer sides, with the intervals dotted half way down; joining sides flat, with 2 dots; germ oval, emarginate at the apex: petals emarginate, inflexed: partial involucre 3 to 7-leaved. 45. 60—(cow-parsley.)

Angelica. Seeds with 3 ribs on their backs and winged margins; intervals between the ribs grooved: germ oval, corticate: general involucre none. 45. 60—(angelica.)

Thaspium. Seeds convex, with 5 wing-like ridges; wings nearly equal with grooved intervals between them: germ somewhat oval: general involucre none; partial ones about 3-leaved, one-sided in most. 45. 60—(false parsnip.)

Pastinaca. Seeds emarginate at the apex, somewhat winged, ribs 3 besides the wings, intervals striate, joining sides 2-striate: germ oval, compressed: perianth calyx entire: petals entire, incurved, sub-equal: involucres none. 45. 60—(parsnip.)

ANETHUM. Seeds flat or convex, 5-ribbed: germ lenticular, compressed: calyx and petals entire: involucres none. 45. 60—(fennel, dill.) Exotic.

(Seeds with 3 nearly equal ribs.)

HYDROCOTYLE. Seed 3-ribbed, flat, dorsal rib sometimes obsolete; joining sides flat, linear: germ sub-orbicular or reniform, compressed laterally; styles short, stigmas capitate: perianth none: petals entire, spreading: involucres various. 45. 60—(pennywort.)

CRANTZIA. Seeds unequal in size, each with 3 marginated dorsal ribs, and 4 obtuse-angled grooves; joining sides excavated: germ sub-globose; styles minute; stigmas obtuse: perianth none: petals entire, roundish, obtuse: umbel simple: involucre about 5-leaved. 45. 60.

ERIGENIA. Seeds convex-gibbous, 3-striate, joining sides narrow, flat: germ oval, somewhat compressed laterally; styles permanent, subulate, very long: perianth none: petals obovate, entire, spreading: general involucre none. 45. 60.

SMYRNIUM. Seeds convex-gibbous, marked with 3 angular elevations: germ roundish and solid, somewhat compressed laterally: perianth obsolete: petals acuminate, incurved. 45. 60—(alexanders.)

CARUM. Seeds oblong-ovate, striate: petals carinate, emarginate, inflexed: involucre about 1-leaved. 45. 60—(caraway.) Exotic.

OENANTHE. Seeds 3-ribbed (rarely 5-ribbed); styles permanent: germ oblong-ovate, corticate, solid, apex denticulate: perianth slenderly 5-toothed: petals of the disk florets of the umbel cordate-inflexed, sub-equal; those of the ray florets large and deformed: general involucre mostly wanting. 45. 60—(water dropwort.)

(Seeds with 5 ribs or none.)

CONIUM. Seeds 5-ribbed: ribs at first crenate with flat intervals between them: germ ovate, gibbous: perianth entire: petals unequal, cordate-inflexed: general involucre about 3 to 5-leaved; partial ones mostly 3-leaved, unilateral. 45. 60—(poison hemlock.)

SIUM. Seeds ovate, gibbous-convex, 5-ribbed with 4 intervening grooves: germ oblong-ovate, glabrous, compressed laterally: perianth obsolete: petals cordate-inflexed: involucres many-leaved. 45. 60—(water parsnip.)

CICUTA. Seeds gibbous-convex : ribs 5, obtuse, converging, with 4 intervening tuberculate grooves ; joining sides flat : germ sub-globose, corticate, compressed laterally : calyx obsolete, 5-toothed : petals cordate-inflexed : partial involucres 5 or 6-leaved 45. 60—(water hemlock.)

AMMI. Seeds 5-ribbed ; ribs obtuse with convex intervals : germ small, round-oblong, glabrous, corticate : perianth entire : petals cordate-inflexed ; equal in the disk florets of the umbel, unequal in the ray : involucre pinnatifid. 45. 60—(bishop's weed.)

MYRRHIS. Seeds with acutish ribs : germ sublinear, solid ; apex attenuated or crowned with the style : general involucre wanting. 45. 60—(mock sanicle, honewort.)

CHAEROPHYLLUM. Seeds without ribs, joining sides furrowed : germ linear-oblong, terete, glabrous : general involucre wanting. 45. 60—(chervil.)

LIGUSTICUM. Seeds with 5 acute ribs and 4 grooves : germ oblong, corticate : general and partial involucres many-leaved. 45. 60—(lovage.)

APIUM. Seeds convex externally ; ribs 5, small, a little prominent : germ sub-globose : perianth entire : petals equal, roundish, inflexed at the apex : involucre 1 to 3-leaved or wanting. 45. 60—(celery, parsley.) Exotic.

CORIANDRUM. Seeds sub-spherical : germ spherical : perianth 5-toothed : petals cordate-inflexed, outer ones largest : involucre 1-leaved, or wanting. 45. 60—(coriander.) Exotic.

* Polygonum, Scleranthus.

[Asclepais and Cynanchum, are usually placed here ; but they are carried to the 19th class on the authority of Dr. Smith.]

ORDER III. TRIGYNIA.

A. *Corols superior, 5-cleft.*

VIBURNUM. Calyx 5-parted : corol bell-form : berry or drupe 1-seeded. 43. 58—(snowball, sheep-berry, high cranberry.)

SAMBUCUS. Calyx 5-parted : corol sub-urceolate : berry 3-seeded. 43. 58—(elder.)

B. *Corols inferior, 5-petalled.*

STAPHYLEA. Calyx 5-parted : capsules inflated, connate ; nuts globular, having a cicatrice. 23. 95—(bladder nut.)

Rhus. Calyx 5-parted: berry 1-seeded. 43. 94—(sumach, poison ivy.)

Sarothra. Calyx 5-parted: petals linear: capsule 1-celled, 3-valved, coloured. 20. 82—(pine weed.)

* Euphorbia, Panax, Queria.

Order IV. Tetragynia.

Parnassia. Calyx 5-parted: corol 5-petalled: nectaries 5, with stamen-like divisions, globular tips: capsule 4-valved, 2-celled: seed membranaceous-margined. 14. 64—(parnassus-grass, false plantain.)

Order V. Pentagynia.

Aralia. Umbellets involucred: perianth 5-toothed, superior: petals 5: berry crowned, 5-celled; cells 1-seeded. 46. 59—(spikenard, wild sarsaparella.)

Linum. Calyx 5-leaved or 5-parted: corol 5-petalled inferior: capsule 5 or 10-valved, 10 celled: seeds solitary: filaments thickening at the base. 14. 73—(flax.)

Statice. Calyx 1-leaved, entire, plaited, scarious, inferior: corol 5-petalled: seed 1. 48. 33—(marsh-rosemary.)

* Spergula, Ceratium.

Order XIII. Polygynia.

Zanthorhiza. Calyx 0: petals 5: nectaries 5, pedicelled: capsules 1-seeded, about 5 in number. 26. 61—(yellow-root.)

CLASS VI. HEXANDRIA.

Order I. Monogynia.

A. *Flower with a perianth and corol, without a spathe.*

Tradescantia. Calyx inferior, 3-leaved: corol 3-petalled: filaments with jointed beards: capsules 3-celled. 6. 13—(spiderwort.)

Berberris. Calyx inferior, 6-leaved: petals 6, with 2 glands at the claw of each: style 0: berry 1-celled, 2 or 4-seeded. (Stigma umbilicate: stamens spring up on being irritated.) 54. 78—(barberry.)

Caulophyllum. Calyx inferior, 3 to 6-leaved: petals 6, opposite to the leaves of the calyx; nectaries 6, sub-

reniform, fleshy, glutinous at the margin, attached to the claws of the petals: drupe stiped, 1-seeded: anther 2-celled, dehiscent at the margin. 24. 61—(poppoose-root.)

PRINOS. Calyx inferior, 6-cleft small: corol wheel-form, 6-cleft; berry 6-seeded; seeds nut-like. 43. 95—(winter-berry.)

CLEOME. Calyx 4-leaved inferior: petals 4, ascending to one side: glands 3, one at each sinuate division of the calyx except the lowest: stamens from 6 to 20, or more: capsule stiped, silique-like, often 1-celled, 2-valved. Tetradynamous. 25. 64—(false mustard.)

FLOERKEA. Calyx 3-leaved, inferior: corol 3-petalled, shorter: style 2-cleft: capsule bladder-like, 2 or 3-grained. 15. 22—(false-mermaid.)

B. *Flowers with a spathe or glume without a perianth.*

AMARYLLIS. Corol superior, 6-petalled, unequal: filaments unequal in proportion or direction, declined, inserted in the throat of the tube. 9. 17—(atamask lily.)

HYPOXIS. Glume-like spathe 2-valved: corol superior, 6-parted, permanent: capsule elongated, narrow at the base, 3-celled, many seeded: seed roundish. 10. 17—(star-grass.)

ALLIUM. Spathe many flowered: corol inferior, 6-parted, very deeply divided; divisions ovate, spreading: capsule 3-celled, 3-valved, many-seeded. (Flowers in close umbels or heads.) 9. 16—(leek, garlic, onion cives.)

GALANTHUS. Petals 3, concave, superior: nectaries (or inner petals) 3, small, emarginate: stigma simple. 6. 17—(snow-drop.) Exotic.

NARCISSUS. Corol bell-form, spreading, 6-parted or 6-petalled, equal, superior: nectary bell-form, 1-leafed, enclosing the stamens. 9. 17—(jonquil, daffodil.) Exotic.

PONTEDERIA. Corol inferior, 6-cleft, 2-lipped, with 3 longitudinal perforations below: capsule fleshy, 3-celled, many seeded: 3-stamens commonly inserted on the tip, and three on the tube of the corol. 6. 17—(pickeril weed.)

C. *Flowers without spathe, perianth or glume.*

AGAVE. Corol erect, superior, tubular, or funnel-form; filaments erect, longer than the corol: capsule triangular, many-seeded. 10. 17—(agave.)

ALETRIS. Corol superior, funnel-form, wrinkled, somewhat 6-cleft ; with the stamens inserted at the base of its divisions : style 3-sided, 3-partible : capsule 3-celled, many-seeded, half inferior when mature. 10. 16—(false aloe.)

HEMEROCALLIS. Corol 6-parted, tubular-funnel-form : stamens declined : stigma small, simple. 10. 16—(day-lily.) Exotic.

DRACAENA. Corol inferior, 6-petalled, cohering at the base : filaments somewhat thickened in the middle and attached to the base of the petals : berry with 3 one-seeded cells. 11. 12—(dragoness-plant.)

CONOSTYLIS. Corol more than half inferior, 6-cleft, permanent, with branching hairs : anthers erect : style conic, 3-parted : stigma simple : capsule opening at top, 3-celled, many-seeded. 10. 17.

ERYTHRONIUM. Corol liliaceous, inferior, 6-petalled ; petals reflexed, having 2 tubercle-form nectaries at the base of the three inner alternate petals. 11 14—(dog-tooth violet, or adder-tongue.)

ASPARAGUS. Corol inferior, 6-parted, erect ; the three inner divisions reflexed at the apex : style very short ; stigmas 3 : berry 3-celled ; many-seeded. 11 12—(asparagus.) Exotic.

POLYANTHES. Corol funnel-form, incurved : filaments inserted in the throat . stigma 3-cleft : germ within the bottom of the corol. 10. 17—(tuberose.) Exotic.

HYACINTHUS. Corol roundish or bell-form, equal, 6-cleft : 3 nectariferous pores at the top of the germ : stamens inserted in the middle of the corol : cells somewhat 2-seeded. 10. 16—(hyacinth.) Exotic.

LILIUM. Corol inferior, liliaceous 6-petalled ; petals with a longitudinal line from the middle to the base : stamens shorter than the style : stigma undivided : capsule with the valves connected by hairs crossing as in a sieve. 10. 14—(lily.)

TULIPA. Corol 6-petalled, liliaceous : style none ; stigma thick : capsule obong 3-sided. 10. 14—(tulip.) Exotic.

FRITILLARIA. Corol 6-petalled, bell-form, with a nectariferous cavity above the claw of each : stamens of the length of the corol : seeds flat. 10. 14—(crown imperial.) Exotic.

Convallaria. Corol inferior 6-cleft, bell-funnel-form : stamens inserted on, or attached to, the inner side of the base or tube of the corol : berry 3-celled, spotted before ripening. 11. 12—(solomon-seal.)

Uvularia. Corol inferior, 6-petalled, with a nectariferous hollow at the base of each petal : filaments very short, growing to the anthers : stigmas reflexed : capsule 3-cornered, 3-celled, 3-valved ; valves septiferous in the middle : seeds many, sub-globose, arilled at the hilum. 11. 14—(bellwort.)

Streptopus. Corol inferior, 6-petalled, sub-campanulate : stigma very short : berry sub-globose, smooth, 3-celled ; seeds few, not arilled at the hilum. 11. 14—(rose bellwort.)

Orontium. Receptacle spadix-like, cylindric, covered with florets : spathe 0 : corol 6-petalled, naked : style 0 : capsule bladder-like, 1-seeded. 2. 7—(floating arum.)

Narthecium. Corol 6-petalled, inferior, spreading, permanent : filaments thread-form, hairy : capsule prismatic, 3-celled : seed many, appendaged at both ends. 10. 16—(false asphodel.)

Ornithogalum. Corol 6-petalled, inferior, erect, permanent, spreading above the middle : filaments dilated or subulate at the base : capsule roundish, angled, 3-celled : seed roundish, naked. 10. 16—(star of Bethlehem.) Exotic.

Asphodelus. Corol 6-parted, spreading : nectary covering the germ with 6-valves. 10. 16—(kings spear, or asphodel.) Exotic.

Acorus. Receptacle spadix-like, cylindric, covered with florets : calyx 6-parted : corol o : (or calyx none, corol 6-parted or 6-petalled) style none ; stigma a mere point : capsule 3-celled, 3-seeded. 2. 13—(sweet flag.)

D. *Flowers without corol.*

Juncus. Glume 2-valved : perianth inferior, 6-leaved, permanent : stigmas 3 : capsules 1 or 3-celled, 3-valved, many-seeded. 5. 13—(rush-grasss, bull-rush.)

* Trientalis, Polygonum, Laurus, Corydalis, Acer.

Order II. Digynia.

Oryza. Calyx, glume 2-valved, 1-flowered : corol 2-valved, adhering to the seed. 4. 10—(rice.) Exotic.

* Ulmus.

Order III. Trigynia.

Gyromia. Calyx 0 : corol deeply 6-parted, revolute : anthers slightly attached to the filaments : styles o : stigmas 3, long-linear, revolute-spreading, slightly united at the base : berry 3-celled, cells 5 or 6-seeded : seeds compressed, 3-sided. 11. 12—(indian cucumber.)

Melanthium. Polygamous. Calyx o : corol wheel-form, 6-parted or 6-petalled, each part with 2 glands at the base : stamens from the lengthened claws of the petals : capsule ovatish, somewhat 3-cleft at the apex, 3-celled ; seeds membrane-winged, numerous. 10. 13—(black-flower,)

Veratrum. Polygamous or dioecious. Calyx o : corol 6-parted or 6-petalled, spreading, without glands : capsules 3, adnate, many-seeded. (The staminate flowers have the rudiment of a pistil.) 10. 13—(itchweed, or swamp hellebore.)

Helonias. Calyx o : corol 6-parted or 6-petalled : styles distinct : capsules 3-celled, 3-horned, few-seeded. 10. 13—(helonias.)

Xerophyllum. Corol wheel-form : filaments contiguous to the base : stigmas 3, revolute, sub-connate at the base : capsule sub-globose, opening at the top into three fissures, 3-celled, each 2-seeded. 10. 13.

Tofielda. Calyx 3-cleft inferior : petals 6 : capsules 3, joined at the base, many-seeded. 10. 13.

Scheuchzeria. Calyx 6-parted inferior : corol o : (or corol 6-parted and calyx o) anthers linear : stigmas sessile, lateral : capsules 3, inflated, 1 or 2 seeded. 5. 13 —(less flowering rush.)

Zigadenus. Calyx 6-leaved, spreading, with 2 glands above the narrow base of each leaf ; stamens inserted in contact with the germ : capsules membranaceous, 3-celled, many-seeded. (Sometimes the calyx is taken for a corol)—(zigadene.)

Trillium. Calyx 3-leaved, nferior, spreading : corol 3-petalled : styles o, stigmas 3 : berry 3-celled, many-seeded. 11. 12—(false wake robin.)

Triglochin. Calyx 3-leaved, inferior ; corol 3-petalled, resembling the calyx : (or a double calyx with 3 outer and 3 inner leaves) stamens 3 or 6 : styles o : stigmas 3 or 6, hairy : capsules 3 or 6, united above and separate at their bases. 5. 13—(arrow-grass.)

Rumex. Calyx 3-leaved: petals 3, converging: stigmas many-cleft: seed 1, naked, three-sided. 12. 28—(dock, field sorrel.)

Order XIII. Polygynia.

Alisma. Calyx 3-leaved: petals 3: capsules numerous, 1-seeded. 5 13—(water-plantain.)

CLASS VII. HEPTANDRIA.

Order I. Monogynia.

Trientalis. Calyx 7-leaved: corol 7-parted, equal, flat: berry juiceless: 1-celled, many seeded: number of stamens variable. 20. 34—(chick-wintergreen.)

Æsculus. Calyx inflated, 4 or 5-toothed: corol 4 or 5-petalled, inserted on the calyx, unequal, pubescent: capsule 3-celled: seeds large, chesnut-form. 23. 66—(horse-chesnut.) Southern states.

Order IV. Tetragynia.

Saururus. Calyx an ament with 1-flowered scales: corol o: germs 4: berries or capsules 4, 1-seeded: stamens 6, 7, 8 or more. 2. 6—(lizard-tail.)

* Polygonum orientale.

CLASS VIII. OCTANDRIA.

Order I. Monogynia.

A. *Flowers superior.*

Oxycoccus. Calyx superior 4-toothed: corol 4-parted, the divisions nearly linear, revolute: filaments converging, anthers tubular, 2-parted: berry many-seeded. 18. 51—(cranberry.)

Gaura. Calyx 4-cleft, tubular: corol 4-petalled, ascending towards the upper side; nut 4-cornered, 1-seeded. 17. 88—(Virginian loosestrife.)

Epilobium. Calyx 4-cleft, tubular: corol 4-petalled: capsule oblong and of great length: seeds feathered. 17. 88—(willow herb.)

Fuchsia. Calyx funnel-form, coloured, superior, caducous: petals (or nectaries) 4, sitting in the throat of the calyx, alternating with its divisions; stigma-4-sid-

ed-cupitate : berry oblong, 4-celled : seeds numerous. 17. 88—(ear-drop) Exotic.

Oenothera. Calyx 4-cleft, tubular, caducous, divisions deflected : petals 4, inserted on the calyx : stigma 4-cleft ; capsule 4-celled, 4-valved : seeds not feathered. 17. 88—(scabish, or tree-primrose.)

B. *Flowers inferior.*

Rhexia. Calyx pitcher-form, 4 or 5-cleft : petals 4, oblique, inserted on the calyx : anthers declined : capsule 4-celled, within the calyx, setose : seeds numerous, cochleate. 17. 90—(deer-grass.)

Acer. Polygamous. Sometimes hexandrous. Calyx 5-cleft : corol 4 or 5-petalled, or wanting : samaras 2, united at the base, 1-seeded. 23. 66—(maple.)

Jeffersonia. Calyx 5-leaved, coloured, caducous : corol 8-petalled : capsule obovate, sub-stiped, 1-celled, dehiscent below : seeds many, oblong, arilled at the base —(twin-leaf.)

Menziesia. Calyx monophyllus : corol monopetalous, ovate : filaments inserted on the receptacle : capsule 4-celled, the partitions from the inflexed margins of the valves : seeds many, oblong. 18. 50.

Erica. Calyx 4-leaved, permanent : corol 4-cleft, permanent : filaments inserted on the receptacle : anthers bifid : capsules membranaceous, 4 to 8-celled, the partitions from the margins of the valves : seeds many in each cell. 18. 51—(heath.) Exotic.

Dirca. Calyx o : corol tubular, limb obsolete, unequal ; stamens longer than the tube of the corol : style filiform : berry or drupe 1-seeded. (The corol may be taken for a coloured calyx.) 31. 25—(leather-wood.)

Daphne. Calyx o : corol 4-cleft, withering, including the stamens : drupe 1-seeded. 31. 25—(mezereon.) Exotic.)

Tropoeolum. Calyx 4 or 5-cleft, coloured, spurred : petals 4 or 5, unequal : nuts leathery, sulcate. 23. 73—(nasturtion.) Exotic.

Order II. Dyginia.

Chrysosplenium. Calyx superior, 4 or 5-cleft, coloured : corol o : capsule 2-beaked, 1-celled, many-seeded. (The terminal flowers in the European specimens are decandrous.) 13. 84—(golden saxifrage, water-carpet.)

Order III. Trigynia.

Polygonum. Calyx inferior, 5-parted, coloured: corol o: seed 1, angular, covered with the calyx.—Stamens and pistils vary in number.—The calyx in some species might be taken for a corol.) 12. 28—(knot-grass, water-pepper, buckwheat, hearts-ease.)

CLASS IX. ENNEANDRIA.

Order I. Monogynia.

Laurus. Calyx 4 to 6-parted: corol o: nectaries 3, each a two-bristled gland, surrounding the germ: drupe 1-seeded. (Stamens vary from 3 to 14—often dioecious The calyx may be taken for a corol.) 12. 27—(sassafras, spice-bush.)

Order III. Trigynia.

Rheum. Calyx none: corol 6-cleft, permanent: seed 1, 3-sided. 12. 28—(rhubarb.) Exotic.

CLASS X. DECANDRIA.

Order I. Monogynia.

A. *Flowers with a calyx and many-petalled, irregular.*

Baptisia.* Calyx 4 or 5-cleft half way, (sometimes 4-toothed) somewhat 2-lipped: corol papilionaceous, wings of the length of the banner: stamens caducous: legume inflated, smooth, many-seeded. 32. 93—(wild indigo.)

Cercis. Calyx 5-toothed, gibbous below: corol papilionaceous, wings longer than the banner, keel 2-petalled: legume compressed: seed-bearing suture margined: seeds obovate. 33. 93—(judas-tree.)

Cassia. Calyx 5-leaved: corol 5-petalled: anthers, 3 lower ones beaked, and on longer incurved filaments; legume membranaceous. 33. 93—(cassia.)

Rhodora. Calyx 5-toothed, corol 3-petalled; or 2-petalled, with the upper one deeply parted: stamens declined: capsule 5-celled. 18. 50—(rhodora.)

B. *Flowers with a calyx and 5-petalled, regular.*

Clethra. Calyx 5-parted, permanent: style permanent: stigma 3-cleft: capsule 3-celled, 3-valved, en-

* Podalyria. 2d. Ed.

closed by the calyx. (Spiked.) 18. 51—(sweet pepper-bush.)

PYROLA. Calyx 5-parted: anthers with 2 pores at the base before, and at the top, after the opening of the flower: style exsert: capsule 5-celled, dehiscent at the angles near the base. 18. 51—(shin-leaf.)

CHIMAPHILA. Calyx 5-parted: anthers with 2 pores at the base before, and at the top after, the opening of the flower: stigma sessile, thick, orbiculate; style immersed in the germ: capsules 5-celled, dehiscent at the angles near the summit. 18. 51—(prince's pine, pipsissiwa.)*

RUTA. Calyx 5-parted: petals concave: receptacle surrounded by 10 nectariferous dots: capsule lobed. (Petals sometimes 4, and stamens 8.) 26. 81—(rue.) Exotic.

MELIA. Calyx 5-toothed; petals 5: nectary cylindric, 10 toothed, bearing the anthers in the throat: style cylindric; stigma 5-rayed: drupe with a 5-celled nut. 4. 71—(bead tree.) Southern states.

DIONAEA. Calyx 5-leaved or 5-parted: stigma fringed: capsule 1-celled, gibbous: seeds numerous. (Petals sometimes 6.) 20. 68—(Venus' fly trap.)

C. *Flowers with a calyx, and 1-petalled.*

ANDROMEDA. Calyx 5-parted or 5-toothed, inferior: corol ovate, roundish, or sub-cylindric, smooth or hairy, with a 5-cleft reflexed mouth: capsule 5-celled, with partitions contrary. (Stamens sometimes 8.) 18. 51—(whitebush, leather-leaf.)

RHODODENDRON. Calyx 5-parted: corol somewhat funnel-form and oblique: stamens declining: capsules 5-celled. 8. 50—(rosebay.)

KALMIA. Calyx 5-parted: corol wheel-salver-form, with 10 horns beneath and 10 cavities within, containing the anthers until the pollen is mature: capsule 5-celled. 18. 50—(laurel.)

VACCINIUM. Calyx 5-toothed or 5-parted: corol

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* The Pyrola and Chimaphila are still united in one genus by some botanists. It has been urged as a reason for this union that they have some strong affinities, &c. This argument would take in the Arbutus, Gaultheria, Oxycoccus, Vaccinium, &c. which belong to the same natural order.

bell or pitcher-form, 5-cleft, the divisions reflected: filaments inserted on the germ with the corol: berry 4 or 5-celled, many-seeded. (The foreign species are sometimes octandrous.) 18. 51—(whortleberry.)

EPIGAEA. Calyx double, outer 3-leaved, inner 5-parted: corol salver-form; capsule 5-celled, many-seeded. 18. 51—(trailing arbutus.)

GAULTHERIA. Calyx inferior, double, outer 2-leaved, inner 5-cleft: corol ovate: filaments hirsute: capsule 5-celled, invested with the inner, berried, calyx: nectary 10-pointed. 18. 51—(spicy winter-green.)

ARBUTUS. Calyx inferior, 5-parted: corol ovate, pellucid at the base, border small, 5-cleft, revolute: berry 5-celled. 18. 51—(bear-berry.)

LEDUM. Calyx small, 5-toothed: corol flat, 5-parted: capsule 5-celled, dehiscent at the base. (Stamens sometimes 5, leaves downy.) 18. 50—(labrador-tea.)

LEIOPHYLLUM. Calyx 5-parted, corol flat, 5-parted or 5-petalled: capsule 5-celled, dehiscent at the top (leaves always glabrous.) 10. 50.—(sleek leaf.)

D. *Flowers without a calyx, and the plants destitute of green herbage.*

MONOTROPA. Corol confusedly polypetalous, permanent; petals about 5, with nectariferous hollows at their bases: anthers reniform, sub-peltate, 1-celled, giving out pollen by 2 holes near the middle: stigma orbicular, not bearded: capsule 5-celled, 5-valved. 18. 51—(birds' nest.)

HYPOPITHIS. Corol confusedly polypetalous, permanent; inner 4 or 5-petals with nectariferous hollows at their bases, outer ones without the hollows: anthers sub-peltate, 1-celled, opening their whole length: stigma orbicular with a bearded margin: capsule 5-celled, 5-valved. 18. 51—(false beech drops.)

PTEROSPORA. Corol 5-parted: nectary ovate with a 5-toothed reflexed margin enclosing the stamens: anthers 2-celled, 2-bristled, sub-peltate, filaments flat: style short, stigma capitate: capsule subglobose, 5-celled. 18. 51—(Albany beech drops.)

* Geranium, Rhexia, Portulacca, Lythrum.

Order II. Digynia.

Hydrangea. Calyx 5-toothed, superior: corol 5-petalled: capsule 2-celled, 2-beaked, dehiscent between the beaks. 13. 84—(hydrangea.) Vid. Hortensia.

Saxifraga. Calyx 5-parted: corol 5-petalled: capsule 1-celled, 2-beaked, opening between the beaks; many-seeded. 13. 84—(saxifrage.)

Tiarella. Calyx 5-parted: corol inserted on the calyx; 5-petalled, petals entire: capsule 1-celled, 2-valved, 1 valve larger. 3. 84—(miterwort.)

Mitella. Calyx 5-cleft: petals 5 on the calyx, pinnatifid: capsule 1-celled, 2-valved, valves equal. 13. 84—(false sanicle, currant leaf.)

Dianthus. Calyx inferior, cylindrical, 1-leafed, with 4 to 8 scales at the base: petals 5 with claws: capsule cylindrical, 1-celled dehiscent at the top. 22. 82—(pink, sweet-william.) Exotic.

Saponaria. Calyx inferior, 1-leafed, tubular, without scales: petals 5, with claws: capsule oblong, 1-celled. 22. 82—(soap-wort.)

Scleranthus. Calyx inferior, 1-leafed: corol 0: seeds 1 or 2, inclosed in the calyx: stamens inserted on the calyx. 22. 86—(knawell.)

* Chrysosplenium.

Order III. Trigynia.

Arenaria. Calyx inferior, spreading, 5 leaved: petals 5, entire: capsule 1-celled, many-seeded. 22. 82—(sandwort.)

Stellaria. Calyx 5-leaved, inferior, spreading: petals 5, deeply cleft, mostly to the claw, spreading: capsule ovate, 1-celled, many-seeded, 6-toothed at the top. 22. 82—(starwort.)

Silene. Calyx 1-leafed, inferior, cylindric, prismatic or conic: petals 5, with claws appendaged at the mouth: capsule imperfectly 3-celled. 22. 82—(catch-fly.)

Cucubalus. Calyx inferior, 1-leafed, bell-form, inflated: petals 5, with claws, not much appendaged at the mouth: capsule 3-celled. 22. 82—(bladder-campion.)

Hortensia. Flowers deformed: florets solitary: calyx 5-toothed, minute: corol 5-petalled. The gay flowers composing the cyme, have a large coloured, permanent, petal-like, 5-leaved calyx, and a minute caducous, 4

or 5-petalled corol; stamens 8, 10 or 11. 13. 84—(changeable hydrangea.) Exotic.

Order IV. Tetragynia.

Micropetalum. Calyx 5-leaved, spreading: petals 5, entire, minute or none: capsule ovate, 4-valved. 22. 82—(blind starwort.)

Order V. Pentagynia.

Sedum. Calyx inferior 5-cleft: petals 5: 5 nectariferous scales at the base of the germ: capsules 5. 13. 83—(live forever, or orpine, stonecrop.) Exotic.

Penthorum. Calyx 5 to 10-cleft: petals 5 or 0: capsule 5-cuspidate, 5-celled. 13. 83—(Virginian orpine.)

Oxalis. Calyx 5-leaved inferior: petals 5, cohering by the claws: capsule 5-celled, 5-cornered, dehiscent at the corners: stamens, with 5 shorter: outer ones adhering at their bases. 14. 73—(wood sorrel.)

Spergula. Calyx 5-leaved inferior: petals 5, entire: capsule ovate, 1-celled, 5-valved. (Stamens often 5.) 22. 82—(spurry.)

Agrostemma. Calyx 1-leaved, prismatic or tubular, coriaceous: petals 5 with claws, border obtuse, entire: capsule 1-celled, many-seeded. 22. 82—(cockle.)

Cerastium. Calyx 5-leaved: petals 5, 2-cleft, or emarginate: capsule 1-celled, dehiscent at top, 10-toothed. 22. 82—(mouse-ear chickweed.)

Lychnis. Calyx 1-leaved, oblong, 5-toothed: petals 5, with claws: the limb somewhat 2-cleft: capsule 1 or 5-celled, with a 5-toothed opening. 22. 82—(campion.) Exotic.

* Phytolacca.

Order X. Decagynia.

Phytolacca. Calyx 0: corol 5-petalled, calyx-like, inferior: berry 10-celled, 10-seeded. 54. 29—(pokeweed.)

CLASS XI. DODECANDRIA.

Order I. Monogynia.

Asarum. Calyx 3 or 4-cleft, superior: corol 0: stig-

ma 6-cleft : capsule coriaceous, 6-celled, crowned with the calyx. 11. 23—(wild ginger, or white snake-root.)

Hudsonia. Calyx tubular, inferior, unequally 5-parted, 2 of the divisions obsolete, coloured : corol 5-petalled : stamens about 15 ; capsule 1-celled, 3-valved, 1 to 3-seeded. 18. 80—(false-heath.)

Portulacca. Calyx 2-cleft, inferior : corol 5-petalled : capsule 1-celled, opening transversely : columella 5, filiform. 13. 86—(purslane.)

Lythrum. Calyx 6, 8, 10 or 12-toothed, inferior : petals 5 or 6 on the calyx : capsule 2 to 4-celled, many-seeded, covered. 17. 91—(milk willow herb.)

Talinum. Calyx inferior, 2 or 5-leaved : corol 5-petalled : capsule 1-celled, 3-valved, many-seeded ; seeds arillate : columella globose—(taliny.)

Cuphea. Calyx tubular-ventricose, 6 to 12-toothed, unequal : petals 6, mostly unequal, inserted on the calyx : capsule 1-celled, dehiscent longitudinally with the calyx ; follicle 3-sided : seeds lenticular. 54. 91—(wax bush.)

Order II. Digynia.

Agrimonia. Calyx 5-toothed, invested with an outer one : petals 5 : seeds 2, in the bottom of the calyx. 35. 92—(agrimony.)

* Delphinium.

Order III. Trigynia.

Euphorbia. Calyx 1-leaved, inflated : petals 4 or 5, standing on the calyx : stamens with articulated filaments : germ stiped ; styles 2-cleft : capsule 3-grained. 38. 96—(spurge, caper.)

Reseda. Calyx 1-leafed, 4 to 6-parted : petals in many divisions : capsule 1-celled, dehiscent at the top : seed reniform (stamens 11 to 15 : styles 3, 5, or none) 54. 64—(mignonette, dyer's weed.)

Order XIII. Polygynia.

Sempervivum. Calyx 9 to 12-parted : petals 8 to 12 : capsules 12, many-seeded. (Stamens 16 or 20.) 13. 83—(house-leek.) Exotic.

CLASS XII. ICOSANDRIA.

Order I. Monogynia.

Philadelphus. Calyx 4-5 parted, superior: corol 4 or 5 petalled: style 4-cleft: capsule 4-5 celled, many-seeded; seed arilled. 19. 89—(false syringa, or mock-orange.)

Prunus. Calyx 5-cleft, inferior: corol 5-petalled: nut of the drupe smooth with prominent seams at the sutures. 36. 92—(cherry, plum.)

Armeniaca. Flowers sessile: calyx 5-cleft, inferior: petals 5: drupe fleshy, pubescent: nut with one margin acute and the other obtuse, furrowed both sides. 36. 92—(apricot.) Exotic.

Cactus. Calyx superior, many-cleft, imbricate: petals numerous, in many series, the inner ones larger: stigma many-cleft: berry 1-celled, many-seeded: umbilicate. 13. 85—(prickly-pear.)

Myrtus. Calyx superior, 5-cleft: petals 5: berry 2 or 3-celled, many-seeded. 19. 89—(myrtle.) Exotic.

Punica. Calyx 5-cleft, superior: petals 5: pome or berry many-celled, many-seeded: receptacle parietal: seed berried. 36. 92—(pomegranite.) Exotic.

Amygdalus. Calyx 5-cleft, inferior: petals 5: drupe with a nut perforated with pores: flowers sessile. 36. 92—(peach.) Exotic.

* Lythrum.

From Order II. Dyginia, to Order V. Pentagynia.

Fothergilla. Calyx inferior, truncate, obsoletely crenate: corol 0: germ 2-cleft: styles 2: capsule 2-lobed, 2-celled: seeds solitary, bony. 50. 99—(witch alder.)

Crataegus. Calyx superior, 5-cleft: petals 5: styles 1 to 5: berry mealy: seeds 2 to 5, bony. 36. 92—(thorn-bush.)

Sorbus. Calyx 5-cleft, superior: petals 5: styles 2 to 3: berry pomaceous: seeds 2 or 3, cartilaginous. 36. 92—(mountain ash.)

Aronia. Calyx 5-toothed: petals 5: fruit pomaceous: berry 5 or 10-celled; cells 1 or 2-seeded; seeds cartilaginous. 36. 92—(shad-flower, choake-berry.)

MESPILUS. Calyx 5-cleft, superior, divisions generally foliaceous, serrate : corol 5-petalled : styles 2-5 : drupe or berry with from 2 to 5 bony seeds. 36. 92—(medlar.) Exotic.

ORDER V. PENTAGYNIA.

PYRUS. Calyx 5-cleft, superior : corol 5-petalled : pome 5-celled, many-seeded. 36. 92—(pear, apple, quince.)

SPIRAEA. Calyx 5 cleft, inferior, spreading : corol 5 petalled, petals equal, roundish : stamens numerous, exsert : capsules 3 to 12, 2-valved within, each 1 to 3-seeded. 36. 92—(steeple bush, hard-hack.)

GILLENIA. Calyx sub-campanulate, border 5-toothed : corol partly unequal ; petals 5-lanceolate, alternate, coarctate at the claws : stamens included : styles 5, contiguous : stigmas capitate : capsules with 5, 2-seeded cells. 36. 92—(indian physic.)

MESEMBRYANTHEMUM. Calyx superior, 5-cleft : petals numerous, linear, cohering at the base : capsule fleshy, many-seeded, turbinate. 13. 87—(ice-plant.) Exotic.

ORDER XIII. POLYGYNIA.

ROSA. Calyx urn-form, inferior, 5-cleft, fleshy, contracted towards the top : petals 5 : seeds numerous, bristly, fixed to the sides of the calyx within. 35. 92—(rose.)

RUBUS. Calyx 5-cleft, inferior : corol 5-petalled : pistils numerous : berry composed of many juicy, 1-seeded, acines. 35. 92—(raspberry, blackberry.)

DALIBARDA. Calyx 5-cleft, inferior : corol 5-petalled : styles long, caducous, 5 to 8 ; berry composed of dry granulations. 35. 92—(dry strawberry.)

FRAGARIA. Calyx inferior, 10-cleft ; 5 alternate divisions smaller : corol 5-petalled : receptacle ovate, berry-like, caducous. 35. 92—(strawberry.)

POTENTILLA. Calyx inferior, 10-cleft, 5 alternate divisions smaller : corol 5-petalled : seeds awnless, roundish, rugose, fixed to a dry small receptacle. 35. 92—(five-finger, cinquefoil.)

GEUM. Calyx inferior, 10-cleft, 5 alternate divisions smaller : corol 5-petalled : seeds with a bent awn : re-

ceptacle columnar, villous. 35. 92—(avens, or herb bennet.)

Comarum. Calyx inferior, 10-cleft, 5-alternate divisions smaller: petals 5, smaller than the calyx: receptacle ovate, spongy, permanent, villous. 35. 92—(marsh five-finger.)

Calycanthus. Calyx 1-leafed, pitcher-shaped, scurfy, with coloured divisions: corol none: styles many, with glandular stigmas: seeds many in the succulent calyx. 35. 92—(Carolina allspice.) Southern states.

CLASS XIII. POLYANDRIA.

Order I. Monogynia.

Chelidonium. Calyx 2-leaved, caducous: corol 4-petalled: silique-like capsule 1-celled, linear: seeds crested, many. 27. 62—(celandine.)

Actaea. Calyx 4-leaved, caducous: corol 4-petalled: berry 1-celled: seeds half orbicular. 26. 61—(necklace weed, bane-berry.)

Macrotys. Calyx about 4-leaved, becoming coloured before expanding, caducous: corol o: stigma simple, sessile, curving towards the gibbous side of the germ: capsule 2-valved, dehiscent at its strait suture.* 26. 61—(cohosh, black snake-root, bug-bane.)

Cistus. Calyx 5-leaved, 2 of them smaller, corol 5-petalled: capsule 3-valved, opening at the top. 20. 80—(rock-rose, frost-plant.)

Sarracenia. Calyx double, 3 and 5-leaved: corol 5-petalled, caducous: stigma peltate, covering the stamens: capsule 5-celled. 54. 62—(side saddle flower.)

Thea. Calyx 5 or 6-leaved: corol 6 or 9-petalled: capsule 3-seeded. 54. 71. (tea.) Exotic.

Citrus. Calyx 5-cleft: petals 5, oblong: filaments dilated at the base, in several parcels: berry 9 to 18-celled—Polyadelphous. 18. 70—(orange, lemon.) Exotic.

Papaver. Calyx 2-leaved, caducous: corol 4-petalled: stigma with radiating lines: capsule 1-celled, de-

* I drew up this description for the Cimicifuga in the woods near Hudson, while I had hundreds of specimens before me. I have since determined to attach it to Mr. Rafanesque's name; for it appears to be very different from the descriptions of the Cimicifuga and Actaea of authors.

hiscent by pores under the permanent stigma. 27. 62—(poppy.)

TILIA. Calyx 5-parted, inferior, caducous : corol 5-petalled : capsule 5-celled, globular, coriaceous, dehiscent at the base, 1-seeded. 37. 79—(bass-wood.)

SANGUINARIA. Calyx caducous, 2-leaved : corol about 8-petalled : stigma sessile, 2-grooved : capsule pod-like, ovate, 1-celled. 27. 62—(blood-root.)

PODOPHYLLUM. Calyx 3-leaved, minute : corol about 9-petalled : berry 1-celled, crowned with the stigma. 27. 61—(wild mandrake.)

NYMPHAEA Calyx 4 to 7-leaved, corol many-petalled, petals about equalling the length of the calyx leaves, attached to the germ beneath the stamens : stigma marked with radiated lines : berry many-celled, many-seeded. 13. 62—(pond-lily.)

NUPHAR. Calyx 5 or 6-leaved, petals many, minute, inserted on the receptacle with the stamens, nectariferous on their backs : stigma with radiate furrows, sessile : berry many-celled, many-seeded. 13. 62—(water-lily, or yellow pond-lily.)

ARGEMONE. Calyx 3-leaved caducous : corol 6-petalled : stigma sessile, capitate, lobed : capsule semi-valved. 27. 62—(horned poppy.)

* Cleome.

FROM ORDER II. DIGYNIA, TO ORDER V. PENTAGYNIA.

PAEONIA. Calyx 5-leaved : petals 5 : styles 0 ; stigmas 2 or 3 : capsules pod-like, many seeded. 26. 61—(peony.) Exotic.

ASCYRUM. Calyx 4-leaved ; 2 interior leafets cordate, larger : corol 4-petalled : stamens with the filaments disposed in 4-parcels : capsule oblong, 1-celled, 2-valved, included in the calyx leaves. 20. 68—(St. Peter's wort.)

HYPERICUM. Calyx 5-parted, divisions subovate : corol 5-petalled : filaments often united at the base in 3 or 5 sets : styles 2 to 5 : capsules roundish with a number of cells equal to the number of styles. 20. 68—(St. John's wort.)

DELPHINIUM. Calyx 0 : corol 5-petalled, unequal : nectary 2-cleft, horned behind : capsules 1 or 3, pod-like. 26. 61—(larkspur.) Exotic.

ACONITUM. Calyx 0 : petals 5, upper one vaulted : nectaries 2, hooded, peduncled, recurved : capsules 3 or 5, pod-like. 26. 61—(monk's hood.) Exotic.

AQUILEGIA. Calyx 0 : petals 5 : nectaries 5, alternating with the petals and ending in horns beneath : capsules 5, distinct. 26. 61—(columbine.)

NIGELLA. Calyx none ; petals 5 : nectaries 5, three-cleft, within the corol : capsules 5, convex. 26. 61—(fennel-flower.) Exotic.

* Reseda, Ascyrum, Caltha, Helleborus, Anemone, Hepatica.

ORDER XIII. POLYGYNIA.

A. *Calyx none.*

HYDRASTIS. Petals 3 : berry composed of 1-seeded acines. 26. 61—(orange-root.)

CLEMATIS. Petals, 3, 4, 5 or 6 ; seeds compressed : styles permanent, becoming long tails. (Some species are dioecious. 26. 61—(virgin's bower.)

ATRAGENA. Corol double, many petalled, outer ones largest : seeds with pilose (or plumose) tails : (or petals 4 to 6, with spatulate nectaries alternating with the petals ; and the outer filaments dilated.) 26. 61—(false virgin's bower.)

THALICTRUM. Petals 4 or 5 : filaments very long : seeds without tails, striate, terete. (Some species are dioecious.) 26. 61—(meadow rue.)

TROLLIUS. Petals 5 to 8, caducous : nectaries 5 to 8, linear : capsules numerous, ovate, sessile, many-seeded. 26. 61—(globe flower.)

HELLEBORUS. Petals 5 or more : nectary 2-lipped, tubular : capsules 5 or 6, many-seeded, erectish, compressed. 26. 61—(hellebore.) Exotic.

COPTIS. Petals 5 or 6, caducous : nectaries 5 or 6, cowled : capsules 5 to 8, stiped, stellate, beaked, many-seeded 26. 61—(gold-thread.)

CALTHA. Petals 5 to 9 : capsules numerous, many-seeded : nectaries 0 : (styles variable in number.) 26. 61—(American cowslip.)

ANEMONE. Petals 5 to 9 : seeds numerous, naked. 26. 61—(wind-flower, rue anemone.)

B. *Calyx 2 to 6-leaved.*

HYDROPELTIS. Calyx 6-leaved somewhat converging; 3 inner leaves longest: corol o: stamens equalling the length of the calyx: capsules oblong, somewhat fleshy, numerous, 2-celled, 1 or 2-seeded. 26. 61—(water-shield.)

HEPATICA. Calyx 3-leaved: petals 6 to 9: seeds naked. 26. 61—(liverleaf.)

PORCELIA. Calyx 3-leaved: petals 6, inner ones largest: germs many: stigmas sessile, obtuse: berry (1 or many) cylindric or ovate, many-seeded: seed connected to an internal suture, arilled. 52. 76—(custard apple.) Southern states.

LIRIODENDRON. Calyx 3-leaved: corol 6 or 9-petalled, liliaceous: seeds in a samara, imbricate on a strobile-like spike. 52. 75—(tulip tree or whitewood.)

MAGNOLIA. Calyx 3-leaved: corol 6 to 9-petalled: capsules numerous, imbricate on a strobile-like spike, 2-valved: seeds arilled, pendulous. 52. 75—(magnolia, or beaver tree.)

NELUMBIUM. Calyx 4 or 5-leaved: petals 5 or more: nuts half immersed in a truncate receptacle, and crowned with the permanent style. 26. 61—(nelumbo.)

RANUNCULUS. Calyx 5-leaved: petals 5, with claws and a nectariferous pore or scale on the inside of each: seeds naked, numerous. 26. 61—(crow-foot.)

ADONIS. Calyx 4-5-leaved: petals 5 or more, without nectariferous pores: seeds awnless. 26. 61—(pheasant's eye.) Exotic.

CLASS XIV. DIDYNAMIA.

ORDER I. GYMNOSPERMIA.

A. *Calyx 5-cleft, with the divisions or teeth nearly equal.*

TEUCRIUM. Corol deep-cleft on the upper side and without an upper lip: lower lip 3-cleft, the middle division rounded: stamens and pistils incurved; stamens exsert through the cleavage on the upper side. 42. 39—(wood-sage, wild germander.)

ISANTHUS. Calyx somewhat bell-form: corol 5-parted, tube strait, narrow; divisions ovate equal: stamens nearly equal: stigma linear, recurved. 42. 39—(blue gentian.)

VERBENA. Corol funnel-form, with a curved tube, border 5-cleft, nearly equal: seeds 2 or 4: sometimes but 2 stamens or 2 barren ones. 42. 38—(vervain.)

LAVANDULA. Calyx ovate, sub-dentate, bracts understudded: corol resupinate: stamens in the tube. 42. 39 (lavander.) Exotic.

LAMIUM. Segments of the calyx subulate, spreading: corol with the upper lip entire, vaulted; under lip 2-lobed; throat with a tooth at each margin. 42. 39—(dead nettle.)

PYCNANTHEMUM. Involucre bract-like, many-leaved, under small heads of flowers: calyx tubular, striate: corol with the upper lip sub-entire, lower lip 3-cleft, middle segment longer: stamens distant, nearly equal; cells of the anthers parallel. 42. 39—(wild basil, mountain mint.)

NEPETA. Calyx dry, striated: corol with a longish tube, under lip with the middle division crenate, throat with a reflected margin: stamens approximate. 42. 39—(catmint.)

HYSSOPUS. Corol with the under lip 3-parted, its intermediate division sub-crenate: stamens strait, distant. 42. 39—(hyssop.)

MENTHA. Corol nearly equal, 4-cleft: broadest division emarginate: stamens erect, distant. 42. 39—(spear mint, pepper mint.)

STACHYS. Calyx with its divisions awned: corol with the upper lip vaulted, the lower lip reflexed at the sides, the middle division largest, emarginate: stamens reflexed towards the sides after discharging the pollen. 42. 39—(woundwort, hedge nettle.)

GELAOPSIS. Calyx awned: corol with the upper lip sub-crenate, vaulted; lower lip unequally 3-lobed, having 2 teeth on its upper side near the margin of the orifice and opposite to the sinuses dividing the lobes. 42. 39—(flowering nettle.)

SATUREJA. Calyx tubular, striate: corol with divisions nearly equal: stamens distant. 42. 39—(savory.)—Exotic.

MOLUCELLA. Calyx very large, bell or shell-form, margin repand-spinose; corol much smaller, in the bottom of the calyx. 42. 39—(shell-flower, molucca balm.) Exotic.

LEONURUS. Calyx 5-angled, 5-toothed: corol with

the upper lip villose, flat, entire : lower lip 3-parted, middle division undivided : lobes of the anthers parallel. 42. 39—(motherwort.)

MARRUBIUM. Calyx salver-form, rigid, marked with 10 lines : corol with the upper lip 2-cleft, linear, strait. 42. 39—(horehound.)

BALLOTA. Calyx salver-form, 5-toothed, 10-striate : corol with the upper lip concave, crenate : seed ovate, 3-sided. 42. 39—(false motherwort.) Naturalized.

CUNILA. Calyx cylindric, 10-striate, 5-toothed, throat villose : corol ringent, upper lip erect, flat, emarginate : 2 of the stamens usually barren : stigma unequally bifid. 42. 39—(dittany.)

HEDEOMA. Calyx 2-lipped, gibbose at the base, upper lip 3-toothed, lower one 2 : corol ringent ; 2 of the stamens barren. 42. 39—(penny royal.)

GLECHOMA. Calyx 5-cleft : corol double the length of the calyx ; upper lip 2-cleft, lower lip 3-cleft, with the middle segment emarginate : each pair of anthers approaching so as to exhibit the form of a cross. 42, 39—(ground-ivy, gill-overground.)

B. *Calyxes 2-lipped.*

MELISSA. Calyx dry, flattish above, with the upper lip sub-fastigiate : corol with the upper lip somewhat vaulted, 2-cleft ; lower lip with the middle lobe cordate. 42. 39—(balm.)

TRICHOSTEMA. Calyx re-supinate : corol with the upper lip falcate : the under lip 3-parted, with the middle division small, oblong : filaments very long-exsert, incurved. 42. 39—(blue-curls.)

DRACOCEPHALUM. Calyx subequal-5-cleft : corol with the throat inflated ; the upper lip concave, the middle division of the lower lip roundish, notched. 42. 40—(dragon-head.)

OCYMUM. Calyx with the upper lip orbiculate, the lower one 4-cleft : corol resupinate ; one lip 4-cleft, the other undivided : outer filaments sending out a process from the base. 42. 39—(sweet-basil.) Exotic.

SCUTELLARIA. Calyx with an entire mouth, which is closed with a helmet-form lid after the corol falls out : tube of the corol bent. 42. 39—(skull-cap.)

ORIGANUM. Calyxes collected into a 4-sided strobile-

like cone, with broad intervening bracts : corol with the upper lip erect, flat : under lip 3-parted, divisions nearly equal. 2. 39—(marjoram.)

THYMUS. Calyx sub-companulate, with the throat closed with hairs : corol with the upper lip flat, emarginate ; lower lip longer. 42. 39—(thyme.) Exotic.

CLINIPODIUM. Involucre many-bristled, bract-like, under head-form whorls : perianth 2-lipped : corol with the upper lip flat, obcordate, strait. 42. 39—(field-thyme.)

PRUNELLA. Calyx with the upper lip dilated : filaments 2-forked, with an anther on one of the points : stigma 2-cleft. 42. 39—(self-heal. or heal all.)

PHRYMA. Calyx cylindric, upper lip longer, 3-cleft, lower lip 2-toothed : corol with the upper lip emarginate, lower lip much larger : seed single. 40. 39—(lopseed.)

ORDER II. ANGIOSPERMIA.†

A. *Calyxes 2-cleft, or 2-leaved, bract-like.*

OBOLARIA. Corol 4-cleft, bell-form : capsule 1-celled, 2-valved, many-seeded : stamens from the divisions of the corol nearly equal : stigma emarginate. 40. 35*—(penny-wort.)

B. *Calyxes 4-cleft.*

BARTSIA. Calyx lobed, emarginate, coloured : corol less than calyx ; upper lip longest, concave, entire, lower lip 3-cleft and reflexed : capsule 2-celled ; seed angled. 40. 35—(painted cup.)

RHINANTHUS. Calyx inflated : corol ringent : the upper lip mostly compressed, the under lip spread 3-parted : capsule 2-celled, obtuse, compressed. 40. 35—(yellow-cockscomb.)

EUPHRASIA. Calyx cylindric : corol 2-lipped ; upper lip 2-cleft, lower lip 3-lobed, with the divisions 2-cleft ; lower anthers lobed, spinose. 40. 35—(eye-bright.)

MELAMPYRUM. Corol with the upper lip compressed, the margin folded back : lower lip grooved, 3-cleft, subequal : capsule 2-celled, oblique, dehiscent on one side : seeds 2, cylindric gibbous. 40. 35—(cow-wheat.)

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* Nuttall says, and also quotes the opinion of Dr. W. Darlington, that this genus belongs to the 46th natural order of Jussieu. See p. 103. vol. 1.

† Read the 35th, 40th, and 45th Nat. Ord. of Jussieu.

SCHWALBEA. Calyx tubular-inflated ; upper division small ; lower division large emarginate or 2-toothed : corol ringent, upper lip entire arched, lower lip 3-lobed : capsule ovate, compressed, 2-celled, 2-valved, with a double partition : seeds many, chaffy. 40. 40—(chaff seed.)

C. *Calyxes 5-cleft or 5-leaved.*

OROBANCHE. Calyx 5-cleft (sometimes 4-cleft) segments often unequal : corol ringent : capsule ovate, acute, 1-celled, 2-valved ; seeds numerous : a gland beneath the base of the germ. 40. 35—(broom rape.)

EPIPHEGUS.* Polygamous, calyx abbreviated, 5-toothed : corol of the barren flowers ringent, compressed, 4-cleft, lower lip flat ; of the fertile flowers minute, 4-toothed, caducous : capsule truncate, oblique, 1-celled, imperfectly 2-valved, opening on one side. 40. 35—(beech drops, cancer root.)

LIMOSELLA. Calyx 5-cleft : corol 4 or 5-lobed, equal : stamens approaching each other by pairs : capsule 1 or 2-celled, 2-valved, many seeded. 40. 40—(mudwort.)

ZAPANIA. Flowers capitate : calyx 5-toothed : corol 5-cleft : stigma head-peltate, oblique : pericarp bladder-like, vanishing, connecting the two seeds. 40. 40—(fog-fruit.)

SCROPHULARIA. Calyx 5-cleft : corol sub-globose resupinate, middle division of lower lip reflexed : capsule 2-celled. (Generally a stamen-like organ is attached to the corol.—Corol dull purplish green or brown.) 40. 40—(figwort.)

ERINUS. Calyx 5-leaved : corol with the limb equally 5-cleft, lobes emarginate ; upper lip very short, reflexed : capsule 2-celled. 40. 35—(erinus.)

BIGNONIA. Calyx 5-toothed, cup-form : corol bell-form, 5-lobed, ventricose beneath : capsule silique-like, 2-celled : seed membrane-winged. 40. 45—(trumpet-flower.)

RUELLIA. Calyx 5-parted, often 2-bracted : corol somewhat bell-form, limb 5-lobed : stamens approaching

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* Nuttall's name is Epifagus. Sprengel in a letter to Dr. John Torry, corrects this naming, so as to derive both parts of the compound from the same language. As Epi is Greek and Fagus Latin ; but Phegos is Greek.

by pairs: capsule tapering to both ends, toothed, elastically dehiscent: seeds few. 40. 36—(ruel.)

Buchnera. Calyx 5-toothed: corol with a slender tube and the limb in 5 equal divisions, the lobes cordate: capsule 2-celled. 40. 34—(blue hearts.)

Antirrhinum. Calyx 5-leaved or deeply 5-parted, the two lower divisions remote: corol ringent, spurred, or with a prominent base, the throat closed with a prominent palate: capsule ovate, 2-valved, dehiscent at the apex. 40. 40—(snapdragon, toad-flax.)

Gerardia. Calyx 5-cleft or 5-toothed: corol subcampanulate, unequally 5-lobed, segments mostly rounded: capsule 2-celled, dehiscent at the top. 40. 40—(false-foxglove.)

Digitalis. Calyx 5-parted: corol bell-form, ventricose, 5-cleft: stigma simple or bilamellate: capsule ovate, 2-celled.—(Flowers racemed.) 40. 40—(foxglove.)

Pedicularis. Calyx ventricose, 5-cleft or obliquely truncate: corol ringent, upper lip emarginate and compressed: capsule 2-celled, mucronate, oblique: seeds numerous, angular, coated. (Leaves many-cleft. 40. 35—(lousewort, high heal-all.)

Mimulus. Calyx prismatic, 5-toothed: corol ringent, upper lip folded back upon its sides, lower lip with a prominent palate: stigma thick, 2-cleft: capsule 2-celled, many-seeded. 40. 40—(monkey-flower.)

Chelone. Calyx 5-cleft or 5-leaved, 3-bracted: corol ringent, inflated; the upper lipe marginate obtuse, under lip slightly 3-cleft: the rudiment of a smooth fllament between and shorter than the two tallest stamens: anthers woolly: seeds membrane-margined: capsule 2-celled, 2-valved. 40. 45—(snake-head.)

Pentstemon. Calyx 5-cleft or 5-leaved: corol ringent, inflated; the rudiment of a bearded filament between and longer than the two tallest stamens: anthers smooth; seeds angular: capsule 2-celled. (Taken from the last genus.) 40. 45—(beard-tongue.)

Martynia. Calyx 5-cleft: corol ringent, almost bell-form: capsule woody and barked, with a hooked beak, 4-celled, 2-valved. 40. 45—(unicorn-plant.)

* Linnæa, Verbena.

CLASS XV. TETRADYNAMIA.†

Order I. Siliculosa.

All plants of this class have flowers with 4-leaved calyxes and cruciform corols. See Jussieu's 63d Nat. Ord.

A. *Silicle without a notch at the end.*

Draba. Silicle oval oblong, valves flattish, parallel to the partition : style none. 39. 63—(whitlow grass.)

Lunaria. Silicle entire, oval, flat-compressed, pedicelled ; valves equalling the partition, parallel, flat : calyx consists of coloured sack-like leafets. 89. 63—(honesty, or satin-flower.) Exotic.

Bunias. Flower minute. Silicle sub-lanceolate, 4-angled ; with two separable 1-seeded valveless articulations, lower one with a depressed line, upper one furnished with an emarginate tooth on each side and an elevated line. 39. 63—(sea-rocket.)

Isatis. Silicle compressed, oblong, ligulate, valveless, 1-seeded : partition like lattice work. 39. 63—(woad.) Exotic.

B. *Silicle with a notch at the end.*

Alyssum. Filaments of the two shorter stamens marked with a tooth : silicle entire, acuminate with the style, oval or globose, often hairy. 39. 63—(madwort, gold of pleasure.)

Cochlearia. Silicle thick, rugose, many-seeded, 2-valved ; the valves gibbous obtuse. 39. 63—(scurvy-grass, horse-radish.)

Iberis. Corol irregular, the two exterior petals longest : silicle emarginate, many-seeded. 39. 63—(candy tuft.) Exotic.

Lepidium. Calyx spreading : corol regular : silicle emarginate, cordate or oval : cells 1-seeded : valves carinate, partition contrary. 39. 63—(pepper-grass.)

Thlaspi. Calyx spreading : silicle emarginate, obcordate, many-seeded ; valves resemble 2 boats with the keels outward. 39. 63—(shepherd's purse.)

* Sisymbium.

† Read the 63d Nat. Ord. of Jussieu.

Order II. Siliquosa.

A. *Calyx leaves converging or closed upon the corols, when the flowers are mature.*

Arabis. Glands 4, one within each leafet of the erect calyx, of the size of the reflected scale: silique compressed, torulose, sub-divaricate: seeds arranged in a single series 39. 63—(wall-cress.)

Turritis. Calyx converging, erect: corol erect: silique very long, striate, 2-edged, valves keeled or nerved: seeds arranged in a double series. 39 63—(tower-mustard.)

Dentaria. Calyx longitudinally converging: silique bursting elastically with nerveless revolute valves; the partition thick and fungus-like: stigma emarginate. (Roots sharp-tasted, fleshy, with tooth-like processes.) 39. 63—(tooth-root, trickle-root.)

Hesperis. Calyx closed, shorter than the claws of the petals: petals bent obliquely, linear or obovate: silicle sub-terete: stigmas forked, with converging apexes. 39. 63—(rocket.)

Erysimum. Calyx closed; silique columnar, exactly 4-sided. 39. 63—(hedge mustard.)

Barbarea. Calyx erect: glands between the bases of the short stamens and the germ: silique 2-edged (or oblique 4-sided): seeds arranged in a single series. 39. 63—(water radish.)

Brassica. Calyx erect, converging: partition extending beyond the valves of the silique: seed globose: glands between the short stamens and pistil, and between the long stamens and calyx. 39. 63—(cabbage, turnip.) Exotic.

Raphanus. Calyx closed, setose: silique torose, somewhat jointed, terete, not opening by valves, 1 or 2-celled: glands between the short stamens and pistil, and between the long stamens and calyx. 39. 63—(radish.)

Cheiranthus. Calyx closed, two of the leafets gibbous at the base: petals dilated: silique when young with a glandular tooth each side: stigma 2-lobed: seed flat. 39. 63—(stock-july-flower, wall-flower.) Exotic.

B. *Calyx-leaves spread, not lying closed upon the corol when the flowers are mature.*

Cardamine. Calyx leaves spreading but little: stig-

ma entire : a single gland between each of the short stamens and the calyx : silique long, bursting elastically with revolute valves, equalling the length of the partitions. 39. 63—(American water-cress.)

SISYMBRIUM. Calyx and corol spreading : silique bursting, not elastically, valves straitish, beak short and terete. 39. 63—(English water-cress, water-radish.)

SINAPIS. Calyx spreading : corol with strait claws : glands between the short stamens and pistil, and between the long stamens and calyx : partition extending beyond the valves of the silique, ensiform. 39. 63—(mustard.)

* Cleome.

CLASS XVI. MONADELPHIA.†

ORDER III. TRIANDRIA.

SISYRINCHIUM. Spathe 2-leaved : perianth 0 : corol superior, 6-cleft, tubular : style 1 : capsule 3-celled. 6. 18—(blue-eyed grass.)

ORDER V. PENTANDRIA.

PASSIFLORA. Calyx 5-parted, coloured : corol 5-petalled, on the calyx : nectary, a triple filamentous crown within the petals : berry pedicelled. 34. 97—(passion flower.) Southern states.

ERODIUM. Calyx 5 leaved : corol 5-petalled : nectariferous scales 5, alternating with the filaments : arils 5, 1-seeded, awned, beaked at the base of the receptacle ; awn spiral, bearded within. (Taken from the geranium. 14. 73—(stork's bill.) Exotic.

* Lysimachia, Linum, Anagallis.

ORDER VII. HEPTANDRIA.

PELARGONIUM. Calyx 5-parted, upper division broader, ending in a capillary nectariferous tube : corol 5-petalled, irregular, the two upper petals usually broader, with coloured veins : filaments 10, three of them usually without anthers : arils 5, each 1-seeded, awned, some of the awns spiral. 14. 73—(stork geranium.) Exotic.

ORDER X. DECANDRIA.

GERANIUM. Calyx 5-leaved : corol 5-petalled, regular : nectariferous glands 5, adhering to the base of the

† Read the 73d and 74th Nat. Ord. of Jussieu.

long filaments : arils 5, 1-seeded, awned, beaked at the head of the receptacle : awn naked, strait. 14. 73—(cranebill, false crowfoot, herb-robert.)

MIMOSA. Calyx 5-toothed : corol 5-cleft, 5-petalled, or 0 : stamens capillary, very long, 4 to 10 or more, sometimes not united : legume sometimes jointed. 33. 93—(sensitive plant.) Exotic.

ORDER XIII. POLYANDRIA.

GORDONIA. Calyx simple, 5-leaved or 5-parted : corol 5-petalled, adhering at the base : style 5-cornered, stigma 5-cleft : capsule 5-celled : columella columnar : seeds 2, with leaf-like wings. 37. 74—(leaf-seed.) S. states.

NAPAEA. Calyx bell-form, 5-cleft, simple : petals 5 : capsule orbicular, depressed, 10-celled : seed solitary. (Pedicels not jointed.) 37. 74—(false-mallows.)

SIDA. Calyx simple, angular, 5-cleft : style many-parted : capsules many, 1 or 3-seeded. (Pedicel articulated under the apex.) 37. 74—(Indian-mallows.)

HIBISCUS. Calyx double, outer one many-leaved, inner one about 5-cleft : stigmas 5 : capsule 5 or 10-celled, many-seeded. 37. 74—(hibiscus, okra.)

MALVA. Calyx double, outer one 3-leaved, inner one 5-cleft : capsules many, 1-seeded. 37. 74—(mallows.)

ALTHAEA. Calyx double, outer one 6 or 9-cleft, capsules many, 1-seeded. 37. 74—(hollyhock.) Exotic.

LAVATERA. Calyx double, outer one 3-cleft : capsules many, many-seeded. 37. 74—(tree mallows.) Exotic.

GOSSYPIUM. Calyx double, outer one 3-cleft : capsule 4-celled, seeds involved in wool. 37. 74—(cotton.) Exotic.

CLASS XVII. DIADELPHIA.*

FROM ODRER V. PENTANDRIA, TO ORDER VIII. OCTANDRIA.

FUMARIA. Calyx 2-leaved, caducous : corol irregular, spurred at the base : filaments 2, each with 3 anthers : capsule drupe-like, 1-celled, 1-seeded, not opening by valves ; seed affixed to the side of the cell. 24. 62—(fumitory.)

CORYDALIS. Calyx 2-leaved : corol ringent, 1 or 2-

* Read the 93d Nat. Ord. Jussieu.

spurred : filaments 2, membranaceous, each with 3 anthers : capsule silique-like, many-seeded. 24. 62—(colic weed.)

Polygala. Calyx 5-leaved, unequal, 2 of the leafets wing-like, larger, coloured : corol irregular (or rather, calyx 3-leaved, corol imperfectly papilionaceous) capsule obcordate, 2-celled, 2-valved. Keel or corol sometimes appendaged. 33. 35—(snake-root, milk-wort, low century.)

Order X. Decandria.

A. *Stamens united in one set.*

Amorpha. Calyx somewhat bell-form, 4 or 5-cleft : banner ovate, concave, wings and keel 0 : legume 1 or 2-seeded, falcate. 32. 93—(false-indigo.)

Lupinus. Calyx 2-lipped : anthers, 5 oblong and 5 roundish : legume coriaceous, torulose. 32. 93—(lupine.)

Crotolaria. Corol with the banner cordate, large : keel acuminate : filamentous membrane with a dorsel fissure : style curved : legume pedicelled, turgid, 32 93—(rattle box.)

Spartium. Calyx extended downwards : keel generally pendant : filaments adhering to the germ : stigma villose lengthwise on the upper side : legume oblong, 1 or many-seeded. 32. 93—(Spanish broom.) Exotic.

Genista. Calyx 2-lipped, 2 upper teeth very short : banner oblong, reflexed back from the pistil and stamens. 32. 93—(kneed-grass, dyer's broom.) Exotic.

Arachis. Calyx 2-lipped : corol upside down : legume gibbous, torulose, veiny, coriaceous. 32. 93—(pea-nut.)

Ulex. Calyx 2-leaved, 2-bracted : stamens all united : legume scarcely longer than the calyx, spinose. 32. 93—(furze.) Exotic.

B. *Stamens in 2 sets ; generally 9 in one set, and 1 alone in the other.*

1. *Legume many-seeded, stigma pubescent.*

Pisum. Calyx with the divisions leaf-like, about equal : banner protruding 2 folds : style compressed, carinate, villose above : legume without down at the suture. 32. 93—(pea.)

Lathyrus. Calyx with the two upper divisions shor-

ter : style flat, villose above, broader towards the top. (Stems mostly winged, leafets 2 or more, terminated by a divided tendril.) 32. 93—(sweet pea.)

Vicia. Calyx emarginate above, 2-toothed : 3 strait long teeth below : banner emarginate : stigma bearded transversely on the lower side. 32. 93—(vetch.)

Ervum. Calyx 5-parted ; divisions linear, acute, about equalling the corol : stigma capitate, glabrous : legume oblong, 2 to 4-seeded. 32. 93—(creeping vetch.)

Phaseolus. Keel, stamens and style spirally twisted together, legume compressed, falcate : seeds sub-compressed, reniform. 32. 93—(bean.)

Dolichos. Banner with two oblong parallel processes at the base, compressing the wings beneath them. 32. 93—(cowhage.)

Robinia. Calyx small, 4-cleft, upper division 2-parted : banner large, reflexed, roundish : legume compressed, elongated, many-seeded ; seeds compressed, small. 32. 93—(locust tree.)

Colutea. Calyx 5-cleft with the keel obtuse : style bearded on its back through its whole length : legume inflated, opening on the upper suture at the base. 32. 93—(bladder senna, bush locust.) Exotic.

Glycyrrhiza, or Liquiritia. Calyx tubular, equal, 5-parted : banner erect, reflexed at the sides; wings spreading ; keel 2-cleft : legume oblong, glabrous, 3 or 4 seeded. (Flowers racemed.) 32. 93—(liquorice.) Exotic.

Indigofera. Calyx spreading : keel with a subulate spur both sides : legume linear, small, terete or quadrangular. 32. 93—(indigo.) Exotic.

2. *Legume many-seeded, stigma without pubescence.*

Vexillaria.* Banner very large, spreading, overshadowing the wings : calyx bell-form or tubular : legume linear, very long, acuminate. 32. 93—(butterfly-weed.)

Galactia. Calyx 4-toothed, 2-bracted : petals all oblong, banner broader, incumbent : stigma obtuse : legume terete : seeds roundish. 32. 93—(milk-way plant.)

* This name is given as a substitute for that of the 1712th genus of Persoon, which is so severely censured by Doctor Smith, in Rees' Cyclopædia.

GLYCINE. Calyx 2-lipped, the tooth of the lower lip longest: the end of the keel curling upwards, and in appearance pushing back the banner: style incurved with the keel: legume terete, somewhat 2-celled; seed cylindric-reniform. 32. 93—(wild bean, wild liquorice, ground-nut.)

AMPHICARPA. Calyx bell-form, 4-toothed, obtuse and naked at the base: petals all oblong, banner broader and lying upon the other petals, subsessile: anthers round: stigma capitate: germ cylindrically sheathed at the base: legume flat, stiped; seeds 2 to 4. 32. 93—wild bean-vine.)

GALEGA. Calyx with subulate teeth nearly equal, stamens monadelphous: legume compressed, subcoriaceous. (Very glabrous, pinnate leaves.) 32. 93—(goat's rue.)

3. *Legumes few-seeded.*

MEDICAGO. The keel deflected from the direction of the banner: legume compressed, cochleate. 32. 93—(lucerne clover, medick.)

TRIGONELLA. Banner and wings nearly equal, spreading, appearing like a 3-petalled corol: legume bowed, rugose, veiny. 32. 93—(fenugreek.) Exotic.

ASTRAGALUS. Calyx 5-toothed: keel obtuse; legume somewhat 2-celled, incurved at the suture below. 32. 93—(milk vetch.)

CICER. Calyx 5-parted, of the length of the corol, 4 upper divisions resting on the banner: legume turgid, 2-seeded; seed gibbose, mucronate. 32. 93—(chick pea.) Exotic.

4. *Legumes about 1-seeded.*

TRIFOLIUM. Flowers sub-capitate: legume included in the calyx, not opening by valves, 1 to 4-seeded. (Leaves always ternate.) 32. 93—(clover.)

MELILOTUS. Flowers racemed: calyx tubular, 5-toothed: keel simple, shorter than the wings and banner: legume rugose, longer than the calyx, or about as long. (Taken from the trifolium.) 32. 93—(melilot clover.)

LESPEDEZA. Calyx 5-parted, 2-bracted, divisions nearly equal: keel of the corol transversely obtuse: legume lens-form, unarmed, 1-seeded. (Leaves always

ternate. Taken from the hedysarum.) 32. 93—(bush clover.)

5. *Legumes jointed, or in loments.*

CORONILLA. Calyx 2-lipped: petals with claws: loment teretish, jointed: flowers in umbels: seeds generally cylindric. 32. 93—(coronilla.) Exotic.

HEDYSARUM. Calyx 5-cleft: keel of corol transversely obtuse: loment many-jointed, joints 1-seeded, compressed, generally hispid. (Most, or all of the species in the northern states have ternate leaves.) 32. 93—(bush-trefoil.)

STYLOSANTHES. Calyx tubular, very long, bearing the corol which originates higher than the top of the germ: loment two-jointed, hooked. (Sometimes the pod is in a single joint.) 39. 93—(pencil-flower.)

AESCHYNOMENE. Calyx 2-lipped, lips toothed: stamens united in two equal parcels: loment compressed, one suture strait, another lobed; joints truncate, 1-seeded. 32. 93—(false sensitive plant.)

POLYADELPHOUS PLANTS.

The genera Citrus, Ascyrum and Hypericum were placed in the class *polyadelphia* by Linnæus, and are still retained in that class by many authors. We, following Persoon's method, have removed them to the class *polyandria*, and left the class *polyadelphia* out of the system.

CLASS XVIII. SYNGENESIA.

ORDER I. POLYGAMIA ÆQUALIS.

A. *Florets ligulate.*

TRAGOPOGON. Calyx simple, many-leaved; receptacle naked: egret plumose, and stiped.* 45. 53—(goat's beard, vegetable oyster.) Exotic.

SCORZONERA. Calyx imbricate, scales scarious at the margin: receptacle naked: egret plumose, substiped. 49. 55—(viper's grass.) Southern states.

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* Pull off the corol, stamens and styles; whatever is left on the germ is the egret. In some flowers the stipe to stiped egret will not appear before full maturity. Pull off all the germs: if nothing is left, the receptacle is naked. But whatever is left belongs to the receptacle, and gives it the character of chaffy, hairy or bristly.—Read the 53d, 54th and 55th Natural Orders of Jussieu.

Apargia. Calyx imbricate: receptacle naked: egret plumose, sessile. (Taken from the leontodon.) 49. 53—(false hawkweed.)

Leontodon. Calyx double: receptacle naked: egret plumose, stiped. 49. 53—(dandelion.)

Prenanthes. Florets from 5 to 20, in a simple series (or in one circular row:) calyx calycled: receptacle naked: egret simple, sub-sessile. 49. 53—(white lettuce.)

Lactuca. Calyx imbricate, cylindric, with the margin membranaceous: receptacle naked: egret simple, stiped: seed smooth. 49. 53—(lettuce.)

Hieracium. Calyx imbricate, ovate: egret simple, sessile: receptacle naked or sub-pilose. (From white becoming yellowish.) 49. 53—(hawkweed.)

Sonchus. Calyx imbricate, inflated: egret pilose, sessile: receptacle naked. 49. 53—(swine-thistle.)

Troximon.* Calyx oblong, conic, many-leaved; leafets unequal, imbricate: receptacle naked, with minute punctures: egret sessile, pilose. 49. 53—(false goat's beard.)

Krigia. Calyx simple, many leaved: receptacle naked: egret 5 membranous leaves with 5 alternating bristles: receptacle naked. 49. 53—(dwarf-dandelion.)

Tolpis. Calyx caliculated; scales lax, subulate, a little longer than the calyx: receptacle pitted: egret setose, with margin dentate. 49. 55—(hawksbeard.) Exotic.

Cichorium. Calyx calycled: egret many chaffy leaves: reeeptacle somewhat chaffy. 49. 53—(succory or endive.)

Scolymus. Calyx imbricate, spinose, surrounded with spinose leafets: receptacle chaffy: egret none. 49. 55—(golden-thistle.) Exotic.

B. *Florets tubulous; flowers capitate.*

Cynara. Receptacle bristly: calyx dilated, imbricate; scales with fleshy bases, emarginate and pointed: egret plumose, sessile. 49. 54—(garden artichoke.) Exotic.

Liatris. Calyx imbricate, oblong: anthers entire

* Hyoseris, 2d Ed.

at the base : seeds hairy, striate, obconic : egret permanent, plumose, coloured : receptacle naked. (Flowers purple.) 49. 54—(gay feather.)

VERNONIA. Calyx imbricate, ovate : egret double, exterior chaffy and short, interior capillary : receptacle naked : stigma 2-cleft, shortish. 49. 55—(flat-top.)

CNICUS. Calyx imbricate, with prickly scales : receptacle villose : egret plumose. (Taken from the carduus.) 49. 54—(thistle.)

CARTHAMUS. Calyx ovate, imbricate with scales, ovatish-leafy at the apex : egret chaff-hairy or none : receptacle chaff-bristly. 49. 54—(false-saffron.) Exotic.

ONOPORDON. Calyx imbricate with sharp-mucronate scales : egret pilose, caducous : receptacle alveolate : seeds transversely sulcate. 49. 54—(cotton thistle.) Introduced.

CARDUUS. Calyx ovate, imbricate with prickly scales : receptacle villose : egret pilose. 49 54—(comb-tooth thistle.)

ARCTIUM. Calyx globose, with scales hooked at the apex : egret chaff-bristly : receptacle chaffy. 49. 54—(burdock.)

SPARGANOPHORUS. Calyx sub-globose, imbricate with unequal scales recurve-spreading at the tips : receptacle naked : seed with the cup like crown sub-cartilagenous. 49. 55—(crown-cup.)

C. *Florets tubulous ; flowers discoid.*

KUHNIA. Calyx imbricate, cylindrical : egret plumose, sessile : receptacle naked. 49. 55—(false-boneset)

EUPATORIUM. Calyx imbricated (rarely simple) oblong : style long, cloven half way down : egret pilose or rough papillose : receptacle naked : seed smooth and glandular, 5-striate. 49. 55—(boneset, thoroughwort, joe pye.)

MIKANIA. Calyx 4 or 6-leaved, equal ; 4 or 6-flowered ; receptacle naked : egret pilose. 49. 55—(climbing boneset.)

CHRYSOCOMA. Calyx imbricate, oblong or hemispheric : style scarcely exsert : receptacle naked : egret pilose, scabrous : seed hairy. 49. 55—(golden locks.)

CACALIA. Calyx cylindric, oblong ; somewhat caly-

cled at the base: receptacle naked: egret pilose. (Leaves mostly succulent.) 49. 55—wild caraway.)

Balsamita. Calyx imbricate, orbicular: receptacle naked: egret none. 49. 55—(costmary.) Exotic.

Order II. Polygamia Superflua.

A. *Flowers discoid.*

Baccharis. Calyx, scales ovate sub-coriaceous imbricate, cylindric, bell-form or ovate: florets are pistillate and perfect intermixed: receptacle naked: egret pilose. (Sometimes the flowers are dioecious.) 49. 55—(groundsel tree.)

Conyza. Calyx imbricate with scales sub-linear ovate, or hemispheric and sub-scarious: egret simple, capillary: receptacle naked. Florets of the ray with a 3-cleft border, not composing a ray in appearance. 49. 55—(plowman's wort.)

Gnaphalium. Calyx imbricate, with the marginal scales rounded, scarious, shortish, glossy, coloured: receptacle naked: egret pilose or plumose. (Florets often all perfect.) 49. 55—(life everlasting.)

Artemisia. Calyx imbricate, with scales rounded, converging: egret 0: receptacle somewhat villose or nakedish. (Flowers mostly rounded.) 49. 55—(wormwood, southern-wood.)

Tanacetum. Calyx imbricate, hemispheric; scales acuminate: rays obsolete, 3-cleft: egret somewhat marginal: receptacle naked. (Flowers corymbed.) 49. 55—(tansy.)

B. *Flowers radiate.*

(Receptacles naked.)

Chrysanthemum. Calyx hemispherical, imbricate, with the scales membranous at the margin: egret none, or a narrow margin. 49. 55—(ox-eyed daisy, feverfew.)

Boltonia. Calyx imbricate: florets of the ray numerous: receptacle conic, punctate: egret consists of many minute bristles and generally 2-elongated bristles or horns: seed flat, margined. 49. 55—(false-chamomile.)

Tagetes. Calyx simple, 1-leafed, 5-toothed, tubular: florets of the ray about 5, permanent: egret 5 erect awns: 49. 55—(marigold.) Exotic.

Bellis. Calyx hemispherical, scales equal : egret 0 : receptacle conical : seed obovate. 49. 55—(garden daisy.) Introduced.

Pyrethrum. Calyx hemispherical, imbricate with scales, acutish and scarious margined : egret a marginal ring. (Taken from Chrysanthemum) 49. 55—(wild feverfew.)

Doronicum. Calyx-scales equal, in two rows, longer than the disk : egret simple : seeds of the ray naked and destitute of egret. 49. 55—(leopard's bane.)

Inula. Calyx imbricate or squarrose : egret simple : anthers ending in 2-bristles at the base : ray florets numerous. 49. 55—(elecampane.)

Erigeron. Calyx imbricate : egret pilose, double, outer egret minute and chaffy : florets of the ray linear, very narrow, numerous. 49. 55—(flea-bane, pride-weed.)

Solidago. Calyx oblong or sub-cylindric ; with oblong, narrow, pointed, strait scales, imbricate, closed : ray-florets about 5 and fewer than 10, lanceolate, 2-toothed, equal to or shorter than the calyx : filaments capillary, very short : style thread-form, equalling the length of the stamens : stigma cleft, spreading : egret simple, pilose : receptacle furrowed with dots or punctures : seeds oblong-ovate. (Yellow.) 49. 55—(golden rod.)

Senecio. Calyx cylindric ; leafets with withering, blackish tips, and a few small calycle leafets at the base : egret simple, capillary copious. 49. 55—(rag-wort, fire-weed.)

Tussilago. Calyx simple, scales equal, and equalling the disk, sub-membranous : pistillate florets ligulate or without teeth : egret simple, sessile. 49. 55—(Sometimes polygamous.) (coltsfoot.)

Cineraria. Calyx simple, many-leaved, equal : egret simple 49. 55—(ash-wort.)

Aster. Calyx imbricate, the inferior scales spreading : egret simple, pilose : receptacle scrobiculate. (Florets of the ray more than 10, except in solidaginoides and a few other species, colour purple or white.) 49. 55 (star-flower.)

(Receptacles chaffy.)

Zinnia. Calyx ovate-cylindric imbricate : florets of the ray 5, permanent, entire : egret 2 erect awns. 49. 55.

HELIOPSIS. Calyx imbricate with ovate-linear scales: ray florets linear, large: receptacle conic; the chaffs lanceolate: seed 4-sided: egret o. 49. 55—(sun-ray.)

RUPHTHALMUM. Calyx leafy: egret marginal, 4-toothed or obsolete: seeds of the ray margined, and sometimes of the disk. 49. 55—(ox-eye.) Southern states.

HELENIUM. Calyx 1-leaved, many-parted: egret 5-awned chaffy leaves: receptacle chaffy in the ray only: florets of the ray half-3-cleft: seed villose. (Leaves decurrent.) 49. 55—(false-sunflower.)

ANTHEMIS. Calyx hemispherical, nearly equal: egret 0, or a membraneous margin: florets of the ray more than 5: receptacle chaffs flat, with a rigid acuminate apex. 49. 55—(may-weed, chamomile.)

ACHILLEA. Calyx imbricate, ovate: egret 0: florets of the ray 4 to 10, roundish, dilated. (Flowers corymbed. 49. 55—(yarrow.)

VERBESINA. Calyx many-leaved; leafets arranged in double order: florets of the ray about 5: egret 2-awned. 49. 55—(crown-beard.)

ORDER III. POLYGAMIA FRUSTRANEA.

RUDBECKIA. Calyx consisting of a double order of leafets or scales: receptacle chaffy, conic: egret a 4-toothed margin or 0. 49. 55—(cone-flower.)

HELIANTHUS. Calyx imbricate, sub-squarrose, leafy: receptacle flat, chaffy: egret 2-leaved, chaff-like, caducous. 49. 55—(sunflower, Jerusalem artichoke.)

BIDENS. Calyx calycled, nearly equal: with or without ray-florets; receptacle flat, chaffy: egret consists of 2, 3, or 4 strong awns, with reflexed and erect lateral prickles: seeds 4-cornered. 49. 55—(burr-marygold, beggarticks.)

COREOPSIS. Calyx double, both many-leaved (8 to 12): seeds compressed emarginate: receptacle chaffy: egret 2-horned. 49. 55—(tickseed sunflower.)

CENTAUREA. Calyx various, mostly imbricate, roundish: egret simple, various: receptacle bristly: corols of the ray funnel-shape, longer, irregular. 49. 54—(blue-bottle, blessed thistle.)

ORDER IV. POLYGAMIA NECESSARIA.

SILPHIUM. Calyx squarrose, scales leafy, broad:

egret a 2-horned-margin: receptacle chaffy: seeds compressed, obcordate, margined. 49. 55—(ragged cup.)

Polymnia. Calyx double, exterior 4-5-leaved, interior 10-leaved, leafets concave: egret 0: receptacle chaffy. 49. 55—(leaf-cup.)

Calendula. Calyx many-leaved, equal: receptacle naked: egret none: seeds of the disk membranaceous. 49. 55—(pot-marygold.) Exotic.

Iva. Calyx about 5-leaved or 5-parted: styles 2, long: seed obovate, naked, obtuse: receptacle hairy, or chaff-bristly: ray 5-flowered. 49. 55—(high water shrub.)

Order V. Polygamia Segregata.

Elephantopus. Common calyx 3-leaved, partial calyx 4-flowered: florets 5-cleft, ligulate: receptacle naked: egret setaceous. 49. 55—(elephant-foot.) Southern states.

Echinops. Proper calyx 1-flowered: corol tubular, perfect: receptacle setose: egret obsolete. 49. 54—(globe thistle.) Exotic.

CLASS XIX. Gynandria.

Order I. Monandria.*

A. *Anther adnate, sub-terminal, not caducous: masses of pollen affixed by the base, and made up of angular particles.*

Orchis. Corol ringent-like, upper petal vaulted: lip dilated, spurred beneath: masses of pollen 2, adnate, terminal. 7. 21—(orchis.)

B. *Anther parallel with the stigma, not caducous: masses of pollen affixed to the summit of the stigma, and made up of farinaceous or angular particles.*

Goodyera.† Corol ringent-like, the 2 lower petals placed under the gibbous lip, which is undivided above: style free: constituent particles of the masses of pollen angular. 7. 21—(rattlesnake leaf, scrophula weed.)

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* Some botanists consider each mass of pollen as an anther; consequently place these genera in the second order. See the 21st natural order of Jussieu.

† Neottia, 2d Ed.

NEOTTIA. Corol ringent-like; the two lower petals placed under the lip, which is beardless; interior petals converging: style wingless: constituent particles of the masses of pollen farinaceous. 7. 21—(ladies' tresses.)

LISTERA.‡ Corol irregular: lip pendant, 2-cleft: style wingless, minute, with the anther inserted at its base: pollen farinaceous. 7. 21—(lily orchis.)

C. *Anther inserted, terminal, not caducous: masses of pollen farinaceous or angular.*

POGONIA.§ Petals 5, distinct, without glands: lip sessile, cowled, crested internally: pollen farinaceous. 7. 21—(snakemouth.)

TRIPHORA.§ Petals 5, distinct, equal and converging, without glands: lip unguiculate, cowled: style spatulate, even, wingless: pollen farinaceous. 7. 21—(three-bird orchis.)

CYMBIDIUM. Petals 5, distinct: lip behind, or inverted, unguiculate: the lamina bearded: style free: pollen angular. 7. 21—(grass-pink.)

ARETHUSA. Petals 5, connate at the base: lip below growing to the style, cowled above, crested within: pollen angular. 7. 21—(arethusa.)

D. *Anther moveable, terminal, caducous: masses of pollen at length becoming wax-like.*

TIPULARIA.* Petals spatulate, spreading; lip entire, sessile, conspicuously spurred below at the base: style wingless, lengthened, free: anther in the form of a lid: masses of pollen 4, parallel. 7. 21. (limodore.)

MALAXIS. Petals 5, narrower than the lip, spreading or deflected: lip flattened, undivided, sessile: style lengthened: masses of pollen 4, parallel, affixed to the summit of the stigma. Flower turned upside-down by the twisting of the peduncle when the corol opens. 7. 21—(tway-blade.)

MICROSTYLUS.† Petals 5, converging, one only deflected, 2 inner ones filiform: lip about equalling the petals in length, erect, sessile, concave, truncate and 2-toothed at the summit: style very minute: masses of pollen 3. 7. 21—(snake-mouth tway-blade.)

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‡ Epipactis, 2d Ed. § Arethusa, 2d Ed. * Limodorum, 2d Ed.
† Malaxis, 2d Ed.

CORALLORHIZA. Petals equal, converging: lip either unguiculate or with an obsolete spur: masses of pollen 4, oblique: style free. 7. 21—(coral-root, adam and eve.)

ORDER II. DIANDRA.

CYPRIPEDIUM. Calyx coloured, 4-leaved, spreading: corol 0: (by some the calyx is called a corol) nectary large, hollow, inflated; style with a terminal lobe and petal-like appendage on the upper side. 7. 21—(ladies' slipper.)

ORDER V. PENTANDRIA.

ASCLEPIAS. Petals 5, reflexed: nectaries 5, concave, erect, containing little horns: each stamen with a pair of pendulous anthers suspended from the top of the stigma. 30. 47—(milk-weed, silk-weed.)

CYNANCHUM. Calyx 5-toothed, very small, permanent: corol wheel-form: nectary simple, cylindric, 5 to 20-lobed, surrounding the orifice of the tube: stamens suspended from the top of the stigmas: follicles 2. 30. 47—(choak-dog.)

GONOLOBUS. Calyx wheel-form, 5-parted: nectary simple, cylindric, somewhat fleshy, 5-lobed, depressed, equal with the cells or cases of the anthers, 5-angled, without winged lateral margins or terminal membranaceous bristles: masses of pollen in 5 pairs, even, transverse: follicles 2. 30. 47—(false choak-dog.)

ORDER VI. HEXANDRIA.

ARISTOLOCHIA. Calyx 0: corol superior, 1-petalled, ligulate, inflated at the base: capsule 6-celled, many-seeded. 11. 23—(birth-wort.)

* Arum was formerly placed here, but is now removed to class *monoecia*.

CLASS XX. MONOECIA.

ORDER I. MONANDRIA.

ZOSTERA. Calyx and corol 0: anther ovate, sessile: germ ovate, inserted on an unilateral spadix-like receptacle: style 2-cleft: capsule 1-seeded. 2. 7—(grass wrack, sea-eelgrass.)

ZANICHELLIA. Staminate flowers—calyx and corol 0. Pistillate flowers—calyx 1-leaved : corol 0 : little germs about 4, each 1-seeded. 2. 13.

CAULINIA. Staminate flowers—calyx 0 : corol 0 : anthers sessile. Pistillate flowers—calyx 0 : corol 0 : style filiform : stigma 2-cleft : capsule 1-seeded. 15. 6. (Flowers axillary)—(river-nymph.)

CHARA. Staminate flowers—calyx 0 : corol 0 : anther globose, sessile. Pistillate flowers—calyx 0 : corol 0 : style 0 : stigmas 5 : berry 1-celled, many-seeded. 15. 6—(chara.)

ORDER II. DIANDRIA.

LEMNA. Staminate flowers—calyx 1-leafed : corol 0 : stamens seated on the base of the germ. Pistillate flowers—calyx 1-leafed : corol 0 : style cylindric, stigma funnel-form : capsule 1-celled, 2 to 4-seeded. 54. 6—(duck-meat, water flaxseed.)

PODOSTEMUM. Staminate flowers—calyx 0 : corol 0 : stamens affixed to a pedicel. Pistillate flowers—calyx 0 : corol 0 : germ ovate : stigma 1, sessile : capsule 2-celled, 2-valved, many-seeded. 54. 6—(thread-foot.)

ORDER III. TRIANDRIA.

TYPHA. Ament cylindric. Staminate flowers—calyx obsolete, 3-leaved : corol 0. Pistillate flowers—below the staminate : calyx 0 : corol 0 : seed 1, pedicelled ; the pedicels surrounded at the base with long hairs resembling egret. 3. 8—(cat-tail, or reed mace.)

SPARGANIUM. Staminate flowers—ament globular : calyx 3-leaved : corol 0. Pistillate flowers—calyx 3-leaved : corol 0 : stigma 2-cleft : drupe juiceless, 1-seeded. 3. 8—(burr-reed.)

ZEA. Staminate flowers—calyx-glume 2-flowered, awnless : corol glume awnless. Pistillate flowers—calyx-glume 2-valved (number of valves increased by cultivation :) style 1, very long, filiform, pendulous : seed solitary, immersed in an oblong receptacle. 4. 10—(Indian corn.)

TRIPSACUM. Staminate flowers—calyx-glume 2-flowered, outer one staminate, inner one neutral : corol-glume membranaceous. Pistillate flowers—calyx glume 1-flowered, covered with a 1-leafed involucre perforated

with hollows : corol with numerous thin membranaceous valves : styles 2 : seed 1. 4. 10—(sesame grass.)

Coix. Staminate flowers—in remote spikes : calyx-glume 2-flowered, awnless : corol-glume awnless. Pistillate flowers—calyx-glume 2-flowered : corol glume awnless : style 2-parted : seed covered with the bone-like calyx 4. 10—(Job's tear.) Exotic.

Carex. Aments imbricate (usually in cylindric spikes.) Staminate flowers—calyx scales single : corol 0. Pistillate flowers—calyx scales single : corol inflated, monopetalous, 2-toothed at the apex : stigmas 2 or 3 : nut 3-sided, inclosed in the permanent corol, which becomes an utriculus-like permanent aril. Sometimes dioecious. 3. 9—(sedge.)

Scleria. Staminate flowers—calyx-glume 2 or 6-valved, many-flowered : corol-glumes awnless. Pistillate flowers—calyx like the staminate : corol 0 : stigmas 1 to 3 : nut coloured, sub-globose. 3. 9—(whip-grass.)

Comptonia. Staminate flowers—ament cylindric with calyx-scales 1-flowered : corol 2-petalled : filaments 2-forked. Pistillate flowers—spike or ament ovate, corol 6-petalled : (the corol may be called a calyx) styles 2 : nut ovate. 50. 99—(sweet-fern.)

Eriocaulon. Common calyx many-leaved ; florets many in an imbricate head : partial perianth superior, 2 or 3-leaved. Staminate flowers central, with monopetalous cleft corols. Pistillate flowers marginal, with 2-petalled corols : stigmas 2 or 3 : capsule 2 or 3-celled : seed 1, crowned with the corol. 6. 13—(pipe-wort.)

Serpicula. The perfect flowers have three stamens only. Staminate flowers—calyx 3-parted : corol 3-petalled : stamens 9, 3 of them within. Pistillate flowers—calyx 3-parted, tube very long : petals 3 : barren filaments 3 : capsule bladder-like, 3-seeded. 15. 88—(ditch moss.)

* Andropogon, Holcus, Hierochloa.

Order IV. Tetrandria.

Aucuba. Staminate flowers—calyx 4-toothed : corol 4-petalled : receptacle pierced with 4 holes. Pistillate flowers—calyx and corol as in the staminate : germ inferior : style 1, short : nut ovate 1-celled—(japan shrub.) Exotic.

Boehmeria. Staminate flowers—calyx 4-parted : corol 0 : nectary 0. Pistillate flowers—calyx 0 : corol 0 : styles 2 : seed 1, compressed. (Flowers in cylindric spikes.) 53. 98—(false nettle.)

Urtica. Staminate flowers—calyx 4-leaved : corol 0 : nectary central cyathiform. Pistillate flowers—calyx 2-leaved (2-valved :) corol 0 : seed 1, glossy. 53. 98—(nettle.)

Parietaria. Polygamous. Perfect flowers—calyx 4-cleft inferior : corol 0 : stamens elastic : style 1 : seed 1. Pistillate flowers—calyx 2-leaved : seed covered with the dried elongated calyx. 53. 98—(pellitory.)

Morus. Staminate flowers—calyx 4-parted : corol 0. Pistillate flowers—calyx 4-leaved : corol 0 : styles 2 : calyx berried : seed 1. 53, 98—(mulberry.)

Alnus. Staminate flowers—ament composed of wedge-form truncate 3-flowered receptacles : calyx a scale : corol 4-parted. Pistillate flowers—calyx 2-flowered scales : corol 0 : seed compressed ovate wingless. 50. 99—(alder.)

Buxus. Staminate flowers—calyx 3-leaved : petals 2 : germ a mere rudiment. Pistillate flowers—calyx 4-leaved : petals 3 : styles 3 : capsules 3-beaked, 3-celled : seeds 2. 38. 96—(box.) Exotic.

Order V. Pentandria.

Xanthium. Staminate flowers—common calyx imbricate : corol 5-cleft, funnel-form : receptacle chaffy. Pistillate flowers—involucre 2-leaved, 1-flowered : corol 0 : drupe dry, muricate, 2-cleft : nut 2-celled. 54. 88—(seab urdock.)

Ambrosia. Staminate flowers—common calyx 1-leaved : corol 1-petalled, 5-cleft, funnel-form : receptacle naked. Pistillate flowers—calyx 1-leafed, entire, the swelling part 5-toothed, 1-flowered : corol 0 : nut from the indurated calyx, 1-seeded. 54. 98—(hogweed.)

Amaranthus. Staminate flowers—calyx 3 or 5-leaved : corol 0 : stamens 3 or 5. Pistillate flowers—calyx and corol as the staminate : styles 3 : capsule 1-celled, opening transversely : seed 1. 54. 30—(amaranth, red-cockscomb.)

* Quercus.

Order VI. Hexandria.

Zizania. Staminate flowers—calyx 0 : corol-glume 2-valved, awnless, with pistillate flowers intermixed. Pistillate flowers—calyx 0 : corol-glume 2-valved, cucullate, awned : style 2-parted : seed 1, invested in the plaited corol. 4. 10—(water-oats.)

* Carya, Myriophyllum.

Order XIII. Polyandria.

A. *Stems not woody.*

Ceratophyllum. Staminate flowers—calyx many-parted : corol 0 : stamens 16—20, short, with tricuspidate anthers. Pistillate flowers—calyx 6-leaved, imbricated : corol 0 : pistil 1 : nut 1-seeded. 15. 91—(hornwort.)

Myriophyllum. Staminate flowers—calyx 4-cleft : petals 4, caducous : stamens 4, 6 or 8. Pistillate flowers—calyx and corol like the staminate : germs 4 ; style 0 : seeds 4, having a bark. 15. 88—(water milfoil.)

Saggittaria. Staminate flowers—calyx 3-leaved : corol 3-petalled : filaments mostly 24. Pistillate flowers—calyx and corol as in the staminate : germs many : capsules aggregate, 1-seeded. 5. 13—(arrow-head.)

Calla. Spathe ovate, becoming expanded : spadix covered with the fructification : stamens intermixed. Staminate flowers—calyx and corol 0 : anthers sessile. Pistillate flowers—calyx and corol 0 : berries 1-celled, crowned with the short style. 2. 7—(water-arum.)

Arum. Spathe cucullate : spadix not entirely covered with the fructification ; being more or less naked above, with pistillate flowers beneath and staminate in the middle ; (sometimes a few are staminate beneath :) berry mostly 1-seeded : generally cirrose-glandular beneath. 2. 7—(Indian-turnip, wake robin.)

Poterium. Staminate flowers—calyx 4-leaved : corol 4-parted : stamens 30 to 50. Pistillate flowers—calyx and corol like the staminate : pistils 2 : berry from the indurated tube of the corol. 54. 92—(burnet.) Exotic.

B. *Stems woody.*

Quercus. Staminate flowers—calyx sub-5-cleft : sta-

mens 5 to 10. Pistillate flowers—calyx 1-leafed, entire, scabrous, being a woody cup : styles 2 to 5 : nut coriaceous, surrounded at the base by the permanent calyx. 50. 99—(oak.)

Carya. Staminate flowers—ament imbricate : calyx 3-parted scales : corol 0 : stamens 4 to 6. Pistillate flowers—calyx 4-cleft, superior : corol 0 : styles 0 : stigma 4-lobed : pericarp 4-valved : nut sub-quadrangular, even. 50. 94—(hickory, walnut.)

Juglans. Staminate flowers—ament imbricate : calyx a scale : corol 6-parted : stamens 18 to 36. Pistillate flowers—calyx 4-cleft, superior : corol 4-cleft : styles 1 or 2 : drupe partly spongy : nut rugose and irregularly furrowed. 50. 94—(butternut, black walnut.)

Fagus. Staminate flowers—ament roundish : calyx 5-cleft, bell-form : stamens about 12. Pistillate flowers —calyx 4-toothed, setose : germs 2 : nuts 2, inclosed in the calyx, becoming coriaceous echinate. 50. 99—(beach.)

Castanea. Polygamous. Staminate flowers—ament naked, linear : corol 5 or 6-parted : stamens 10 to 20. Pistillate flowers—calyx 5 or 6-leaved, muricate ; germs 3 : stigmas pencil-form ; nuts 3, with coriaceous putamen, inclosed in the calyx becoming echinate. 50. 99—(chesnut.)

Betula. Staminate flowers—ament imbricate, scales peltate, 3-flowered : calyx a scale : stamens 10 to 12. Pistillate flowers—calyx a 2-flowered scale : seed 1, winged. 50. 99—(birch.)

Carpinus. Ament imbricate. Staminate flowers—calyx-scales ciliate : stamens 10. Pistillate flowers—calyx-scales 2-flowered : corol 3-cleft : nut ovate sulcate. 50. 99—(hornbeam.)

Ostrya. Ament imbricate. Staminate flowers—calyx a scale : filaments ramose. Pistillate flowers—ament naked : capsule inflated, imbricate at its base, 1-seeded. 50. 99—(hop hornbeam.)

Corylus. Staminate flowers—ament imbricate : calyx a scale : stamens about 8. Pistillate flowers—calyx 2-parted, lacerated : styles 2 : nut ovate, surrounded by and included in the permanent leaf-like calyx. 50. 99—(hazlenut.)

Platanus. Ament globose, corol 0. Staminate flowers

corol none or scarcely apparent, anthers growing around the filaments. Pistillate flowers—calyx many-leaved; style with a recurved stigma: seed roundish, crowned with the mucronate style, with egret-like hairs at the base. 50. 99—(button-wood, false sycamore.)

LIQUIDAMBAR. Staminate flowers—ament conic, surrounded with a 4-leaved involucre: corol 0: filaments numerous. Pistillate flowers—ament globose, surrounded with a 4-leaved involucre: calyx 1-leafed, pitcher-form, 2-flowered; styles 2: capsules 2, surrounded at the base by the calyx, 1-celled, many-seeded. 51. 99—(sweet-gum.)

ORDER XVI. MONADELPHIA.

A. *Stems woody.*

PINUS. Staminate flowers—calyx 4-leaved: corol 0: stamens many: anthers naked. Pistillate flowers—calyxes in strobiles or cones, scales 2-flowered: pistil 1: nut with a membranaceous wing. (Perhaps more properly a samara.) 51. 100—(pine.)

CUPRESSUS. Staminate flowers—ament ovate, imbricate: calyx a peltate scale: corol 0: anthers 4, sessile. Pistillate flowers—ament strobilaceous: calyx a 1-flowered peltate scale; corol none: germs 4 to 8 under each scale of the calyx: nuts angular, compressed. 51. 100—(white cedar.)

THUJA. Staminate flowers—ament imbricate: calyx a scale: corol 0: anthers 4. Pistillate flowers—ament a strobile: calyx a 2-flowered scale: corol 0: nut 1, surrounded with a marginal wing. 51. 100—(arbor vitae.*)

B. *Stems not woody.*

ACALYPHA. Staminate flowers—calyx 3 or 4-leaved, or 3 or 4-parted: stamens 8 to 16. Pistillate flowers—calyx and corol like the staminate: styles 3, 2-cleft: capsule tricoccous, 3-celled. (Having large bracts.) 38. 96—(three seed mercury.)

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* This tree is also called white cedar in Dr. Hosack's catalogue; to which and to Phelps' Calendar, I generally refer, as the standards for English names; excepting in those cases, where I take the names immediately from the common people.

In the 3d edition I have added several English names from Professor Peck's catalogue, and from Barton's Flora of Philadelphia.

Ricinus. Staminate flowers—calyx 5-parted: stamens numerous. Pistillate flowers—calyx 3-parted: styles 3, 2-cleft: capsules echinate, 3-celled, 3-seeded. 38. 96—(palma christi, or castor oil plant.) Exotic.

Phyllanthus. Staminate flowers—calyx 5 or 6-parted: filaments united in a column; anthers 3, and generally several barren filaments. Pistillate flowers—calyx and corol like the staminate: nectary with a 12-angled margin: styles 3: capsule tricoccous. 38 96—(leaf-flower.)

Momordica. Staminate flowers—calyx 5-cleft: corol 5-parted: filaments 3. Pistillate flowers—style 3-cleft: berry gourd-like and bursting elastically: seeds compressed. 34. 97—(balsam apple, wild cucumber.)

Sicyos. Staminate flowers—calyx 5-toothed: corol 5-parted: filaments 3. Pistillate flowers—styles 3-cleft: berry gourd-like, 1-seeded. 34. 97—(single-seed cucumber.)

Cucurbita. Staminate flowers—calyx 5-toothed: corol 5-cleft: filaments 3. Pistillate flowers—calyx and corol like the staminate: pistil 3-cleft: pomaceous berry large, 3 to 5-celled: seeds thickened at the margin. 34. 97—(gourd, squash, pumpkin, water-melon.) Exotic.

Cucumis. Staminate flowers—calyx 5-toothed: corol 5-parted: filaments 3. Pistillate flowers—calyx and corol like the staminate: stigmas 3, thick, 2-parted: berry with sharpish seeds. 34. 97—(cucumber, musk-melon.) Exotic.

Melothria. Staminate flowers—calyx 5-toothed: corol bell-form: filaments 3. Pistillate flowers—style 1. stigmas 3: berry 3-celled, many-seeded. 34. 97—(creeping cucumber.)

CLASS XXI. DIOECIA.

Order II. Diandria.

Vallisneria. Staminate flowers—spathe ovate, 2-parted: spadix covered with florets: perianth 3-parted. Pistillate flowers—spathe 2-cleft, 1-flowered: perianth 3-parted, superior: corol 3-petalled: stigmas 3, strap-like, 2-cleft: capsule valveless, 1-celled, many-seeded. (stamens 2 and 6.) 1. 22—(tape-grass, eel-grass.)

Salix. Staminate flowers—ament cylindric: calyx a

scale, with a nectariferous gland at the base: stamens 1 to 6. Pistillate flowers—ament and calyx like the staminate: styles 2-cleft: capsule 1-celled, 2-valved: seed with egret-like down. 50. 99—(willow.)

Fraxinus. Perfect flowers—calyx 0, or 4-parted: corol 0, or 4-petalled: pistil 1: samara 1-seeded, with a lanceolate wing. Pistillate flowers—calyx, corol and pistils same as perfect. 44. 37—(ash.)

Order III. Triandria.

Empetrum. Staminate flowers—calyx bud-like, imbricated with about 9 scales; the 3 innermost are petal-like: stamens long. Pistillate flowers—calyx and corol as in the staminate: styles 9: berry 9-seeded. 18. 51—(crow-berry.)

Ficus. Common receptacle fleshy, (becoming the fruit) enclosing the apetalous florets, both staminate and pistillate, either in the same, or in distinct individuals. Staminate flowers—calyx 3-parted. Pistillate flowers—calyx 5-parted: pistil 1, lateral: seed 1, covered with the closed permanent somewhat fleshy calyx. 53. 98—(fig tree.) Exotic.

* Carex.

Order IV. Tetandria.

Hippophae. Staminate flowers—calyx 4-parted, caducous, tubular: corol 0: stamens 8, enclosed, alternating with 8 glands. Pistillate flowers—calyx 4-cleft, bell-form, superior: style 1: stigma oblique: berry 1-seeded. 16. 24—(sea-buckthorn.)

Myrica. Staminate flowers—ament oblong: calyx an ovate scale: corol 0. Pistillate flowers—calyx and corol like the staminate: styles 2: drupe or berry 1-seeded. 50. 99—(bay-berry, sweet-gale.)

Viscum. Staminate flowers—calyx 4-parted: corol 0: anthers sessile adhering to the calyx.—Pistillate flowers: calyx 4-leaved, superior; corol 0: style 0: berry 1-seeded: seed cordate; (parasitic adhering to trees) 43. 58—(misseltoe.)

Order V. Pentandria.

Hamiltonia. Perfect flowers—calyx sub-campanulate, superior, 5-cleft: corol 0; nectary with a 5-toothed

disk : stamens 5 : pistils 1 : fruit a drupe. Staminate flowers like the perfect, except in wanting the pistil. 43. 95—(American oil-nut.)

ZANTHOXYLUM. Staminate flowers—calyx 5-parted : corol 0 : stamens 3 to 5. Pistillate flowers—pistils 3 to 5.: capsules equal to the number of pistils, 1-seeded. 46. 94—(prickly ash, or tooth-ache tree.)

SPINACIA. Staminate flowers—calyx 5-parted : corol 0. Pistillate flowers—styles 4 : seed 1, within the indurated calyx. 12. 29—(spinach.) Exotic.

ACNIDA. Staminate flowers—calyx 5-parted : corol 0. Pistillate flowers—calyx 3-parted : style 0 : stigmas 3, sessile : capsule 1-seeded. 53. 29—(water-hemp.)

HUMULUS. Staminate flowers—calyx 5-leaved : corol 0. Pistillate flowers—calyx 1-leafed, entire, oblique, spreading : styles 2 : seed 1, within the leaf-like calyx : inflorescence strobile-form. 53. 98—(hop.)

CANNABIS. Staminate flowers—calyx 5-parted. Pistillate flowers—calyx 5-leaved, entire, gaping laterally : styles 2 : nut 2-valved, within the closed calyx. 53. 98—(hemp.) Exotic.

NYSSA. Perfect flowers—calyx superior, 5-parted : corol 0 : pistil 1 : fruit a drupe. Staminate flowers—stamens 5 to 12 standing around a peltate gland. 12. 24—(tupelo tree, pepperidge.)

ORDER VI. HEXANDRIA.

SMILAX. Staminate flowers—calyx 5 or 6-leaved, inferior : corol 0. Pistillate flowers—calyx and corol like the staminate : styles minute ; stigmas 3 : berry 3-celled, 1 to 3-seeded. 11. 12—(green briar, Jacob's ladder.)

DIOSCOREA. Staminate flowers—calyx 6-parted : corol 0. Pistillate flowers—styles 3 : capsule 3-celled, triangular, compressed : seeds 2, membranaceous. (Leaves generally alternate.) 11. 12—(yam-root.)

GLEDITSCHIA. Perfect flowers—calyx 6 to 8-parted, caducous, 3 or 4 of the outer segments smaller : corol none : stamens 5 or 6 (rarely 8 :) legume long, flat compressed, 1 or many-seeded. Pistillate flowers—calyx subturbinate, 5 to 8-parted with 3 to 5 of the segments interior : stamens 6 to 8. 33. 93—(honey locust.)

FROM ORDER VIII. OCTANDRIA, to ORDER XIII. POLYANDRIA.

POPULUS. Staminate flowers—ament cylindric, calyx a torn scale : corol turbinate, oblique, entire. Pistillate flowers—ament, calyx and corol like the staminate : stigma 4 or 6-lobed : capsule 2-celled ; seed with egret-like hairs. (Leaves having a tremulous motion.) 50. 99—(poplar, balm of gilead.)

DIOSPYROS. Staminate flowers—calyx 4 to 6-cleft, dilated : corol pitcher-form, 4 to 6-cleft : stamens 8, 16 or 29 ; often 2 anthers to a filament. Pistillate flowers—calyx and corol like the staminate : stigmas 4 or 5 : berry 8 to 12-seeded. 18. 50—(date plum.)

DATISCA. Staminate flowers—calyx 5-leaved : corol 0 : anthers sessile, about 15. Pistillate flowers—calyx superior, 2-toothed : styles 3 : capsules 3-angled. 3-horned, 1-celled, many-seeded, pervious. 54. 98? (false-hemp.)

MENISPERMUM. Staminate flowers—calyx 6-leaved : somewhat 2-bracted, caducous : petals 6 to 9, glandular, minute, retuse : stamens 16, 18 or 24 ; anthers 4-lobed, 2-celled. Pistillate flowers—calyx and corol like the staminate : germs and styles 3 to 6 : drupes or berries mostly solitary, 1-seeded ; nut woolly, compressed. 11. 77—(moon seed.)

* Thalictrum.

ORDER XVI. MONADELPHIA.

JUNIPERUS. Staminate flowers—ament ovate : calyx a scale : stamens 3. Pistillate flowers—calyx 3-parted : petals 3 : styles 3 : berry 1 or 2-seeded, consisting of the unequal tubercles of the calyx. (Nut bony, 1-celled, with balsamy glands at the base.) 51. 100—(red cedar, savin.)

TAXUS. Staminate flowers—calyx consists of 4 to 6 imbricated scales : corol 0 : stamens many, anthers peltate, 6 to 8-cleft. Pistillate flowers—style 0 : receptacle cup-form, succulent ; nut ovate. 51. 100—(yew.)

POLYGAMOUS PLANTS.

Some authors still retain the class Polygamia ; but I, following Persoon, have distributed the genera belonging to this class as follows :—*Andropogon* to class 3, or-

der 2. *Holcus* to 3, 2. *Panax* to 5, 2. *Atriplex* to 5, 2. *Celtis* to 5, 2. *Veratrum* to 6, 3. *Melanthium* to 6, 3. *Acer* to 8, 1. *Mimosa* to 16, 10. *Parietaria* to 20, 4. *Fraxirus* to 21, 2. *Nyssa* to 21, 5. *Gleditschia* to 21, 6.

CLASS XXII. CRYPTOGAMIA.

Order I. Filices.*

Ferns are annulated, when each capsule has a kind of chain passing around it at about right angles with the suture. When the fruit is ripe, the chain in straitening opens the capsule ; it being attached by its ends to two contiguous edges of it.

A. *With annulated capsules.*

1. *Without involucres.*

Acrostichum. Capsules numerous, covering the whole lower surface of the frond. (The fertile leaves differ in shape from the barren. This genus should be examined in the young state ; for the scattered fruit of other genera, by becoming confluent when old, often cover the frond.) 55. 5—(fork-fern.)

Polypodium. Capsules disposed in round scattered dots, on various parts of the lower surface of the frond. 55. 5—(polypod.)

2. *With involucres.*

Onoclea. Fruit-dots indeterminate, presenting a berry-like appearance, capsules covering the whole lower surface of the frond ; involucre formed by turning in or rolling back the margin of the leaf, which opens inwards, in maturity, towards the midrib, or remains closed. (The fertile leaves are contracted and narrower than the barren ones.) 55. 5—(sensitive polypod.)

Blechnum. Capsules in uninterrupted lines running parallel to the midrib of the frond on both sides : involucre opens inwards.† (The fruit of this genus, when ripe, often covers the whole lower surface of the frond like the

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* The descriptions of the genera of this order are chiefly taken from Sprengel's Introduction to the study of Cryptogamous plants.

† The involucre opens *inwards*, when it opens or separates, so as to leave the capsules naked on the side next to the midrib.

acrostichum; it must therefore be examined in the young state.) 55. 5—(Roman fern.)

PTERIS. Capsules arranged in a continued line along the very margin of the frond: involucre opening inwards. (When the leaves are extremely small, the rows of capsules on opposite sides meet and cover the lower surface like the above.) 55. 5—(brake.)

ASPLENIUM. Capsules in lines parallel to each other, situated exactly *upon* the secondary veins of the frond: involucres opening inwards. (By the secondary veins is meant those of the middle part of the disk, not the larger ones at the margin or midrib. The parallel lines of capsules may stand obliquely with respect to the midrib, but their direction must be parallel to each other.) 55. 5—(spleen wort, walking leaf.)

SCOLOPENDRIUM. Capsules in strait or zigzag parallel lines *between* the secondary veins (or ribs) of the frond: involucre double, opening on the top of the lines of capsules and folding down towards each side. (In the genus *asplenium*, the lines of capsules lie across the veins of the frond; but in this they are in line with the veins and attached along their sides or between them.) 55. 5—(caterpillar fern.)

WOODWARDIA. Capsules in oblong or oval spots arranged in regular rows on both sides of the midrib: involucre vaulted and opening inwards. (When the leaves have large segments, the capsules are arranged along the midribs of the segments also.) 55. 5—(kidney-fruit fern.)

ADIANTUM. Capsules disposed in oblong spots, arranged along the margin of the frond: involucre is formed by turning back the margin of the frond over the capsules, and it opens inwards. (The lines of oblong spots are generally along that margin, which may be considered the end of the leaf or of the segments of the leaf. 55. 5—(maiden-hair.)

ASPIDIUM. Capsules in scattered roundish spots on various parts of the whole lower surface of the frond: involucre a kidney-form or round membrane, fastened to the frond in or near the centre of the fruit-dot, and opening on all sides. (The involucre, when a little opened, is strictly peltate.) 55. 5—(shield-fern.)

ATHYRIUM. (Taken from *aspidium*.) Capsules in scattered roundish or oblong spots on various parts of the

whole lower surface of the frond: involucre a roundish membrane, fastened to the frond at one side of the fruit-dot, and opens on the other. (The involucre is generally fastened inwards and opens outwards towards the margin of the frond.) 55. 5—(snuff box fern.)

DICKSONIA. Capsules in small round scattered fruit-dots at the margin of the frond: involucre double; one part is formed of the thin margin of the frond turned over upon the fruit-dots, the other is from the frond on the inward side of the fruit-dots, each part opening opposite to where it is fastened to the frond. 55. 5—(mountain fern.)

WOODSIA. Involucre perianth-form, with a hair-like margin: capsules pedicelled, included within the involucre: fruit-dots roundish, scattered. 55. 5—(flower-cup fern.)

CHEILANTHUS. Fruit-dots roundish, distinct, situated at the margin of the frond: involucre a roundish membrane, formed by turning over the margin of the frond upon the fruit-dots, and opening inwards. (The margin is always crenate, and each fruit-dot has its own involucre perfectly separate from the others.) 55. 5—(lip-fern.)

B. *With capsules not annulated.*

SCHIZAEA. Capsules top-form, striate longitudinally and radiately, situated upon the back part of a narrow spike-form appendage of the frond, surrounded with or interspersed among bundles of hairs. (The appendages, bearing the capsules, are generally digitate and occupy the summit of the frond.) 55. 5—(one-sided fern.)

OSMUNDA. Capsules globose, pedicelled, radiate-striate or wrinkled, having a hinge at the joining of the two valves, which resembles part of the jointed ring of annulated ferns: the capsules either occupy the whole frond, to a limited extent, or a panicled-raceme. (The parts of the frond occupied by the fruit are always more contracted than the barren parts.) 55. 5—(flowering fern.)

LYGODIUM. Capsules in two series, radiate-striated or wrinkled, opening laterally, longitudinally or transversely; they are situated upon spikelets which proceed from the margin of the frond, each capsule being hid under a scale which falls off frequently in ripening. 55. 5—(fringed fern, climbing fern.)

Botrychium. Capsules coriaceous, globose, one-celled, smooth; they are disposed in spikes or racemes, generally opening lengthwise, sometimes irregularly. 55. 5—(grape-fern.)

Ophioglossum. Capsules round, 1-celled, opening transversely; they are placed on a somewhat jointed spike in two close rows. 55. 5—(adder-tongue fern.)

Sub-order. Apteres.*

Lycopodium. Capsules mostly kidney-form or roundish, 2 or 4-valved opening elastically; they are placed under separate scales in a spike, or sometimes in the axils of leaves. (Very leafy, their stems being generally covered with 2, 3 or 4 rows of narrow simple entire leaves.) 55. 5—(ground pine.)

Equisetum. Fruit placed under peltate bodies which are arranged in whorls, forming a spike-form raceme; four spiral filaments surround the seed (probably) which resemble green globules. (Fertile plants mostly leafless, the stems of all are jointed with toothed sheaths at every joint, and usually longitudinally striated and hollow.) 55. 5—(scouring rush, horsetail.)

Isoetes. Capsules membranaceous, 1-celled, not dehiscent; fruit-dots heart-ovate, immersed in a swelling or tuberosity at the base of a linear subarticulated grass-like frond: seeds attached to numerous cross-bars within the capsule. 55. 5—(quill-wort.)

Order II. Musci.†

First division. Capsules without peristomes.

Sphagnum. Base of the calyptre remains attached to the capsule, after the upper part has fallen off. 56. 4.

Phascum. Capsule terminal, without an opening. Calyptre bell-form, halved, subulate, minute. 56. 4.

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* See the 5th Nat. Ord. of Jussieu. But transfer Isoetes to the second division, after Equisetum. Also insert after "axils of leaves," and before "having," the words—or in the substance of the frond.

† Arranged, with few exceptions, according to the Methodus Muscorum A Sam. Eb a Bridel.

Mosses may be gathered whenever the capsules have arrived to their usual size. But they must be put in a closet, until the lids of the capsules become reddish-brown, before they are examined. Then the lids may be removed, and the teeth examined.

GYMNOSTOMUM. Capsules terminal. Calyptre cowled or halved, subulate, caducous. 56. 4.

SCHISTIDIUM. Capsule terminal. Calyptre mitre-form, or bell-conic, split at the base into many subequal divisions. 56. 4.

ANOECTANGIUM. Capsule lateral. Calyptre halved, subulate. 56. 4.

Second division. Capsules with peristomes.

A. *Mouth surrounded by a single peristome; fruit terminal.*

1. *Teeth solitary, free* (disconnected) *at the base, entire.*

TETRAPHIS. Teeth of the peristome 4, pyrimidal: calyptre mitre-form, split into many divisions at the base. 56. 4.

GRIMMIA. Teeth of the peristome 16, pyrimidal, easily reflexed: calyptre mitre-form. 56. 4.

WEISSA. Teeth of the peristome 16, erectish, narrow, imperforate: calyptre halved, subulate. 56. 4.

TREMATODON. Teeth of the peristome 16, lance-linear, perforate: germ nodding, with a long horn-like epophysis at the base: calyptre cowled. 56. 4.

2. *Teeth solitary, free at the base, split from the apex towards the base.*

DICRANUM. Teeth of the peristome 16, inflexed, 2-cleft, the divisions equal: calyptre hood-form. 56. 4.

CAMPYLOPUS. Teeth of the peristome 16, 2-cleft, sub-perforate: calyptre mitre-form, torn-fringed at the base. 56. 4.

RACOMITRUM. Teeth of the peristome split even to the base into 2, 3 or 4 parts; division equal, filiform: calyptre mitre-form or bell-form and subulate, mostly torn at the base. 56. 4.

TRICHOSTOMUM. Teeth of the peristome 16, split even to the base into 2, 3 or 4 parts, divisions filiform: calyptre halved, hood-form. 56. 4.

3. *Teeth solitary, twisted together like a rope at the top.*

BARBULA, Teeth of the peristome 16 or 32, capillary, somewhat connected at the base, and spirally twisted at the top: calyptre hood-form. 56. 4.

SYNTRICHIA. Teeth of the peristome 16 or 32, twisted spirally in the form of a spike, and arising from a broad reticulate membrane : calyptre hood-form. 56. 4.

4. *Teeth approach each other, or unite, in pairs.*

DIDYMODON. Teeth of the peristome 32, they approach each other in pairs, but remain distinct : calyptre hood-form. 56. 4.

SPLACHNUM. Teeth of the peristome 16, attached to each other in pairs so that they can hardly be separated without lacerating their cuticles, reflexed, and at length close pressed to the back of the capsule ; the capsule has an apophysis : calyptre bell-form, with a sub-lacerated base. 56. 4.

B. *Mouth surrounded by a double peristome* (except 2 species of Orthotrichum ;) *fruit terminal.*

ORTHOTRICHUM. Peristome single or double. *When single,* the teeth are 16, arranged in pairs ; after the falling of the lid they are reflexed. *When double,* the outer teeth are as when single, and the inner teeth are 8 or 16, linear, distant : calyptre conic or bell-form, keeled, pilose upwards ; rarely glabrous. 56. 4.

ULOTA. Teeth of the outer peristome 16, arranged in pairs, after the falling of the lid they are easily reflexed : teeth of the inner peristome are 8, linear, distant : calyptre conic, smoothish, hairy above, often split into a fringe at the base. 56. 4.

BARTRAMIA. Teeth of the outer peristome 16, wedgeform ; the inner peristome consists of a membrane folded into 16 carinate plaits or folds ; the divisions are bifid receiving the inflexed apexes of the teeth : calyptre hooded. 56. 4.

BRYUM. Teeth of the outer peristome 16, broadish, acute ; the inner peristome consists of a membrane, divided or folded by keel-like furrows, and extended into 16 broadish processes, with ciliate hairs interposed : calyptre hood-form : capsule equal. 56. 4.

ARRHENOPTERUM. Teeth of the outer peristome 16, broadish, acute : the inner peristome consists of a keel-furrowed membrane, split into broad processes, with ciliate hairs interposed : calyptre oblong, laterally sessile : capsule unequal, arcuate, nodding. 56. 4.

MNIUM. Teeth of the outer peristome 16, broadish, ascending or erect, with very long apexes arching outwards; the inner peristome consists of a membrane extended into 16 perforated or forked divisions, ciliate hairs interposed? calyptre acutely conic: capsule unequal, nodding. 56. 4.

TIMMIA. Teeth of the outer peristome 16, broadish, acuminate; the inner peristome consists of a membrane torn into 16 divisions, opposite to the teeth, irregularly perforated and anastomosing, rarely the divisions are alternately free: calyptre laterally fissile. 56. 4.

DIPLOCOMIUM. Teeth of the outer peristome 16, obtuse, short: the inner peristome consists of 16 ciliate hairs approaching each other in pairs, not connected by any membrane. 56. 4.

MEESIA. Teeth of the outer peristome 16, short; the inner peristome consists of ciliate hairs connected wholly by network. 56. 4.

DIPHYSCIUM. The outer peristome seems as if almost obliterated, it consists of 16 very minute scales surrounding the mouth of the germ; the inner peristome consists of a conic truncate membrane, in 16 plicate folds, which alternate with the scales. 56. 4.

BUXBAUMIA. Peristomes three. Teeth of the outer peristome 16, truncate, very short, unequal, fugaceous: the two inner peristomes consist of sub-conical membranaceous cylinders, constructed of filaments laterally adhering together, and torn at the top; the innermost is the longest, folded in 16 plaits and dehiscent at the apex. 56. 4.

FUNARIA. Teeth of the outer peristome 16, cohering together at the apex and twisted obliquely; the inner peristome consists of 16 membranaceous cilia opposite to the teeth, lying flatly. 56. 4.

C. Mouth surrounded by a single peristome; fruit lateral.

1. *Teeth entire.*

PTERIGYNANDRUM. Teeth of the peristome 16, equally distant, acute, erectish: calyptre hood-form, glabrous. 56. 4.

LASIA. Teeth of the peristome 16, equally distant, acute, erect: calyptre hood-form, pilose above. 56. 4.

2. Teeth split.

LEUCODON. Peristome a membrane divided into teeth, each of which is split almost to its base : calyptre hood-form. 56. 4.

D. *Mouth surrounded by a double peristome; fruit lateral.*

1. Teeth of the inner peristome free at the base.

NECKERA. Teeth of the outer peristome 16, erect, free ; cilia of the inner peristome alternate with the teeth (rarely opposite) : calyptre hood-form, glabrous. 56. 4.

CRYPHAEA. Teeth of the outer peristome 16, erect, free : cilia of the inner peristome alternate with the teeth : calyptre mitre-form, or conic, glabrous. 56. 4.

PILOTRICHUM. Teeth of the outer peristome 16, erect, free ; cilia of the inner peristome alternate with the teeth : calyptre mitre-form, or conic, hirsute. 56. 4.

2. Teeth of the inner peristome connected by a membrane at the base.

CLIMACIUM. Teeth of the outer peristome 16, acute; inner peristome consists of cilia, arising from a very short membrane, which are united at the apex in pairs by transverse bars. 56. 4.

LESKIA. Teeth of the outer peristome 16, subulate, inflexible; inner peristome consists of a membrane extended into 16 linear uniform processes : calyptre hood-form. 56. 4.

PTERIGOPHYLLUM. Teeth of the outer peristome 16, lance-linear ; inner peristome consists of a membrane split into 16 linear uniform (rarely deformed) processes : calyptre mitre-form, entire, glabrous. 56. 4.

HYPNUM. Teeth of the outer peristome 16, acute, reflexile ; inner peristome consists of a membrane extended into 16 processes, with smaller capillary ones interposed : calyptre hood-form, glabrous. 56. 4.

3. Inner peristome without teeth or cilia.

FONTINALIS. Teeth of the outer peristome 16, broadish, acute, erect ; inner peristome a reticulate conic membrane. 56. 4.

E. *Mouth surrounded by a single peristome; fruit arises from the duplicature of a leaf.*

FISSIDENS. Peristome simple : teeth 16, 2-cleft, broadish, inflexed ; the divisions somewhat unequal, diverging. 56. 4.

F. *Mouth closed by a horizontal membrane.*

POLYTRICHUM. Peristome very short, teeth 16, 32, or 64 : mouth of the germ covered by a dry membrane which is connected to it by the teeth of the peristome : calyptre very small, with a large villose or hairy covering. 56. 4.

CATHARINAEA. Peristome very short, teeth 32 or 64 ; mouth of the capsule covered by a dry membrane : calyptre glabrous, or hirsute, with scattering hairs. 56. 4

ORDER III. HEPATICAE.*

RICCIA. Capsules sub-globose, imbedded in the frond, not dehiscent ; furnished with a short tube, scarcely prominent, becoming brownish and perforated at the apex. This aquatic genus has the habit of the most succulent and tender lichens. 57. 3.

ANTHOCEROS. Capsules long, horn-form, subulate, longitudinally dehiscent into 2 valves when mature ; imbedded and nourished in a linear fleshy receptacle : after the opening of the capsule seeds appear attached to a columella. Around the fleshy receptacle (or perhaps calyx) within the substance of the frond, appear heaps of reddish bodies resembling anthers. The substance of the frond is made up of hexahedral cells. In habit this genus resembles mosses. 57. 3.

MARCHANTIA. Receptacles pedicelled, radiate-lobed, disk-like or bell-form, with the inside downwards, to which the globose 4-valved capsules are attached, with their apexes downward. The umbrella-like receptacle is elevated one or two inches by a stipe attached to the centre of its lower side, among the capsules and many pilose appendages. The frond is leafy, reticulate, furnished with a midrib, and beset with villose roots on the under side which attach themselves to stones in brooks, to damp earth, &c.

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* From Sprengel, De Lamarck and De Candolle.

JUNGERMANNIA. Capsules 4-valved, globose, elevated by peduncles or stipes from within a bell-form calyx. The fronds are made up of finer leaves than those of the Marchantia, and are often mistaken for mosses among which they generally grow. 57. 3.

ORDER IV. ALGAE.*

A. *The section* FUCOIDEAE *comprizes those seaweeds of the old genus Fucus, whose fronds are cartilaginous or leathery and of an olive or copper colour, becoming brown or black. They are composed of interwoven longitudinal fibres. Fruit, or receptacles, appear like portions of the frond blown up in bubbles.*

FUCUS. Receptacles tubercled; the tubercles perforate, nourishing aggregated capsules within, intermixed with articulated fibres. 57. 2.

CHORDARIA. The fruit consists of immersed clavate articulated concentric threads, passing into seeds. Fronds filiform, cartilaginous and lubricous. 57. 2.

LAMINARIA. Seeds oblong, immersed in a distinct part of the frond—never in all parts. Frond a tenaceous cartilage. 57. 2.

B. *The section* FLORIDEAE *comprizes those seaweeds of the old genus Fucus, whose fronds are leathery, membranous or gelatinous, and of a purple or rose colour.*

DELESSERIA. Fruit double, seeds and capsules. Seeds heaped together in spots, immersed in the leaves in various places. Frond always thin and membranaceous. 57. 2.

SPHAEROCOCCUS. Fruit uniformly a capsule; sessile in the disk of the frond, or pedicelled at the margin. Frond cartilaginous, nerveless, flat or filiform. 57. 2.

HALYMENIA. Frond membranaceous, leathery, nerveless, punctate: seed immersed throughout the whole frond, disposed in spots. 57. 2.

C. *The section* ULVOIDEAE *comprizes the plants of the old genus Ulva. Fronds membranaceous,* (broad or in narrow slips) *thin, of a grass-green colour. Their substance*

* Translated from Agardh's Synopsis Algarum—Omitting all which is not required by discoveries in our district.

consists of cells, with the fruit immersed in the frond. They grow on rocks, stones, shells, &c. in the sea—also in ditches, stagnant waters, damp woods, &c. 57. 2.

ULVA Seeds in fours, immersed in every part of the membranaceous frond. 57. 2.

VAUCHERIA. Fruit consists of minute homogeneous vesicles strung on a thread ; or the threads or fibres sprinkled over with green granular masses, which may at length be easily brushed off. Linneus denominated the plants of this genus amphibious confervae, because they rise to the surface of water, and project their fructiferous filaments above it. 57. 2.

D. *The section* CONFERVOIDEAE *comprizes the plants of the old genus Conferva. Fruit capsular or naked granulations. Fronds filiform and geniculate, containing the fruit immersed in them, generally strung on threads ; mostly of a grass-green or greenish colour, sometimes purple.* They grow in fresh water streams, springs, ditches and stagnant waters. Sometimes in damp woods, and some in the sea.

HUTCHINSIA. Fruit double, capsular, and filamentose granulations. Capsules ovate, broader at the base, acuminate apex (sometimes truncate) sessile, reticulate, containing globules in inflated branches. Filaments formed from numerous channels, of a purplish colour. 57. 2.

CERAMIUM. Fruit double, filamentose and capsular. Filaments constituted from one tube. 57. 2.

LAMANIA. Filaments torose, rigid containing the seed within them. The chain of germs is affixed to the interior disk of the membrane, in a pencil form aggregate. 57. 2.

CONFERVA. Filaments articulated, uniform, simple or branched ; containing the seed within them. No external fruit. 57. 2.

ZYGNEMA. Filaments simple, equal, articulated, green, gelatinous: articulations hyaline ; granulations disposed in spiral lines or in double stars, rarely scattered. At length the transverse tubes burst in the middle of the joints, and from the two nearest filaments is transmitted, at the same time, a green substance, which, uniting, forms a spherical or oval seed. 57. 2

OSCILLATORIA. Filaments continued, membranaceous, gelatinous: germs ring-form, transverse, parallel, crowded. Agardh considers some of the species of this genus as intermediate between animal and vegetable; though their oscillatory motions cannot be voluntary. 57. 2.

BATRACHOSPERMUM. Frond gelatinous. Filaments with the main part articulated; branches whorled at the articulations: fruit external. 57. 2.

E. *The section* TREMELLINAE *camprizes the old genus Tremella. Plants of this section are all gelatinous, hyaline, and covered with a membrane. They are globose, palmate or filiform; and contain conferva-like filaments within. Colour green or purplish. They resemble Confervoideae in habit and place of growth.*

RIVULARIA. Filaments simple, continued, annulated within, terminating in a distinct globe at the base, produced at the apex into a long hyaline point. Colour olive or dark green 57. 2.

NOSTOC. Filaments monili-form, constituted from coadunate globules. Frond bullate, vesicular (at length becoming flattened) crowded with simple monili-form, curve-crisped filaments. 57. 2.

ORDER V. LICHENES.*

A. *The Idiothalamous† section comprizes those lichens, whose receptacles are wholly of a substance and colour different from that of the frond.*

1. *Receptacles simple, wholly formed of a pulverulent or cartilaginous substance.*

(Receptacles without margins.)

SPILOMA. Frond‡ crustaceous, expanded, flat, adnate, uniform: receptacles (efflorescence) composed of corpuscules, or pulverulent atoms, aggregated in compact homogeneous, naked, formless, coloured massess. 57. 2.

ARTHONIA. Frond crustaceous, flat, expanded, adnate, uniform: receptacle innate-sessile, round-shapeless,

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* Translated from the last improved Synopsis Methodica Lichenum of Professor Erik Acharius.

† *Idios*, peculiar, *thalamos* bed.

‡ Acharius has substituted for frond, *universal receptacle* in his last work, throughout.

dark coloured, covered with a sub-cartilagenous membrane—resembles a solid parenchymous substance. 57. 2.

(Receptacles margined.)

GYALECTA. Frond crustaceous, flat, expanded, adnate, uniform. Receptacle shield-form, urceolate, immersed in the crust, resembling a thin cartillage; the hollow part concave, with the aperture contracted, and sub-marginated. 57. 2.

LECIDEA. Frond various; crustaceous, expanded and adnate, uniform or dis-figured, foliaceous, or rope-like: receptacle (spangles) shield-form, sessile, clothed every where with a cartilaginous membrane; somewhat solid, including a parenchamous substance; disk with an uniform margin. 57. 2.

CALICIUM. Frond crustaceous, flat, expanded, adnate, uniform: receptacles (puffs) bowl-form, sessile or stiped, cartilaginous; sustaining a compact, pulverulent mass, flat or subglobose above, forming a naked disk. 57. 2.

GYROPHORA. Frond foliaceous, coriaceous-cartilaginous, peltate, monophyllous (when luxurient polyphyllous) free beneath: receptacles (buttons) somewhat shield-form, sessile-adnate, clothed with a dark membranaceous cartilage, somewhat solid, including a parenchymous substance; disk warty or circinal, plicate and margined. 57. 2.

OPEGRAPHA. Frond crustaceous, flat expanded, adnate, uniform: receptacles (clefts) oblong, elongated, sessile, clothed with a dark coloured cartilaginous membrane, somewhat solid including a parenchymous substance: disk linear, margined both sides. 57. 2.

2. *Receptacles sub-simple, formed from a solitary frond and furnished with a perianth-like organ including a nucleus.*

(Receptacles margined.)

GRAPHIS. Frond crustaceous, flat, expanded, adnate, uniform: receptacles (hollows) elongated, immersed in the frond; the perianth-like organs surrounding the seed-cases are simple, cartilaginous, halved lateral, dark-coloured, margined both sides; nucleus linear; disk naked above and beneath, cellular-striate within. 57. 2.

(Receptacles without margins.)

VERRUCARIA. Frond crustaceous, flat, expanded, adnate, uniform: receptacles (hollows) hemispheric or subglobose, imbedded in the frond at the base: the perianth-like organs surrounding the seed-cases are double; exterior one sub-cartilaginous, thick, dark-coloured, halved above, furnished with little openings or papillose; interior one thin, membranaceous; nucleus sub-globose, cell-vesicular, every part enclosed. 57. 2.

ENDOCARPON. Frond crustaceous, flat, adnate, somewhat deformed or foliaceous and peltate: receptacles (hollows) globose, hidden in the substance of the frond: the perianth-like organs surrounding the seed-cases are simple, membranaceous, thin, translucent; the little openings at the surface of the frond are thick, sub-papillose, prominent; nucleus a globose substance. 57. 2.

B. *The* COENOTHALAMOUS* *section comprizes those lichens, whose receptacles are in part only formed from the substance of the frond.*

1. *Receptacles included in warts, which are formed from the frond.*

PORNIA. Frond crustaceous, cartilaginous, flat, expanded, adnate, uniform: receptacles (hollows) single or many together hidden in verrucose enclosures, which are formed from the frond and are without margins; the perianth-like organs surrounding the seed-cases are simple, tender, membranaceous, translucent, furnished with coloured openings, thicker at the surface of the warts, and including sub-globose cellular vesicles. 57. 2.

PYRENULA. Frond crustaceous, flat, expanded, adnate, uniform: receptacles (hollows) single, enclosed, or surrounded at the base, by warts formed from the frond; the perianth-like organs are simple, thick, dark-coloured, papillose, investing the whole cellular globose nucleus. 57. 2.

VARIOLARIA. Frond crustaceous, flat, expanded, adnate, uniform; the receptacle is a kind of wart formed externally from the frond, with a white border or margin: nucleus naked (without the perianth-like organ)

* *Koinos*, common, *thalamos*, bed.

compressed, cellular, hidden within the substance of the wart, veiled above but at length naked. 57. 2.

2. *Receptacles shield-form, sub-sessile, furnished with a disk of a peculiar substance and colour; and surrounded by a margin of a different colour, proceeding from the frond.*

URCEOLARIA. Frond crustaceous, flat, expanded, adnate, uniform: receptacles (shields or spangles) concave, lamina seed-bearing, coloured, striate-cellular within, immersed in the substance of the crust or in warts, surrounded with margins formed from the frond and of the same colour, sessile or elevated. 57. 2.

LECANORA. Frond crustaceous, flat, expanded, adnate, uniform: receptacles shield-form, thick, adnate-sessile; seed-bearing lamina forming the disk, plano-convex, coloured, covering the receptacle above, cellular-striate within, surrounded with a thickish margin formed from the frond and of the same colour, somewhat free. 57. 2.

PARMELIA. Frond coriaceous, sub-membranaceous; flat, expanded, close-pressed, orbicular, stellate and lobed or multifid-laciniate, having fibres beneath: receptacle shield-form, sub-membranaceous, formed under-side from the frond, free, with a central puncture by which it is affixed; seed-bearing lamina forming the disk, concave, coloured, covering the whole receptacle above, within similar, sub-cellular and striate, cut round inflexed with a frond-like margin. 57. 2.

BORRERA. Frond cartilaginous, laciniate-branched; divisions free, often channelled beneath and ciliate at the margin: receptacles shield-form, thick, formed from the frond beneath; seed-bearing lamina forming the disk, coloured, similar within or vesicular, surrounded by a frond-like margin, elevated, inflexed. 57. 2.

CETRARIA. Frond cartilaginous or membranaceous, ascending or expanded, lobe-laciniate, smooth and naked both sides: receptacles (targets) shield-like obliquely attached to the margin of the frond, the lower free being separated from it, the upper one sessile; seed-bearing lamina forming the disk, coloured, plano-concave, within similar or cellular-striate, surrounded with a frond-like inflexed margin. 57. 2.

STICTA. Frond foliaceous, coriaceous, cartilaginous,

expanded, lobed, beneath free and villose with pits interspersed : receptacles shield-form, formed from the frond beneath, with a central puncture to which it is affixed and close-pressed ; seed bearing lamina forming the disk, coloured, flat, cellular-striate within, surrounded by a frond-like margin. 57. 2.

Peltidea. Frond foliaceous, coriaceous, expanded, sub-adnate, lobed, woolly-veined beneath : receptacles formed beneath from the extended, ascending, proper, lobes of the frond ; seed-bearing lamina, orbicular, wholly from the frond, sub-oblique (inferior segment more elevated) cellular-striate within, adnate, coloured, flat, surrounded by a frond-like margin, thin, elevated, approximating on all sides. 57. 2.

Nephroma. Frond foliaceous, coriaceous, membranaceous, expanded, lobed, free and naked or sub-villose beneath : receptacles up-side-down, formed above from the extended, ascending, proper lobes of the frond ; seed-bearing lamina reniform, wholly from the frond and its back surface, adnate, coloured, flat, cellular-striate within, guarded around by a frond-like margin approximate-inflexed above, more remote and somewhat elevated beneath. 57. 2.

Evernia. Frond sub-crustaceous, laciniate-branched, angled or flat-compressed, erectish or pendulous, rope-like within : receptacle shield-like, sessile, elevated all around ; seed-bearing lamina forming the disk, thin, concave, coloured, similar within, inflexed, with a frond-like margin. 27. 2.

3. *Receptacles without margins, sub-globose, formed from the frond above or under side ; inserted on the branchlets or terminal processes, or scattered and sessile.*

(Receptacles covered above with seed-bearing lamina.)

Cenomyce. Frond crusty or cartilaginous, foliaceous, laciniate, sub-imbricate, free (rarely adnate ;) bearing sub-fistulous peduncles *(podetia,)* both barren and fertile : receptacles (knobs,) orbicular, without margins, at length convex and capitate, inflated or empty beneath, terminal, attached to the peduncles by their peripheries ; seed-bearing lamina forming the receptacle above, thickish, coloured, similar within, convex, reflexed and at-

tached at the periphery, invested beneath with the woolly integument of the frond. 57. 2.

Baemyces. Frond crustaceous, flat, expanded, adnate; bearing soft, solid, fertile peduncles *(podetia :)* receptacles (knobs) capitate, without margins, solid, terminal, sessile on the peduncles; seed-bearing lamina covering the whole receptacle and adnate to it, convex-reflexed, thickish, coloured, similar within. 57. 2.

Isidium. Frond crustaceous, flat, expanded, adnate, uniform, bearing shortish, solid, fertile, peduncles *(podetia :)* receptacles (globules) orbicular, convex, at length sub-globose, solid, terminal, sessile on the peduncles; seed-bearing lamina included by the apex of the peduncles and surrounded by a kind of edging formed from them, convex above, flat and coloured beneath, afterwards prominent, edged around and hemispheric, similar within. 57. 2.

Stereocaulon. Frond cartilaginous, or somewhat woody, woody-branched, bark crustaceous and unequal: receptacles (knobs) turbinate, sessile, solid, flat above, edged around, at length globose hemispheres; seed-bearing lamina thick, covering the receptacle above, flat, surrounded by a frond-like edging somewhat equal, at length convex, dilated and covering the edging, reflexed, coloured, similar within, sub-striate. 57. 2.

Receptacle clothed with the substance of the frond, and enclosing a pulverulent mass.)

Rhizomorpha.* Frond cartilaginous, membranaceous, with rope-like fibres within, solidish, somewhat terete, proliferous-branched, creeping, prostrate: receptacles globose, sessile, afterwards conglomerate, formed from the cortical substance of the frond, lacerate-burst, filled with fertile dust. 57. 2.

C. *The* Homothalamous† *section comprizes those lichens, whose receptacles are wholly formed from the bark and substance of the frond: being the same, or nearly the same, colour.*

1. *Receptacles shield-form, margined, sub-sessile.*

Alectoria. Frond cartilaginous, sub-filiform, rope-

* Persoon places this root-like lichen under the order Fungi.

† *Omos* similar, *thalamos*, bed.

like within, sub-fistulous, ramose, prostrate or pendulous: receptacle shield-form, thick, sessile, flatish, margined and convex, wholly formed from the frond, covered with its cortical substance, similar within, colour similar. 57. 2.

Ramalina. Frond cartilaginous, rope-like within, solidish, laciniate-branched, suffruticose, and mostly with powdery dots: receptacles shield form, thickish, subpeltate with small footstalks, flat, margined, wholly formed from the frond and covered with its cortical substance, colour uniform. 57. 2.

Collema.* Frond sub-gelatinous, homogeneous, after drying mostly hard-cartilagenous, polymorphous (crust-like, foliaceous, or in branchlets): receptacle shield-form, sessile, (rarely elevated on a very short footstalk) margined, formed wholly from the substance of the frond and similar, but the disk becomes coloured on drying. 57. 2.

2. *Receptacle terminal, peltate, nearly destitute of margins.*

Cornicularia. Frond cartilagenous, solidish within and ropelike, branching and a little frutescent: receptacles orbicular, terminal, obliquely peltate, formed wholly from the frond, covered all over with its cortical substance and similar, at length convex and subinflated, somewhat two-coloured: its periphery submarginated, sub-dentate, and at length reflexed. 57. 2.

Usnea. Frond sub-crustaceous, teretish, branched, mostly pendulous fascicled, filiform, elastic, central part hyaline: receptacles orbicular, terminal, peltate, formed wholly from the frond, covered all over with its cortical substance, similar, nearly of an uniform colour; its periphery destitute of margin, but often surrounded by a ciliate edging. 57. 2.

D. *The* Athalamous† *section comprizes those lichens whose receptacles are wanting, or at least not distinguishable.*

Lepraria. Frond crusty-pulverulent, expanded, ad-

* This genus is placed between Usnea and Lepraria by Acharius in the natural arrangement; but it stands in this section in his *Conspectus Systematicus.*

† *A*, without, *thalamos*, bed.

nate, uniform : receptacle wanting, or at least unknown. 57. 2.

Remark. Sprengel considers the Lepraria, Spiloma and Variolaria as merely the rudiments of other genera.

Order VI. Fungi.*

A. *Fungus*† *closed, or bearing fruit within, mostly with seeds very copious.* A plant of this section is denominated ANGIOCARPUS.

1. *Fungus hardish with a soft internal substance.*

SPHAERIA. Receptacles various: spherules roundish; mostly hollow when dry, filled when moist with a gelly or juicy-gelly, made up from the free capsules. A large genus, comprizing 184 species. Plants minute. 58. 1.

STILBOSPORA. Spherules none : capsules or seeds aggregated together in a black substance flowing from branches. 58. 1.

NAEMASPORA. Receptacle none or manifest and soft : a gelly bursting into hair-like or shaggy-forms, (when dissolved it becomes shapeless.) 58. 1.

TUBERCULARIA. Receptacle sub-hemispheric, stipe-form, or wanting : gelatinous substance roundish, compact, mostly reddish, permanent, moist and somewhat flowing. 58. 1.

HYSTERIUM. Receptacle none : the enclosures of the capsules mostly oblong, dehiscent into longitudinal chinks. 58. 1.

XYLOMA. Receptacles (or enclosures of the capsules) various, hard, somewhat fleshy within, continuing closed or at length bursting in various ways. 58. 1.

2. *Fungus fleshy, stuffed.*

SCLEROTIUM. Stuffed, various in form, similar and smooth within ; at length corrugated externally in some. 58. 1.

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* Translated from the Synopsis Methodica Fungorum, of D. C. H. Persoon.

† The word *fungus* is used by Persoon to denote the part enclosing the fruit, or in any manner sustaining it : as the hat of the mushroom to the under side of which the lamellae are attached, the membranous covering of a puff-ball, enclosing the dust-like seeds, &c.—the covering and seeds may be called the fruit.

TUBER. Roundish, fleshy: its substance variegated with seed-bearing veins. 58. 1.

3. *Fungus membranaceous, coriaceous or villose, stuffed with dust within.*

(The seminal dust intermixed with filaments.)

TULOSTOMA. Receptacle pedicelled, opening with a cylindric cartilaginous mouth. 58. 1.

GEASTRUM. Volva thin, evanescent: outer bark of the receptacle split in a stellate form, at length reflexed; mouth mostly pilose. 58. 1.

BOVISTA. Receptacle smooth, sessile, outer bark white, resembling a volva: at length irregularly bursting at the top it becomes evanescent by parts. The seminal dust is yellowish-purple. 58. 1.

LYCOPERDON. Receptacle somewhat caulescent, at length bursting at the top, with scaly warts or prickles scattered over its surface, especially when young. Seminal dust green. 58. 1.

SCLERODERMA. Receptacle with a tesselate, hardish, corky bark, at length bursting irregularly. Seminal dust purple, brown-yellow or rust-colour. 58. 1.

LYCOGALA. Receptacle roundish, membranaceous, smooth; stuffed at first with a pulpy liquescent mass, which at length becomes dust intermixed with scattering distant fibres. 58. 1.

FULIGO. At first pulpy, mostly open, somewhat deformed; externally hardish-fibrous or villose, membranaceous at the base; within cellular-fibrous and pilose, at length crumbling into dust. 58. 1.

PHYSARUM. Receptacle rigid, simple, mostly with small wrinkles, somewhat farinaceous: fibres scattered, reticulate, mostly adnate, concealed. 58. 1.

TRICHIA. Receptacle at length unequally ruptured, permanent; seminal filaments compact, adnate to the receptacle at the base, expanding themselves elastically. 58. 1.

ARCYRIA. Receptacle evanescent to the middle: seminal filaments denudated, overlayed with a calyciform receptacle. 58. 1.

STEMONITIS. Receptacle very thin, somewhat evanescent: seminal filaments reticulate, sub-compact, surrounding and affixed to the columella-like organs. 58. 1.

(Seminal dust naked, or not reticulate with fibres.)

TUBULINA. Receptacles tube-form, connate in a cespitose form, mostly imposed on an underlaying membrane: seminal dust naked, farinaceous. 58. 1.

MUCOR. Receptacle membranaceous, globose, stiped, at first watery and pellucid, then opake: seeds naked, sub-cohering. Very minute and fugacious. 58. 1.

ONYGENA. Receptacle stiped, roundish, dry, permanent: seminal dust cohering, compact, not intermixed with filaments. 58. 1.

AECIDIUM. Receptacle stemless, manifest, terete, membranaceous, at length ruptured with a dentate mouth: seminal dust farinaceous, naked. Grows on leaves. 58. 1.

UREDO. Receptacle none: seminal dust under the cuticle of leaves and stems, when ruptured it is easily brushed off; the little masses of seeds uniform, mostly globose. 58. 1.

PUCCINIA. Receptacle none: seeds conglomerated in a little head, from terete it is sub-turbinate; caudate, divided by little partitions. Mostly on leaves. 58. 1.

TRICHODERMA. Denudated: seminal dust copious, farinaceous, surrounded with a tomentose or villose integument. 58. 1.

CONOPLEA. Form distinct, byssus-like (flax-like:) filaments permanent, compact, rigid, sprinkled with conspicuous seminal dust. 58. 1.

(Fruit lenticular, fleshy, very manifest.)

CYATHUS. Receptacle funnel-form or cup-form, coriaceous; closed at first with a veil or covering, including within lenticular vessels or seeds. 58. 1.

B. *Fungus fleshy, bearing seeds in some kind of exposed or naked receptacle; as in plates, papillose or aculeate processes, or a spongy substance. A plant of this section is denominated* GYMNOCARPUS.

1. *Receptacles juicy, gelatinous, at length dissolving.*

PHALLUS. Having a volva at the base of the stipe: pileus ovate, sitting on the stipe, entire, covered with dissolving juice. 58. 1.

3. *Receptacles of a membranaceous substance, not dissolving; seeds pulverulent.*

(Receptacles lamellar or vein-like, beneath a pileus.)

AMANITA. Having a volva: pileus fleshy, mostly verrucose: lamellae confert, subentire: stipes mostly elongated, annulated or naked. 58. 1.

AGARICUS. Destitute of a volva at the base of the stipe, with or without the ring: lamellae either entire or with shorter ones intermixed, rarely simply ramose. Never veiny. A vast genus. Persoon describes 447 species, which occupies one third of his work on Fungi, 58. 1.

MERULIUS. Pileus fleshy or membranaceous: receptacles vein-like; the veins being superficial, tumid, in the form of folds. 58. 1.

(Receptacles in the form of tubes beneath a pileus.)

DAEDALEA. Pileus (halved) cork-leathery, reticulated beneath with oblong hollows, waving and torn, somewhat pore-form. This genus partakes of the characters of the Merulius and the Boletus. 58. 1.

BOLETUS. Pileus various: tubes and pores terete, entire. A large genus. Persoon describes 93 species. 58. 1.

(Receptacles in the form of teeth or acculate processes growing from a pileus.)

SISTOTREMA. Pileus various: receptacles at first in circular pores; at length torn mostly in the middle into compressed deformed teeth. This genus partakes of the characters of the Boletus and Hydnum. 58. 1.

HYDNUM. Pileus various: receptacles echinate, or in entire prominent subulate teeth. 58. 1.

(Receptacle a smooth or papillose membrane.)

THELEPHORA. Pileus coriaceous, with a papillose membrane beneath; rarely covered with minute bristles, or uniformly smooth. 58. 1.

MERISMA. Branching, coriaceous, compressed, smooth; mostly pilose at the apex. This genus in substance resembles that of the Thelephora, and in form that of the Clavaria. 58. 1.

(Receptacles fleshy, elongated; pileus confluent with the stipe.)

CLAVARIA. The clavate pileus simple and branched, confluent with a thick stem, or with a short stipe, rarely manifest. 58. 1.

GEOGLOSSUM. The clavate pileus fleshy, mostly compressed, short, contiguous to the stipe, with a prominent margin. 58. 1.

(Pileus membranaceous, distinct from the stipe.)

SPATHULARIA. Clavate; pileus compressed, membranaceous, decurrent into the stipe both sides. 58. 1.

LEOTIA. Head-form, pileus conic or orbicular, reflexed at the margin, closely surrounding the stipe. 58. 1.

HELVELLA. Pileus membranaceous, inflated, somewhat deformed, deflected both sides; mostly stiped. 58. 1.

MORCHELLA. Pileus elongated, teretish, lacunose with elevations, adhering within. Without volva or seminal juices. 58. 1.

TREMELLA. Open, gelatinous, circular-plicate: pileus not distinct. 58. 1.

PEZIZA. Receptacle hemispheric, concave or cup-form, a little swollen, bearing the seeds in a smooth disk above. Capsules follicle-like, generally inconspicuous to the naked eye, seeds 8, flying about and giving off fetid fumes. 58. 1. Persoon describes 151 species.

AEGERITA. Minute stemless fungi, of a granulated appearance, stuffed and sub-farinaceous. 58. 1.

3. *Fungus byssus-like (flax-like or filamentose.) comprizing the old genus Byssus and its relatives.*

ISARIA. Sub-filamentose, simple or ramose, sprinkled over with a farinaceous (sub-filamentose) seminal dust. Substance soft, colour white. 58. 1.

MONILA. Stiped or open, filamentose; filaments monili-form or articulated 58. 1.

DEMATIUM. Filamentose fungus of an indeterminate form, erect or depressed, sub-fascicled or diffused; threads smooth, not interwoven. 58. 1.

ERINEUM. Growing on leaves: filaments rigid with little lumps, conglomerated into a cup-form head impressed on the leaf. 58. 1.

RACODIUM. Expanded, soft; bearing a kind of clothing with threads densely interwoven. 58. 1.

HIMANTIA. Creeping, villose, branch-fibrous. 58. 1.

MESENTERICA. Creeping, gelatinous, veiny: ramifications of the veins joined by a little membrane. 58. 1.

END OF PART I.

ABBREVIATIONS,

To be included in Parenthesis.

Localities.

H. Common in high or considerably elevated districts. As in the Catskill Mountain range, including its various spurrs—The Green Mountain range, and other elevated parts of New-England, &c.

L. Litus. Common in maritime districts, at and near the sea-shore. As at Boston, New-Haven, New-York, &c.

Y. Yale college. Plants which grow in the vicinity of New-Haven.

C. Columbia college. Plants which grow about New-York.

W. Williams college. Plants which grow in the vicinity of that college.

N. Northampton. Plants which grow along Connecticut river from Northampton to Deerfield.

T. Troy Lyceum. Plants growing in the vicinity of Albany and Troy.

V. Vermont Medical Institution. Plants growing between the Green Mountains and Hudson river, in the adjoining counties of Rutland Vt. and of Washington and Essex, N. Y. near the centre of which is the Medical school.

P. Pennsylvania.

D. Delaware. Plants growing between the Delaware river and New-York.

O. Ommibus locis. Plants more or less common to all the above places.

E. Exotics.

Colours of Corols.

r. red—p. purple—y. yellow—w. white—b. blue—g. green.

Time of Flowering.

Ap. April—M. May—J. June—Ju. July—Au. August—S. September—Oc. October.

Duration, &c.

☉. annual—♁. biennial—♃. perennial—♄. woody.

It is not to be understood by students, that plants referred to any of the above places may not be found in places very distant from them. But it will be useful in collecting plants, to know what species have been found in localities resembling those where plants are sought, in elevation, latitude, &c.

The first number on the left of the generic name is the number of the artificial class to which it belongs—the second, of the artificial order. The first on the right, of the natural order of Lineus—the second, of Jussieu.

Abbreviations for Authors.

Not to be included in Parenthesis.

A. Aiton—B. Barton—Bl. Bridel—Bw. Bigelow—Br. Robert Brown—C. Curtis—D. Desfontaines—Dc. De Candolle—E. Elliott—Eh. Ehrhart—G. Gronovius—H. Hedwig—Hn. Hoffman—Hr. l'Heritier—J. Jussieu—Jn. Jacquin—L. Linneus*—Lb. Lambert—Lk. Lamarck—M. Muhlenberg—Mx. Michaux—Mn. Moenchausen—Mr. Murray—N. Nuttall—P. Persoon—Ph. Pursh—Pt. Poiret—Pb. Palisot de Beauvois—R. Rafinesque—Rs. Roemer and Shultes—Rd. Richard—S. Smith—Sy. Salisbury—Sr. Schreber—Sl. Sprengel—Sw. Swartz—Sh Schkuhr—Sp. Sibthorp—T. Tournefort—Tr. Turton—V. Ventenant—W. Willdenow—Wr. Walter—Wm. Wangenheim.

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* But the L. is generally omitted; therefore those without any name or abbreviation, are to be understood as Linnean names, excepting that Fungi without abbreviations are to be understood as of Persoon; Algae, of Agardh; Lichenes, of Acharius.

SPECIES OF PLANTS

GROWING IN THE

NORTHERN AND MIDDLE STATES

OF

AMERICA.

A.

20—16. ACALYPHA. L. 38. 96.

virginica, L. (three-seeded mercury. O. g. Au. ☉.) pistillate flowers at the base of the staminate spike: involucres ovate, acuminate, toothed: leaves short-petioled, lance-oblong, remotely and obtusely serrate. 4 to 3 inches high, coarse and unsightly.

caroliniana, Wr. (T. P. g. Ju. 2f.) pistillate flowers at the base of the staminate spike: involucres cordate, toothed: leaves long-petioled, rhomb-ovate, serrate, entire at the base. Rather more slender and delicate than the above, but can hardly be distinguished from it without comparing them.

8—1. ACER. 23. 66.

rubrum (red maple, soft maple. O. r. Ap. ♄.) leaves palmate-5-lobed, at the base cordate, unequally gash-toothed, glaucous beneath, the dividing incisions between the lobes acute: flowers in sessile umbels with long pedicels: germs glabrous. Large tree.

dasycarpum (1) (white maple, silver maple. P. New-England. g-y. Ap. ♄.) leaves palmate-5-lobed, at the base truncate, unequally gash-toothed, glabrous and glau-

(1) eriocarpum, Mx.

cous beneath, obtusely sinuate: flowers glomerate; pedicels short: germs downy. Large tree.

barbatum, Mx. (1) (hairy maple. D. w-g. Ap. ♄.) leaves heart-ovate, short-3-lobed, unequally serrate, glaucous beneath and hairy at the nerves: peduncles hairy, staminate ones branching, pistillate ones simple: calyx bearded within: wings of the capsules erect. Small.

saccharinum (sugar maple, rock maple, hard maple. O. r-y. M. ♄.) leaves palmate-5-lobed, at the base subcordate, acuminate, obtusely sinuate, sinuate-toothed, glaucous beneath: peduncles in a nodding corymb. Large tree.

nigrum, Mx. (sweet tree, black maple. H. y. Ap. ♄.) leaves palmate-5-lobed, cordate, with the sinus at the base closed, lobes spreading, somewhat sinuate-toothed, downy beneath: flowers corymbed: capsules turgid, sub-globose. Large tree, affording almost as much sugar as the last.

striatum, Mx. (2) (striped maple, false dogwood, moose wood, O. g. M. ♄.) lower leaves roundish, upper ones 3-cuspidate-acuminate, sharply serrate, glabrous: racemes simple, pendant. Small tree with a greenish-striped bark.

spicatum, Lk. (3) (mountain maple bush, O. y-g. M. ♄.) leaves sub-5-lobed, acute, toothed, pubescent beneath: racemes compound, erect.

negundo (ash-maple, box-elder. P. M. ♄.) leaves pinnate, or ternate, unequally serrate. Flowers dioecious. Large tree.

18—2. ACHILLEA. 49. 55.

millefolium (yarrow, milfoil. O. w. J. 4.) leaves 2-pinnatifid, downy; the divisions linear, toothed, mucronate: stem furrowed.

ptarmica (sneeze-wort. C. can. w. Au. 4.) leaves linear, acuminate, equally and sharply serrate, glabrous. Damp.

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(1) carolinianum, Wr.

(2) pensylvanicum, W,

(3) montanum, W. pensylvanicum, Wm.

21—5. ACNIDA. 53. 29.

cannabina (water hemp. L. T.w-g. Ju. ☺.) leaves lanceolate: capsules smoothish, acute-angled. Damp or wet, both on salt marshes and inland.

tursocarpa (P. w-g. Ju. ☺.) leaves lance-oval: capsules rugose, obtuse-angled. Damp.

13—5. ACONITUM. 26. 61.

uncinatum (monk's hood. P. b. J. 4.) stem flexuose: leaves palmate, 3 to 5-parted; divisions rhomb-lanceolate, gash-toothed: upper lip of the corol lengthened. Cultivated.

napellus (wolf's bane. E. b. J. 4.) leaves shining, 5-parted; the divisions 3-parted by gashed incisions, subdivisions linear: upper lip of the corol lanceolate, ascending, 2-cleft; spur strait, obtuse.

6—1. ACORUS. 2. 13.

calamus (sweet flag, calamus. O. g-y. J. 4.) spike protruding from the side of a sword-form leaf-like scape. Water or wet.

22—1. ACROSTICHUM. 55. 5.

aureum, Mx. (forkfern, southern states. Ju. 4.) frond pinnate; leafets stiped, bases wedge-form, lance-oblong entire, acuminate, the upper ones fruit-bearing. Very large, 4 or 5 feet high.

13—1. ACTAEA. 26. 61.

rubra, W. (1) (baneberry. O. w. M. 4.) petals acute: pedicels of the raceme less than the general peduncle when mature. Berries red. Bw. MS.

alba, Bw. (neclace weed, white beads. O. w. M. 4.) petals truncate: pedicels of the raceme as large as the general peduncle when mature. Berries white. The leaves of both species are decompound. Woods.

22—1. ADIANTUM. 55. 5.

pedatum (maiden hair. O. J. 4.) frond pedate with pinnate branches; leafets halved, upper margin gashed—

(1) brachypetala, Dc. americana, Ph. spicata, Mx.

barren segments toothed, fertile ones entire : stipe capillary, very glabrous. Woods.

13—13. ADONIS. 26. 61.

autumnalis (pheasant's eye. E. P. Au. ☉.) flowers 5 to 8. petalled : fruit sub-cylindric : petals crose, or emarginate.

22—6. AECIDIUM. 58. 1.

1. *Cespitose ; receptacles aggregated in a tuft, making a crust-like spot on leaves.*

cornutum, becoming yellow ; receptacles very long, curved, olive-grey. Appears like saffron coloured spots on the upper sides of leaves of mountain ash, &c.

cancellatum, tuberculate, chesnut-brown : receptacles at length splitting into divisions cohering at the apex. Grows on the under side of withering or dieing pear leaves.

rhamni, cespitose, rose coloured : receptacles elongated, somewhat diverging, at length becoming pale. On the leaves of the rhamnus.

tussilaginis, spots purplish yellow, tufts flat ; receptacles immersed. Occurs on the leaves of the colt's foot, (tussilago farfaro) is hardly prominent above the surface of the leaf.

2. *Simple ; receptacles scattered ; crust, which is distinct, is never conjoined.*

euphorbiae, simple, crowded : receptacles cylindric, pale ; mouth reflexed, yellow with dust. On the leaves of Euphorbia maculata.

anemones, simple, scattered : receptacles cylindric, a little prominent, pale, mostly toothed ; wholly filled with white dust. On the leaves of Anemone nemorosa in the spring.

punctatum, simple, scattered : receptacle sub-immersed : mouth somewhat converging ; dust compact, becoming sooty-yellow. Found sometimes on leaves of Anemone.

22—6. AEGERITA. 58. 1.

candida, crowded, smooth, white. Found in autumn on alders, &c. often on the wood in damp places.

17—10. AESCHYNOMENE. 32. 98.

hispida, W. (false sensitive plant. D. P. y. Ju. ☉.) stem erect; stem and petioles tubercle-hispid: leaves in many pairs; leafets linear, obtuse: stipules membranaceous, half arrow form: racemes simple, few-flowered: loments hispid.

7—1. AESCULUS. 23. 66.

hippocastanum (horse chesnut. E. w. J. ♄.) leaves digitate about in seven divisions: corol 5-petalled, spreading: flowers in a panicled pyramid.

pallida, W. (P. J. ♄.) leaves digitate, in fives, glabrous: corol 4-petalled, claws of the length of the calyx: stamens longer than the corol: firuit spinose.

22—6. AGARICUS. 58. 1.

1. *Lamellae juiceless or becoming dry; not smoke-dusty, nor sooty: stipe annulated.*

procerus, large: pileus fleshy, bossed, scaly, reddish-ash coloured: lamellae very remote, white: stipe bulbous, very long: ring moveable. Var. *squamosus*, pileus convex, and scaly above, lamellae pressed together outwardly from the stipe, and becoming yellow. Var. *excoriatus*, smaller, whitish, scales obsolete. Woods and fields.

squarrosus, cespitose: pileus fleshy; pileus and stipe scaly and scurfy, rusty yellow: lamellae crowded, pale-olive. Often on roots and trunks of trees in autumn.

polymyces, cespitose, heaped together: pileus bossed, hairy-scaled, sooty-yellow: lamellae sub-decurrent, white becoming pale: stipe annulated, conic, olive-ash coloured, solid, elastic. Woods on trunks or the earth, in autumn.

candidus, cespitose: pileus somewhat fleshy, glabrous, cinnamon colour: lamellae sub-decurrent, pale rust coloured, stipe scaly, cylindric, rather slender. On trunks in autumn.

2. *Pileus mostly fleshy: lamellae emarginate, mostly one coloured and at length cinnamon: stipes mostly bulbous, having a veil-like volva dissolved into spider-web-like filaments.*

decolorans, pileus viscid, yellow; lamellea at first bluish-

purple, at length cinnamon : stipe glabrous sub-tuberous, white : veil-like volva rust-colour.

flavidus, cespitose : pileus somewhat fleshy, yellow ; the central part more obscure : lamellae distinct, one-coloured, becoming yellow : stipe soft, thickening downward and becoming sooty yellow. On trunks.

decipiens, growing in groups : pileus fleshy, acutely bossed and membranaceous near the centre, depressed : lamellae broadish, obscurely cinnamon-coloured : stipe long, from white becoming reddish.

3. *Pileus fleshy, entire, convex : lamellae one-coloured, becoming dry : stipe central, destitute of a ring or curtain-like volva.*

(Colour of the pileus brownish or brownish yellow.)

pratensis, tawny-red, hardish : pileus campanulate, either obtusely bossed or flattish, glabrous : lamellae thick, distant, decurrent : stipe short, somewhat slender, tapering downwards. Among grass.

reflexus, growing in groups : rusty yellow : pileus somewhat fleshy, acutely bossed, scaly, reddish yellow : lamellae distinct, light-cinnamon : stipe long, slender, fibrous-scaly, scales reflexed. Woods.

radicatus, pileus fleshy, bossed, viscous, rugose, sooty-purple or tawny : lamellae sub-decurrent, white : stipe very long, having a long fusiform root. Woods.

velutipes, cespitose : pileus somewhat fleshy, repand, glabrous, brown : lamellae ventricose, becoming yellow : stipe tomentose becoming dark liver-brown. Autumn.

(Colour of the pileus shining, red or light yellowish green.)

coccineus, growing in groups : scarlet all over : pileus sub-membranaceous, convex, subviscous : lamellae distinct connected by teeth ; stipe hollow, sub-compressed. Autumn in grass.

conicus, pileus conic, acute, subviscous, light greenish-yellow : lamellae crowded, ascending, becoming yellow : stipe long, yellow. Var. *tristis*, solitary, pileus acutely campanulate, from yellowish-green becoming dark : lamellae free.

russula, large : pileus fleshy, sub-convex, with rose-red, scales : stipe rose-red, solid, short : lamellae unequal, white.

(Colour of the pileus white.)

discoideus, sub-cespitose : pileus fleshy, viscid, flattish, white ; middle part yellow or somewhat rust-colour : lamellae sub-decurrent ; lamellae and stipe middling white.

pulvinatus, pileus fleshy or rather corky, cushion-like, sub-repand, glabrous, white ; middle part pale flesh-coloured : lamellae crowded, decurrent, white : stipe very short, solid, hard. Woods.

4. *Small, tender ; pileus mostly membranaceous, striate, pellucid, convex, permanent : lamellae becoming dry, one-coloured : stipe mostly hollow, elongated, naked.*

galericulatus, cespitose, inodorous : pileus membranaceous, bossed, tawney-lead-colour : lamellae distinct, white : stipe smooth, rooting, strigose-haired at the base. On trunks in autumn.

hypnorum, small, very tender, rusty-yellow all over : pileus bell-form, furrowed : lamellae distant, broadish : stipe middling.

clavus, growing in groups, extremely minute : pileus somewhat fleshy, papillose, orange or red : lamellae broadish : stipe and lamellae white.

lacteus, white all over : pileus campanulate, obtuse, striate : lamellae distinct, ascending : stipe rather long, hirsute at the base.

corticola, minute, scattered, tawney : pileus hemispherical, sub-plicate : lamellae uncinate, linked together, white : stipe shortish, incurved. In crevices of bark, of wood, &c.

3. *Pileus membranaceous, fugaceous, or somewhat fleshy, at length torn : lamellae at length becoming a black juice, or dusty smut : stipe white, naked or annulated.*

(Membranaceous, almost wholly becoming a black juice : lamellae very thin.)

comatus, growing in groups : pileus conic, scaly, white ; scales yellow : lamellae crowded or heaped together, at first white-purple ; stipes very long, ring moveable.

cinereus, pileus conic, furrowed, sub-tomentose, cinereous ; smooth and bluish-purple at the apex, the margin at length torn and inflexed : lamellae linear, punc-

tate, somewhat zigzag : stipe long, scaly. Gardens and woods.

disseminatus, crowded or heaped together, small, fugaceous : pileus somewhat oval, striate plicate : at first somewhat reddish-yellow, then grey : lamellae distinct, in some measure linked together, light sooty-yellow : stipe mostly incurved.

domesticus, pileus campanulate, obtuse, undulate, sulcate, sooty ; scales bran-like : lamellae crowded, linear ; at first bluish-red, then brown becoming black. On damp walls, &c. about houses.

narcoticus, pileus convex, cinereous : plicate with distinct, bifid, dense folds—vertex entire : stipe subulate : lamellae more rare or distant, entire and halved, alternate. It diffuses a very narcotic odour.

(Somewhat fleshy : lamellae at length becoming black smut or soot-like, in nebulous or sooty spots.)

semiglobatus, pileus fleshy, hemispherical, sub-viscose, becoming yellow : lamellae very broad, horizontal, becoming dark-cloudy : stipe long, annulated.

papilionaceus, pileus somewhat fleshy, campanulate, sooty (becoming almost black :) lamellae all attached, dark-cinereous and various, white at the margin : stipe furrowed at the apex, dark-pulverulent.

6. *Pileus fleshy or sub-membranaceous, smooth, permanent ; lamellae somewhat nebulous, at length dark-stained or one-coloured sub-ramose ; finally becoming more obscure and dark with seminal dust : stipe annulated or naked.*

(Pileus fleshy ; stipe annulated.)

edulis, in groups, large ; pileus white, smooth or obsoletely scaly : lamellae red : stipe long, bulbous : the ring-volva manifest. This is an eatable mushroom ; but not the most common.

campestris, pileus fleshy, flattish, having dark-yellow scales : lamellae becoming yellowish-red : stipe short : the ring-volva rather incomplete. This is the common eatable mushroom.

precox, somewhat in groups : pileus fleshy, hemispheric, tan-yellow, at first white : lamellae flat, thin, watery-soot-yellow : stipe solid, somewhat tenaceous ; ring-volva fugacious.

latericius, cespitose, large: pileus fleshy, sub-viscous, brick-colour; margin yellow: lamellae distinct, somewhat nebulose, becoming greenish-cinereous: stipe long, sub-solid; ring fugaceous becoming black.

fasciculáris, small, cespitose: pileus somewhat fleshy, bossed, reddish-yellow: lamellae nebulose becoming green: stipe hollow, slender; the curtain-like volva becoming black.

(Pileus mostly fragile, membranaceous, subaquose: stipe naked.)

denticulatus, slender: pileus hemispheric, livid purple: lamellae toothed at the margin: stipe hollow, sooty-yellow.

gracilis, wholly fragile: pileus membranaceous, campanulate, acute, very soft, lamellae linear; becoming dark-cinereous: stipe very long, glabrous. Pileus varies to flesh-colour, dark reddish-yellow, white, &c.

7. *Pileus fleshy, mostly depressed: lamellae becoming milky.*

piperatus, pileus funnel-form, expanded at the margin, glabrous, white: lamellae crowded, forked, white becoming pale.

subdulcis, pileus funnel-form, becoming reddish-yellow: lamellae pale flesh-colour: juice sweetish.

8. *Pileus fleshy, mostly depressed: lamellae of equal length, white, becoming dry: stipe naked, white.*

rosaceus, pileus convex, flat, smoothish, rose-coloured or pale red: lamellae and stipe white.

9. *Pileus entire, membranaceous, mostly striate, funnel-form or umbilicate: lamellae of equal length, not becoming milky, mostly decurrent; stipe naked, central. Small.*

rotula, cespitose, white: pileus deeply furrowed: lamellae united in a tube surrounding the stipe: stipe becoming black.

androsaceus, in groups, permanent: pileus flattish, subplicate, white, obsoletely bossed: lamellae simple, all attached: stipe becoming dark liver-brown.

epiphyllus, in groups, minute, white; pileus membrana-

ceous, convex, at length sub-umbilicate : lamellae few, ramose : stipe becoming black.

campanella, in groups ; pileus hemispheric, umbilicate, striate, rust-coloured : lamellae decurrent : stipe hollow, chesnut-brown.

10. *Pileus fleshy, depressed, oblique, entire or halved : stipe naked, not attached to the centre of the pileus, lateral, or none.*

(Pileus entire ; stipe not in the centre.)

inconstans, largish : pileus sub-tenaceous, depressed, entire or halved, lobed, zigzag, somewhat reddish-yellow : lamellae sub-ramose, crisped at the base, white and somewhat shining.

(Pileus halved : stipe marginal : lamellae decurrent, diverging from the side of the pileus.

flabelliformis, sub-stiped : pileus flattish, torn in various forms, margin crenate : lamellae 3-cleft, pale, sub-crenate : stipe short or none.

spathulatus, erect spathe-form : pileus pale tan-colour ; the middle part spongy and scaly : stipe perpendicular, channelled.

mollis, in groups, soft : pileus glabrous, gibbose, pale : lamellae watery-cinnamon colour.

styptacus, cespitose, pileus sub-coriaceous, emarginate, tan-colour, sub-farinaceous : lamellae very thin, veiny, connected, cinnamon colour : stipe compressed, ascending, dilated at the apex.

mitis, in groups, all over white : pileus somewhat fleshy, glabrous, smooth : lamellae simple : stipe horizontal, dilated at the apex.

(Pileus halved, somewhat corky.)

alneus, coriaceous, tomentose, whitish-grey : lamellae split, revolute at the margin. Becoming purple-cinereous.

abietinus, sub-cespitose, dark sooty yellow : pileus glabrous, smooth : lamellae glaucous : branching in the young state.

coriaceus, coriaceous, marked with zones, tomentose, pale : lamellae sub-ramose, pale-woody.

sepiarius, coriaceous, hard, flat both sides ; pileus stri-

gose-tomentose, chesnut-brown : lamellae crowded, ramose, becoming yellow.

6—1. AGAVE. 10. 17.

virginica, (agave. P. y-g. S. 4.) stemless : leaves with cartilaginous serratures, scape very simple.

11—12. AGRIMONIA. 85. 92.

eupatoria (agrimony. O. y. Ju. 4.) cauline leaves interruptedly pinnate, the terminal one petioled : leafets obovate, gash-toothed, almost glabrous : flowers sub-sessile ; petals twice as long as the calyx : fruit hispid.

parviflora, A. (dotted agrimony. P. C. y. Ju. 4.) cauline leaves pinnate ; leafets mostly lanceolate, serrate : terminal ones sessile, petals one and a half the length of the calyx.

10—5. AGROSTEMMA. 22. 82.

githago, (cockle. O. r. J. ☺) hirsute : calyx longer than the corol : petals entire.

coronaria, (rose campion. E. Au. ♂.) tomentose : leaves lance-ovate : petals emarginate.

3—2. AGROSTIS. 4. 10.

1. *Awned.*

spicaventi, W. (bent-grass P. J. ☺.) a very long straight stiff beard, or awn, upon the exterior petal : panicle spreading. Naturalized.

tenuiflora, W. (P. Au. 4.) panicles very simple with appressed branches : corol awned, and the awn longer than the flower.

diffusa, M. (P. C. Au. 4.) branches diffused and erect : leaves lanceolate, sub-perforate : corol glumes sub-pubescent at the base : one valve with a short strait awn.

sericea, M. (1) (C. P. J. 4.) leaves terete-filiform very long : panicle capillary, very slender : corol small, and the calyx but one third as long : awns strait naked.

filiformis, M. (P. S. 4.) panicle contracted, filiform,

(1) Stipa sericea, Mx.

becoming purple ; peduncles and pedicels scabrous : calyx 2-valved, equal, 1-flowered : corol equalling the calyx.

stricta W. (New England. C. J. 4.) panicles elongated, stiff and strait : corol smaller than the calyx ; a twisted awn from the base of a petal, longer than the flower.

setosa, M. (1) (P. S. 4) culm erect, sending out shoots from the base : stipules none : panicle contracted, cylindric with a pubescent rachis : calyx awned : corol anwlesss.

2. *Without awns.*

sobolifera, M. (P. C. S. 4.) culm erect sending off shoots from the base : leaves 5-nerved : stipules none : sheathes gaping, glabrous : calyx valves acuminate, carinate, panicle contracted, filiform.

juncea, Mx. (C. P. Ju. 4.) panicle oblong-pyramidal : flowers awnless ; the extreme valves half as large : leaves stifly erect, rigid with convolute bristles.

compressa, Torry. (D. Oc. 4.) very glabrous : culm erect, compressed, simple : panicle oblong, subcontracted, with capillary branches : calyx equal, shorter than the corol ; valves acute : corol equal, obtusish, glabrous at the base. See Torrey's Catalogue, p. 91.

involuta, M. (P. C. Oc. 4.) leaves long, filiform at the apex and recurved, rough, upper one strait : stipules obsolete : sheath striate, glabrous, hairy at the orifice : panicle concealed, contracted : valves of the calyx with scabrous keels, half as large as the corol.

vulgaris, S. (redtop. O. Ju. 4.) panicle spreading : branches divergent capillary : calyx equal ; petal within, half as long, retuse.

clandestina, Sl. (2) (P. S. 4.) leaves glaucous, very long, rigid, with rough margins : stipule very small or none ; mouth of the sheath hairy : panicle concealed, often sooty, and spike-form : corol twice as long as the calyx, spotted.

virginica, M. (3) (P C. S.) culm geniculate and branching at the base : leaves hairy at the base ; stipule 0 ; mouth of the sheath hairy around the culm : panicles lateral and terminal, spike-form, lower ones concealed : seed transparent.

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(1) racemosa, Mx. glomeratus, W. (2) aspera, Mx.
(3) Crypsis virginica, N.

glauca, M. (P. New-England. J. 4.) leaves glaucous, keel white : stipule white split : panicle terminal crouded : lower branches whorled in fives. Probably an Arundo.

alba W. (white top. O. Ju. 4.) panicle lax : culm rooting at the lower joints : calyx valves equal, awnless, keels rough.

mexicana M (1) (P. J. 4.) panicle oblong heaped together : calyx and corol acuminate, sub-equal, awnless.

lateriflora Mx (C. P. J. 4.) panicles lateral and terminal compact : flowers awnless, valves very acute, interior greater, bearded at the base : leaves short and flat.

pungens Sr. (C. J. 4.) panicle contracted, spike-form : leaves involute rigid, pungent, upper ones obliquely opposite : culm ramose.

3—2. AIRA. 4. 10.

melicoides Mx. (2) (hair-grass. P. C. Ju. 4.) panicle small compact sub-racemed : glumes, the partial ones rather larger than the general, linear-lanceolate awnless : corols villose at the base ; there is but the rudiment of a third flower : leaves flat, glabrous : culm erect.

pumila Ph. (dwarf hair-grass. P. J. 4.) panicle few-flowered, level-top; pedicels short : corol awnless, obtuse, twice as long as calyx : valves membranaceous at the margin : leaves flat, glabrous : culm erect, of the length of the leaves. About one inch high.

obtusata, Mx. (3) P. C. J.) panicle compressed into an oblong raceme of dense flowers : corol awnless, compressed at top : one valve of the glume narrow-linear acute, another broad obovate round-obtuse : leaves flat ; culm erect, slender.

triflora, E. (D. Ap. 4.) panicle slender, erect : valves of the calyx acute : upper spikelets 3-flowered : leaves short, flat. About 14 inches.

cespitosa, W. (P. New-England. J. 4.) panicle spreading : petals awned, villose at the base , awns strait and short. A variety has sub-bristle-form leaves.

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(1) lateriflora, Mx. (2) triflorum, E. Poa melicoides, N, (3) truncata, M. pensylvanica, Sl. Holcus striatus, L.

flexuosa W. (W. P. C. J. 4.) panicle spreading trichotomous: peduncle flexuous: awn geniculate: leaves bristle-form: culm nakedish.

mollis, M. (P. C. M. 4.) leaves with soft hairs: stipule short, retuse, many-cleft; sheaths pubescent: panicle spreading, sub-simple: calyx with one valve broad, 3-nerved; the other lanceolate, acute.

pallens, M. (1) (P. C. J. & S. 4.) leaves lance-linear glabrous, with glabrous joints: stipules retuse ciliate: panicle contracted, nodding: corol with 2 punctate valves; awn below the apex contorted.

precox, W. (C. P. M. ⊙.) leaves bristle-form: sheath angular: flowers in panicled-spikes: florets awned at the base.

22—5. ALECTORIA. 57. 2.

jubata (negro-hair. T.) frond terete, glossy, livid-brown and black, very branching; branches filiform, pendulous, compressed at the axils: receptacles of the same colour, at length convex, entire at the margin. Found on fire-wood brought to market in Troy and Albany. Var. *chalybeiformis*, frond and its branches more simple, zigzag, twisted, complicate, somewhat rigid, lead-brown, decumbent.

usneoides, frond flat-compressed, striate longitudinally, very branching, pale-white: branches fibrous: receptacles fla., of the same colour, entire. On trees.

6—1. ALETRIS. 10. 16.

farinosa (2) (false aloe, unicorn-root, false stargrass. Y. y. 4.) stemless: leaves linear-lanceolate, withering at the tips: scape with alternate pedicelled, mostly farinaceous, flowers. This plant grows plentifully in Brimfield (Mass.) Here the inhabitants use the root as a tonic, which at the same time serves as a moderate cathartic. The root is intensely bitter. Meadows.

+ *aurea*, Mx. (yellow star-root. P. D. y. Ju. 4.) flowers sub-sessile, short-tubular, sub-campanulate; fertile corols rugose, very scabrous: leaves lance-ensiform, acute.

6—13. ALISMA. 5. 13.

+ *plantago* (3) (water-plantain. O. w. Ju. 4.) leaves ovate

(1) Avena palustris, Mx. (2) alba, Mx. (3) trivialis, Ph.

or heart-ovate, obtuse or abruptly acuminate, 5 to 9-nerved : fruit 3-cornered : flowers whorled. Var. *parviflora*, flowers smaller, leaves about 5 or 7-nerved. Difference scarcely sufficient for a variety. Wet and water.

subulata, W. (P. D. Au. ☺.) leaves linear-subulate.

6—1. ALLIUM. 9. 16.

porrum (leek. E. Ju. 4.) stem flat-leaved, umbelliferous : stamens tricuspidate : leaves sheathing at the base.

sativum (garlic. E. Ju. 4.) stem flat-leaved, bulb-bearing ; bulb compound : stamens tricuspidate.

fragrans (false snowdrop. E. w. M. 4.) scape terete : leaves linear, keeled, obtuse, contorted : peduncles naked : stamens flat.

senescens (false narcissus. E. 4.) scape naked, 2-edged : leaves linear, convex under side, smooth : umbel round : stamens subulate.

vineale (field garlic. T. C. P. p. J. 4.) stem terete-leaved, bulb-bearing : stamens tricuspidate. River alluvion.

oleraceum (striped onion. E. 4.) stem terete-leaved, bulb-bearing : leaves scabrous, semi-terete, sulcate beneath : stamens simple.

ascalonicum (shallot. E. Ju. 4.) scape naked, terete : leaves subulate : umbels globose : stamens tricuspidate.

triflorum (mountain leek. H. M. 4.) scape naked, terete, shorter than the leaves ; leaves lanceolate nerved, caducous : umbels few-flowered.

canadense (meadow garlic. P. Y. T. r. M. C. 4.) scape naked terete : leaves linear : little heads bulb-bearing.

cepa (garden onion. E. Ju. 4.) scape naked, swelling towards the base, longer than the terete leaves.

tricoccum (three-seed leek. P. Ju. 4.) scape naked, semi-terete : leaves lance-oblong, flat, glabrous : umbel globular.

fistulosum (welch onion. E. 4.) scape naked, equalling the terete ventricose leaves.

schoenoprasum (cives. E. Ju. 4.) scape naked, equalling the leaves which are terete-filiform.

20—4. ALNUS, W. (1) 50. 99.

incana, W. (P. ♄.) leaves oblong, acute, pubescent beneath; axils of the veins naked: stipules lanceolate.

undulata, W. (waved alder. Muh. says it grows in N. England. ♄.) leaves oblong, acute, rounded at the base: petioles and veins hairy beneath: axils of the veins naked: stipules ovate-oblong.

serrulata, (alder. O. r-g. Ap. ♄.) leaves obovate, acuminate; veins and their axils hairy beneath: stipules oval, obtuse.

glutinosa (Canada. Ap. ♄.) leaves round-wedge-form, obtuse, glutinous: axils of the veins downy.

3—2. ALOPECURUS. 4. 10.

pratensis (meadow-grass, foxtail. P. C. J. 4.) culm erect: glume villose; corol beardless.

geniculatus M. (2) (floating foxtail. W. C. T. Ju. 4.) culm spiked and geniculate: corol beardless.

16—13. ALTHAEA. 37. 74.

officinalis (marsh mallows. E. 4.) leaves downy, oblong-ovate: obsoletely 3-lobed, toothed.

rosea (hollyhock. E. ♂.) stem erect: leaves rough, heart-form, 5 to 7-angled, crenate.

ficifolia (fig-hollyhock. E. ♂.) leaves 7-lobed, subpalmate, obtuse.

15—1. ALYSSUM. 39. 63.

saxatile (madwort, basket of gold. E. ♄.) stem woody, panicled: leaves lanceolate, very soft spreading.

hyperboreum, W. (Canada.) stem herbaceous: leaves hoary, toothed: stamens 4, 2-forked.

sativum (P. y. J. ☺.) stem erect: leaves lanceolate, toothed, clasping, alternate: flowers corymbed.

incanum (E. 4. & ♂.) stem erect: leaves lanceolate, entire, hoary: flowers corymbed, petals 2-cleft.

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(1) Betula, L. (2) aristulatus, Mx.

22—6. AMANITA. 58. 1.

1. *Stipe surrounded with a distinct volva at the base, naked at the top.*

livida, pileus bossed, flattish, striate, lead-livid; lamella white; stipe long, white. Margins of woods.
spadicea, pileus sub-campanulate, bossed, striate, fragile, chesnut-brown: lamella white: stipe scaly, sooty-yellow.
pusilla, pileus hemispheric, bossed: lamella ventricose, rose-colour: stipe shortish, white. Volva often 4-cleft. In gardens, &c. autumn.

2. *Stipe with a manifest volva at the base, and a ring at the top.*

bulbosa, wholly white: pileus convex: stipe elongated, attenuated, bulbous. Woods in autumn. Stipe about 3 inches long, $\frac{1}{4}$ thick.
citrina, pileus glabrous, citron-yellow: lamella white; stipe white.

3. *Stipe with a ring at the top, volva at the base obliterated; warts on the pileus small, equal.*

umbrina, pileus flattish, from sooty-yellow becoming chesnut-brown: warts, lamella and stipe white. In beach wood.
aspera, pileus fleshy, compact, bossed, dark reddish-yellow, rough with acute warts: lamella crowded, white: stipe long, sub-bulbous, having fibres.

20—5. AMARANTHUS. 54. 30.

albus, W. (white coxcomb. C. P. g-w. Ju. ☺.) glomerules axillary, triandrous: leaves obovate retuse: stem 4-cornered simple. Common garden weed.
graecizans W. (P. Au. ☺.) glomerules axillary, triandrous: flowers 3-cleft: leaves obovate emarginate: stem terretish branching.
melancholicus (love-lies-bleeding. E. r. ☺.) glomerules axillary peduncled roundish: leaves ovate-lanceolate coloured.
tricolor (three-coloured coxcomb. E. Ju. ☺.) glomerules sessile: leaves oblong-lanceolate coloured.
lividus W. (lead amaranth. E. Ju. ☺.) glomerules trian-

drous sub-spiked roundish : leaves eliptic retuse : stem erect. Probably introduced.

oleraceus (pot amaranth. Y. W. T. C. Ju. ☉.) glomerules axillary branching : leaves wrinkled, oblong, very obtuse, emarginate. Sometimes the flowers are pentandrous.

hybridus, W. (P. Y. C. Ju. ☉.) racemes pentandrous doubly-compound, heaped together, erect : leaves ovate-lanceolate.

paniculatus, W. (P. Ju. ☉.) racemes pentandrous triply-compound : branches spreading pubescent : leaves ovate lanceolate.

retroflexus, W. (rough amaranth. O. Au. ☉.) racemes pentandrous, triply-compound, compact, erect : branches pubescent : leaves ovate undulate.

hypochondriacus, W. (spleen amaranth. P. Au. ☉.) racemes pentandrous, compound compact, erect : leaves oblong-lanceolate, mucronate. Leaves red. (False prince's feather.) Cultivated.

spinosus, W. (P. Au. ☉.) racemes pentandrous, terminal, compound ; axils spinose.

pumilus, R. (dwarf amaranth. C. g.) glomerules axillary : flowers pentandrous : calyx 5-leaved, concave : leaves ovate, obtuse, smooth and fleshy, sometimes retuse. Scarcely twelve inches high.

6—1. AMARYLLIS. 9. 17.

atamasco (atamasco lily. P. w. & r. J. 4.) spathe 2-cleft, acute : flower pedicelled : corol bell-form subequal, erect : stamens declined.

formosissima (jacobea. E. 4.) spathe 1-flowered : corol ringent-like : petals declined.

20—5. AMBROSIA. 54. 98.

trifida, W. (P. V. N. C. T. g-y. S. ☉.) bristly, rough : leaves 3-lobed serrate, lobes oval lanceolate acuminate : fruit 6 spined beneath the apex. From 5 to 8 feet high.

integrifolia, W. (P. Ju. ☉.) leaves ovate sessile acuminate serrate, bristly on both sides, ciliate at the base : racemes terminal, sometimes ternate. Flowers very inconspicuous.

elatior, W. (hogweed. O. S. ☉. leaves doubly-pinnatifid smoothish : petioles long ciliated : racemes terminal, panicled : stem wand-like.

artemisifolia, W. (C. P. S. ☺.) leaves doubly-pinnatifid, hoary beneath, at the summit pinnatifid: racemes terminal in threes: branches level-topped.

paniculata, W. (P. J. ☺.) leaves glabrous doubly pinnatifid, pinnatifid at the summit: racemes terminal solitary: branches level topped.

heterophylla, W. (P. S. ☺) cauline leaves pinnatifid subtoothed petioled; on the upper branches lanceolate sessile: petioles long ciliate: racemes terminal solitary: stem panicled.

4—1. AMMANNIA. 17. 91.

humilis, (tooth-cup. P. p. Au.) procumbent: leaves lanceolate, narrower downwards: flowers all solitary. Wet.

ramosior, W. (D. p. Au. ☺.) stem erect: leaves lance-linear, base dilated, half-clasping: lower flowers whorled.

5—2. AMMI. 45. 60.

capillaceum, M. (1) (bishop-weed. C. Y. w. Au.) stem ramose: leaves all capillary, many-cleft: umbel with short, many-parted involucres: seed glabrous. Pursh says it grows in sandy fields. But at N. Haven and N. York it grows in salt-marshes.

17—10. AMORPHA. 45, 60.

fruticosa (false indigo. P. p. Ju. ♄.) calyx with 4-teeth acute, and one accuminate, pedicelled, nakedish: legumes few-seeded: spikes elongated, aggregate: leaves petioled.

glabra, D. (D. b-w.) leaves glabrous.

5—1. AMPELOPSIS. Mx. 46. 72.

quinquefolia, M. (2) (false grape, creeper, O. w. Ju. ♄.) leaves in fives, toothed: stem rooting, climbing.

17—10. AMPHICARPA. N. (3) 32. 93.

monoica (wild bean-vine. O. b. & w. Ju. ☺.) stem slender,

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(1) majus, Wr. Sprengal says, in a letter to Dr. John Torry, that this is a Sium.

(2) Hedera quinquefolia, L. Cissus hederacea, P. Vitis quin. Lk.

(3) Glycine, L.

twining, hairy backwards: leaves ternate, ovate, nearly smooth; stipules ovate, striate. Var. *comosa*, has narrow, hirsute leaves.

12—1. AMYGDALUS. 36. 92.

persica (peach E. r. M. ♄) serratures of the leaves all acute, flowers sessile, solitary.

nana (flowering almond. E. ♄.) leaves ovate, tapering to the base, sharply serrate.

5—1. ANAGALLIS. 20. 34.

† *arvensis* (red chickweed, scarlet pimpernell. Y. T. C. P. r. J. ☉.) stem spreading naked, procumbent: petals entire flat, with hairs at the margin.

5—1. ANCHUSA. 41. 42.

† *officinalis* (buglos. E. y. 2.) leaves lanceolate: spikes imbricate, one-sided: bracts ovate.

10—1. ANDROMEDA. 18. 51.

hypnoides, W. (moss bush. Whitehills. Au. ♄.) leaves imbricate subulate glabrous: peduncles solitary terminal 1-flowered: corol nodding globose-bellform. Small, creeping.

† *mariana* W. (P. C. J. ♄.) leaves oval entire sub-acute at both ends, glabrous leathery paler beneath: flower-bearing branches almost leafless: peduncles fascicled: corol ovate-cylindric: calyx leafy: anthers beardless: capsule ovate and resembling the form of a pine-apple. One variety has narrow lanceolate leaves.

polifolia, Mx. (H. & T. r-w. M. ♄.) leaves linear-lanceolate convex revolute, white-glaucous beneath and hoary-glaucous above: flowers aggregate terminal: corol sub-globose: anthers bearded towards the top. One foot high. Wet.

arborea, W. (sorrel tree. P. w. Ju. ♄) branches terete: leaves oblong acuminate mucronate-serrate glabrous: panicles terminal many-spiked: corol ovate-cylindric pubescent: anthers linear beardless. About 40 feet high, with acid leaves.

† *paniculata*, M. (1) (white bush. O. w. J. ♄.) pubescent:

(1) Lyonia paniculata, N.

leaves obovate-lanceolate acute sub-entire: flower-bearing branches terminal panicled nakedish: glomerules peduncled: corol sub-globular pubescent: anthers obtuse beardless. A shrub running into several varieties —flowers small.

racemosa, W. (P. C. w. J. ♄.) leaves oval-lanceolate acute serrulate membranaceous glabrous: spikes terminal, one-way, elongated, simple or branched: bracts linear acute: corol cylindric: calyx acute with bracts at the base: anthers doubly 4-bearded at the apex. A middling sized shrub, odoriferous. Wet.

calyculata, W. (leather leaf. T. Y. C. P. W. N.w. M. ♄.) leaves lanceolate-oblong, obsoletely serrulate, sub-revolute, with scaly dots, rust-coloured beneath: racemes terminal, leafy, turned one-way: pedicells short, solitary, axillary: calyx acute, 2-bracted at the base; bracts broad-ovate, acuminate: corol oblong-cylindric. Wet.

3—2. ANDROPOGON. 4. 10.

nutans, (1) (beard-grass, Y. W. P. D. N. V. T. Au. ♃.) panicles branching compact nodding: flowers in pairs awned: calyx bristly: perfect flowers sessile, staminate pedicelled caducous. Dry.

macrourus, Mx. (2) (Indian grass, D. P. S. ♃.) sheaths villose at the margin: panicles lateral with many fascicular spikes; flowers monandrous, beard 4 or 5-fold of the length of the glume; anterior valves glabrous.

dissitiflorus, Mx. (3) (P. S. ♃.) sheaths glabrous; culm erect: spikes lateral distant: flowers monandrous; awns long strait; interior valves glabrous.

purpurascens, W. (4) (O. Au. ♃.) spikes simple peduncled, double, close-panicled; flowers double, the perfect is sessile lanceolate bearded, the neutral is pedicelled bearded; rachis ciliate.

furcatus, W. (forked spike. O. Au. ♃.) spikes digitate, partly in fours, flowers double; the perfect ones sessile awned, the staminate ones beardless pedicelled: rachis hairy.

virginicus (broom-grass. C. P. S. ♃.) spikes in pairs, lateral, rachis wooly: florets in pairs, one pedicelled decaying, the other perfect: calyx of the perfect flower

(1) avenaceus, Mx. (2) Cinna glomerata, Wr.
(3) Cinna lateralis, Wr. (4) Scoparium, Mx.

2-valved, valves acute, longer than the corol, villose at the base : corol 2-valved, one of them awned at the apex.

13—13. ANEMONE. 26. 61.

hortensis (garden anemone. E.) radical leaves digitate, divisions 3-cleft ; cauline ones ternate, lanceolate, connate, sub-divided : seed woolly.

+*virginiana* (wind flower. O. g-w. Ju. 2.) stem dichotomous : leaves in threes, ternate. upper ones opposite, leafets gash-lobate and serrate acute : peduncles solitary, 1-flowered elongated : seed oblong, woolly, mucronate, in heads.

aconitifolia, Mx. (1) (P. C. T w. J. 2.) stem dichotomous : radical leaves palmate ; cauline leaves sessile clasping 3-cleft, the lower ones ternate, with the lobes acute-lanceolate gash-serrate : peduncles solitary 1-flowered : seed in globose heads naked subulate-beaked. Flowers large.

+*dichotoma*, (2) (Can. T. w-r. M. 2.) stem dichotomus : leaves all cauline, opposite clasping 3-cleft, lobes wedge-lanceolate with the upper ones gash-serrate : peduncles solitary 1-flowered : seed in a globose head naked recurved-mucronate.

+*nemorosa* (low anemone. O. r-w. M. 2.) stem 1-flowered : cauline leaves in threes, ternate, leafets wedge-form, gash-lobed, toothed acute : corol 5-6-petalled : seeds ovate, with a short style, hooked. A variety, *quinquefolia*, has lateral leaves deeply 2-cleft.

lancifolia (P. w. M. 2.) stem 1-flowered : leaves cauline in threes, ternate : leafets lanceolate crenate-toothed : corol 5-petalled : seeds ovate with a short style hooked.

+*thalictroides*, (3) (rue anemone. O. w. M. 2.) umbels involucred : radical leaves twice ternate, leafets subcordate 3-toothed : involucre 6-leaved, leafets petioled uniform : umbel few flowered : seed naked striate : root tuberous. A variety, *uniflora*, has a 1-flowered involucre.

Anemone. See Hepatica.

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(1) pensylvanica, L. (2) irregularis, Lk. (3) Thalictrum anemonoides Mx.

5—2. ANETHUM. 45. 60.

graveolens (dill. E.) fruit compressed : plant annual.
foeniculum (fennel. E.) fruit ovate : plant perenial.

5—2. ANGELICA. 45. 60.

archangelica (archangel. E. ♄.) the odd terminal leafet lobed.
atropurpurea (angelica. O. J. 4.) leaves compound, leafets oblong sublobate serrate sub-sessile, the last pair united, the terminal petioled. 3 to 6 feet high, root fragrant. Meadows.
triquinata, Mx. (1) (O. w. J. 4) petiole 3-parted, partitions pinnate, 5-leaved ; leafets gash-toothed ; the odd terminal one sessile rhombic, lateral ones decursive. Dry, woods. Alluvian.
lucida (nondo. w. J. 4.) leafets equal, ovate gash-serrate.

22—2. ANOECTANGIUM. 56. 4.

filiforme, Mx. stem slender-filiform : leaves closely imbricate, oval, denticulate in a similar-coloured point : capsule ciliate at the apex : lid sub-conic : calyptre sub-villose. On rocks.

18—2. ANTHEMIS. 49 55.

nobilis (chamomile. E. w. Au. 4.) leaves 2-pinnate ; leafets 3-parted linear-subulate sub-villose : stem branching at the base. Gives out a fragrant odour.
arvensis (C. T. w. Ju. ♄.) receptacle conic, chaff lanceolate : seed crown-margined : leaves 2-pinnate subdivided lanceolate linear.
cotula (mayweed. O. w. J. ☺.) receptacle conic, chaff-bristly : seed naked : leaves 2-pinnate, leafets subulate 3-parted.

22—3. ANTHOCEROS 57. 3.

levis (wax liverwort) frond flat, undivided, scarcely undulated at the margin. On the earth in damp shaded situations.
punctatus, frond sinuate, undivided, crisped at the margin. On the earth where moist and shaded.

(1) Ferrula canadens is, L.

carolinianus, Mx. fronds with short roundish lobes, margin sub-entire, scarcely punctured above; the horn-form capsule about half an inch in length.

3—2. ANTHOPOGON. N. 4. 10.

lepturoides, N. (false beard-grass. D. 4.) stem decumbent at the base, ascending above and erect: leaves short, lance ovate, acute, smooth, flat, striate: sheaths bearded at the summit; stipule obsolete.

2—2. ANTHOXANTHUM. 4. 10.

odoratum (sweet vernal grass. O. M. 4.) spike oblong-ovate; florets sub-peduncled, longer than the awn. An American variety, *altissimum*, is larger and of a darker green. Ives.

14—2. ANTIRRHINUM. 40. 40.

elatine, W. (creeping snap-dragon. P. T. y. Ju. ☺.) procumbent pilose: leaves alternate, hastate entire: peduncles solitary, very long.

triornithophorum (three-birds. E.) leaves whorled, lanceolate 3-nerved: stem decumbent: raceme terminal, few-flowered, flowers large, peduncled.

linaria (snap-dragon. E. y. Ju. 4.) erect glabrous: leaves scattered lanceolate-linear, crowded together; spikes terminal, dense-flowered: calyx glabrous. shorter than the spur. Flowers large—(toad-flax.) Naturalized.

canadense, W. (flax snap dragon. C. Y. T. P. w-b. J. 4.) rising in a curve, glabrous, very simple: leaves scattered irregularly, erect narrow linear obtuse remote: flowers racemed: scions procumbent. Flowers small.

Anychia, see Queria.

18—1. APARGIA. 49. 53.

autumnalis, W. (1) (false hawkweed. Boston. y. J. 4.) scape branching scaly; leaves lanceolate, runcinate-pinnatifid, smoothish. Naturalized. Bw.

Apios, see Glycine.

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(1) Leontodon autumnale, L. Hedypnois autumnale, S.

5—2. APIUM. 45. 60.

petroselinum (parsley. E. Ju. ♁.) cauline leaves linear: involucres minute.

graveolens (celery. E. Ju. ♁.) stem channelled: cauline leaves wedge-form.

5—2. APOCYNUM. 30. 47.

androsaemifolium (dog-bane. O. r-w. J. 4.) leaves ovate, glabrous: cymes lateral and terminal: tube of the corol longer than the calyx: limb spreading.

cannabinum, Mx. (1) (Indian hemp. O. g-y. Ju. 4.) leaves oblong-oval, whitish-downy beneath: panicle pubescent: tube of the corol about equal to the calyx, limb erect.

hypericifolium, W. (john's dogbane. C. P. w. Ju. 4.) stem erectish: leaves oblong, heart-form, glabrous: cymes shorter than the leaves. Flowers very small; the plant low and smooth.

13—5. AQUILEGIA. 26. 61.

vulgaris (garden columbine. E. J. 4.) nectaries incurved-horns: leafy stem and leaves glabrous: leaves decompound. Nectaries multiplied by culture.

canadensis (wild columbine. O. r. & y. Ap. 4.) horns strait: stamens exsert: leaves decompound. Growing frequently in crevices of rocks.

15—2. ARABIS. 39. 63.

rhomboidea, P. (2) (spring cress. P. T. w. M. 4.) leaves glabrous rhomboid, with obsolete spreading teeth; lower leaves with long petioles: root tuberous. Damp.

thaliana, W. (mousear cress. W. P. T. C. w. Ap. ☺.) radical leaves oblong, petioled; cauline leaves lanceolate, sessile: stem erect, rough-haired at the base: petals twice as long as the calyx.

reptans, W. (P. C. J. 4.) leaves sub-rounded, entire, rough-haired: shoots creeping.

lyrata, W. (P. C. T. Can. w. Ap. ☺.) leaves glabrous, radical ones lyrate, cauline ones linear.

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(1) pubescens, Br. (2) bulbosa, M.

hispida. A. (1) (P. w. M. 4.) leaves toothed, obtuse, hispid, radical ones sub-lyrate: stem hispid: petals erect.

hastata (2) (C. T. Great Barrington. w. M.) leaves lanceolate, narrowed at the base, hastate, sessile, very glabrous: peduncles glabrous, erect; siliques pendant, falcate, very narrow. Torrey.

falcata. Mx. (3) (O. w. 4.) leaves lanceolate, narrowed at both ends, remotely toothed, hastate-sessile: silique pendant, 2-edged, falcate, peduncles hairy.

17—10. ARACHIS. 32. 93.

hypogaea (pea-nut, false ground-nut. E. ☉.) stem pilose, procumbent: leaves pinnate, abrupt: flowers axillary. Peduncles become elongated, and deposit the fruit under ground to ripen.

5—5. ARALIA. 46. 59.

†*spinosa.* W. (shot bush, angelica tree. P. y-w. Au. ♄.) woody: stem and leaves thorny, leaves doubly-pinnate; leafets slightly serrate: panicles very branching: umbels numerous.

†*hispida.* Mx. (bristly stem sarsaparilla. H. w. J. ♄.) low: sub-shrubby: stem and petioles rough with bristles: leaves doubly-pinnate; leafets ovate gash-serrate, unarmed glabrous: umbels with long peduncles. Neglected fields.

†*racemosa,* W. (spikenard. O. w. J. 4.) spreading branches: petioles 3-parted, the partitions 3—5-leaved, leafets often heart-form; branchlets axillary, leafy: umbels many, sub-panicled, leafless above. Damp.

nudicaulis, W. (wild sarsaparilla. O. w. M. 4.) hardly a proper stalk, 1-leafed; the leaf thrice-ternate or thrice-quinate; leafets oblong-oval: scape naked, shorter than the leaf: umbels few. Woods.

10—1. ARBUTUS. 18. 51.

†*uva-ursi.* W. (bear berry. T. N. Y. C. P. w-r. M. ♄.) stem procumbent: leaves wedge-obovate, entire: berry 5-seeded. Dry, barren sand-plains, &c.

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(1) stricta, W. (2) pendula, N. Turritis laevigata, W.
(3) canadensis, W. but Nuttall suspects it to be the *hastata,* or Turritis laevigata of W.

alpina, W. (Can. w. J. ♄.) leaves serrate: rugose, acute, obovate: racemes terminal.

18—1. ARCTIUM. 49. 54.

lappa (burdock. O. r. Au. 4.) cauline leaves heart-form, petioled, toothed: flowers panicled, globose: calyx smooth.

22—6. ARCYRIA. 58. 1.

flava, rare, yellow, very long, capillary, nodding. On trunks.

cinerea, gregarious, white-cinereous, sometimes becoming rust-colour. On trunks in woods.

punicea, crowded together, between saffron colour and scarlet. On decaying trunks in summer and autumn.

10—3. ARENARIA. 22. 82.

1. *Leaves oblong.*

+ *peploides*, W. (C. Can. Ju. 4.) stem dichotomous: leaves ovate, acute, fleshy: calyx acuminate.

lateriflora, W. (sandwort. P. C. w. J. 4.) stem filiform, simple: leaves ovate, obtuse, sub-triple-nerved: peduncles lateral, solitary, elongated, 2-cleft; one pedicel middle-bracted: corol longer than the calyx.

+ *serpyllifolia*, W. (P. O. w. Ju. ☺.) stem dichotomous, spreading; leaves ovate, acute, sub-ciliate: calyxes acute, sub-striate: petals shorter than the calyx.

2. *Leaves linear subulate.*

glabra, Mx. (1) (T. Shawingunk. 4.) very glabrous suberect filiform many-stems: leaves subulate-linear flat spreading: pedicels 1-flowered elongated divaricate: leafets of the calyx oval obtusish smooth, shorter than the petals.

stricta, Mx. (N. Whitehills. T. w. M. 4.) glabrous erect many-stems: leaves subulate-linear erect: panicles few-flowered: petals much longer than the calyx, which is oval-lanceolate apparently striate. Dry.

squarrosa, Mx. (2) (D. w. Ju. 4.) turfy: lower leaves scaly-imbricate, channelled, glabrous: stems few, very simple: flowers few, terminal, erect: petals much larger than the roundish calyx.

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(1) Stellaria uniflora, Wr. (2) caroliniana. Wr.

rubra, Mx. (1) (P. Y. C. r. J. ☺.) glabrous, humifuse: leaves filiform, fleshy, much longer than the joints: stipules connate-membranaceous, sheathing: stamens 5: capsule angular or globose, Var. *canadensis*, leaves linear, fleshy.

19—1. ARETHUSA. 7. 21.

bulbosa, W. (arethusa. C. Y. P. N. r. J. 4.) leafless: root globose: scape sheathed 1-flowered: calyx with the superior divisions incurved: lip sub-crenulate.—Flowers large sweet-scented. Damp.

Arethusa, see Triphora and Pogonia.

13—1. ARGEMONE. 27. 62.

mexicana, W. (P. T. y. Ju. ☺.) leaves pinnatifid, gashed, spinose: flowers axillary. Flowers large.

3—2. ARISTIDA. 4. 10.

dichotoma, Mx. (beard-grass. P. C. Ju. ♂.) turfy: culm dichotomous, erect, setaceous: calyx longer than the corol; middle awn twisted, two lateral ones very short: flowers subspiked.

oligantha, Sw. (P. Ju. 4.) culm strait sub-branched: leaves convolute-filiform: flowers distant solitary: awns long-spreading.

racemosa, M. (C. S.) culm erect, 4-cornered, joints glabrous: leaves linear, striate, hairy at the base and scabrous at the apex: sheath hairy: panicle contracted, subracemed: pedicells angled, jointed below the calyx: valves of the calyx unequal, keeled, scabrous, mucronate: corol a little smaller, hairy at the base.

stricta (P.) culm terete glabrous: leaves linear, pubescent: panicle dense, with solitary branches: both valves of the calyx awned.

19—6. ARISTOLOCHIA. 11. 23.

sipho, Hr. (birthwort. P. J. ♄.) leaves heart-form, acute: stem twining: peduncles 1-flowered furnished with an ovate bract: corol ascending, limb 3-cleft equal. A very high running vine, with large leaves: flowers yellowish-brown.

(1) canadensis, P.

serpentaria (P. C. p. J. 2.) leaves heart-form, oblong, acuminate: stem zigzag ascending: peduncles radical: lips of the corol lanceolate. (The Virginia snakeroot.) There is a variety with very long, narrow leaves. Tonic and diaphoretic. B.

12—1. ARMENIACA. 36. 92.

vulgaris (apricot. E. ♄.) leaves subcordate: stipules palmate. Var. *precox* (early apricot.) fruit small, yellow. Var. *persicoides* (peach apricot) fruit subcompressed.

dasycarpa (black apricot. E. ♄.) leaves ovate acuminate, doubly-serrate, petioles glandular: drupe globose, pubescent.

12—5. ARONIA. 36. 92.

arbutifolia (1) (red choak-berry. O. w-r. M. ♄.) leaves lance-obovate, crenate-toothed, downy beneath, with the midrib glandular above: flowers corymbed: calyx downy. Damp.

botryapium, P. (2) (shad-bush, june-berry. O. w. Ap. ♄.) leaves oblong-oval, cuspidate, glabrous when mature, (when first expanded lanceolate and downy): flowers racemed; petals linear: germs pubescent: segments of the calyx glabrous.

sanguinea, (3) (bloody choak-berry. C. Pittsfield. w. M. ♄.) leaves oval, obtuse at both ends, mucronate, serratures very slender: racemes few-flowered: calyx glabrous: petals linear, obtuse.

melanocarpa (4) (black-choak-berry. O. w. M. ♄.) leaves obovate-oblong, acuminate, serrate, glabrous beneath; midrib glandular above: flowers corymbed: calyx glabrous. Damp.

ovalis P. (5) (medlar bush. P. V. W. D. w. M. ♄.) leaves round-oval acute, glabrous: flowers racemed: petals obovate: germ and segments of the calyx pubescent.

22—2. ARRHENOPTERUM. 56. 4.

heterostichum, erectish: leaves lax-imbricate, oval with

(1) pyrifolia, P. pyrus arbutifolia, W. Mespilus arbutifolia, L. and erythrocarpa, Mx. (2) Pyrus botryapium, W. Mespilus canadensis L. (3) Pyrus sanguinea, Ph. (4) arbutifolia, P. Pyrus melanocarpa, W. Crataegus arbutifolia, Lk. Mespilus arbutifolia. Var. melanocarpa, Mx. (5) Mespilus canadensis. Var. obovalis, Mx. Crataegus Spicata, Lk.

an obtuse point, serrulate, all nerved: peduncle generally terminal: capsule oblong, arcuate; lid conic, obtusely acuminate.

18—2. ARTEMISIA. 49. 55.

abrotanum (southern wood, E. 2. and h.) stem strait: lower leaves bipinnate, upper ones hair-form pinnate: calyx pubescent hemispheric.

canadensis, Mx. (wild wormwood. C. Y. w. y. Au. 2) subdecumbent, scarcely pubescent: leaves flat linear-pinnatifid: branchlets spike-flowered: flowers sub-hemispheric: calyx scarious. Receptacle smooth.

pontica (roman artemisia. E.) leaves downy beneath; cauline ones bipinnate, leafets linear: branches simple: flowers roundish peduncled nodding.

absynthium (worm-wood. E. 2.) stem branching, panicled: leaves hoary; radical ones triply-pinnatifid, divisions lanceolate toothed obtuse; cauline ones 2-pinnatifid or pinnatifid, divisions lanceolate acutish: floral ones undivided lanceolate. Naturalized in most mountain districts of N. England.

vulgaris, W. (mugwort. P. T. S. 2.) leaves downy beneath; cauline ones pinnatifid, divisions lanceolate subtoothed acute; floral ones undivided linear-lanceolate: flowers sub-sessile oblong erect: calyx downy.

22—5. ARTHONIA. 57. 2.

punctiformis (crust somewhat determinate, membranaceous, smooth, dark orange-yellow: receptacles minute, roundish, scattered, sub-immersed, flattish one side and sub convex the other, dark coloured. On the tender bark of branches of trees.

obscura, crust membranaceous, somewhat olive coloured: receptacles minute, flat, a little concave, sub-membranaceous, oval and reniform, sub-immersed, a little rugose, dark-coloured. On the cuticle and bark of trees.

pruinosa, crust thin, of a tartar-like appearance, unequal, smooth, rimose, white: receptacles flat, immersed, roundish polygons, confluent, obscurely dark yellow, mealy-glaucous. On oak bark, &c.

20—13. ARUM. 2. 7.

dracontium, W. (green dragon T. P. J. 2.) stemless;

leaves pedate; leafets lanceolate-oblong, entire: spadix subulate, longer than the oblong convolute spathe. River alluvion.

atrorubens, W. (brown dragon. P. M. 4.) stemless: leaves ternate, leafets ovate, acuminate: spadix cylindrical; spathe sessile ovate acuminate, spreading horizontally above. Spathe dark brown, disagreeable smell.

triphyllum, W. (Indian turnip, wild turnip, wake-robin. O. p. & g. M. 4.) sub-caulescent: leaves ternate; leaflets ovate acuminate: spadix club-form: spathe ovate acuminate, peduncled, with the lamina as long as the spadix. One vaiety, *virens*, has a green spathe; another, *atropurpureum*, has a dark purple spathe.

virginicum, W. (1) (poison arum. Y. T. C. P. g. J. 4.) stemless: leaves hastate heart-form, acute, lobes obtuse: spathe elongated, incurved; green: spadix long-stamen-flowered.

3—2. ARUNDO. 4. 10.

donax (reed grass. E. Nov.) calyx 5-flowered: panicle diffuse: culm somewhat woody.

phragmites, W. (marsh reed grass. Y. P. C. Hudson. Ju. 4.) calyx 5-flowered: panicle lax, somewhat nodding, branches glabrous. About 6 or 8 feet high. Damp.

epigejos, M. (D. 4.) calyx 1-flowered: panicle erect: leaves glabrous beneath, lanceolate. Flowers small.

canadensis, Mx. (2) (P. V. W. J. 4.) panicle oblong, contracted, scabrous: calyx 1-flowered, lanceolate, scabrous-pubescent upon the keel: corol awned upon the back, awn of the length of the corol; pubescence equalling the corol: culm terete, glabrous, simple: leaves hairy above and glabrous beneath. About 3 feet high.

arenaria, S. (sand reed grass. Can. D. Ju. 4.) panicle spiked: calyx 1-flowered, longer than the corol: flowers erect, beardless: leaves involute, prickly.

agrostoides, Ph. (P. V. C. D. Ju. 4.) panicle lax, diffused: calyx 1-flowered, acuminate, glabrous: corol shorter than the calyx, membranaceous: outer valve gashed at the top: pubescence equalling the corol:

(1) Calla virginica, Mx.
(2) cinnoides, M. Calamagrostis canadensis, N.

leaves flat, a little scabrous : culm sheathed and glabrous.

11—1. Asarum. 11. 23.

canadense (1) (white snake-root, wild ginger, false colt-foot. O. p. M. 4.) leaves broad kidney-form, in pairs : calyx woolly, deeply 3-parted, divisions sub-lanceolate, reflected. Root aromatic and stimulant. B.

virginicum, W. (P. M. 4.) leaves solitary, round-heart-form, glabrous, leathery : flower sub-sessile : calyx glabrous above, short, bell-form. Leaves speckled, smooth.

19—5. Asclepias. 30. 47.

1. *Leaves opposite.*

syriaca (common milkweed. O. w-p. Ju. 4.) stem very simple : leaves lanceolate-oblong, gradually acute, downy beneath : umbels sub-nodding, downy. 3 to 5 feet high ; flowers in large close clusters, sweet-scented—nectaries are fly-traps.

obtusifolia, Mx. (2) (Y. P. C. p. J. 4.) leaves clasping, oblong, round-obtuse, waving : umbel terminal, long-peduncled, many-flowered, glabrous ; the horn of the nectary exsert. Flowers large.

phytolaccoides, Ph. (T. D. W. P. w-g. Ju. 4.) stem erect, simple : leaves broad-ovate, acute, glabrous, paler beneath : nectaries truncate, internal margin 2-toothed : umbels lateral and terminal, long-peduncled, nodding.

periplocaefolia, N. (3) (D. w-g. Ju. 4.) leaves sub-sessile, somewhat distant, lance-ovate, narrowing upwards, very acute, smooth on both sides, margin rough ; umbels mostly 2, naked, lateral : root round-tuberous ; segments of the nectaries oblong-linear.

amoena, W. (Y. D. P. p. Ju. 4.) stem simple, a little hairy on two sides : leaves sub-sessile, oblong-oval, pubescent beneath : terminal umbels and nectaries erect, appendages exsert. Damp.

purpurascens, W. (C. P. p. Ju. 4.) stem simple : leaves ovate, villose beneath : umbels erect : nectaries resupine. Damp shades.

lanceolata (Y. g. Ju. 4.) stem decumbent, hirsute ; leaves

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(1) carolinianum, Wr. latifolium, Sy. (2) purpurascens, Wr.
(3) acuminata, Ph. cordata, Wr. laurifolia, Mx.

lanceolate, acute, sub-sessile : umbels hirsute, lateral, solitary, sessile, sub-globose, dense-flowered, nodding : no appendage. Ives. Dry sandy plains. Vid. Silliman's Journal of Science, p. 252.

viridiflora, Ph. (P.Y.g.Ju.4.) stem simple, erect, hirsute : leaves lanceolate-oblong, obtusish, sub-sessile, downy-hirsute both sides : umbels lateral, solitary, sub-sessile, nodding, sub-globose-dense-flowered : no appendage. Dry.

variegata, W. (1) (C. P. w. Ju. 4.) stem simple erect : leaves ovate, petioled, rugose, naked : umbels subsessile, pedicelled, tomentose. The umbels dense.

incarnata, W. (O. r. Ju. 4.) stem erect branching above downy : leaves lanceolate sub-downy both sides : umbels mostly double at their origin : the little horn of the nectary exsert. A variety, *pulchra*, is more hairy. Var. *glabra*, almost glabrous. Damp.

debilis, Mx. (V. C. w. Ju. 4.) smoothish ; stem weak erect simple : leaves petioled oval-lanceolate, acute at both ends, membranaceous : umbels terminal lax flowered ; pedicels capillary. The bark is a good substitute for flax.

quadrifolia, Jn. (O. w. M. 4.) stem erect simple glabrous : leaves ovate acuminate petioled, those in the middle of the stem are largest and in fours : umbels two terminal lax-flowered ; pedicels filiform. About 10 inches high, flowers small and sweet-scented.

laurifolia, Mx. (P. p. Au.) stem erect glabrous : leaves sub-sessile oval-lanceolate gradually growing narrower, very acute glabrous with a roughish margin.

2. *Leaves not opposite.*

verticillata, Mx. (dwarf milkweed. Y. T. P. D. g-y. Ju. 4.) stem erect very simple marked with lines and small pubescence : leaves very narrow-linear strait glabrous, whorled generally : horn in the nectary exsert.

tuberosa, W. (butterfly weed. N. Y. T. P. y. Ju. 4.) stem erectish, at the top spreading-branched, very rough-haired : leaves scattered oblong-lanceolate rough-haired ; umbels terminal, sub-corymbed. A variety, the *decumbens*, has a decumbent stem : leaves sublinear, hirsute. Cathartic, diaphoretic, expectorant. B.

(1) hybrida, Mx.

13—1. ASCYRUM. 20. 68.

crux-andreae, W. (1) (peter's wort. P. D. y. Ju. ♄.) many stems, diffuse : leaves sub-lanceolate-oblong obtuse : corymb terminal : flowers sub-sessile 2-styled : stem sub-terete, 2 feet high, petals narrow.

hypericoides, W. (2) (D. y. Ju. ♄.) erect branching, branches 2-edged : leaves oblong with 2 glands at the base, flowers terminal, solitary, with short pedicels, 3-styled. From 1 to 2 feet high.

6—1. ASPARAGUS. 11. 12.

officinalis (asparagus. E. Ju. 4.) stem herbaceous unarmed sub-erect terete : leaves bristle-form soft : stipules sub-solitary.

6—1. ASPHODELUS. 10. 16.

luteus (asphodel, king's spear. E. 4.) stem leafy : leaves 3-sided, striate.

ramosus (E. 4.) stem branching, naked : leaves ensiform, carinate, smooth.

22—1. ASPIDIUM. 55. 5.

1. *Fronds ternate.*

cicutarium, W. (3) (P. 4.) leafets pinnatifid, divisions acuminate, sinuate-pinnatifid, entire ; the lower and outer divisions of the sides elongated : fruit-dots in rows.

2. *Fronds pinnate.*

acrostichoides, W. (4) (O. J. to Au. ♃.) leafets lanceolate, sabre-form, acute, ciliate-serrate, the upper ones eared and dagger-pointed, the lower ones wedge-form at the base ; the upper fruit-bearing ones smaller : stipe and rachis chaffy : fruit-dots solitary, but at length become confluent.

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(1) multicaule, Mx. (2) stans, Mx.

(3) Polypodium cicutarium, L. appendiculatum, Sw.

(4) auriculatum, Sh. Nephodium acrostichoides, Mx. N. B. Linnæus placed the genus Aspidium under the genus Polypodium.

3. *Fronds sub-pinnatifid; involucre* [indusium] *halved, kidney-form.*

novebaracense W. (1) (N. W. C. T. P. Ju. 4.) frond pinnate; leafets linear-lanceolate, pinnatifid, divisions oblong, obtusish, sub-entire, ciliate: fruit-dots marginal: stipe smooth. Damp woods.

cristatum, W. (C. P. J. 4.) frond lanceolate-ovate, glabrous, pinnate; leafets sub-cordate-oblong, pinnatifid, divisions oblong obtuse, tooth-serrate: stipe chaffy. A variety, *callipteris*, largeish: leafets alternate, divisions oblong unequally appressed-serrate: frond bearing the fruit at the top. Another variety, *lancastriense*, leafets sub-opposite, divisions triangular, ovate, acute, serrate: stipe naked.

4. *Frond doubly or triply-pinnate, involucre halved, kidney-form.*

obtusum, W. (P. C Ju. 4.) frond doubly-pinnate, the lesser leafets oblong obtuse, the upper ones having united bases, tooth crenate: rachis pubescent above. 4 or 5 inches high. Rocks.

aculeatum, W. (Vermont mountains. Au. 4.) frond doubly-pinnate; the lesser leafets ovate, sub-sabre-form, acute, dagger-serrate, the base of the upper ones truncate, of the lower ones short-wedge-form; the upper ones bear the fruit: stipe and rachis chaffy.

marginale, W. (2) (O. Ju. 4.) frond doubly-pinnate: lesser leafets oblong, obtuse, decurrent, crenate; more deeply crenate at the base: fruit-dots marginal: stipe chaffy. Two or three feet high.

filix-mas, W. (W. N. C. D. P. Ju.) frond doubly-pinnate, lesser leafets oblong, obtuse, serrate; serratures beardless: fruit-dots of the middle rib approximate: stipe and rachis chaffy. 2 or 3 feet high. A variety, *erosum*, lesser leafets erose-serrate, more remote. Rocky hills.

intermedium, W. (P. W. T. J. 4.) frond doubly-pinnate; lesser leafets linear, gash-pinnatifid; divisions at the apex sub-mucronate-serrate: stipe chaffy. Resembles the next species in many respects.

spinulosum, W. (W. P. T. Ju. 4.) frond doubly-pinnate:

(1) Nephrodium thelypteroides. (2) Nephrodium marginale, Mx.

lesser leafets oblong, decurrent, running together, gash-toothed; divisions mucronate-serrate: stipe chaffy: involucre glandular. Large.

dilatatum, W. (1) (P. Ju. 4.) frond doubly-pinnate; lesser leafets oblong distinct gash-pinnatifid, divisions mucronate-serrate: stipe chaffy: involucre smooth. Leaves more compound, larger and broader than the filix-femina.

Remark. This genus has been divided, and the remainder of the species are placed under the genus Athyrium. There is no difficulty in distinguishing that genus from the Aspidium, if care be taken to ascertain the precise origin of the involucres. In some species of the Aspidium, the involucres appear, at first view, to be attached to one side of the fruit-dots; especially those which are kidney-form. But on a minute examination, the point, by which the involucre is attached to the frond of the Aspidium, will be found to be surrounded by the capsules of the fruit-dot. Whereas the involucres of the Athyrium are attached to the frond entirely outside of the capsules of the fruit-dots.

22—1. Asplenium. 55. 5.

rhizophyllum, W. (walking leaf. O. Ju. 4.) frond lanceolate stiped sub-crenate, heart-form ears at the base; apex very long linear-filiform rooting. Var. *pinnatifidum*, leaves with the crenatures so deep as to become sub-pinnatifid. Barton. Woods.

angustifolium, W. (2) spleenwort. W. C. P. Ju. 4.) frond pinnate; leafets alternate, upper ones sub-alternate, linear-lanceolate, sub-repand, base of the upper ones truncate, of the lower ones slightly rounded. One foot high.

ebenum, W. (3) (W. C. T. P. Hudson. Ju. 4.) frond pinnate: leafets sessile, lanceolate, serrulate, cordate at the base, auricled above. A very small species.

melanocaulon, W. (4) (W. T. P. C. Ju. 4.) frond pinnate; leafets roundish, obtuse, crenate, at its base wedge-form: stipe particoloured. Very small; stem black, polished.

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(1) Nephrodium cristatum, Mx.
(2) pycnocarpon, Sl.
(3) trichomanoides, Mx.
(4) trichomanes, Mx.

thelypteroides, W. (1) (W. T. P. Ju. 4.) frond pinnate; leafets sessile, lanceolate, acuminate, deeply pinnatifid; divisions oblong obtuse, obtusely serrate: fruit-dots parallel, at length confluent.

ruta-muraria, W. (W. C. T. P. Hudson. Ju. 4.) frond bipinnate at the base, simply pinnate at the apex; leafets rhombic-oblong, obtuse, with the apex obtusely denticulate. Very small. Rocks.

montanum, W. (2) (W. T. Ju. 4.) frond glabrous, bipinnate: leafets lanceolate, pinnatifid, divisions 2-or-3-toothed.

18—2. ASTER. 49. 55.

1. *Leaves entire.*

hyssopifolius, W. (starflower, D. w. y. p. Au. to O.) leaves linear-lanceolate, 3-nerved punctate acute margin scabrous: branchlets level-top corymbed compact: rays about 5-flowered; calyx imbricate, twice as short as the disk. 12 to 24 inches high.

solidaginoides, W. (3) O. w. Au 4.) leaves linear lanceolate, obsolete-3-nerved, entire, obtuse, margin scabrous: branches level-top-corymbed: flowers sessile, aggregate; rays 5-flowered, calyx shorter than the disk, imbricate, scales oblong, obtuse, close-pressed, sub-reflexed at the apex. About 2 feet high: scales of the calyx white with green tips: rays long and white.

tedifolius, Ph. (4) (D. y. w. S. and Oc. 4.) leaves linear-lanceolate, tapering to the base, without nerves, roughish, revolute margin: branches corymbed; branchlets filiform, 1-flowered, nakedish: calyx lax imbricate, twice as short as the disk: leafets very acute: rays about 20-flowered. A variety, *uniflorus*, (5) has a very simple stem bearing but one flower. About a foot high; sometimes the leaves have a small indenture on each side.

rigidus, W. (6) (N. Y. C. p. y. Au. 4.) leaves linear, mucronate, sub-carinate, rigid, margin rough-ciliate: the cauline leaves reflexed, the branch ones spreading, subulate: stem erect, somewhat branched above, branch-

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(1) acrostichoides, Sw. (2) Adiantum nigrum, Mx. (3) Conyza linifolia, L. (4) nemoralis, A. (5) uniflorus, Mx. (6) linariifolius, in Banks' collection.

lets 1-flowered corymbed: calyx imbricate, twice as short as the disk: scales obtusish, carinate: rays about 10-flowered reflexed. Hardly a foot high.

linariifolius, W. (1) (O. p. y. Au. 4.) leaves thick-set nerveless, linear, mucronate, dotted, carinate, rough, stiff, those on the branches recurved: stem subdecumbent: branches level topped, 1-flowered: calyx imbricate, of the length of the disk. A little lower than the preceding species and flowers smaller; stem rough purplish.

linifolius, W. (N. P. S. 4.) leaves linear, without nerves, dotted, rough, reflexed-spreading: branches level-top-corymbed, leafy: calyx imbricate, short: rays about equal to the disk. About 18 or 24 inches high.

subulatus, Mx. (L. Au. 4.) very glabrous; small-flowered: stem panicled: branches many-flowered: leaves linear-subulate: calyx cylindric; ligulate florets of the ray minute. Salt marshes.

foliolosus, W. (P. Au. 4.) leaves linear-lanceolate tapering to both ends acuminate: stem pubescent panicled erect: branches few-flowered: calyx imbricate: scales linear acute close pressed. Flowers small; hardly distinct from the next species.

tenuifolius, W. (C. w. Au. 4.) leaves linear-lanceolate, tapering to both ends, hispid margin: stem glabrous, branching, erect; branchlets 1-flowered: calyx imbricate, scales oblong, acute, lax.

dumosus, W. (C. w. y. Au. 4.) leaves linear, glabrous; those of the branchlets are the shortest: branches panicled: calyx cylindric, closely imbricate. A variety called *violaceus*, has pale violet rays and a pubescent stem. Another variety, *albus*, has white rays and a glabrous stem. Flowers small.

ericoides, W. (O. w-y. Au. 4.) leaves linear very glabrous; those of the branchlets subulate, approximate, cauline ones elongated: calyx somewhat scurfy: leaves acute: stem glabrous. Flowers small.

multiflorus, W. (O. w-y. Au. to N. 4.) leaves linear, smoothish: stem very branching, diffuse, pubescent, branchlets one-way: calyx imbricate, scales oblong, scurfy acute. Probably a variety of the last.

sparsiflorus, Mx. (2) (L. y. w-p. Au. 4.) very glabrous:

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(1) Inula linariifolia, N. (2) flexuosus, N.

leaves subulate-linear, somewhat fleshy, sub-reflexed : stem slender, very branching ; branches and branchlets spreading, bristle-form, 1-flowered : scales of the peduncles divaricate, subulate : calyx imbricate, scales close-pressed acute. Resembles the last ; flowers smaller. Salt marshes.

concolor, W. (D. P. r-b. Au. ♃.) leaves oblong-lanceolate, white pubescent both sides : stem very simple, erect, pubescent : raceme terminal : calyx imbricate, scales lanceolate, silky, close-pressed. About a foot high ; ray and disk coloured alike.

cornifolius, M. (O. w. Au. ♃.) glabrous : leaves oblong-ovate, acuminate, short petioled, margin rough : stem glabrous : panicle few flowered, branches 2-flowered ; calyx sub-imbricate.

humilis, W. (1) (P. w. Au. ♃.) leaves sub-rhomboid, oval-lanceolate, acuminate at both ends, sub-petioled, glabrous, margin hispid : corymb divergingly dichotomous, nakedish, few-flowered : calyx lax imbricate : rays 8-flowered. About a foot high ; flowers large.

amygdalinus, Mx. (2) (O. w. S. ♃.) leaves lanceolate, tapering to the base, acuminate, margin rough : stem simple, level-top-corymbed at the top : calyx lax-imbricate, scales-lanceolate, obtuse. Rays large.

salicifolius, W. (3) (C. r-b. Au. ♃.) leaves linear-lanceolate, sub-entire, glabrous : stem glabrous, panicled at the top : calyx lax-imbricate, scales acute, spreading at their tips. From 4 to 6 feet high ; flower middle-sized.

aestivus, W. (D. b. Ju. to S. ♃.) leaves lanceolate, sub-clasping, tapering to the apex, margin rough : stem branching from its base, erect, hispid ; branchlets pilose ; calyx scaly, scales lax, linear, acute, equal. About 2 feet high ; the flowers resembling the last.

nova-angliae (O. b-p. Au. ♃.) leaves linear-lanceolate, pilose, clasping, auricled at the base : stem sub-simple, pilose, straight and stiff : flowers sub-sessile, terminal, crowded : scales of the calyx lax, coloured, lanceolate, longer than the disk. In rich soil it grows 10 feet high : flowers large.

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(1) infirmus, Mx. probably a variety of cornifolius.
(2) umbellatus, A. Inula amygdalina, N. (3) praealtus, Lk.

cyaneus, Hn. (1) (O. b-p. Au. 4.) leaves linear-lanceolate, clasping smooth : stem wand-like-panicled, very glabrous : branches racemed : scales of the calyx lax, lanceolate, equalling the disk, inner ones coloured at the apex. 3 or 4 feet high ; flowers many and large. This is the handsomest of all asters.

phlogifolius, W. (2) (C. w. p. Au. 4.) leaves lanceolate, heart-form, clasping, pubescent beneath, rough margin : stem very simple, pubescent : panicle terminal, lax, few-flowered : scales of the calyx lax, imbricate lanceolate. From 18 to 24 inches high.

patens, W. (3) (O. p-y. S. to Nov. 4.) leaves oblong-lanceolate, ciliate, heart-form, clasping, rough both sides, hairy : stem branching, rough with hairs ; branches spreading, elongated, few-flowered, small-leaved : scales of the calyx imbricate, lanceolate, spreading.—From 1 to 2 feet high.

2. *Leaves heart-form and ovate, serrate.*

undulatus, W. (4) (O. p. S. 4.) leaves oblong, heart-form, clasping, entire hairy sub-undulate ; lower ones ovate, heart-form, sub-serrate, petioled ; petioles winged : stem panicled hispid ; branchlets one-way, leafy, 1-flowered. Flowers small.

paniculatus, A. (O. b-p. Au. to Nov. 4.) leaves ovate-lanceolate, sub-serrate, petioled, glabrous ; radical ones ovate-heart-form, serrate, rough, petioled ; petioles naked : stem very branching, glabrous ; branchlets pilose : calyx lax, sub-imbricate. From 2 to 4 feet high ; flowers smallish, numerous.

cordifolius, L. (5) (O. w. S. 4.) leaves heart-form, pilose beneath, sharp-serrate, petioled ; petioles winged : stem panicled, smoothish ; panicles divaricate ; calyx lax, sub-imbricate. Flowers small.

corymbosus, A. (O. w. Au. 4.) leaves ovate, sharp-serrate, acuminate, smoothish : lower ones heart-form, petioled ; petioles naked : stem glabrous, level-top-corymed above : branches pilose : calyx oblong, imbricate,

(1) rubricaulis, Lk. spurius, W. novae-angliae, A.
(2) amplexicaulis, Mx. (3) diversifolius, Mx.
(4) amplexicaulis, Mx. but not of W. (5) heterophyllus, W.

scales obtuse, very close-pressed. 12 to 14 inches high : flowers rather large.

macrophyllus, A. (O. w-b. Au. 2.) leaves ovate, petioled, serrate, rough ; upper ones ovate-heart-form, sessile ; lower ones heart-form, petioled ; petioles sub-margined : stem branching, diffused : calyx cylindric, closely imbricate, scales oblong acute. 1 or 2 feet high ; flowers largish.

chinensis (china aster. E. ☺.) leaves ovate, thickly toothed, petioled ; cauline ones sessile, at the base wedge-form, floral ones lanceolate, entire : stem hispid ; branches 1-flowered : calyx foliaceous. A variety has very full flowers, various-coloured and very short rays. Cultivated.

3. *Leaves lanceolate and ovate, lower ones serrate.*

amplexicaulis, W. (1) (O. b. S. 2.) leaves ovate-oblong, ovate, clasping, heart-form, serrate, glabrous : stem panicled, glabrous ; branchlets 1-2-flowered : scales of the calyx lanceolate, closely imbricate. Flowers mid-sized.

prenanthoides, W. (W. P. C. b. 2.) leaves clasping, spatulate-lanceolate, acuminate, serrate in the middle, heart-form at the base : branchlets pilose : scales of the calyx lanceolate, scurfy.

laevigatus, W. (P. C. r-p. S. to Nov. 2.) leaves sub-clasping, broad-lanceolate, sub-serrate, smooth : stem very branching, glabrous, branchlets many-flowered : scales of the calyx lanceolate, lax, nearly equalling the disk.

versicolor, W. (P. D. y-w. Au. 2.) leaves sub-clasping, broad lanceolate, sub-serrate, glabrous : radical ones serrate in the middle : stem very branching, glabrous : scales of the calyx lanceolate, lax, shorter than the disk.—Flowers many and large, elegant.

mutabilis, W. (C. p-y. Au. to Oc. 2.) leaves sub-clasping : upper ones lanceolate, acuminate, entire ; lower ones lanceolate, at the base narrow serrate : branchlets wand-like : calyx shorter than the disk, lax : stem glabrous.

laevis, W. (C. V. b-p. S. to Nov. 2.) leaves sub-clasping, remote, oblong, entire, shining ; radical ones sub-ser-

(1) pensylvanicus, Lk.

rate: branches simple, 1-flowered: calyx imbricate, the leafets somewhat wedge-form, acute, thickened at the apex: stem glabrous, angular.

concinnus, W. (P. b-p. S. to Nov. 2.) leaves lanceolate, somewhat clasping: lower ones sub-serrate, glabrous: stem simple, panicled at the top: calyx closely imbricate.

puniceus (O. p. Au. to Nov. 4.) leaves clasping, lanceolate, serrate, roughish: branches panicled: calyx lax, exceeding the disk, the leafets linear-lanceolate, sub-equal: stem hispid. A variety, *purpureus*, (1) seven feet; stem deep purple. Another variety, *rufescens*, eight feet: from green becoming reddish. From 3 to 10 feet high; flowers large. Damp.

novi-belgii (C. w-p. Au. 2.) leaves sub-clasping, lanceolate, glabrous, rough at the margin; lower ones sub-serrate: branches sub-divided: calyx lax-imbricate, the leafets linear-lanceolate: stem terete, glabrous.

spectabilis, W. (P. b. Au. 2.) leaves lanceolate, roughish, sub-clasping: lower ones serrate in the middle: branches corymbed: leafets of the calyx lax, foliaceous, somewhat wedge-form, acutish, scurfy. About 2 feet high: flowers large.

serotinus, W. (D. b. S. 4.) leaves oblong-lanceolate, acuminate, sessile, glabrous; margin rough; lower ones serrate: branches corymbed, glabrous; branchlets 1-flowered: scales of the calyx lanceolate, acuminate, spreading. About three feet; flowers large.

tardiflorus, W. (D. b. Oc. 4) leaves sessile, serrate, glabrous, spatulate-lanceolate, tapering to the base, deflected at the margin and both sides: branches divaricate: calyx lax, the leafets lanceolate-linear, sub-equal, glabrous. Flowers not middle size.

blandus, Ph. (Can. p. Oc. 2.) leaves somewhat clasping, oblong-lanceolate, acuminate, serrate, glabrous: stem branching in a pyramid form: branches axillary, racemed, scarcely longer than the leaf; peduncles downy, not winged: calyx lax, sub-equal, shorter than the disk. Flowers largish.

acuminatus, Mx. (P. W. w. Au. 4.) leaves broad-lanceolate, lower ones tapering, entire, upper ones unequally serrate, long-acuminate; stem simple, zigzag, angu-

(1) amoenus, Lk.

lar : panicle corymbed, divaricate-dichotomous : leafets of the calyx lax, linear, shorter than the disk. A variety called *elatior*, has a taller stem; panicles many-flowered and leafy. Another variety, *pumilus*, has a lower stem ; corymb few-flowered, naked, scarcely higher than the leaves. Commonly 12 inches high and upwards ; flowers middle-size. Probably a variety of prenanthoides.

conyzoides, W. (1) (O. w. Ju. 4.) leaves oblong, 3-nerved, narrow and acute at the base ; upper ones sessile, sub-entire ; lower ones petioled, serrate : stem simple, corymbed at the top : calyx cylindric, scurfy : rays 5, very short. About 12 inches high ; flowers small.

radula, W. (P. w. S. 4.) leaves lanceolate, serrate, acuminate, rugose, very rough : stem erect, angular, simple : corymb terminal : calyx imbricate, leafets lanceolate, obtusish, somewhat scurfy. Flowers mid-size.

strictus, Ph. (2) (P. y-r. S. 4.) leaves sessile, narrow-lanceolate, serrate, rough : stem 1 or few-flowered above : scales of the calyx imbricate, close-pressed, oblong, acute, nearly equalling the disk. Four to seven inches high ; flowers middle-sized.

tradescanti, W. (3) (O. w-p. Au. 4.) leaves lanceolate, serrate, sessile, glabrous : branches wand-like : calyx imbricate : stem terete, glabrous. 3 to 4 feet high : flowers small.

recurvatus, W. (4) (O. b. S. 4.) leaves sessile, narrow-lanceolate, tapering to the base : lower ones serrate in the middle : stem branching, glabrous, recurvate : scales of the calyx lax, imbricate, linear-lanceolate, subequal. Resembles the last.

laxus, W. (D. w-y. S. to Nov. 4.) leaves linear-lanceolate, acuminate, rough margin : lower ones sub-serrate : stem sub-reflexed : branches very spreading : stem lax, panicled at the apex : calyx imbricate, leafets lanceolate, acute, reflexed at the apex.

junceus, W. (C. r. Au. 4.) leaves lanceolate-linear, sessile, glabrous ; lower ones sub-serrate ; those of the

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(1) marylandicus, Mx, Conyza asteroides, L.
(2) biflorus, Mx.
(3) vimineus, Lk.
(4) salicifolius, Lk.

branchlets lanceolate ; stem panicled, glabrous : branches wand-like : calyx imbricate. 4 to 6 feet high.

dracunculoides, W. (1) (C. w. S. 4.) leaves linear, acuminate, entire ; lower ones linear-lanceolate, sub-serrate : branches corymbed : calyx imbricate : stem smoothish. About 3 or 4 feet high.

miser, W. (Can. C. w. S. 4.) leaves sessile, lanceolate, serrate, glabrous : calyx imbricate, leafets acute ; florets of the disk and ray equal : stem sub-villose.

divergens, W. (O. w-r. S. 4.) leaves elliptic-lanceolate, serrote glabrous ; cauline ones linear-lanceolate, elongated : branches spreading : calyx imbricate : stem pubescent. 3 to 5 feet high ; flowers small.

diffusus, A. (P. w. T. C. w. S. to Nov. 4.) leaves elliptic-lanceolate, serrate, glabrous, all proportioned : branches spreading : calyx imbricate : stem pubescent. Flowers small.

pendulus, A. (P. W. Oc. Nov. 4.) leaves elliptic-lanceolate, serrate, glabrous ; those of the branchlets remotish : branches very divaricate, pendulous : stem pubescent. Resembles the preceding ; but the disk turns brown.

17—10. Astragalus. 32. 93.

glaux (milk vetch. E. ☺.) caulescent, diffuse : the little heads peduncled imbricate ovate : flowers erect ; legume ovate callous inflated.

depressus (trailing vetch. E. 4.) sub-caulescent, procumbent : leafets obovate : raceme shorter than the petiole : legume terete lanceolate reflexed.

secundus, Mx. (Can. p. Ju. 4.) caulescent, procumbent : leafets ovate pubescent : spikes peduncled : legumes one-way, strait, acuminate both ends, pendulous.

canadensis, W. (P. C. y. Ju. 4. caulescent, diffuse : leafets (21) glabrous both sides ; legume sub-cylindric, mucronate.

carolinianus, W. (P. y. J. 4.) caulescent, erect : leafets (41) oblong, pubescent beneath : spikes peduncled : bracts lanceolate of the length of the peduncle : legumes ovate tumid beaked.

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(1) artemisiflorus, Lk.

3—2. ATHEROPOGON. 4. 10.

apludoides, M. (1) (hair-beard. P. S. 4.) spikes short, numerous, (20 to 40) reflexed downwards : culm terete, glabrous, geniculate : leaves hairy at the base ; sheaths hairy. About a foot high.

22—1. ATHYRIUM. (2) Roth & Sl. 55. 5.

thelipteris (snuff-box fern. C. P. Ju. 4.) frond pinnate : leafets lance-linear, pinnatifid, glabrous ; divisions ovate, acute, entire : fruit-dots marginal, contiguous, at length confluent.

bulbiferum (C. P. Ju. 4.) frond bipinnate, lance-oblong ; leafets opposite, oblong, obtuse, serrate, lower ones pinnatifid : rachis bulb-bearing : fruit-dots roundish.

asplenoides (C. P. New-England. Ju. 4.) frond bipinnate ; leafets lance-linear, gash-serrate, serratures 2 or 3-toothed, terminal ones more acute : fruit-dots oblong, lunate. Tall.

filix-femina (P. Ju. 4.) frond bipinnate : leafets lance-oblong, gash-serrate, serratures 2 or 3-toothed, acutish : fruit dots oblong, strait Tall.

angustum (C. W. Y. P. Ju. 4.) frond bipinnate ; leafets lanceolate, gash-serrate, sub-bidentate, lower one elongated above : fruit-dots oblong, sub-lunate.

punctilobum (P. Ju. 4.) frond bipinnate ; leafets decurrent, ovate-oblong, pinnatifid, divisions somewhat 4-toothed : fruit-dots solitary : rachis pubescent : stipe glabrous. 2 or 3 feet high.

atomarium (P.) frond bipinnate ; leafets, decurrent, ovate oblong, pinnatifid, divisions toothed : fruit-dots scattered. About a span high.

tenue (C. P. T. Ju. 4.) frond bipinnate ; leafets ovate, decurrent, toothed : fruit-dots solitary, near the teeth of the leafets. Small. Rocks.

rufidulum (Y. W. D. P. J. 4.) frond bipinnate ; leafets chaff-bristly beneath, oblong, obtuse, crenate, coadunate : fruit-dots at length confluent. Small. In tufts on rocks.

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(1) Chloris curtipendula, Mx.

(2) Aspidium, Sw. Nephrodium, Mx. Polypodium, L.

13—13. ATRAGENE. 26. 61.

americana, Sims. (1) (false virgin bower. O. b-p. M. 4.) stem climbing, 6-angled : leaves in fours, ternate, with climbing petioles ; leafets glabrous, heart-ovate, acuminate : seeds caudate, with hairs not plumose.

5—2. ATRIPLEX. 12. 29.

halimus, W. (orach. D. ♄.) leaves alternate or opposite, oblong-sub-rhomboid entire.

hortensis (garden orach. C. Ju. ☺.) stem erect, herbaceous : leaves triangular, toothed, of an uniform colour : calyx of the fruit ovate, netted, entire.

laciniata, W. (L. J. ☺.) stem erect herbaceous : leaves triangular, deeply toothed, white beneath : calyx of the fruit rhomboid, 3-nerved, denticulate.

arenaria. N. (2) (C. Ju. ☺.) stem herbaceous, spreading : leaves entire, oblong-ovate, subsessile, white-silvery beneath, upper ones acute or acuminate : flowers axillary, glomerate : calyx of the fertile flowers muricate, dentate, retuse. Stem reddish, angular very-branching, about a foot high.

5—1. ATROPA. 28. 41.

belladonna (deadly nightshade. E. w-y. 4.) stem herbaceous, brachiate : leaves ovate, entire. Berries black and poisonous.

physaloides, W. (3) (P. w-b. Ju. ☺.) stem very branching : calyx membranaceous, 5-angled, net-veined : berry fleshy, covered with the calyx.

20—4. AUCUBA.

japonica (japan shrub. E. y. J. ♄.) leaves opposite, serrate, with yellowish spots.

3—2. AVENA. (4) 4. 10.

sativa (oats. E. J. ☺.) panicled : calyx 2-seeded : seeds smooth, one of them awned. First discovered in the island of Juan Fernandes. A variety is awnless and has black seeds.

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(1) pensylvanica, M. Clematis verticillata, Dc. (2) patula ? M.
(3) Nicandra physaloides, P. (4) See Danthonia.

sterilis (animated oats. E. Ju. ☺.) panicled : calyx about 5-flowered : florets hairy, the middle ones awnless. When dry the heads are set in motion, if moistened, by the untwisting of the awn.

fatua (P. Au. ☺.) panicled : calyx 3-flowered ; florets spreading, all awned and the base rough haired.

elatior (E. J. 4.) panicle sub-contracted nodding : glume 2-flowered ; florets perfect sub-awnless, staminate awned : culm geniculate glabrous : root creeping. Introduced.

pensylvanica, W. (1) (P. C. W. J. ☺.) panicle tapering : calyx 2-flowered : seed villose : awn twice as long as the calyx.

5—1. AZALEA. 18. 50.

lapponica (mountain honeysuckle. Whitehills. p Ju. ♄.) leaves oval, punctate, excavated, rough : corol bell-form.

procumbens, W. (Whitehills. r. Ju. ♄.) leafy flowered : branches diffuse-procumbent : leaves opposite eliptic glabrous, margin revolute : corol bell-form glabrous : filaments inclosed equal. Flowers small ; resembles Ledum buxifolium : all the other species resemble the Rhododendron.

calendulacea, Mx. (P. r. & y. Ap. ♄.) sub-naked-flowered : leaves oblong pubescent both sides, and when full-grown become rough-haired : flowers abundant large not viscous : teeth of the calyx oblong : corol with a hirsute tube shorter than its divisions. A variety, *flammea*, has a flame-coloured flower. Another, *crocea*, has a saffron-coloured flower.

canescens (Catskill mountains. r. J. ♄.) sub-naked-flowered : leaves obovate-oblong pubescent on the upper side and downy beneath ; nerves not bristle-bearing : flowers not viscous : tube of the corol scarcely shorter than its divisions : teeth of the calyx very short round-obtuse : stamens scarcely exsert.

nudiflora, W. (2) (early honeysuckle, pinxter blomache. O. r. M. ♄.) sub-naked-flowered : leaves lanceolate-oblong, smoothish both sides, uniform-coloured : nerves on the upper side downy and beneath bristly ; margin ciliate : flowers abundant not viscous ; their tubes lon-

(1) Trisetum pensylvanicum, Pb. (2) periclymenoides, Mx.

ger than their divisions : teeth of the calyx short oval sub-rounded : stamens very much exsert. A variety, *coccinea*, has scarlet flowers and lanceolate leaves. Another, *rutilans*, has deep red flowers and minute calyx. Another, *carnea*, has pale red flowers, with red bases and leafy calyx. Another, *alba*, has white flowers with a middling calyx. Another, *papilionacea*, has red flowers with the lower divisions white, calyx leafy. Another, *partita*, has flesh-coloured flowers 5-parted to the base. Another, *polyandria*, has rose-coloured flowers with from 10 to 20 stamens. Woods.

nitida (swamp honeysuckle. Y. C. D. w. J. ½.) leafy-flowered : branches smoothish : leaves few oblanceolate sub-mucronate leathery, glabrous both sides and the upper side shining ; nerve bristle-bearing beneath, margin revolute-ciliate : flowers viscous, tube a little longer than the divisions : calyx very short ; filaments exsert. Leaves dark green, smallish. Swamps.

viscosa, W. (white honeysuckle. O. w. J. ½.) leafy-flowered : branches hispid : leaves oblong-obovate acute, both sides glabrous and one-coloured : nerve bristle-bearing, margin ciliate : flowers viscous, tube twice as long as the divisions : teeth of the calyx very short rounded : filaments scarcely longer that the corol. Flowers very sweet scented.

glauca, Lk. (fragrant honeysuckle. P. w. J. ½.) leafy-flowered : branchlets hispid : leaves oblanceolate acute, both sides glabrous and glaucous beneath ; nerve bristle-bearing, margin ciliate : flowers very viscous : tube of the corol twice as long as its divisions : calyx very short ; filaments about equal to the divisions of the corol. Rather lower than the other species : flowers abundant.

B.

18—2. Baccharis. 49. 55.

halimifolia, Mx. (groundsel tree. C. w. S. ½.) leaves obovate, gash-toothed above : panicle compound leafy, fascicles peduncled. The whole shrub covered with white powder. Sea coast and river alluvion.

22—5. BAEMYCES. (4) 57. 2.

roseus (O) crust uniform, warty, white : peduncle (podetia) short, cylindric : receptacle sub-globose, pale red. On the earth.

14—1. BALLOTA. 42. 39.

nigra (false motherwort. Y. 4. naturalized, and grows wild about New-Haven.) Leaves heart-form, undivided, serrate : leafets of the calyx acuminate. Ives.

18—1. BALSAMITA. 49. 55.

suaveolens (costmary, sweet tansey. E. 4.) leaves toothed ; upper ones with eared bases.

10—1. BAPTISIA. V. (1) 32. 93.

† *tinctoria* (wild indigo. O. y. Ju. 4.) very glabrous and branching : leaves ternate, sub-sessile ; leafets wedge-obovate, round-obtuse (becoming black in drying) : stipules obsolete, oblong, acute, much shorter than the petioles : racemes terminal : legumes ovate, long-stiped.

† *coerulea*, Mx. (2) (spiked indigo-weed. Y. Canandaigua. b. Ju. 4.) glabrous : leaves ternate, short-petioled ; leafets oblong-wedge-form, obtuse : stipules lanceolate, acute, twice as long as the petioles : racemes spiked, elongated . legumes acuminate.

15—1. BARBAREA. Br. 39. 63.

vulgaris (3) (water radish, water rocket. T. V. W. N. y. M. 4.) lower leaves lyrate-pinnatifid, with the terminal lobe roundish ; upper leaves obovate, toothed. Banks of rivers.

22—2. BARBULA. 56. 4.

caespitosa, stem very short, sub-simple : leaves densely crowded together, oblong-linear, mucronate, convolute at the apex on becoming dry : capsules cylindric, with a strait-subulate lid of nearly its own length.

acuminata, leaves ovate-acuminate, concave, twisted on becoming dry : stems erect, simple and divided, beco-

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(1) Podalyria, W. Sophora, Wr.
(2) australis, W.
(3) Erysimum barbarea, L.
(4) See Cenomyce.

ming renewed ; elongations of the renewed parts stand out behind the capsules.

fallax, stem ramose : leaves recurve-spreading : perichaeth nerveless : capsules oblong ; lid obliquely beaked. On walls and bye-lanes, &c.

lanceolata, leaves lanceolate, sub-apiculate, crisped when dry ; foscicle of ducts strong : capsule bottle-form, strait ; lid oblique.

tortuosa, caulescent, rather high, ramose : leaves lance-linear, acute, sub-denticulate, may become crisped : capsule strait, slender-cylindric ; lid subulate.

4—1. BARTONIA. 20. 46.

paniculata, M. (1) (screwstem. T. C. D. Y. N. P. w. Ju. ☺.) stem sub-ramose, 4-sided and becoming spirally twisted : peduncles opposite, lower ones ramose. Stem almost leafless—5 or 6 inches high. Damp. It is thought best to retain this name, until the fancies of our *verbifacient* botanists shall become so nearly stationary, that one or two changes more may settle upon this little plant a permanent name.

22—2. BATRAMIA. 56. 4.

crispa, pedicells erect : leaves subulate, crisped, serrate at the margin, much contorted when dry. In the mountains about Williams Col.

ederi (2) stem elongated, slender : pedicells erect ; leaves lanceolate, serrulate, scarcely twisted when dry.—Among damp mountain rocks, &c.

longiseta, stem short ; lesser stems somewhat simple : leaves not dense, subulate, keeled and scarcely perceptably denticulate, erect when dry : peduncle very long.

14—2. BARTSIA. 40. 35.

coccinea, W. (3) (painted cup. Y. P. y. & r. J. ♄.) leaves alternate linear gash pinnatifid ; divisions linear : bracts dilated, generally 3-cleft, longer than the flowers : teeth of the calyx rounded-obtuse. Flowers yellow with scarlet bracts. One variety, *pallens*, has yellow bracts.

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(1) tenella P. Andrewsia paniculata, B. Centaurella paniculata, Mx C. autumnalis, Ph. Sagina virginica, W. Centaurium, P. in mother part of his works. (2) gracilis, S. (3) Euchroma coccinea, N.

pallida (Whitehills. w-y. Au. 2.) leaves alternate linear undivided; upper ones lanceolate; floral ones sub oval, sub-toothed at the summit; all are 3-nerved: teeth of the calyx acute.

22—4. BATRACHOSPERMUM. 57. 2.

moniliforme, frond alternately ramose moniliform: branches attenuated.

5—1. BATSCHIA. 41. 42.

canescens (puccoon, false bugloss. P. y. Ju. 2.) whitening-villose: leaves all oblong: calyx very short: divisions of the corol entire. A red substance covering the root is the puccoon of the Indians.

18—2. BELLIS. 49. 55.

perennis (daisy. E. w. & p. Ap. 2.) leaves obovate, crenate: scape naked, 1 flowered. Grows wild in cultivated fields in Pittsfield, Mass.

6—1. BERBERRIS. 54. 78.

vulgaris (barberry. N. Y. C. P. y. M. ♄.) branches punctate: prickles mostly in threes: leaves obovate, remotely serrate: flowers racemed.

5—2. BETA. 12. 29.

vulgaris (beet. E. g. Au. ♂.) flowers heaped together: lower leaves ovate.

cicla (white beet, scarcity. E. ♂.) flowers in threes: radical leaves petioled, cauline ones sessile: lateral spikes very long.

20—13. BETULA. 50. 99.

populifolia, W. (1) (white birch, poplar birch. T. V. D. N. C. Ju. ♄.) leaves deltoid, long-acuminate, unequally serrate, very glabrous; scales of the strobile with rounded lateral lobes: petioles glabrous. 30 to 40 feet high.

excelsa, W. (2) (tall birch, yellow birch. C. W. N. J. ♄.)

(1) acuminata, Eh. (2) lutea, Mx.

leaves ovate acute serrate : petioles pubescent shorter than the peduncle : scales of the strobile with rounded lateral lobes. 70 to 80 feet high.

rubra, Mx. (1) (red birch. M. ♄.) leaves rhombic-ovate, doubly-serrate, acute, pubescent beneath, base entire: pistillate ament ovate ; scales villose ; divisions linear, equal. About 70 feet high ; excellent cabinet timber.

papyracea. W. (2) (paper birch, canoe birch. C. W. ♄.) leaves ovate acuminate, doubly-serrate ; veins hirsute beneath ; petiole glabrous : pistillate ament peduncled, nodding : scales with lateral short sub-orbicular lobes. Has a paper-like bark, of which the Indians construct canoes.

lenta, W. (3) (spicy birch, cherry birch, black birch. O. M. ♄.) leaves heart-ovate, sharp-serrate, acuminate ; nerves and petioles pilose beneath : scales of the strobile glabrous, with obtuse equal lobes having elevated veins. Large tree, whose wood is much like mahogany ; very sweet-scented.

glandulosa (scrub birch. C. P. M. ♄.) branches glandular-dotted, glabrous : leaves obovate serrate, at the base entire, glabrous, sub-sessile : pistillate ament oblong, scales half-3-cleft : seed orbicular with a narrow margin. From 2 to 8 feet high. Very abundant in the marshes about Stockbridge, Mass. It seems to be intermediate between Betula and Alnus.

nana (dwarf birch. Can. M. ♄.) very small and glabrous : leaves small, wedge-orbiculate, gash-crenate, net-veined beneath : scales of the ament deeply 3-parted, divisions oblong : seeds oblong, nearly wingless. Swamps.

pumila, W. (4) (dwarf birch. C. P. J. ♄.) branches pubescent dotted : leaves orbicular-obovate petioled, dense-pubescent beneath : pistillate ament cylindric. 2 or 3 feet high.

18—3. Bidens. 49. 55.

†*cernua* (water beggar-ticks. O. y. Au. ☺.) flowers subrayed drooping : outer calyx longer than the flower : leaves lanceolate sub-connate toothed. One variety,

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(1) lanulosa, Mx. fl. nigra, L.
(2) papyrifera, Mx.
(3) nigra, Wm. carpinifolia, Eh.
(4) nana, Kalm, not W.

minima, has sessile leaves and erect flowers and seeds. Another variety, *coreopsis*, has serrate opposite clasping leaves.

chrysanthemoides, W. (1) (daisy beggar-ticks. O ? y. Au. ☺.) flowers rayed drooping, the ray thrice as long as the sub-equal calyx : leaves oblong, tapering to both ends, toothed, connate. Flowers large ; 2, 3 or 4 awns to a seed. Wet.

frondosa (burr-marygold. O. y. Ju. ☹.) flowers discoid : outer calyx six times as long as the flower, leafets ciliate at the base : lower leaves pinnate, upper ones ternate lanceolate serrate.

connata, W. (2) (P. C. y. Ju. ☺.) flowers discoid : outer calyx thrice as long as the flower : cauline leaves ternate : lateral leafets connate, floral ones oblong-lanceolate.

pilosa (P. Ju. ☺.) flowers discoid : outer calyx of the length of the inner : lower leaves pinnate, upper ones ternate ; leafets oblong, a terminal lanceolate one twice as long as the rest.

bipinnata (hemlock beggar-ticks. C. P. y. Ju. ☺.) flowers sub-rayed : outer calyx of the length of the inner. Leaves doubly pinnate, leafets lanceolate pinnatifid.

beckii, Torrey. (mermaid beggar-ticks. Au. y. 4.) submersed leaves capillary, divided into many parts, dichotomous : flowers erect, terminal, solitary. Flowers radiate. A new species discovered in a pond near Schenectary, N. Y. by Dr. Lewis C. Beck, and named by Dr. John Torry, in honor of the zealous and persevering discoverer.

14—2. BIGNONIA. 40. 45.

radicans (trumpet flower. P. r. & y. Ju. ♄.) leaves pinnate : leafets ovate toothed acuminate : corymb terminal : tube of the corol thrice as long as the calyx : stem rooting. Most beautiful climbing shrub. One variety, *flammea*, has yellow-scarlet flowers. Another variety, *coccinea*, has bright scarlet flowers. Cultivated.

Bignonia, see Catalpa.

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(1) Coreopsis perfoliata, Wr. (2) chrysanthemoides, Mx.

22—1. BLECHNUM. 55. 4.

borealis (Roman fern. Au. 4.) barren frond pinnatifid, divisions lanceolate obtusish parallel: fertile frond pinnate, leafets linear acuminate.

serrulatum (4.) frond pinnate; leafets lanceolate, tapering to both ends, at the base decurrent, sharp serrate. I do not know that we have a Blechnum in our district.

1—2. BLITUM. 12. 29.

capitatum (strawberry blite. O. r. J. ☺.) heads in a terminal spike, not intermixed with leaves: leaves triangular toothed.

virgatum (slender blite. P. r. J. ☺.) lateral heads scattered, top ones leafy: leaves triangular toothed.

maritimum, N. (1) (sea blite, C. g. S. 4 ?) calyx membranaceous: clusters axillary, spiked, naked: leaves lanceolate, tapering to each end, gash-toothed. Salt marshes. From 1 to 3 feet high, very branching.

20—4. BOEHMERIA. 53. 98.

cylindrica, W. (2) (false nettle. O. g. Ju. 4.) leaves opposite ovate-oblong acuminate toothed glabrous: flowers sub-dioecious: staminate spikes glomerate interrupted: pistillate spikes cylindric; stem herbaceous. Damp.

lateriflora (P. Ju. 4.) leaves alternate ovate-lanceolate acuminate serrate rough: flowers glomerate lateral: stem herbaceous. Leaves 3-nerved, and on long petioles.

22—6. BOLETUS. 58. 1.

1. *Pileus fleshy, cushion-like, easily separated from the elongated tubes.*

annulatus, pileus cushioned, campanulate, viscid, becoming yellow-livid; with spots, from brick-coloured streaks, becoming red: pores yellow: stipe annulated. Among pines, &c. in autumn.

cortinatus, stiped: pileus yellow, sub-viscid, orange in the center; the fleshy part white, firm and ridgy or

(1) I have had this plant in my possession seven years. I considered it an undescribed species from the first and so labelled it, but did not venture to publish it as new. (2) Urtica cylindrica, L.

crispid : tubes yellow : curtain-like volva white : stipe thick, especially towards the base.

rufus, pileus dilated, plano-convex, brick-red : pores white : stipe long, torn-wrinkled : scales becoming black. In grassy woods, &c. autumn. This is a variety of the *aurantius*.

scaber, pileus subrugose, grey-sooty-yellow : pores becoming pale white, depressed around the attenuated stipe : scales becoming black. In beech woods, &c. the beginning of autumn ; at length it becomes dry hard and dark coloured.

circinans, in groups : pileus viscid, sub-repand, thick, straw-colour or livid-yellow : pores acute, yellow : stipe somewhat slender, shortish, yellowish, rough with dark specks. Among pines, &c. early in autumn.

sub-tomentosus, middle-size : pileus cushioned, plano-convex, sub-tomentose, yellowish ash-colour ; the fleshy part not very changeable : pores large : stipe somewhat slender, reddish in the middle or yellowish and one-coloured. Grows in woods in autumn.

radicans, pileus cushioned, yellow-cinereous ; margin involute, sub-tomentose : pores citron yellow : stipe smooth, rooting, tomentose, one-coloured. In oak woods, &c. autumn.

reticulatus, pileus cushioned, dilated, dirty yellow, mostly tessellated, and chinked ; fleshy part becoming bluish : pores middle size ; becoming yellow : stipe shortish, glabrous of the same colour of the pileus, red within. Pileus often 5 or 6 inches broad.

edulis, pileus cushioned, very broad, dark-yellowish purple, the fleshy part not changeable : pores at first filled and whitish, afterwards pale yellow : stipe tuberous, sub-ventricose, reticulate, reddish-grey. In woods, &c. autumn.

luridus, large : pileus cushioned, dark olive : pores equal, at first red, at length orange ; stipe elongated, red reticulate, sub-bulbous. In July, large.

2. *Pileus fleshy, coriaceous, mostly somewhat corky : tubes shortish, connected with the substance of the pileus.*

(Pileus entire ; stipe central or a little out of the centre, and perpendicular.)

brumalis, pileus convex, sub-umbilicate, of a darkish-

shade becoming yellow, margin ciliate : pores oblong, white. Late in autumn on decaying trunks, &c.

perennis, coriaceous, tenaceous, cinnamon colour : pileus thin, with zones, mostly connate. On the earth about decaying trunks, &c.

(Pileus halved ; stipe lateral.)

frondosus, very branching : pilei many, halved, sooty-grey. About roots of oaks, &c. in autumn. The whole group or mass sometimes a foot broad.

lucidus, pileus very tough, coriaceous, chesnut colour, shining, with concentric furrows : pores minute, white. Stipe variable. On trunks of trees, very large, becoming tawney.

badius, sub-cespitose : pileus glabrous, tough, liver-brown, paler at the margin : pores minute, pale : stipe lateral, short, thick, dark cinereous. On hollow logs, &c. in autumn.

varius, sub-solitary ; pileus tough, reddish-yellow, halved or entire : stipe sub-lateral, elongated, black from the middle downward. On trunks 1 to 2 inches broad.

(Pileus halved ; without a stipe.)

citrinus, imbricate, halved, fleshy, glabrous, citron-yellow. Roots of oaks, &c. in summer and autumn.

odoratus, halved, odoriferous, sub-deformed : pileus rugose, with zones or parallel bands ; dark shade at the base, margin arched and cinnamon colour beneath, opake. On trunks.

marginatus, simple or sub-imbricate : pileus thick, hard tuberculate, becoming red or reddish-yellow, margin issuing a white juice : pores pale or light citron-yellow. Very hard and hairy, about 4 inches. When recent acid drops of a liquid issue from the margin.

igniarius, dilated, smooth, cuticle in ridges ; pileus hard, becoming dark at the base, at the margin cinnamon colour, beneath yellowish white. Grows on trunks. General form like a horse's hoof. It is called *touch-wood*.

betulinus, sub-stiped, largish ; pileus flesh-corky, reniform, dirty reddish-yellow, white beneath. On roots, &c.

fomentarius, halved, hard ; pileus sub-triquetrous, with

obsolete belts, dirty ash-colour: pores at first white-glaucous, at length sub-ferruginous. Used for tinder.

velutinus, corky, simple, pileus convex, thin, hirsute, white: pores minute, dirty white. About 1 ½ inches broad, somewhat zoned. On dry trunks, &c.

lutescens, sub-cespitose, corky: pileus depressed, thin, tomentose, pale; with hirsute zones becoming yellow. On trunks, &c. with the last which it resembles but is rather broader.

versicolor, cespitose, coriaceous; pileus thin, with blueish many-coloured zones: pores white. On dry trunks. Autumn and winter.

cinnabarinus, in groups, uniformly of a cinnabar or vermilion colour: pileus thickish, ridgy, obsoletely zoned, subtomentose. One or two inches diameter.

3. *Open or effuse, upside down* (that is, the pores or tubes on the upper side) *pileus mostly obsolete.*

destructor, white; pileus unequal, undulated, rugose; pores roundish-obtuse. Grows in buildings, &c. which it tends to destroy. Its substance is fibrous and becomes dry.

radula, pale white, subtomentose; pores acute, unequally prominent, rough.

4. *Tubes free among each other.*

hepaticus, fleshy, blood-red, halved: tubes free, becoming yellow. Roots of oaks, &c. in autumn.

18—2. BOLTONIA. 49. 55.

asteroides (false aster. P. w-r. Au. 4.) leaves very entire: flowers long peduncled: seed oval, glabrous, sub-awnless.

glastifolia (false chamomile. P. w. Ju. 4.) lower leaves serrate: flowers short-peduncled: seeds obcordate, apparently winged, pubescent; awns of the pappus two of equal length with themselves.

5—1. BORAGO. 41. 42.

officinalis (borage. E. b. Ju. ☺.) leaves alternate: calyx spreading.

africana (E. ☺.) leaves opposite, petioled, ovate: peduncle many-flowered.

22—5. BORRERA. 57. 2.

ciliaris, frond greenish ; divisions linear, ramose, attenuated ; ciliate at the apex, white beneath, channelled : receptacles sub-terminal ; disk concave, at length flat, dark sooty yellow and grey, with a frond-like, crenate and fringed margin. On trunks and rocks.

leucomela, frond becoming pale ; divisions erect, linear, many-cleft, attenuate, ciliate, very white beneath, subpulverulent, somewhat channelled : disk of the receptacles flat, dark grey, with a frond-like ciliate margin. On trunks of trees.

erysophthalma, frond yellowish red, naked both sides, 1-coloured ; divisions linear, flattish, pinnatifid-branched, with little fibres at the apex : receptacles sub-terminal, disk orange, with frond-like, fibrous-ciliate margins. Common on fences and trees.

exilis, frond pale white ; divisions very branching, entangled a little, compressed, capillary attenuated : receptacles scattered, disk flattish, saffron colour, with a thin entire frond-like margin. On trees, &c.

22—1. BOTRYCHIUM. 55. 5.

fumarioides, W. (1) (grape fern. C. P. J. Ju.) scape naked, frond glabrous, radical, 3-parted, 2-pinnate ; leafets lunate crenate : spikes pinnate.

obliquum, W. (P. J. Ju.) scape below 1-fronded ; frond sub-biternate : leafets oblong-lanceolate, serrulate, dilated at the base, unequally heart-form : spikes doubly pinnate. Perhaps only a variety of the last.

dissectum (P. C. J.) scape below 1-fronded ; frond 3-parted 2-pinnatifid, divisions linear 2-parted, at the apex 2-toothed.

virginicum, W. (2) (N. W. C. P. J. Ju.) hirsute : scape in the middle fronded ; frond sub-ternate, 3-parted, 2-pinnatifid ; leafets gash-pinnatifid, divisions obtuse, sub-3-toothed, spikes 2-pinnate, divaricate. Large. (rattlesnake fern.)

gracile, Ph. (C. Y. W. P. T. J.) glabrous : scape in the middle fronded ; frond 3-parted, 2-pinnatifid, divisions gash-sub-pinnatifid, acute, sub-toothed : spikes slender, pinnate, erect. Smaller.

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(1) Botrypus lunarioides, Mx. Osmunda biternata, Lk.
(2) Osmunda virginica, L. Botrypus virginicus, Mx.

22—6. BOVISTA. 58. 1.

nigrescens, large, becoming of a dark shade, plicate beneath. Form either globose or round-oblong, an inch or two in diameter. In shady woods.

Brasenia, see Hydropeltis.

15—2. BRASSICA. 39. 63.

orientalis (perfoliate cabbage. E. ♄.) leaves heart-form, clasping, glabrous; radical ones entire: silique 4-sided.

napus (kale or cole. E, ♄.) root caulescent, fusiform: leaves smooth, upper ones heart-lanceolate, clasping, lower ones lyrate toothed. (Rape.)

rapa (turnip. E. ♄.) root caulescent, orbicular, depressed, fleshy: radical leaves rough, cauline ones very entire, smooth. Var. *ruta-baga*, has a turbinate, sub-fusiform root.

oleracea (common cabbage, including all the varieties caused by culture. E. ♄.) root caulescent, terete, fleshy: leaves smooth, glaucous, repand and lobate.

3—2. BRIZA. 4. 10.

canadensis, Mx. (1) (quake grass. C. M. 4.) panicle lax; spikelets erect, 4 to 10-flowered, the common glume smallish; outer valve of the flower acute, ovate: leaves long: culm erect.

eragrostis, Sr. (2) (P. Ju. 4.) spikelets oval-lanceolate, 20-flowered, flowers sub-acute: neck of the sheathing leaves pilose: culm geniculate, decumbent.

media (E. M. 4.) sheath striate, glabrous: panicle erect, spreading, with the branches in pairs; spikelets subtriangular: corol equalling the calyx, one valve broad, the other compressed.

maxima (rattlesnake grass. E. ☺.) spike cordate, about 7-flowered. Flowers very large.

3—2. BROMUS. 4. 10.

secalinus, W. (chess. O. J. ☺.) panicle nodding; spikelets ovate compressed: glumes naked distinct; awns

(1) Megastachia canadensis, Rs.
(2) Poa megastachya, Koeler. Megastachia eragrostis, Pb.

shorter, subulate straitish-zigzag. Probably from Europe, common in rye and wheat fields.

ciliatus, W. (1) (C. W. T. P. J ♃.) panicle nodding; spikelets oblong compressed, 6 to 8-flowered, florets awned at the margin, cilliate-villose: sheaths and both sides of the leaves subpilose: culm bearded at the joints.

pubescens, M. (broom grass. C. V. P. J. ♃.) culm hairy below, joints brown: stipules very short: panicle at length nodding, pubescent: calyx less than corol, 8 to 12-flowered: corol pubescent, one valve awned beneath the apex.

purgans, W. (C. W. P. Au. ♃.) panicle nodding, spikelets lanceolate terete: florets awned, pilose, awns erect: leaves glabrous both sides, their sheaths pilose.

mollis, S. (C. Ju.) panicle erect, compact; peduncles remose, spikelets ovate, florets imbricate, depressed, nerved, pubescent.

22—2. Bryum. 56. 4.

1. *Staminate flowers peduncled, leafless.*

androgynum, leaves lanceolate, acute, imbricate-spreading: capsule erect, oblong; lid conic. In damp woods.

2. *Staminate flowers sessile, terminal, bud-form: capsules peduncled.*

carneum, stem simple: leaves lanceolate, acute, entire, reticulate, remotish: capsule pendulous, ovate. In damp shades.

argenteum, stem ramose at the base, cespitose: leaves ovate, concave, mucronate, imbricate, glaucous-silvery: capsule ovate-oblong, pendulous. On walls, houses and sandy soils.

caespiticium, stem ramose at the base: leaves lance-ovate, acuminate, imbricate: capsule oblong, pendulous: lid convex. On walls, houses, &c.

3. *Staminate flowers sessile, terminal, with a disk-like tuft of leaves.*

roseum, stem erect: leaves crowded together, stellate, oblong, entire, acute; capsule oblong: lid conic. In woods and bushes.

cuspidatum, leaves lance-ovate, serrate: capsule ovate, pendulous: lid conic, obtuse. In moist shades.

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(1) canadensis, Mx.

punctatum, stem erect, sub-simple : leaves obovate, entire, punctate-reticulate : capsule ovate : lid subulate, incurved. In damp shady lawns, &c.

4. *Flowers perfect ; germs nodding.*

nutans, stem sub-simple : leaves lanceolate, acute, keeled : capsule obovate, nodding, lid convex, short-mucronate. In dry barren situations.

14—2. BUCHNERA. 40. 34.

americana, W. (blue hearts. P. D. b. Au. ♃.) leaves lanceolate, 3-nerved, toothed.

15—1. BUNIAS. 39. 63.

edentula, Bw. (1) (sea rocket. L. Ju. ☉.) leaves obovate, sinuate : silicles with two smooth, 1-seeded, toothless joints.

18—2. BUPHTHALMUM. 49. 55.

grandiflorum (ox-eye. E. ♃.) leaves alternate, lanceolate, sub-denticulate, glabrous.

22—2. BUXBAUMIA. 56. 4.

aphylla (leafless moss) capsule long-peduncled : leaves none. In barren places.

20—4. BUXUS. 38. 96.

sempervirens (box. E. ♄.) leaves ovate, petioled, somewhat hairy at the margin : anthers ovate, arrow-form. Var. *angustifolia*, leaves lanceolate. Var. *suffruticosa*, leaves obovate, stem hardly woody.

C.

18—1. CACALIA. 49. 55.

suaveolens, W. (wild caraway. P. w. Au. ♃.) stem herbaceous : leaves petioled, halbert-arrow-form, serrate, glabrous, one-columned : flowers corymbed, erect : calyx many-flowered. From 3 to 4 feet high.

(1) Cakile maritima, Ph. americana, N.

atriplicifolia, W. (orach caraway. P. w. Au. 4.) stem herbaceous: leaves petioled, glabrous, glaucous beneath, radical ones cordate toothed, cauline ones rhomboid, sub-2-toothed both sides: flowers corymbed, erect: calyx 5-flowered. Flowers small.

reniformis, W. (P. w. Au. 4.) stem herbaceous: leaves petioled, glabrous beneath, pilose at the veins: radical ones ample, heart-kidney-form, repand-toothed; cauline ones toothed, at the base wedge-form, entire: corymbs level-topped: calyx many-flowered. From 5 to 10 feet high.

12—1. CACTUS. 13. 85.

flagelliformis (creeping cereus. E. r. Ju. ♄.) creeping, cylindric, or 10-angled, rooting.

opuntia (prickly pear. Y. P. C. Catskill. y. J. 4.) proliferous; compressed and ovate between the isthmusses: bristles fascicular. Flowers large. The plant appears like a series of thick succulent leaves, one growing from the top of another. Dry rocks, &c.

Cakile, see Bunias.

18—4. CALENDULA. 49. 55.

officinalis (pot marygold. E. y. ☺.) seed keeled, muricate, incurved.

22—5. CALICIUM. 2. 7.

stigonellum (fungus lichen.) crust sub-contiguous, unequal, becoming white, or none: receptacles (puffs) sessile, sub-globose, black, glabrous: disk puncticulate, at length flattish, opake, margin thin, shining. In bark.

turbinatum, puffs turbinate, nearly sessile, black, rather polished: disk dark, opake, puncticulate, within a thick contracted margin. On trunks of trees, &c.

20—13. CALLA. 2. 7.

palustris, W. (water arum. O. w. Ju. 4.) leaves subroundish heart-form acute: spathe ovate cuspidate spreading when mature. Grows in wet places.

2—1. CALLISTACHIA. R. (1) 40. 35.

virginica (Culver's physic. O. w. Au. 4.) spikes terminal : leaves in fours or fives. Five or six feet high.

1—2. CILLITRICHE. 12. 88.

verna, W. (2) (water chickweed or star-wort. O. w. M. ☺.) upper leaves spatulate-obovate, lower ones linear obtuse and emarginate.

intermedia (P. Pittsfield, Mass. w. Ju. ☺.) upper leaves oval : cauline ones linear, 2-cleft at the apex.

autumnalis, Loesel. (3) (Y. P. C. w. S. ☺.) leaves all linear, bifid at the apex : flowers perfect.

brevifolia, Ph. (4) (C. Au. ☺.) leaves all linear truncate, short approximate. Small, moss-like.

13—13. CALTHA. 26. 61.

palustris, W. (American cowslip. O. y. Ap. 4.) stem erect corymbed : leaves heart-reniform, lobes spreading, acute-crenate all around ; floral leaves sub-sessile : petals ovate.

ficaroides, Ph. (5) (fig cowslip. C. y. J. 4.) stem erect 1-flowered, 1-leafed ; radical leaves heart-ovate, very obtuse, few-toothed, many nerved : petals elliptic.

flabellifolia, Ph. (tooth-leaf cowslip. P. y. J. 4.) stem procumbent : leaves spread-reniform ; lobes very spreading, acute and sharp toothed all around : peduncles axillary, solitary, 1-flowered : petals obovate : capsule hook-beaked. Probably the *dentata* of Muhl.

integerrima (New-England. P. y. M. 4.) stem erect corymbed : leaves entire, with a closed sinus, orbiculate-heart-form : floral leaves sessile kidney-form, at the base obsoletely-crenate : petals obovate.

CALYCANTHUS. 41.

floridus (Carolina allspice. Southern states. p. M. ħ.) divisions of the calyx lanceolate : leaves broad-oval acute, tomentose beneath : branches spreading. Cultivated.

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(1) Veronica, L. Leptandra, N.
(2) heterophylla, Ph. aquatica, Bw.
(3) linearis, Ph.
(4) terrestris, M.
(5) Ranunculus ficaria, Wr.

Campanula. 41.

grandiflora (great bell-flower. E. 4.) leaves ternate, oblong, serrate: stem 1-flowered; flowers spreading.

rotundifolia, W (flax bell-flower, hair-bell. O. b. J. 4.) glabrous: radical leaves heart-reniform crenate; cauline ones linear entire: panicle lax few-flowered, flowers nodding. Without particular care the radical leaves will be overlooked. Rocks, &c.

americana, W. (P. b. J. ♄.) glabrous: leaves heart-form and lanceolate serrate; lower petioles ciliate: flowers axillary sessile; corol 5-parted flat, style longer than the corol. Flowers small, 2 or 3 in the axils of the leaves; from 2 to 3 feet high.

acuminata, Mx. (1) (P. T. w-b. Ju. 4.) smoothish erect: leaves ovate-lanceolate ending in a long acuminate point, sub-serrate: spike fascicular many flowered: corol somewhat wheel-form. Flowers like the *americana*.

erinoides, M. (2) (prickly bell-flower. O. w-b. J. ☺.) slender: stem simple angular: angles and the margin and nerve of the leaves with reversed prickles: leaves linear-lanceolate glabrous on the upper side: peduncles few, those on the top of the stem flexuose, axillary ones 1-flowered filiform. Flowers small. Damp.

medium (canterbury bells. E. b. Au. ♄.) capsule 5-celled, covered: stem undivided erect leafy: flowers erect.

speculum (venus' looking glass. E. b. Au. ☺.) stem very branching diffuse: leaves oblong, sub-crenate: flowers solitary, often destitute of the scales at the base.

perfoliata, W. (3) (clasping bell-flower. O. b. J. ☺.) stem simple erect: leaves heart-form crenate clasping: flowers axillary sessile glomerate. Flowers small.

22—2. Campylopus. (4) 56. 4.

pulvinatus, stem ramose, fastigiate: leaves lanceolate, bearing hairs: capsule oval, nodding: lid subulate. On walls, stones, &c.

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(1) nitida, A. (2) flexuosa, Mx. aparinoides, Ph. aspera, Donn.
(3) amplexicaulis, Mx. (4) Dicranum, H.

21—5. CANNABIS. 53. 98.

sativa (hemp. E. g. Au, ☉.) stem pilose : leaves digitate serrate pilose : staminate flowers solitary axillary, pistillate flowers spiked.

Caprifolium, see Lonicera.

5—1. CAPSICUM. 23. 41.

annuum (guinea pepper. E. w. Au. ☉.) stem herbaceous : peduncles solitary.

15—2. CARDAMINE. 39. 63.

impatiens (cuckow flower. E. w. ☉.) leaves pinnate, gashed stipuled : flowers apetalous.

rotundifolia, Mx. (Whitehills. w. Ju. 4.) stem procumbent, somewhat simple : leaves sub-orbiculate, nearly entire.

pensylvanica, W. (american watercress. O. w. M. 4.) glabrous, branching : leaves pinnate : leafets roundish-oblong, obtuse, tooth-angled : silique narrow erect.

virginica, W. (P. Pittsfield, Mass w. M. 4.) glabrous, erect : leaves pinnate ; leafets lanceolate, sub-auricled : silique long strait erect.

teres, Mx. (New-England. Pursh. w. J. 4.) small erect ramose : leaves all sub-lyrate-pinnatifid : silique short, terete acuminate.

hirsuta (P. w. M.) leaves without stipules, pinnate : leafets rounded, repand-toothed petioled, with the terminal one oblong, gashed : flowers tetrandrous.

18—1. CARDUUS. 49. 54.

pectinatus (comb thistle. P. p. ♄.) unarmed : leaves decurrent : peduncles terminal, very long, 1-flowered, somewhat leafless ; flowers nodding after the discharge of pollen : scales of the calyx linear spreading.

20—3. CAREX. 3. 9.

1. *Stigmas two ; spikes dioecious.*

scirpoidea, Mx. (Can. C.) solitary spike imbricate, cylindric : capsules densely-pubescent : leaves flat.

sterilis, W. (barren sedge. O. M. 4.) spikes sub-sixfold: fruit ovate compressed 3-sided acuminate, at the apex recurved doubly-cuspidate, margin ciliate-serrate.—Wet.

2. *Stigmas two : spikes single with staminate flowers at the apex.*

cephalophora, W. (1) (head sedge. W. C. P. J. 4.) spikes single, condensed in an elliptical form : fruit ovate, compressed, bifid, margined, ciliate-serrate above, leaves exceeding the culm in length. Wet.

3. *Stigmas two : spikes several with staminate flowers at the top.*

bromoides, W. (O. M. 4.) spikelets oblong, alternate, remotish, sessile : capsules oblong, acuminate, beaked bicuspidate : scales oblong, mucronate. Wet.

retroflexa, Sh. (O. W. 4.) spikelets somewhat in fours, remotish : fruit ovate, 2-toothed, glabrous at the margin, reflexed-spreading : scales oblong-lanceolate. On dry land.

stipata, W. (O. J. 4.) spikelets somewhat in fives, oblong aggregate : fruit spreading ovate acuminate, bicuspidate, convex-flat, nerved : culm 3-sided, very rough. On wet land.

muhlenbergii, W. (2) (P. O. Ma. J.) spikelets somewhat in fives, ovate, alternate, approximate : fruit roundish-ovate, margined, compressed, 2-toothed, ciliate-serrate ; scales mucronate. On dry land.

multiflora, W. (O. M. 4.) spikes in narrow panicles, oblong obtuse : fruit ovate acuminate bicuspidate : scales ovate mucronate : bracts leafy filiform. On wet land.

spurganioides, W. (O. Ma. to Ju. 4.) spikelets many-flowered, somewhat in eights, ovate, sub-approximate : fruit ovate compressed, margined, bifid, the margin ciliate-serrate, horizontal. On wet ground.

rosea, W. (3) (O. 4.) spikelets somewhat in fours remote : fruit ovate, acuminate, 2-toothed, at the margin ciliate-serrate, horizontal : scales ovate obtuse : bract leafy at the base of the lower spike. On dry land.

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(1) typhina, Mx. squarrosa, L. (2) vulpinoidea, Mx
(3) echinata.

paniculata, W. (O. Ju. 4.) spikes panicled ; fruit ovate, margined above, 2-toothed, the margin ciliate-serrate : culm 3-sided. On wet land.

4. *Stigmas two : spikes several with pistillate flowers at the top.*

scirpoides, W. (1) (O. Ma. Ju. 4.) spikelets somewhat in fours approximate elliptic : fruit ovate 2-toothed compressed, at the margin ciliate-serrate, erect : scales elliptic obtuse. On wet ground.

lagopodioides, W. (2) (O. J. Ju. 4.) spikelets in twelves, alternate elliptic obtuse approximate : fruit ovate-lanceolate margined bicuspidate : bract leafy very long at the base of the last spike. On wet ground.

straminea, Sh. (straw sedge. W.) spikelets oblong-ovate, alternate, erect, approximate. sessile, about in sixes, at length sub-globose : fruit ovate-compressed, diverging margin scabrous, 2-toothed at the apex, nerved at the base ; scales lance-ovate, half as large as the capsule : leaves glabrous, lower ones shorter. Wet.

scoparia, W. (3) (O. Ma. to Ju. 4.) spikelets somewhat in fives, alternate elliptic, obtuse, sub-approximate : fruit ovate-lanceolate, margined, bicuspidate : bracts oblong, mucronate. Common on wet and dry land.

festucacea, W. (O. Ma. J. 4.) spikelets somewhat in eights, sub-approximate, alternate, cylindric, the fruit-bearing ones club-form : fruit roundish-ovate, beaked 2-toothed, at the margin ciliate serrate, greater than the scales, which are lanceolate mucronate. Common on dry land

5. *Stigmas two : staminate and pistillate flowers mostly on distinct spikes.*

saxatilis, W. (Vermont. J. 4.) pistillate spikes in pairs, oblong, the lower one peduncled : fruit elliptic, obtuse, equalling the oblong obtuse scale ; bracts oblong, clasping, sub-foliaceous at the apex : culm glabrous. Hemlock woods.

caespitosa, W (4) (O. Ma. J. 4.) pistillate spikes cylindric, obtuse, somewhat in threes, distant, exsertly-peduncled, lower one very short, fruit ovate, obtuse, per-

(1) triceps, Mx.
(2) richardi, Mx.
(3) viridula, Mx.
(4) polyandra, Sh.

forated at the mouth, larger than the oblong obtuse scale : leaves spreading. On wet land. (Staminate spike sometimes single.)

crinita, W. (O. J. Ju. 4.) staminate spikes in pairs : pistillate ones in fours, distant, peduncled, pendulous, cylindric : fruit roundish-elliptic, ventricose, very short-beaked, at the orifice entire, shorter than the oblong awned scale. A variety, *paleacea*, has cylindric spikes, the staminate ones several : peduncles long, reclined : bracts leafy, distant : scales terminated with long serrate sharp points : capsules roundish, emarginate at the orifice : culm lax. Wet.

acuta, W. (O. J. Ju. 4.) staminate spikes in pairs or in threes ; pistillate ones somewhat in fours, sub-peduncled, a little nodding, cylindric, remote : fruit oblong with a very short beak, at the orifice entire, perforated—it nearly equals the oblong acute scale. Wet.

6. *Stigmas three : spikes with staminate flowers at the top.*

willdenowii, Sh. (P. C. Ma. J. 4.) spike simple : fruit alternate, oblong, terete-3-sided, rough, acuminate : scales ovate acuminate ; the lowest apex leafy. On wet land.

polytrichoides, W. (1) (O. J. 4.) spike simple ; fruit oblong-lanceolate, compressed-3-sided, obtuse, emarginate : scales oblong, obtuse, mucronate. On wet ground.

pedunculata, W. (O. Ma. to Ju. 4.) spikes somewhat in fours, peduncled, much branched : fruit obovate, 3-sided, obtuse ; scales oblong, obtuse, mucronate. Moist.

7. *Stigmas three : the terminal spikes staminate below, the others pistillate.*

virescens, W. (green sedge. O. Ma. 4.) the androgynous spike linear-peduncled, staminate florets below ; the pistillate ones sub-approximate, in pairs, sub-peduncled, linear : fruit globular-3-sided, obtuse, pubescent. On dry land.

hirsuta, W. (P. C. Ma. J. 4.) androgynous spikes oblong obovate, staminate florets below ; the pistillate ones remotish, sub-ternate, sub-sessile, oblong : fruit ovate, very obtuse, obtusely 3-sided : leaves and sheaths hirsute. On dry hills.

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(1) microstachya, Mx.

buxbaumii, W. (1) (P. Ju. Au. 2.) androgynous spikes peduncled obovate : staminate florets below ; pistillate ones sub-ternate, remote, sub-peduncled : fruit elliptic, 3-sided obtuse, obsoletely 2-toothed, nearly equalling the oblong mucronate scale. On wet ground.

trichocarpa, Sh. (2) (W. P. J. 2.) androgynous spikes in threes ; pistillate ones in pairs peduncled erect, cylindric remote ; fruit ovate, acuminate, bicuspidate, pilose, longer than the awned ovate-lanceolate scale. On damp land.

3. *Stigmas three : the stamens and pistils on distinct spikes ; the staminate spikes solitary, the pistillate ones sessile or having an inclosed peduncle.*

varia, W. (O. Ma. J. 2.) pistillate spikes somewhat in threes, sub-approximate, sessile, sub-globular : fruit sub-globular 3-sided, beaked, 2-toothed, pubescent, shorter than the oblong scale : culm erect. On dry land.

subulata, Mx. (C. 2.) pistillate spikes somewhat in fours, very remote, sessile ; staminate one sessile : fruit subulate, divaricate, reflexed : culm slender : leaves flat. Swamps.

marginata, W. (P.C. Ap. Ma. 2.) pistillate spikes somewhat in pairs, approximate, sub-globular, sub-sessile : fruit globular, tomentose, 2-toothed, larger than the oblong-ovate scale : radical leaves of one year longer than the culm. Common on dry land.

vestita, W. (O. J. 2.) staminate spike lanceolate ; pistillate ones ovate, in pairs, sessile, approximate : fruit ovate, beaked, at the orifice oblique, pubescent, nearly equalling the acute ovate scale. On wet land.

tentaculata, W. (O. J. Ju. 2.) pistillate spikes in threes with inclosed peduncles, ovate sub-approximate : bracts very long leafy : fruit ovate, ventricose, nerved, very long-beaked, at the orifice 2-toothed, longer than the lanceolate mucronate scale. On wet land.

rostrata, Mx. (O. J. 2.) stiffly erect : leaves very narrow, flat : pistillate spikes in pairs, distinct, axillary, sub-sessile, sub-globose ; staminate spike sessile : capsules capitate, erect, oblong, very long-beaked. Not a variety of *tentaculata*. Wet.

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(1) polygama, Sh. (2) lanuginosa Mx.

miliaris, Mx. (O. Ju. 2.) pistillate spike generally solitary, sessile, ovate: bract bristle-form: fruit globose glabrous. On damp land.

lupulina, W. (O. J. to Au. 2.) pistillate spikes in threes with enclosed peduncles, oblong approximate: bracts very long, leafy: fruit ovate ventricose nerved, with a very long conic beak, at the orifice bicuspidate, several times longer than the mucronate ovate scale. On damp land.

flava, W. (1) (P. W. J. 2.) pistillate spikes somewhat in threes, sub-approximate, elliptic with an inclosed peduncle: fruit ovate reflexed, beak longer than the ovate, lanceolate scale, the beak curved 2-toothed. On wet land.

oligocarpa, W. (2) (W. C. P. Ma. 2.) pistillate spikes in pairs, somewhat 4-flowered, the lower florets peduncled, fruit roundish-3-sided, obovate, beaked, at the orifice entire, longer than the mucronate oblong scale. Woods.

folliculata, W. (3) (O. J. Ju. 2.) pistillate spike sub-solitary, sub-6-flowered, sub-exsert-peduncled: fruit ovate ventricose nerved beaked, at the orifice 2-parted, longer than the ovate scale. A variety, *major*, has the fruit more swollen.

pubescens, W. (O. Ma. 2.) pistillate spikes in fours, sessile, the lowermost flowers exsert-peduncled: fruit ovate-3-sided, pubescent, beaked, 2-toothed, longer than the oblong mucronate scale: leaves on the culm pubescent. On damp land.

9. *Stigmas three: the stamens and pistils on distinct spikes; staminate spikes solitary; pistillate ones long-peduncled, the sheaths shorter.*

plantaginea, W. (4) (plantain sedge. O. Ma. J. 2.) spikes peduncled; pistillate spikes in fours, distant: fruit elliptic, 3-sided, pedicelled, glabrous, shorter than the cuspidate ovate scale: bract sheathing, sub-foliaceous at the apex: radical leaves lanceolate, nerved. On dry ground, in woods, &c.

anceps, W. (5) (C. P. J. 2.) pistillate spikes in threes, re-

(1) oederi, Sh. (3) intumescens, Rudge.
(2) paupercula, Mx. (4) latifolia.
(5) striatula, Mx. Perhaps a variety of the plantaginea.

mote, lower ones peduncled : fruit ovate nerved, at the orifice membranaceous, longer than the mucronate oblong scale. Woods.

granularis, W. (1) (O. Ma. to Ju. 4.) pistillate spikes in threes, remote, the two lower ones peduncled : fruit globular-ovate nerved ventricose, very short-beaked, at the orifice obsoletely-emarginate, longer than the ovate-lanceolate scale. On dry land.

conoidea, W. (O. J. 4.) pistillate spikes in pairs remote ; the upper one sub-sessile, the lower one long-peduncled : fruit oblong-conic, obtuse, equalling the awn scale. Woods.

tetanica, Sh. (P. C. W. Ma. J. 4.) pistillate spikes in pairs remote, the upper one sub-sessile, the lower one long-peduncled : fruit obovate, recurved at the apex, at the orifice entire, longer than the obtuse ovate scale. Common in dry ground.

laxiflora, W. (2) (P. C. W. Ap. Ma. 4.) pistillate spikes in threes, 6 to 8-flowered, distant ; lower one remotely peduncled, fruit oblong ventricose obtuse, larger than the mucronate ovate scale. Shady places.

hystericina, W. (O. J. Ju. 4.) staminate spike solitary, scales ovate-oblong sub-mucronate ; pistillate spikes cylindric in pairs, the lower one peduncled, fruit ovate many-nerved beaked, at the orifice bifid, longer than the awned oblong scale. On wet land.

flexuosa, W. (3) (O J. 4.) pistillate spikes somewhat in fours, remote, filiform, peduncled, nodding : fruit distant, alternate, oblong beaked, bifid, twice as long as the mucronate ovate scale. On wet land.

digitalis, W. (P. C. 4.) pistillate spikes somewhat in threes remote, filiform, peduncled, nodding : fruit elliptic obtuse, longer than the oblong-lanceolate scale.

10. *Stigmas three : the stamens and pistils on distinct spikes ; staminate spike solitary, pistillate ones peduncled ; sheaths scarcely any.*

umbellata, W. (C. W. N. P. Ma. 4.) pistillate spikes in threes peduncled, 8-flowered, ovate, whorled : fruit ovate pubescent, beaked, at the orifice entire, equalling the ovate-lanceolate scale. On dry land.

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(1) lenticularis, Mx. (2) paupercula, Mx.
(3) debilis, Mx. tenuis, Rudge.

miliacea, Sh. (P. C. Ju. 4.) pistillate spikes in threes filiform, the highest sub-sessile, the others peduncled: fruit ovate 3-sided, short-beaked, at the orifice entire, longer than the awned emarginate oblong scale. On wet land.

pseudo-cyperus, W. (O. J. Ju. 4.) pistillate spikes in fours with the peduncles in pairs, pendulous cylindric: fruit ovate-lanceolate bicuspidate, reflexed, equalling the bristle-form scale. Common on wet land.

11. *Stigmas three: the stamens and pistils on distinct spikes: staminate spikes many.*

recurva, W. (1) (P. J. 4.) staminate spikes in pairs; pistillate ones cylindric, somewhat in threes, peduncled, pendulous: fruit elliptic, obtuse, often roughish, equalling the ovate cuspidate scale. On wet ground.

pellita, W. (2) (O. J. Ju. 4.) staminate spikes in pairs; pistillate ones in pairs cylindric, erect, remote, upper one sessile: fruit ovate bifid, pilose, shorter than the awned ablong scale. Common on wet land.

lacustris, W. (3) (O. J. Ju. 4.) staminate spikes in fours; pistillate ones in pairs erect cylindric peduncled: fruit oblong many-nerved beaked bifurcate, longer than the mucronate oblong scale. On wet land. A large variety is called *gigantea*.

vesicaria, W. (O. Ma. to Ju. 4.) staminate spikes in threes; pistillate ones somewhat in pairs, peduncled, cylindric: fruit oblong-inflated, beaked, bicuspidate, larger than the lanceolate scale, culm acutely 3-cornered. On wet land.

bullata, W. (P. W. J. 4.) staminate spikes in threes; pistillate ones in pairs, cylindric, peduncled, erectish: fruit obovate-globular, beaked, bifurcate; the beak hispid and longer than the lanceolate scale. Common on wet land.

20—13. CARPINUS. 50. 99.

americana, W. (4) (hornbeam, blue beech. O. g. M. ½.) leaves oblong-ovate, acuminate, unequally serrate: scales of the strobile 3-parted, the middle division with a lateral tooth.

(1) flacca, Sh.
(2) striata, Mx.
(3) riparia, M.
(4) virginiana, Mx.

18—1. CARTHAMUS. 49. 54.

tinctorius (false saffron safflower. E. y. J. ☹.) leaves ovate, entire serrate-aculeate.

coerulius (blue saffron. E. b. 2.) stem about 1-flowered: leaves lance-ovate, spine-toothed.

5—2. CARUM. 45. 60.

carui (caraway, E. w. ♄.) stem branching: leaves with ventricose sheaths: partial involucre none.

20—13. CARYA. N. (1) 50. 94.

sulcata, W. (2) (shell-bark hickory. P. Ap. ♄.) leafets about 9, ob-lanceolate, acuminate, serrate, pubescent beneath; the terminal leafets sub-sessile, tapering to the base: fruit roundish, 4-keeled; nut sub-globose a little compressed, smooth, long-mucronate.

squamosa, Mx. (3) (shag-walnut, shag-bark hickory. O. M. ♄.) leafets about 7, long-petioled, lance-oblong, acuminate, sharply serrate, villose beneath; the terminal leafet sessile: ament filiform, glabrous: fruit globose a little depressed: nut compressed, oblique.

tomentosa, Mx. (4) (white-heart hickory. T. C. P. Ap. ♄.) leafets about 9, lance-oblong, acuminate, slightly serrate, pubescent beneath, scabrous, terminal one sub-petioled: aments filiform, very long, tomentose: fruit sub-globose, smooth, with the pericarp very thick; nut somewhat 6-angled—putamen thick, hard to be broken, nucleus agreeably tasted.

amara, Mx. (bitter nut. T. C. Y. V. P, Hudson. Ap. ♄.) leafets about 9, ovate-oblong, acuminate, sharply serrate, glabrous both sides; the terminal leafet short-petioled; fruit sub-globose, with the sutures prominent above; nut smooth, sub-globose, mucronate—putamen easily broken, nucleus bitter.

porcina, Mx. (pig-nut, broom hickory. O. M. ♄.) leafets about 7, lanceolate, acuminate, serrate, glabrous both sides; terminal leafet sub-sessile: fruit pear-form or globose: nut smooth—putamen very thick and hard,

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(1) Juglans, L. (3) compressa, W. squamosa, Mx. arb.
(2) laciniosa, Mx, mucronata, Mx. fl. (4) alba, W.

nucleus small. Var. *obcordata*, (1) has an obcordate nut. Var. *ficiformis* has the fruit turbinate and nut oblong.

10—1. Cassia. 33. 93.

senna (Egyptian senna. E. ☉.) leaves in 6 pairs ; petioles glandless : legume reniform.

marilandica (wild senna. O. y Au. 4.) somewhat glabrous : leaves in 8 pairs, lance-oblong, mucronate : flowers in axillary racemes and in terminal panicles : legumes linear curved. An excellent mild cathartic. B. River alluvian.

chamaecrista (cassia, partridge pea. Y. T. C. P. y. Au. ☉.) somewhat glabrous : leaves linear in many pairs, the glands or the petioles sub-pedicelled : petals with 2 spots : legumes pubescent. A most elegant plant, from 8 to 16 inches high. Dry sand, &c.

fasiculata (C. P. y. Ju. ☉.) somewhat glabrous : leaves at the summit in 9 pairs : fasicles many-flowered, lateral : petals and stamens of the same colour : legumes glabrous, ascending arched.

nictitans (C. P. New-England. Pursh. y. Ju. ☉.) spreading, pubescent : leaves in many pairs, linear ; glands of the petioles pedicelled : peduncles short, supra-axillary, 2 or 3-flowered ; flowers petandrous. The leaves of this species and of the chamaecrista possess a considerable degree of irritability.

20—13. Castanea. 50. 99.

americana, Mx. (2) (chesnut. O. g. J. ♄.) leaves lance-oblong, sinuate-serrate, with the serratures mucronate, glabrous both sides. Large tree.

pumila (chinquapin. P. g. J. ♄.) leaves oblong, acute, mucronate-serrate, with white down beneath. Small tree.

2—1. Catalpa. J. 40. 45.

syringaefolia, Sims. (3) (catalpa tree. P. w. & p. Ju. ♄.) leaves cordate, flat. An elegant tree. Cultivated.

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(1) These two varieties are the species obcordata and glabra of W.
(2) Fagus castanea, L. (3) cordifolia, E. bignonioides, Wr. Bignonia catalpa, L.

22—2. CATHARINAEA. 56. 4.

undulata, leaves lanceolate, serrate, undulated, crisped when dry : capsule cylindric : lid subulate. In woods and shades.

CAULINIA.

flexilis (water knot-grass T. C. P Y. Au. ☺.) leaves in sixes, toothed at the apex, spreading. Immersed in ditches, &c.

fragilis (P. S. ☺.) leaves in threes or opposite, linear-subulate, recurved, aculeate-toothed, rigid. Immersed.

6—1. CAULOPHYLLUM. MX. (1) 24. 61.

thalictroides (poppose root, false cohosh. O. p-y. Ap. 4.) very glabrous : leaves more than decompound ; leafets oval, the lower ones petioled and lobed, the end ones 3-lobed. Berries dark, blue. Woody.

5—1. CEANOTHUS. 43. 95.

americanus (New-Jersey tea. O. w. J. ♄.) leaves ovate acuminate, serrate, 3-nerved, pubescent beneath : panicles axillary long-peduncled, sub-corymbed.

5—1. CELASTRUS. 43. 95.

scandens, W. (false bittersweet, staff tree O. y-w. J. ♄.) stem twining : leaves oblong, acuminate, serrate : racemes terminal. Retains its scarlet berries through the winter, though dry and generally opening by valves.

5—2. CELTIS. 53. 99.

occidentalis, W. (nettle tree. T. C. P. w. M. ♄.) leaves ovate, acuminate, equally serrate except near the base ; scabrous above, rough-haired beneath : fruit solitary.

crassifolia, W. (hag-berry, hoop-ash. P. w. M, ♄.) leaves ovate, acuminate, unequally serrate, unequally cordate at the base, sub-coriaceous : peduncles about 2-flowered.

(1) Leontice, L.

Polytrichum. L.

3—1. CENCHRUS. 4. 10.

echinatus (hedgehog grass. P. C. Au. ☺.) spike oblong, conglomerate : involucre sub-globose, 10-parted.

tribuloides (C.P .Ju. ☺.) spike glomerate, with alternate spikelets : pistillate glumes globose, muricate-spinose hirsute. Sandy marsh.

22—5. CENOMYCE. (1) 57. 2.

1. *Frond foliaceous : peduncle* (podetia) *fistulous, dilated upwards, bearing cups, or attenuate-subulate ; the cups closed with transverse membranes.*

(Receptacles sooty-yellow or pale.)

alcicornis, frond foliaceous, marked, becoming pale-green; divisions sub-palmate, ascending, repand-toothed, obtuse, inflexed, fascicles of hairs at the margin : peduncles long-turbinate, all bearing cups, smooth ; cups regular, crenate, at length leafy and proliferous at the margin : receptacles yellowish or tawney.

pyxidata, frond foliaceous, divisions crenulate, ascending : peduncles all turbinate, cup-form, glabrous, at length warty-granulate, scabrous, greenish-grey ; cups regular, afterwards the margin is extended and proliferous : receptacles tawney.

fimbriata, frond foliaceous, divisions small, crenate : peduncles elongated, cylindric, bearing cups ; some are awl-form, very thinly pulverulent, white : cups wine-glass-form, regular ; margin entire and crenate ; at length proliferous : receptacles tawney.

gonorega, frond foliaceous ; divisions broadish, gash-crenulate : peduncles longish, glabrous, somewhat warty, glaucous or whitish-green ; when dieing it becomes dark-coloured, white-dotted, all bearing cups, which are irregular, somewhat torn-radiate, margin proliferous, leafy : receptacles tawney.

(Receptacles scarlet or dark red.)

bacillaris, frond foliaceous, minute ; divisions gash-lobed, crenate, nakedish beneath : peduncles cylindric, simple, sub-ramose at the apex, white-cinereous, with pul-

(1) Baemyces of Acharius in a former edition of his work.

verulent granulations ; rarely bearing cups, which are narrow, at length radiate : receptacles scarlet. On decaying trunks.

deformis, frond foliaceous, minute ; divisions broadish, gashed, crenate, naked beneath : peduncles long, thick, sub-ventricose, sulphur-colour, thinly pulverulent ; bearing cups, which are narrow, crenate-toothed, at length dilated and torn : receptacles sessile and pedicelled, scarlet. On the earth in woods and mountains.

coccifera, frond foliaceous, minute, divisions round, crenate, naked beneath : peduncles long-turbinate, naked, warty-scabrous, pale yellowish cinereous and green, all bearing cups, which are wine-glass form, margin extended, fertile : receptacles rather large, at length roundish, scarlet.

2. *Frond leafy : peduncle* (podetia) *fistulous, dilated above, bearing cups, which are not closed.*

parecha, frond foliaceous, largish ; divisions narrow, pinnatifid, crenulate : peduncles smooth, pale, obconic, cup-form, cup somewhat pervious, margin torn, dentate, the proliferous parts ramose, thick, not cup-form, apexes denticulate : receptacles terminal, aggregate, tawney. Often on sterile earth.

3. *Frond leafy : peduncles* (podetia) *sub-fistulous cylindric, simple, split at the apex or sub-digitate-rayed—rays all fertile.*

cariosa, frond foliaceous, minute ; lobes crenulate : peduncle white, latticed as if worm-eaten, warty-granulate, divided somewhat in a digitate form at the apex ; branches fastigiate : receptacles crowded, dark tawney.

symphycarpa, frond foliaceous ; lobes roundish, crenulate, livid : peduncles shortish smooth, subdivided at the apex : receptacles heaped together, tawney.

delicata, frond foliaceous ; lobes minute, erose-laciniate, granulated : peduncles glabrous, granulate, pale, somewhat divided at the apex, branches very short : receptacles conglomerate dark-tawney. On decaying trunks or earth.

capitata, frond foliaceous, lobes imbricated, somewhat olive-coloured : peduncles sub-simple, somewhat straw-like : receptacles heaped in a sub-globular form, reddish yellow.

4. *Frond leafy, almost wanting or disappearing; peduncle* (podetia) *cartilaginous rigid, fistulous, all attenuated and subulate, ramose, mostly perforated at the axils.*

acicularis, peduncles stiffly erect, terete, warty-wrinkled, white, sub-simple: receptacles capitate, sub-globose, sub-solitary, shining, dark tawney.

furcata, peduncle elongated, smooth, livid and somewhat chesnut-brown, dichotomous; axils not perforated, branches aricular, curved, forked at the apex, diverging: receptacles of the fertile ones tawney.

uncialis, peduncles elongated, glabrous, pale, dichotomous; axils perforated, standing open, apex of the branches spreading, short, rigid: receptacles terminal, becoming tawney.

adunca, peduncles pale or hoary, fork-branched, axils perforated, apex of the branches radiately hook-spined: receptacles capitate, pale tawney. A variety of the last?

rangiferina, peduncles elongated, cylindric, erect, somewhat scabrous, becoming cinereous, ramose; axils at length perforated, branches scattered and sub-divided, the extreme branchlets sub-radiated, apexes nodding: receptacles of the fertile ones sub-globose, aggregate, tawney.

sylvatica, peduncles white-hoary, softish, thickish and turgid, branches short, scattered, terminal, erectish, sub-fastigiate, apex sometimes dilated and somewhat torn. Variety of the last?

alpestris, peduncles white, softish, very branching, branches and branchlets interwoven, terminal, forming a dense thyrse.

5. *Frond none; peduncle* (podetia) *soft, sub-solid, subulate, somewhat branched* (sterile) *axils not perforated.*

vermicularis, peduncle somewhat awl-form, sub-simple, smooth, very white, sub-fistulous, zigzag, prostrate.

18—3. CENTAUREA. 49. 54.

cyanus (blue-bottle. E. b. w. r. J. ☺.) scales of the calyx serrate: leaves linear, entire; lower ones toothed. Naturalized, and now common in fields, &c.

benedicta (blessed thistle. E. y. J. ☺.) leaves semi-de-

current, tooth-spinose : calyx with branched spines. Cultivated.

jacea (knapweed. P. p. Ju. 4.) leaves lanceolate, entire; radical ones sub-dentate : branches angular, calyx scarious.

solstitialis (D. y. Ju. ☉.) calyx palmate-spinose, solitary; spines strait : leaves hoary, lance-linear, decurrent, entire ; radical ones lyrate. Naturalized.

centaurium (great centaury. E. 4.) leaves pinnate, glabrous ; leafets sharply and doubly serrate, decurrent : calyx smooth.

scabiosa (scabrous centaury. E. 4.) leaves pinnatifid, roughish ; divisions lanceolate, spreading, acute, pinnatifid at the base : calyx ciliate.

suaveolens (yellow sultana. E. ☉.) leaves lyrate-pinnatifid : calyx smooth.

moschata (sweet sultana. E. ☉.) leaves slightly pinnatifid ; lower divisions mostly entire : calyx smooth.

Centaurella, see Bartonia.

4—1. CEPHALANTHUS. 48. 56.

occidentalis (button bush. O. w. Ju. ♄.) leaves opposite and in threes, oval, acuminate. Inflorescence a round head. Swamps.

22—4. CERAMIUM. (1) 57. 2.

1. *Red or reddish.*

rubrum, threads dichotomous, very branching, sub-cartilaginous, branchlets forked, joints ovate opake, knee-joints contracted : capsules involucred. Bays, &c.

diaphanum, threads dichotomous very branching, sub-membranaceous, variegated with purple and hyaline, branchlets forceps-like, joints cylindric hyaline, knee-joints elevated : capsules involucred. Bays, &c.

2. *Yellowish or rust-colour.*

ferrugineum, threads slender, divaricately ramose, loosely entangled : joints twice as long as their diameter. Sea.

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(1) Species of Conferva of Linneus and others, excepting the aureum, which is a Byssus.

littorale, threads very slender, woven into a rope-like frond: branches erect, joints with their length equalling their diameter. Lakes, &c.

cirrhosum, branches pinnate, spreading approximate, stiff and strait; length of the joints nearly equalling their diameters. Seas, bays, &c.

aureum, threads flexuose, fascicled in a dense, soft, cushion-like tuft; branches elongated, spreading, somewhat rigid; joints twice as long as their diameters. On damp rocks, as in Castleton, Vt. on overflowed timber, &c.

10—5. CERASTIUM. 22. 82.

†*vulgatum*, S. (mousear chickweek. O. w. Ap. ☺.) hirsute, viscid, cespitose: leaves ovate: petals oblong, about equal to the calyx: flowers longer than the peduncle.

†*semidecandrum*, W. (Y. P. w. M. ☺.) hirsute, viscid: leaves ovate-oblong, acute: petals emarginate, shorter than the calyx: peduncles longer than the calyx: flowers pentandrous.

†*arvense*, W. (T. P. w. J. 4.) pubescent, cespitose: leaves lance-linear, obtuse, ciliate at the base, shorter than the distance between the joints of the stem: petals obcordate, twice as long as the calyx: leafets of the calyx obtuse.

dichotomum, M. (P. w. ☺.) leaves lanceolate: stem dichotomous: capsules erect, twice as long as the calyx.

†*viscosum*, W. (P. C. T. w. M. 4.) hirsute, viscous, diffuse; leaves lance-oblong, obtusish: petals obovate, scarcely longer than the calyx: flowers shorter than the peduncle.

tenuifolium, Ph. (P. C. w. M. 4.) very slender, pubescent, cespitose: leaves narrow-linear, longer than the distance between the joints of the stem: petals obovate, emarginate about thrice as long as the acute calyx.

glutinosum, N. (1) (P. D. w. J. 4. or ☺.) viscid, with soft hairs, erect leaves elongated, distant oblong-linear, acute; radical ones spatulate: petals oblong, 2-cleft at the apex, longer than the calyx: peduncles at length much longer than the flower, though shorter at first.

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(1) nutans, R ? longepedunculatum, M.

20—13. CERATOPHYLLUM. 15. 91.

demersum (hornwort. C. P. Ju. 4.) leaves 8 in a whorl, dichotomous in pairs, tooth-spined on the back: flowers axillary: fruit 3-spined.

10—1. CERCIS. 33. 93.

canadensis (red bud, judas tree. D. P. Can. r. M. ħ.) leaves round-heart-form, acuminate, villose at the axils of the nerves: stipules minute: legumes short-stiped.

22—5. CETRARIA. 57. 2.

islandica (1) (the iceland lichen, iceland moss. C. Y.) frond olive-chesnut-brown, at the base reddish-white, white beneath; divisions erectish, sub-linear, many-cleft, channelled, tooth-ciliate, the fertile ones dilated: receptacles close pressed, flat, one-coloured, margin frond-like, elevated, entire. On sandy plains, as on the barren plains near Beaver ponds in N. Haven, where it covers the earth very densely in many places.

juniperina, frond pale yellow, very yellow beneath: divisions flat ascending, erose-crenate, crisped: receptacles elevated; disk liver-brown, margin frond-like, crenulate. On trunks and branches.

pinastri, frond with divisions depressed, round-lobed, crenate, margin crisped, pulverulent, very yellow. A variety of the last?

ciliaris, frond livid-tawney, reticulate-lacunose, white beneath, divisions crisped ciliate: receptacles somewhat elevated, dark-tawney, margin frond-like, crenate.

lacunosa, frond ample, whitish-green, rugose-reticulate, cellular, whiter beneath, round-lobed, margin torn-crenate: receptacles large, elevated, reddish-yellow; margin frond-like, flexuose, sub-entire.

5—2. CHAEROPHYLLUM. 45. 60.

procumbens (2) (chervil. C. P. w. M. ☺.) seeds shining,

(1) Physica islandica, Mx.
(2) Scandix procumbens. W. See Uraspermum.

smooth : leaves decompound : stem procumbent : umbels few-flowered.

20—1. Chara. 15. 6.

vulgaris, W. (feather-beds. O. Ju. ☺.) stem and branches naked at the base ; branchlets terete ; joints leafy ; leaves oblong-subulate ; bracts shorter than the berry. Odour disagreeable. Ponds and ditches mostly stagnant.

foliosa, W. (P. Ju. ☹.) stem naked papillose above ; branchlets terete at the base and in the leafy joints : leaves linear : bracts shorter than the berry. In clear water.

flexilis, W. (P. Au. ☺.) stem translucent, naked : branchlets jointless, leafless, compressed : berries lateral, naked. Ponds in Stockbridge.

glabra, M. (P. Ju.) whole plant glabrous.

22—1. Cheilanthes. 55. 5.

vestita, W. (lip fern. P. 4.) frond doubly pinnate, hairy both sides ; leafets pinnatifid, divisions oblong, obtuse, entire : stipe and racemes rough-haired. Small, on rocks.

15—2. Cheiranthus. 39. 63.

cheiri (wall-flower. E. J. 4.) leaves lanceolate, acute, glabrous : branches angled : stem somewhat of a woody texture.

fenestralis (waved wall-flower. E. ♄.) leaves crowded together in a head, recurved undulate : stem undivided.

annuus (stock july-flower. E. Ju. ☹.) leaves lanceolate, sub-dentate, obtuse, hoary : silique cylindric with an acute apex.

incanus (brompton stock, brompton queens. E. ♄.) leaves lanceolate, entire, obtuse, hoary : silique truncate compressed at the apex, stem somewhat of a woody texture.

13—1. Chelidonium. 27. 62.

majus, W. (celandine. O. y. M. 4.) umbels axillary, peduncled : leaves alternate, pinnate, lobed.

14—2. CHELONE. 40. 45.

glabra (snakehead. O. w. & r. Ju. 4.) leaves opposite, lance-oblong, acuminate, serrate ; spikes terminal, dense-flowered. Some authors make a species *obliqua*, which they say, has all the leaves opposite, and that the glabra has the lower leaves alternate—sed quere? Damp.

5—2. CHENOPODIUM. 12. 29.

bonus-henricus (english mercury. E. g. J. 4.) leaves triangular saggitate entire, spikes compound leafless axillary.

rubrum (rusty pigweed. O. r-g. Ju. ☺.) leaves triangular-cordate, obtusish, sinuate-toothed : racemes erectish, compound, sub-foliaceous, shorter than the stem. Frequent about gardens, &c. perhaps introduced.

album (pigweed. O. g. Ju. ☺.) leaves rhomboid-ovate, erose, entire behind, the upper ones oblong entire, seeds smooth. Var. *viride*, leaves lance-rhomboid sinuate-toothed : racemes ramose, sub-foliaceous : stem very green.

hybridum (O. g. Ju. ☺) leaves cordate, angled-acuminate : racemes branching, divaricate naked.

botrys (oak-of-jerusalem. O. g. J. ☺.) leaves oblong, sinuate : racemes naked many-cleft. Sweet scented.

ambrosioides, W. (sweet pigweed. C. P. g. Ju. ☺.) leaves lanceolate, toothed : racemes leafy simple. Sweet scented.

anthelminticum (wormseed. Y. C. P. g. Au. 4.) leaves ovate, oblong, rarely toothed ; racemes leafless : styles 3. Odour strong and disagreeable. A good anthelmintic. B.

maritimum (sea pigweed. C. P. Y. g. Au. 4.) leaves subulate, fleshy, semi-terete : flowers glomerate, axillary. On the sea-coast.

glaucum (C. 4.) leaves ovate-oblong, repand, glaucous beneath ; racemes naked, simple, glomerate.

scoparium (summer cypress. E.) leaves flat, lance-linear, margin ciliate : flowers glomerate, axillary.

10—1. CHIMAPHILA Ph. (1) 18. 51.

maculata, W. (spotted winter-green. O. w. Ju. 4.) leaves lanceolate, rounded at the base, remotely serrate, marked with long spots : scape 2 or 3-flowered ; filaments woolly. Woods.

umbellata, W. (prince's pine, bitter wintergreen. O. r-w. Ju. 4.) leaves wedge-lanceolate, with an acute base : scape corymbed : filaments glabrous. Both species are tonics and diuretics, and resemble in their effects the Arbutus uva-ursi. B.

2—1. CHIONANTHES. 44. 87.

virginica (fringe tree. C. P. w. M. ½.) panicle terminal, trifid : peduncles 3-flowered : leaves acute. Berries purplish blue.

Chironia, see Sabbatia.

22—4. CHORDARIA. (2) 57. 2.

filum, frond filiform, very simple, terete, attenuate at the apex and base, constructed of fibres spirally twisted. Colour tawny olive, substance tenaceous. Sea.

18—2. CHRYSANTHEMUM. 49. 55.

leucanthemum (ox-eyed daisy. O. J. 4.) leaves clasping, lanceolate serrate, cut-toothed at the base : stem erect branching. Fields.

parthenium (feverfew E.) leaves petioled compound, flat : leafets ovate, gashed : peduncles branching corymbed : stem erect.

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(1) Pyrola, L. The Chimaphila was long united to the Pyrola. Tho' they possess strong botanical affinities, they differ quite as much in habit, and sensible, as well as medicinal, properties, as other genera of the natural order Ericae. Such divisions of the Linnean genera where the "natural genus gives the characters," ought to be adopted. But divisions founded on any artificial character, however constant and decisive, injure the science.

The *pipsissiwa* of the Indians is the Chimaphila umbellata. But the *kinni-kinick*, which the Indians mix with tobacco for smoking, is the Arbutus uva-ursi. I have before me a genuine specimen, which was sent to Miss J. Dickinson of Troy from the Island of St. Joseph, northwest of Lake Huron. It is a very luxuriant growth. Our druggists ought to be supplied from that region, and stop the importation.

(2) Fucus. L.

carinatum (three-coloured daisy. E. r. w. Au. ☺.) leaves bipinnate, fleshy, glabrous : scale of the calyx carinate,
coronarium (garden chrysanthemum. E. Au. ☺.) leaves bipinnatifid, acute, broa der outwards : stem branching.

18—1. CHRYSOCOMA. 49. 55.

virgata (goldy locks. D. y.) herbaceous, smooth : leaves narrow-linear : branches corymbed, fastigiate : calyx oblong, 3 or 4-flowered ; scales glutinous, close-pressed.

18—3. CHRYSOSPLENIUM. 23. 84.

oppositifolium (golden saxifrage, water-carpet. O. y-r. M. ♃.) leaves opposite, roundish, slightly crenate, tapering for a little distance to the petiole. In rivulets, springs, &c.

17—10. CICER. 32. 93.

arietinum (chick pea. E. ☺.) peduncle 1-flowered : seeds globose, gibbous : leaves serrate.

18—1. CICHORIUM. 49. 53.

intibus (succory or endive. O. b. Ju. ♃.) flowers axillary, in pairs, sessile ; leaves runcinate.
endivia (garden endive. E. ♁.) peduncles axillary, in pairs ; one long, 1-flowered, the other short, about 4-flowered : leaves oblong, denticulate. Var. *crispum*, has fringed leaves and solitary flowers.

5—2. CICUTA. 45. 60.

virosa (water hemlock. E. ♃.) umbels opposite to the leaves ; petioles margined, obtuse : leafets ternate, acutely serrate. Root containing a yellow juice.
bulbifera (O. Ju. ♃.) branches bearing bulbs in whorls : leaves fennel-like. Damp.
maculata (O. w. Ju. ♃.) serratures of the leaves mucronate : petioles membranaceous : 2-lobed at the apex. Damp.

Cimicifuga, see Macrotys.

18—2. CINERARIA. 49. 55.

heterophylla (ashwort. P. y. M. ♃.) downy : radical

leaves long-petioled, obovate-spatulate; also ovate, acutish, and pinnatifid; cauline 2–3, linear, pinnatifid: flowers corymbed.

1—2. CINNA. 4. 10.

arundinacea (1) (indian reed. W. V. C.) glabrous: panicle large, many-flowered, capillary: one valve somewhat awned below at the apex.

2—1. CIRCAEA. 48. 88.

lutetiana (2) enchanter's nightshade. O. r-w. Ju. 4.) stem erect: leaves ovate, denticulate, somewhat glabrous. Var. *alpina*, has an ascending stem, leaves sub-cordate, and the calyx membranaceous. This variety is generally considered as a distinct species. But they certainly pass into each other by almost imperceptible gradations. Damp.

13—1. CISTUS. (3) 20. 80.

canadensis (rock rose, frost plant. O. y. J. 4.) without stipules, erect; leaves alternate, erect, linear-lanceolate, flat, tomentose beneath; divisions of the calyx broad-ovate-acuminate: capsules shorter than the calyx. At the foot of the Pine-rock, New-Haven, the barren plains produce great quantities of this plant. In Nov. and Dec. of 1816, I saw hundreds of these plants sending out broad, thin, curved ice crystals, about an inch in breadth from near the roots. These were melted away by day, and renewed every morning for more than 20 days in succession.

ramuliflorum, Mx. (D. y. Ju. 4.) without stipules, erect: powdery-tomentose: leaves alternate, oblong, acute, revolute at the margin, tomentose beneath: racemes short, about 3-flowered at the summit: divisions of the calyx orbicular, pulverulent: capsules globose, of the length of the calyx. Dry, sandy.

corymbosum (D. J. 4.) without stipules, erect, ramose, minutely pubescent: leaves alternate, lanceolate, whitish-downy beneath: corymb fastigiate, with numerous crowded flowers: divisions of the calyx ovate, acute: capsule scarcely longer than the calyx. Dry, sandy.

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(1) Agrostis cinna, Ph. (2) canadensis, M. (3) Helianthemum, J.

13—1. CITRUS. 18. 70.

aurantium (orange tree. E. w. ♄.) leaves oval, acuminate, with the petioles winged or margined.

medica (lemon tree. E. w. J. ♄.) leaves ovate, acuminate, with linear wingless petioles. Var. *limon* (lime tree) bears smaller fruit, which is almost round.

22—6. CLAVARIA. 58. 1.

1. *Corol-like; clavate pileus branched.*

(Stems or stipes very thick.)

formosa, very branching: stem sub-decumbent, thick, white: branches elongated, rose-orange; branchlets obtuse, becoming yellow. In groves.

flava, stem thick, white: branches and branchlets strait, shortish, yellow. In autumn it grows in shady woods, about 3 inches long.

botrytis, sub-deformed; stem very thick, decumbent, becoming palish white: branches shortish, sub-rugose; branchlets obtuse, red. On fallen trees, &c.

(Stems slender, or not so thick as to equal all the branches taken together.)

palmata, somewhat winged or wing-like, becoming pale: stem slender: branches sub-compressed, palmate.—About 3 inches long, and the breadth about the same.

corniculata, sub-ramose, yellow: stem slender, elongated, twice ternately divided in forks; branchlets acute. Branches mostly compressed; branchlets a little woolly. In woods, 1½ inch long.

byssiseda, various, sub-ramose, small, pale reddish-yellow; rootlets byssus-like or flax-like, white, sessile or sitting down. Springs up among fallen leaves, &c.

mucida, in groups, minute, simple and ramose, white: apex ochre colour: sitting down with a tomentose base. On decaying trunks, &c. about the fourth of an inch long, substance tough.

cornea, in groups, minute, viscid, becoming yellow, simple and ramose; connate at the bases. On trunks in autumn, scarcely the fourth of an inch long.

2. *Simple; the clavate pileus not branched.*

ligula, sub-cespitose, pale reddish-yellow, opake, vari-

ous, villose and slender at the base, terete or sub-compressed at the apex. Adhering to branches, &c. about 2 inches long.

pistillaris, solitary, large, thick, from yellow becoming a little reddish ; round at the apex. Nearly cylindric at first, and becoming thick and sub-rugose. Has a bitter taste.

fusiformis, cespitose, heaped together, orange ; clavate pileus attenuated, sub-tenacious, cohering at the base. In woods.

flavipes, cespitose, fragile : clavate pileus sub-falcate, acuminate, pale ; approximate at the base : shining yellow.

eburnea, cespitose, crowded, fragile, snow white. In shady woods on the earth. Very variable ; but distinguished by being white and fragile.

herbarum. in groups, minute, lanceolate, sub-tenaceous ; becoming dark-olive. Hardly belongs to this genus. About one sixth of an inch long, on leaves and other herbage.

muscicola, very minute, white, sub-incrassate, curved, all glabrous ; sitting down with globose tubercles.

gyrans, on leaves ; wholly white, filiform ; stipe with long pubescence. In autumn. Stipe white, weak.

5—1. Claytonia. 13. 86.

virginica, W. (spring beauty. T. Y. C. w. & r. Ap. ♃.) leaves lance-linear : raceme solitary : leaves of the calyx acutish : petals obovate, retuse : root tuberous. Thin woods.

spatulata (1) (spring beauty. H. w. & r. Ap. ♃.) leaves spatulate : raceme solitary : leaves of the calyx obtuse : petals roundish, retuse : root tuberous. Leaves nearer the flowers than those of the virginica, and much broader.

13—13. Clematis. 26. 61.

viticella (purple virgin's bower. E. p. Ju. ♃.) climbing : leaves compound and decompound ; leafets oval sub-lobate entire : petals obovate spreading.

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(1) spathulaefolia, Ph. caroliniana, Mx.

viorna, W. (1) (leather flower. P. b. J. ♄.) climbing : leaves compound and decompound ; leafets lance-oval, acute at both ends, trifid and entire : flowers solitary, bell-form : petals thick leathery, acuminate.

virginica (virgin's bower. O. w. Ju ♄.) climbing : leaves ternate ; leafets ovate, sub-cordate, gash-toothed and lobate : corymbs dichotomous, few flowered ; petals longer than the stamens. Often dioecious.

flammula (sweet virgin's bower. E. ♄.) lower leaves laciniate ; upper ones simple, entire, lanceolate.

ochroleuca, W. (2) (P. C. w. & y. J. 4.) erect, simple, pubescent : leaves simple entire. About one foot high.

6—1. CLEOME. 25. 64.

dodecandra, W. (false mustard. P. T. C. p. Ju. ☺.) glabrous : flowers axillary, solitary : leaves ovate, ternate generally dodecandrous. Along the banks of the Hudson from Stillwater in Saratoga co. to its mouth.

pentaphylla, W. (P. w-r. Ju. ☺.) leafets quinate : stem unarmed. Flowers gynandrous. The corols of this genus being cruciform, it is by some placed in the 15th class.

10—1. CLETHRA. 18. 51.

alnifolia (spiked alder, sweet pepper bush. Y. C. P. w. Ju ♄.) leaves wedge-obovate, acute, coarse-serrate above, glabrous both sides : flowers in spike-form racemes. A bush 3 to 6 feet high. Damp or wet.

22—2. CLIMACIUM. 56. 4.

dendroides (3) (tree moss) stem branching, tree-form : leaves crowded, erect, lanceolate, sub-3-nerved, serrulate above : capsule erect, long-cylindric : inner peristome at length multifid-capillaceous.

14—1. CLINOPODIUM. 42. 39.

vulgare (field thyme. O. r-w. Ju. 4.) flowers in head-form whorls : bracts setaceous, hispid : leaves above pilose, remotely toothed : stem simple. Dry fields and woods.

(1) cylindrica, Sims. (2) Sericea, Mx. (3) Leskea dendroides, Mx.

18—1. CNICUS. (1) 49. 54.

lanceolatus (common thistle. O. p. J. ♄.) leaves decurrent, hispid, pinnatifid; divisions 2-lobed divaricate, spinose: calyx ovate with spider-web-like pubescence: scales lanceolate, spinose, spreading.

discolor (O. p. Ju ♄.) leaves sessile, pinnatifid, rough-haired, downy beneath; divisions 2-lobed, divaricate, spinose: calyx globose with spider-web-like pubescence; scales ovate, close-pressed, with spreading spines at the tips.

altissimus (2) (tall thistle. O. w-p. Au. ♃.) leaves sessile, lance-oblong, scabrous, downy beneath, toothed, ciliate; radical ones pinnatifid: calyx bracted, ovate; scales lance-ovate, spinose, close-pressed.

arvensis (3) (canada thistle. O. p. J. ♃.) leaves sessile pinnatifid, ciliate, spinose: stem panicled: calyx ovate, mucronate: scales broad-lanceolate, close-pressed, margin woolly.

horridulus, Ph. (4) (C. P. w-y Ju. ♃.) tall: leaves sessile, pinnatifid, acutely gashed, very spinose: involucre terminal, 1-flowered, many-leaved; leafets very spinose double: calyx unarmed.

muticus, Ph. (5) (C. P. p. Ju. ♄.) leaves all pinnatifid, woolly beneath; divisions sub-lanceolate, acute, a little spinose: branches at the summit many, nakedish, 1-flowered: calyx globose; scales not spinose.

glaber, N. (D) leaves sessile, pinnatifid, all over smooth; segments spinose, acute, lower ones sub-decurrent: calyx ovate, glabrous, scales spineless, short mucronate, obtusely carinate: stem much branched. 4 or 5 feet high, with slender branches.

odoratus, M. (6) (P. D. C. r. Ju. ♃.) stem hairy backwards, 1 to 3-flowered: leaves clasping, lance-oblong, pinnatifid, segments irregularly lobed, ciliate, tipped with spines; colour similar both sides: calyx large, sub-globose, naked; scales close-pressed, lanceolate, acuminate, spinose. Stem 1 to 2 feet high.

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(1) Carduus, L. in some of his works. Cirsium, Mx.
(2) virginianus, Wr. repandum, Mx.
(3) Serrulata arvensis, W.
(4) spinosissimus, Wr. Serratula discolor, Lk.
(5) carolinianus, Wr.
(6) pumilus, N.

15—1. COCHLEARIA. 39. 63.

officinalis (scurvy grass. E. w. J. 24.) radical leaves roundish; cauline ones oblong, subsinuate: silicles globose.

armoracia (horse radish. E. w. J. 24.) radical leaves lanceolate, crenate; cauline ones gashed. Var. *aquatica*, leaves deeply pinnatifid or pinnate below. Growing wild in water and wet places in various parts of Berkshire county, Mass.

20—3. COIX. 4. 10.

lachryma, (job's tear. E, Ju. ☉.) culm semiterete above: flowers naked: fruit ovate.

22—5. COLLEMA. 57. 2.

nigrum, frond crust-like, sub-orbicular, dark-tawny; lobes gash-crenate all around the periphery, the central ones subramose, and in the form of grains: receptacles at length convex, black, marginated. On stones.

pulposum, frond sub-orbicular, formed of thick sub-imbricate repand-crenate plicate naked lobes: receptacles central crowded, flattish, reddish-yellow, with elevated entire margins.

papulosum, frond orbicular: central lobes thick, entangled, irregular; those of the periphery expanded, dilated outwardly, gash-crenate, warty blistered above.

pallescens, frond yellowish green, pale beneath: lobes deformed, densely entangled, irregularly crenate, ascending: receptacles sub-marginal. A variety of the tenax.

myriococcum, frond sub-orbicular, imbricate, black; lobes crowded, entangled, crisped, granulate: receptacles minute, globose-turbinate, heaped together, marginal and scattered, one-coloured, marked with punctures. Among and on mosses on rocks, &c.

palmatum, frond sub-foliaceous, tawny-green becoming glaucous; lobes thick, crowded, gash-palmate, divisions sub-linear-terete: receptacles red-tawny. On the earth and trunks.

nigrescens, frond foliaceous, membranaceous sub-monophyllous, orbicular, depressed, radiately plicate, round-lobed, dark-green: receptacles central, crowded, at length convex, red-tawny, margins entire. On roots of trees, rocks, &c.

pulchellum, frond foliaceous, membranaceous, orbicular, flat, sub-laciniate, round-lobed at the periphery, plicate-papulose above, dark-green, paler beneath and deeply lacunose : receptacles scattered, crowded, elevated ; disk urceolate, pale wax-colour ; margin thin, contracted, entire, at length sub-rugose.

furvum, frond foliaceous, membranaceous, sub-rugose, complicate, dark-green, granulated both sides ; lobes round-deformed, afterwards undulate crisped entire : receptacles scattered, flat, dark-tawny, margins entire. Trunks, &c.

tremelloides, frond foliaceous, membranaceous, very tender, sub-diaphanous, lead-colour, obsoletely rugose and marked with dots, lobes oblong, round, gashed, entire : receptacles scattered, flat, red-tawny, at length black, margin pale. Trunks among moss, &c.

lacerum, frond foliaceous, membranaceous, sub-diaphanous, sub-rugose-reticulate, becoming glaucous ; lobes small, sub-imbricate, laciniate, tooth-ciliate : receptacles scattered, a little concave, red, margin pale.

14—1. Collinsonia. 42. 39.

canadensis (horse balm, rich weed. O. y. Au. 4.) leaves heart-ovate, broad glabrous : teeth of the calyx short-subulate : panicle terminal, compound. Var. *cordata*, leaves broad-cordate, upper ones entire. Var. *ovata*, leaves ovate, attenuate at the base, all serrate. Strong scented, not unpleasant. Woods.

14—2. Collinsia. N. 40. 40.

[Generic description omitted by mistake. Make a reference to it from its place after Antirrhinum, on page 100.]

Generic characters. Calyx 5-cleft : corol 2-lipped, throat closed ; upper lip 2-cleft, lower one 3-cleft, intermediate segment keeled, bag-like and covering the declined stamens and style : capsule globose, somewhat 1-celled and 4-valved. Seeds 2 or 3, umbilicate.

verna (collinsia. P. Lake-Erie. b. M. ☺) leaves opposite and whorled, entire : peduncles axillary, whorled, single-flowered. River alluvian.

17—10. COLUTEA. 32. 93.

arborescens (bladder senna. E. y. ♄.) leaves pinnate; leafets oval, retuse: banner gibbous, abbreviated.

vesicaria (senna herb. E. y. Ju.) leaves pinnate; leafets ovate: stem herbaceous, decumbent, villose: legumes orbicular inflated.

12—13. COMARUM. 35. 92.

palustre (marsh five-finger. O. P. Ju. 4.) leafets in threes, fives and sevens, serrate: stipules growing to the petioles and sheathing: flowers axillary and terminal: stem rooting. An active astringent. Ives' Lectures MS.

3—1. COMMELINA. 6. 13.

angustifolia, Mx. (day-flower. P. b. Ju. 4.) assurgent, weak, somewhat glabrous: leaves lance-linear, very acute, flat, glabrous; sheaths sub-ciliate: bracts (or involucres) peduncled, solitary, short-cordate.

longifolia (P. b. Ju. 4.) stiffly erect, all over pubescent: leaves long-lanceolate; sheaths red-bearded at the throat: bracts (or involucres) sub-sessile, aggregate-terminal: calyx petal-like, 3-leaved, nearly equal.

20—3. COMPTONIA. 50. 99.

asplenifolia (sweet fern. O. g. Ap. ♄.) leaves long-linear, alternately crenate-pinnatifid. A small odoriferous bush, from 2 to 4 feet high. Dry barren situations. Mild astringent and tonic. B. It is also a secernant stimulant.

22—4. CONFERVA. 57. 2.

1. *Coloured* (not green) *ramose.*

rufa, threads ramose, capillary, strait, obsoletely geniculate; branches and branchlets opposite, remotish: length of the joints equalling the diameter. In the sea. Reddish-yellow, shining, in fascicles; threads the thickness of human hair, 2 inches and longer, placid. soft.

2. *Coloured, simple.*

fucicola, threads simple, cylindric, fascicled; joints twice as long as thick. In bays, &c. fascicled like a pencil-brush, an inch or an inch and a half, yellow-ferruginous.

3. *Green, simple.*

floccosa, threads simple, spider-web-like, woven into a bullate stratum ; joints with the length and diameter equal. In ditches and slow flowing streams, frequent early in the spring, yellowish-green. Adheres to paper or leaves.

capillaris, threads simple, variously reflexed and loosely interwoven ; joints when dry alternately compressed : granulations scattered. Common in still water Joints vary in length. Hardly adheres to paper—Obscure green.

vesicata, threads simple, slender : joints six times as long as thick, in some parts globose-inflated.—Var. *fuscescens*, sooty-yellow.

fontinalis, threads simple, adnate, fascicled, strait, obtuse : joints thrice as long as thick. In limpid fountains, bright green. Hardly adheres to paper when dry.

linum, threads simple, filiform, very long, variegated and equal when dry ; diameter of the joints about equalling the length. In salt water ditches. Will not adhere to paper.

vivularis, threads simple, capillary, very long, strait, equal ; knee-joints pellucid, joints bearing grains, diameter about one third their length, alternately compressed when dry. In rivers summer and autumn—Obscure green, more slender than human hair. Var. *crispata*, has ramose threads.

4. *Green, ramose and submersed.*

fracta, threads rigid, very branching, capillary ; branches divaricate, alternate ; joints 5 times as long as thick. Common in ditches, large.

glomerata, threads very branching, capillary ; branches alternate, terminal ones fastigiate, somewhat 1-sided ; joints cylindric, four times as long as thick. Common in rivers and lakes. Adheres slightly to paper.

rupestris, threads fascicled, very branching, strait, wand-like, obtuse ; branches erect ; knee-joints pellucid ; joints cylindric, thrice as long as thick. In the sea and bays. Threads from 3 inches to a hand's breadth in length. Does not adhere to paper when dry.

5. *Green, ramose and emersed.*

velutina, threads creeping, rooting; fibrills flexuose, hyaline, ramose; branches erect, obtuse, interwoven into a veil-like tissue: upper joints double the length of the diameter. On the naked earth.

5—2. CONIUM. 45. 60.

maculatum (poison hemlock. O. w. Ju. 4.) stem very branching, spotted; leaves very compound: seeds striate. Powerful narcotic.

22—6. CONOPLEA. 58. 1.

sphaerica, in groups, sub-confluent, becoming a dark olive, tubercled or sub-granulated, spherical. On deciduous branches in dense masses.

6—1. CONOSTYLIS. 10. 17.

americana (weed-grass. D. y. Ju. 4.) corol woolly within: scape corymb-panicled: leaves grass-ensiform, glaucous: filaments equal.

6—1. CONVALLARIA. 11. 12.

1. *Corols cylindric or funnel-form; stamens attached to the upper part of the corol.* (1)

angustifolia, Ph. (2-flowered solomon seal. P. y-w. M. 4.) stem terete: leaves alternate, sessile, lance-oval, sharp, sub-trinerved, glabrous: peduncles axillary, long, about 2-flowered.

canaliculata, W. (2) (clasping solomon seal. H. w. Ju. 4.) stem channelled: leaves alternate, clasping, oblong, margin pubescent: peduncles axillary, about 2-flowered.

pubescens, W. (O. w. M. 4.) stem teretish, deeply furrowed: leaves alternate, clasping, ovate, pubescent beneath: peduncles axillary, about 2-flowered.

multiflora (giant solomon seal. O. w. Ju. 4.) stem terete: leaves alternate, clasping oblong-oval: peduncles axillary, some of them many-flowered.

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(1) This section is the Polygonatum, D.

(2) polygonatum, M.

latifolia (P. J. 4.) stem angled : leaves sessile, ovate, acuminate : peduncles 1 or many-flowered. Very tall.

Corols bell or wheel-form ; stamens attached to the base of the corol. (1)

racemosa, D.(spiked solomon seal. O.y-w.M.4.) stem with alternate leaves : leaves sessile, oblong-oval, acuminate, nerved, pubescent : flowers in a terminal raceme-panicle.

stellata (V. W. C. T. P. w. M. 4.) stem with alternate, clasping, lanceolate leaves : raceme simple, terminal. 8 to 12 inches high.

ciliata, D. (Can. w. J. 4.) stem arched : leaves sessile, ovate ciliate : panicle terminal, crowded. Flowers very small.

trifolia (P. w. J. 4.) stem with three alternate pubescent, lance-oblong leaves : raceme terminal, lax. Near the great lakes.

bifolia, Mx. (2) (dwarf solomon seal. O. w. Ju. 4.) stem with two heart-oblong, sub-sessile, glabrous leaves : raceme simple, terminal : flowers tetrandrous.

majalis (lily of the valley. E. w. J. 4.) scape naked, smooth : leaves oval-ovate.

Remark. The above genus has been divided, and the new genera, Smilacina and Polygonatum taken from it. Vid. Pursh, page 232 and on. It is true that artificial characters have been assumed which are constant and distinct. Any natural genus may be divided in the same way. But I never knew artificial characters applied in making such unnatural and unnecessary havoc in a genus containing such a natural assemblage of plants.—Some of the species most nearly related are separated, and those least related are kept together.

5 ♃—1. Convolvulus. 29. 43.

arvensis, S. (bindweed. P. New-England. w. Ju. 4.) twining, glabrous : leaves sagittate, both lobes and apex acute : peduncles about 1-flowered : bracts minute, remote from the flower.

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(1) This section includes the Convallaria majalis, L. and the genus Smilacina, D. taken from the Convallaria.

(2) canadensis, Ph.

sepium, W. (1) (field bind-weed. O. w, & r. J. 4.) twining : leaves sagittate, with the apex acute and the lobes truncate entire (some obtuse) : bracts acute, longer than the calyx and shorter than the middle of the corol : peduncle exceeding the angle of the petal.

panduratus, Mx. (mechoacan. C. P. w. &. r. Ju. 4.) twining, pubescent : leaves broad-cordate, entire or lobed, guitar-form ; peduncles long ; flowers fascicled : calyx glabrous, awnless : corol subulate, bell-form. A mild cathartic, and resembles rhubarb in its effects. B.

batatus (sweet potatoe, carolina potatoe. Southern states. w-r. Ju. 4.) creeping, tuberous : leaves cordate, hastate, angular-lobed, 5-nerved, smoothish : peduncles long ; flowers fascicled : corol sub-campanulate. Cultivated.

jalapa (jalap. Southern states. w. J. 4.) pubescent : leaves cordate, entire and lobed, rugose-plaited, downy beneath : peduncles 1 to 3-flowered : flowers sub-campanulate : root very thick. A well known cathartic.

stans, Mx. (2) (dwarf morning glory. O. w. J. 4.) erect downy : leaves lance-oblong, acuminate, cordate, hind-lobes obtuse : peduncle 1-flowered, long : bracts ovate, acute : stem floriferous below.

sagittifolius, Mx. (3) (arrow bindweed. C. r. J. 4.) climbing, glabrous : leaves thick, with roundish obtuse sinuate lobes ; the odd one larger, emarginate : peduncles 1-flowered ; corol short sub-campanulate.

spithameus, W. (4) (P. T. w. J. 4.) erect, pubescent ; leaves heart-oval, obtuse : peduncles 1-flowered, shorter than the leaves ; bracts ovate, acute, stem floriferous above.

tricolor (3-coloured bindweed, E. Ju. ☺.) leaves lance-ovate, glabrous : stem declined : flowers solitary.

Convolvulus, see Ipomaea.

18—2. CONYZA. 49. 55.

camphorata, M. (5) (marsh fleabane, plowman's wort. C. P. D. Y. p. Au. ☺.) herbaceous, pubescent : leaves ses-

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(1) repens, L. Calystegia sepium, Br.
(2) Calystegia tomentosa, Ph.
(3) speciosus, Wr.
(4) Calystegia spathameus, Pk.
(5) marylandica, Mx.

sile, broad-lanceolate, acute, serrate; serratures at the apex cartilaginous: corymbs terminal, fastigiate, condensed, almost leafless: scales of the calyx subulate-mucronate: florets short. About a foot high, near rivers, &c. Odour resembling camphor.

bifrons, W. (Can. y. Ju. 4.) sub-glutinous: leaves clasping spatulate-oblong, acute serrate: corymbs of the panicle glomerate.

13—13. COPTIS. 49. 55.

trifolia, Sy. (1) (gold thread. O. w. M. 4.) scape 1-flowered: leaves ternate. Two or three inches high. Roots long, filiform, golden-yellow. Tonic bitter. B.

19—1. CORALLORHIZA. Br. (2) 7. 21.

innata, Br. (3) (corol root. W. V. P. w-y. M. 4.) scape sheathed, leafless: flowers pedicelled; petals lanceolate, the two lower ones lance-linear, deflected; lip acute 3-cleft, spur obsolete, adnate to the germ. Plant white with a much branched corol-like root.

odontorhiza (corol teeth. O. p. w. Ju. 4.) scape sheathed, leafless: flowers pedicelled: petals lanceolate, equal: lip entire, oval, obtuse, margin undulate or a little crenate; spur obsolete adnate to the germ: capsule subglobose. Resembles the last.

hyemalis, (4) (adam and eve, putty root. V. W. C. T. g-p. M. 4.) leaf single, radical, many nerved, ovate, nerves lucid: scape simple, sheathed, erect: petals erect, 3 outer ones lanceolate, inner ones oblong; lip 3-cleft obtuse, palate ridged, central lobe rounded, crenulate. A cement resembling putty may be made of the root.

18—3. COREOPSIS. 49. 55.

tripteris (tickseed sunflower. P. T. y. 4.) glabrous; leaves opposite, petioled, lanceolate, entire; radical ones pinnate, cauline ones ternate: rays entire: seeds obovate, naked at the apex.

trichosperma, Mx. (C. D. y. Ju. ♂.) glabrous; dichotomous: leaves opposite, quinate-pinnate, lanceolate serrate: outer leafets of the calyx (8) spatulate. ciliate ser-

(1) Helleborus trifolius, L.
(2) Cymbidium, W.
(3) corallorhizon, W.
(4) Aplectrum heimale, N.

rate : rays entire : seed wedge-form, about 4-toothed. Swamps.

dichotoma, Mx. (1) (C. y. S. ☉.) stem glabrous, naked-ish and dichotomous above : leaves mostly alternate, undivided, entire, narrowing into the petiole : seed obovate 2-bristled, scabrous, with a torn margin. Swamps.

†*alternifolia*, L. (2) (P. C. y. & w. Au. 4.) stem winged : leaves lanceolate, acuminate, sub-petioled, serrate : flowers corymbed ; ray-florets lanceolate. Meadows, &c.

rosea, N. (D. P. r. M.) small, very smooth : stem mostly simple : leaves linear, entire ; axils leafy : flowers few, long-peduncled, dichotomous, terminal ; rays unequally 3-toothed. In grassy swamps.

5—2. CORIANDRUM. 45. 60.

†*sativum* (coriander. E. w. J.☉.) fruit globose : calyx and style permanent.

22—5. CORNICULARIA. 57. 2.

pubescens (horned lichen,) frond decumbent, terete, rugose, a little scabrous, dark-coloured ; branches interwoven, capillary, the extreme ones simple : receptacles of one colour, entire all around. On moist rocks, &c.

fibrillosa, frond obscurely soot-yellow, terete, smoothish, slender, entangled, ramose, somewhat rough-haired, from the branchlets and fibres which are flexuose, ramose, very thick, irregular, sub-clavate. On rocks. Variety of the pubescens.

4—1. CORNUS. 45. 58.

†*canadensis* (dogweed, low cornel. O. w. M. 4.) herbaceous : leaves at the top, whorled, veiny : involucres ovate, acuminate : fruit globose. About 6 inches high. Berries red.

florida (false box, dogwood tree. O. w-y. M. ♄.) leaves ovate, acuminate : involucres 4, very large, somewhat

(1) gladiata, Wr.
(2) Verbesina coreopsis, Mx. Actinomeris squarrosa, N.

obcordate, and appear like petals : fruit ovate. Size between shrub and tree. Berries red. Involucres white, very showy, but the corols are obscure. Tonic, resembling in effects the peruvian bark, for which it serves as a good substitute. B.

mascula, (cornelian cherry. E. ♄.) umbels equalling the involucre.

sanguinea, Hr. (T. Can. w. J. ♄.) branches strait : leaves ovate, both sides pubescent and coloured alike : cymes spreading. About 10 feet high. Berries dark-brown. Anthers yellow.

alba, W. (1) (white dogwood. O. J. ♄.) branches recurved ; branchlets glabrous : leaves ovate, acute, pubescent, hoary beneath : cymes depressed. About 10 feet high, with red branches. Berries bluish-white.

+*sericea*, W. (2) (red osier. O. w. J. ♄.) branches spreading ; branchlets woolly : leaves ovate, acuminate, rusty-pubescent beneath : cymes depressed, woolly.— About 7 feet high. Berries bright blue. Properties similar to the *florida*. B.

alternifolia, Hr. (C. T. P. w. M. ♄.) branches warty : leaves alternate ovate, acute, hoary beneath : cymes depressed, spreading. About 18 feet high. Berries purple.

circinata, Hr. (3) (O. w. J. ♄.) branches warty : leaves broad-oval, acuminate, white-downy beneath : cyme much spread. About 8 feet high. Berries blue.

stricta, H. (4) (O. w. Ju. ♄.) branches strait, fastigiate : leaves ovate, acuminate, glabrous, colour nearly alike both sides : panicled-cyme convex.

+*paniculata*, Hr. (5) (bush dogwood. O. w. J. ♄.) branches erect : leaves ovate, acuminate, glabrous, hoary beneath : flowers in a thyrsed cyme. About 6 feet high. Berries white, globular flattened.

17—10. Coronilla. 32. 93.

emerus (coronilla. E. y. 4.) stem angled, woody ; peduncles about 3-flowered : claws of the petals about thrice as long as the calyx.

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(1) stolonifera, Mx. (2) lanuginosa, Mx alba, Wr. rubiginosa, Eh.
(3) tomentulosa, Mx. rugosa, Lk. (5) racemosa, Lk.
(4) fastigiata, Mx. sanguinea, Wr.

17—6. CORYDALIS. V. (1) 24. 62.

cucullaria, W. (colic weed. O. y. & w. M. 4.) stemless: corol 2-spurred: scape naked; raceme simple, one-sided: nectaries of the length of the corol: style inclosed: root bulbous. Leaves more than decompound. All the specimens which were found by my class at Williams College, were hexandrous. They had also a 2-leaved bract so near the calyx as to give the appearance of a 4-leaved calyx.

fungosa, A. (2) (climbing colic weed. P. C. Catskill. Plainfield, Mass. r-w. J. ♁.) stem climbing: leaves cirrose: racemes axillary, corymbed, nodding: corol monopetalous, gibbous both sides of the base, thick and fungus-like.

glauca, Ph. (3) (O. y-r-g. J. ♁.) corol 1-spurred: stem branching, erect: leaves glaucous; cauline ones biternate: raceme sub-corymbed: bracts minute silique linear, thrice as long as the peduncle. Grows 1 to 4 feet high.

formosa, Ph. (V. Can. r. M. 4.) scape naked: raceme somewhat compound, nodding, many-flowered: nectaries very short, incurved: style extended: divisions of the leaves oblong, gash-pinnatifid: root tuberous: flowers 2-spurred.

aurea, W. (P. D. y. M. ☺.) stem branching, diffuse: leaves doubly-pinnate; leafets divided, lance-linear, acute at both ends: racemes one way: bracts broad-lanceolate, sub-denticulate: silique terete, thick, twice as long as the peduncles.

20—13. CORYLUS. 50. 99.

avellana (filbert. E. Ap. ♄.) stipules oblong, obtuse: calyx of the fruit campanulate, spreading at the apex, torn-toothed: leaves round-cordate acuminate. Var. *maxima*, has a gash-toothed calyx: nut depressed-ovate.

americana, Wm. (hazel nut. O. Ap. ♄.) leaves broad-cordate: calyx of the fruit hispid with glandular heads at the ends of the hairs, campanulate, longer than the roundish nut, limb spreading, tooth serrate.

rostrata, W. (beaked hazel. O. Ap. ♄.) leaves oblong-ovate, acuminate: stipules lance-linear: calyx of the

(1) Fumaria, L. (2) recta, Mx. (3) sempervirens, L.

fruit bell-tubular, 2-parted, divisions gash-toothed; elongated beyond the nut into a beak.

5—2. CRANTZIA. N. 45. 60.

lineata (1) (false navelwort. D. w. M. 4.) stem creeping, terete, filiform; peduncles axillary, in many-flowered simple umbels (8 to 12;) involucres about 5-leaved: leaves wedge-linear, obtuse, sessile. Small—in salt marshes.

2—5. CRATAEGUS. 36. 92.

coccinea, A. (2) (thorn bush. O. w. M. ♄.) thorny: leaves heart-ovate, gash-angled, glabrous, acute serrate: petioles and calyx pubescent, glandular: petals orbicular: styles 5. Var. *viridis*, has lance-ovate leaves, sub-trilobate: stem unarmed. The berries are large red and pleasant tasted.

pyrifolia, A. (3) (pear-leaf thorn. T. C. P. w. J. ♄.) thorny or unarmed: leaves oval-ovate, gash serrate, somewhat plaited and rather rough-haired: calyx a little villose; leafets lance-linear, serrate: flowers with 3 styles.

populifolia, Wr. (4) (P. w. J. ♄.) thorny: leaves heart-ovate, truncate at the base, gash-angled, glabrous: petioles and calyx without glands: styles 5. Berries small, red.

elliptica, W. (5) (P. C. M. ♄.) thorny; leaves oval, unequally serrate, glabrous: petioles and calyx glandular: divisions of the calyx obtuse: berry globose, 5-seeded.

glandulosa, W. (6) (O. w. M. ♄.) thorny: leaves wedge-obovate, angled, glabrous, shining: petioles, stipules and calyx glandular: berries oval, 5-seeded. Berries red, middle size.

flava, W. (7) (yellow-berried thorn. Vermont. M. ♄.) thorny; leaves wedge-obovate, sub-lobate, crenate-serrate: petioles short: stipules cordate glandular: flowers sub-solitary: berry 4-seeded, turbinate.

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(1) Hydrocotyle lineata, Mx. (2) Mespilus aestivalis, Wr.
(3) cornifolia, P. leucopheus, Mn. Mespilus latifolia, Lk.
(4) cordata, A. Mespilus phoenopyrum, L. acerifolia, Lk.
(5) prunifolia, Lk. (6) Mespilus rotundifolia, Eh.
(7) viridis, Wr. glandulosa, Mx. michaux, P.

+ *punctata*, W. (1) (common thorn tree. O. w. M. ♄.) thorny or unarmed: leaves wedge-obovate, sub-plicate, glabrous, gash-serrate, decurrent into the petiole: calyx villose, divisions subulate entire; berry sub-globose, depressed. Var. *rubra*, has red berries. Var. *aurea*, yellow berries with dark specks.

+ *crus-galli*, W. (2) (thorn tree. O. w. M. ♄.) thorny: leaves wedge-obovate, sub-sessile, shining, leathery: corymbs compound: leafets of the calyx lanceolate, subserrate: styles 2. Var. *splendens*, leaves wedge-obovate. Var. *pyracanthifolia*, leaves lance-oblong, subcuneiform. Var. *salicifolia*, leaves-lanceolate. Berries small, red.

parvifolia, W. (3) (low thorn. D. w. M. ♄.) thorny: leaves wedge-ovate, gashed, serrate, sub-tomentose: leafets of the calyx lanceolate gashed, of the length of the fruit: flowers solitary, styles 5: fruit sub-turbinate, warty-punctate. Fruit greenish-yellow.

oxyacantha (quickset. E. w. M. ♄.) leaves obtuse somewhat 3-cleft, serrate, glabrous: peduncles and calyx somewhat glabrous: segments of the calyx lanceolate, acute; styles 2. Naturalized.

3—1. CROCUS. 6. 18.

officinalis (saffron. E. y. 4.) leaves linear with revolute margins: stigma exsert, with long linear segments. Var. *sativus*, having violet corols.

18—10. CROTALARIA. 32. 93.

+ *sagittalis*, Mx. (rattle-box. Y. N. C. P. y. Ju. ☺.) hirsute, erect, branching: leaves simple lance-oblong: stipules lanceolate, acuminate, decurrent: racemes opposite to the leaves, about 3-flowered: corol less than the calyx.

parviflora, W. (4) (P. C. y. J. ☺.) hirsute, erect, branching: leaves simple, lance-linear: stipules above decurrent with two short teeth: racemes opposite to the leaves: corol smaller than the calyx.

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(1) Mespilus cuneifolia, Eh. cornifolia, Lk.
(2) lucida, Wm. hyemalis, Wr.
(3) tomentosa, L. Mespilus, laciniata, Wr.
(4) A variety of sagittalis, Mx.

22—2. CRYPHAEA. 56. 4.

heteromalla, stem branching, diffuse : leaves lance-ovate, acute, 1-nerved : capsules lateral, subsessile. On trunks.

3—2. CRYPSIS. Lk. 4. 10.

virginica (1) (C. D. P. S. 4.) spikes oblong, thick lobed : stem procumbent, geniculate, joints numerous, approximate, leaves involute, rigid, pungent : calyx keeled, shorter than the corol.

2—2. CRYPTA. N. 13. 86.

minima (2) (mud purslane. P. T. w-g. S.) stem dichotomous, decumbent, striate : leaves wedge-oval or obovate, opposite, sessile, entire, papillose above, with very minute stipules : flowers axillary, sessile, solitary. Very abundant on the shores of the Hudson between high and low water mark, about a mile below Albany.

10—3. CUCUBALUS. 22. 82.

behen (bladder campion. C. P. w. Ju. 4.) glabrous, glaucous, decumbent : leaves oblong-oval, acute, nerveless : calyx inflated-membranaceous, veiny.

stellatus (Y. C. P. T. w. Ju. 4.) pubescent, erect : leaves whorled, in fours, lance-oval, very long-acuminate. About 2 or 3 feet high.

20—16. CUCUMIS. 34. 97.

colocynthis (bitter apple. E. ☺.) leaves many-cleft : pomaceous berry globose, glabrous. Fruit very bitter.

anguria (prickly cucumber. E.) leaves palmate-sinuate fruit globose, echinate.

anguinis (snake cucumber E. ☺.) leaves lobed : pomaceous berry cylindric, very long, smooth, contorted plaited.

melo (musk-melon. E. y. Ju. ☺.) angles of the leaves rounded : pome oblong, torulose. Sweet scented.

sativus (cucumber. E. y. Ju. ☺.) angles of the leaves strait : pomaceous berry oblong, scabrous. Brought from Asia.

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(1) Agrostis virginica, W. (2) Peplis americana, Ph.

20—16. CUCURBITA. 34. 97

ovifera (egg-squash. E. ☺.) leaves cordate, angled-5-lobed, denticulate, pubescent : pomaceous berry with fillet-like stripes lengthwise .

verrucosa (club squash. E. y. J. ☺.) leaves cordate, deeply 5-lobed ; middle lobe narrowed at the base, denticulate : pomaceous berry clavate, a little warty.

melopepo (flat squash. E. y. J. ☺.) leaves cordate, obtuse, sub-5-lobed, denticulate : pomaceous berry depress-based, swelled at the margin.

pepo (pumpkin. E y. Ju. ☺.) leaves cordate, obtuse, sub-5-lobed, denticulate : pomaceous berry roundish or oblong, smooth. Var *potiro*, has the fruit more or less flattened. From Asia.

citrullus (water melon. E. y. Au. ☺.) leaves 5-lobed ; the lobes sinuate-pinnatifid, obtuse : pomaceous berry oval smooth. Fruit watery, often striped. From Africa, and the south of Asia.

lagenaria (gourd, calabash. E. w. Au. ☺.) leaves cordate, round-obtuse, pubescent, denticulate ; with 2-glands at the base on the under side : pomaceous berry clavate somewhat woody.

14—1. CUNILA. 42. 89.

† *mariana* (1) (dittany. C. P. r-b. J. 4.) leaves ovate, serrate, sessile : corymbs terminal, dichotomous. Dry places. Diaphoretic. B.

Cunila, see Hedeoma.

11—1. CUPHEA. 54. 91.

† *viscosissima* (waxweed. V. P. p. J. ½.) viscous : leaves opposite, petioled, ovate-oblong : flowers with 12 stamens, lateral, solitary, peduncles very short. This plant is said to be sometimes herbaceous. Dr. M. Stevenson found it in Cambridge, N. Y. where it grows about 14 inches high on wet ground, with a frutescent stem.

20—16. CUPRESSUS. 51. 100.

† *thyoides*, Wm. (white cedar. D. C. M. ½.) branchlets

(1) Ziziphora mariana, Rs.

compressed : leaves imbricate four ways, ovate, tubercled at the base : strobile globular.

5—2. CUSCUTA. 54. 53.

americana, W. (dodder. O. w. Au. ☺.) flowers peduncled, umbelled, 5-cleft : stigma capitate. A bright yellow leafless vine, twining around other weeds in damp places. In some parts of New-England it is called gold-thread vine.

europea (T. w. Au. ☺.) flowers sub-sessile : stigma acute : stamens mostly 5. Grows at Schenectady, N. Y. Tracy.

22—6. CYATHUS. 58. 1.

striatus (tunnel fungus) dark brown, villous, striate within, chesnut-brown. On the earth and fallen branches in woods late in autumn.

olla, cinereous outside or becoming sooty-yellow, subtomentose ; lead-livid within.

nitidus (birdnest fungus) campanulate, grey, tomentose, margin at length revolute ; shining lead-colour within, striate with concentric zones. In sand and on wood in summer and autumn.

crucibulum, sub-cylindric, indurated, sub-tomentose ochre yellow. In pine woods, rarely in gardens, on branches, chips, &c.

19—1. CYMBIDIUM. 7. 21.

pulchellum, Sw. (1) (grass pink, O. r. Ju. 4.) leaves radical, ensiform, nerved : scape few-flowered : lip erect, slender at the base ; lamina spread ; disk concave, bearded.

18—1. CYNARA. 49. 54.

cardunculus (cardoon. E. 4.) leaves spinose, all pinnatifid : scales of the calyx ovate.

scolymus (garden artichoke. E. 4.) leaves sub-spinose, pinnate : scales of the calyx ovate.

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(1) Limodorum tuberosum, L. Calopogon pulchellum, Br. See Corallorhiza.

5—1. CYNOGLOSSUM. 41. 42.

officinale (hound tongue. O. p. Ju. ♂.) very soft-pubescent: leaves broad-lanceolate, sessile: panicled-racemes.

amplexicaule, Mx. (1) (W.V.P. w. & b. J. 4.) very hirsute: leaves oval-oblong; upper ones clasping: corymbs terminal, leafless, long-peduncled.

3—2. CYNODON. Rd. 4. 10.

dactylon (2) (flat finger-grass. O. Ju. 4.) spikes digitate: flowers imbricate in a single series, solitary. A creeping grass, and grows best on dry sandy land.

3—1. CYPERUS. 3. 9.

1. *Spikelets aggregate.*

bricolor, M. (P. Au.) umbel compound; rachis angular: spikelets compressed, lanceolate, acute: scales lanceolate, purple on the margin, obtuse: pistil long, 2-cleft: seed oval, ash-colour, smooth: involucre 3-leaved, much longer than the umbel. Vid. Barton's Flo. Phil.

poaeformis, Ph. (O. g-p. Au.) spikelets oblong, flat, fasicle-corymbed; fasicles sessile and peduncled: involucre 3-leaved, very long.

uncinatus, Ph. (3) (O. J. ♂.) little heads sub-globose, glomerate: spikelets linear, about 8-flowered; valves lanceolate, recurve-acuminate: involucre about 2-leaved, very long.

2. *Umbels with elongated rays; spikelets terminal, umbelled.*

tenuis, Vahl. (C.) umbel terminal, simple: involucre 3 or 4-leaved, longer than the spikelets, rough at the apex: peduncles unequal: spikelets lanceolate, alternate, yellow, acute, 10 to 17-flowered, bracted, at the base. Swamps.

brizaeus, Rd. (C. Ju. 4.) spikelets oblong-ovate, obtuse: umbels crowded, leafless: leaves narrow.

inflexus (P. Ju.) umbels 3-leaved, simple: spikes 3,

(1) virginianum, L.
(2) Digitaria dactylon, M. Panicum dactylon, L.
(3) inflexus, M.

ovate, one sessile, the others peduncled, conglomerate; spikelets oblong, green, compressed, 7-flowered : plant sweet-scented.

3. *Umbels with elongated rays ; spikelets alternate.*

phymatodes, M. (P.Au. 4.) umbels simple or decompound, rayed : involucre 3 to 9-leaved, unequal ; three of the leafets very long, scabrous at the margin : peduncles compressed : spikelets 2-ranked linear ; lower ones compound, upper ones simple, 15-flowered : bracts linear.

erythrorhizus, M. (1) (O. Au. ☺.) umbel decompound, 3-leaved ; umbellets mostly wanting : involucre 3 to 6-leaved, very long, scabrous : spikelets alternate, linear, approximate, long, horizontal, 12-flowered, terete compressed.

parviflorus, M. (P. D. V. Au.) umbel compound : involucre 3-leaved, longer than the peduncles : peduncles glabrous, many (6 to 10) 3-sided : spikelets 3, compressed, alternate, ovate, 8-flowered. Mud, &c.

dianarus, Torrey, (C. Au.) culm obtusely three-cornered and weak ; umbel about 1-rayed, with the flowers in fasicles, involucre 3-leaved, 2 leaves much longer than the umbel : spikes chesnut-brown, lance-oblong, compressed, many-flowered (14—16 :) glumes acutish, keeled—stamens but 2 ; style bifid : seed ovate compressed. See Torry's catalogue, p. 90.

flavescens (C. P. Pittsfield. Au. ♄.) spikelets lance-linear, crowded : involucre 3-leaved, longer than the 3-cleft umbel. Bog meadows, salt and fresh.

strigosus, Vahl. (O.g-y. Au. 4.) spikes oblong, lax ; spikelets subulate spreading, remotish : involucres nearly wanting : rays of the umbellets alternate. Meadows.

4. *Umbels with short rays ; spikes digitate.*

caespitosus, Torrey. (C. Au. 4.) culm acutely 3-cornered : umbel radiate or sub-radiate, lax, rays short : involucre 4-leaved, 2 of the leaves very long ; spikes lance-linear, compressed, acute : stamens 2 : style 2-cleft, seed oblong, obtuse, compressed. 5 to 12 inches high. Seed glabrous. Salt marshes. See Torrey's catalogue of N. York plants, p. 89.

(1) strigosus, Sw.

19—2. CYPRIPEDIUM. 7. 21.

candidum, M. (white ladies' slipper. P. w. M. 4.) stem leafy ; leaves lance-oblong : lobe of the style lanceolate, obtusish : lip compressed, shorter than the lanceolate petals.

parviflorum, Sy. (1) (C. P. y-g. M. 4.) stem leafy : lobe of the style triangular, acute ; outer petals oblong-ovate, acuminate ; inner ones linear, contorted : lip shorter than petals, compressed.

† *pubescens*, W. (2) (yellow ladies' slipper. H. y. M. 4.) stem leafy : lobe of the style triangular-oblong, obtuse : outer petals oblong-ovate, acuminate ; inner ones very long, linear, contorted : lip compressed, shorter than the petals. Woods.

† *spectabile*, W. (3) (gay ladies' slipper. W. T. C. V. P. w. & p. J. 4.) stem leafy : lobe of the style oval-cordate, obtuse : outer petals broad-oval, obtuse : lip longer than the petals, split before. Woods.

† *humile*, W. (4) (low ladies' slipper. O. w. &. p. M. 4.) scape leafless, 1-flowered : leaves radical, in pairs, oblong, obtuse : lobe of the style round-rhomboid, acuminate, deflexed ; lip longer than the lanceolate petals, split before. Woods.

arietinum, A. (Can w. r. g. M. 4.) stem leafy : lobe of the style orbicular, obtusish ; petals 5, 2 lower ones lance-linear, deflected, lateral ones linear, horizontal, upper one ovate-oblong, acute ; lip of the length of the petals, ob-conic before, saccate. Damp.

D.

3—2. DACTYLIS. 4. 10.

glomerata (orchard grass. O. J. 4.) panicle one-sided, glomerate.

12—13. DALIBARDA. 35. 92.

† *repens*, Lk. (5) (H. w. J. 4.) villose : having creeping shoots : leaves simple, cordate, crenate : peduncles 1-flowered.

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(1) calceolus, Mx. (3) canadense, Mx. album, A. reginae, Wr,
(2) flavescens, Redoute calceolus, Wr. (4) acaule, A.
(5) violacoides, Mx. Rubus dalibarda, W.

fragaroides, Mx (1) (dry strawberry. H. y. M. 4.) leaves ternate: leafets wedge-form, gash-serrate, ciliate: peduncles many-flowered: tube of the calyx obconic.

3—2. DANTHONIA. Dc. 4. 10.

spicata (2) (wild oats. O. J. ¼.) leaves subulate, short; the radical ones often hairy on the upper side: stipules obsolete, ciliate: raceme simple or divided near the base: spikelets 4 to 9: calyx longer than the spikelets: florets 6 or 7.

sericea (D. Ju.) culm erect: raceme compound; branches 2 and 3-flowered, spikelets 9 to 13, 8 and 9-flowered somewhat shorter than the calyx: valves of the corol very unequal, outer lanceolate densely villose on the margin, bristly-2-cleft at the apex, with a central twisted awn: inner valve ciliate, much shorter.

8—1. DAPHNE. 31. 25.

mezereum (mezereon. E. M. ♄.) flowers sessile, cauline, in threes: leaves lanceolate.

odora (sweet mezereon. E. w. Ap. ♄.) having many flowers in little terminal heads; leaves scattered, lance-oblong, glabrous.

21—13. DATISCA. 54.

hirta, W. (false hemp. P. y. 4.) stem hirsute: leaves pinnate: leafets running together at the base. Flowers small, panicled.

5—1. DATURA. 28. 41.

stramonium (thorn apple. Y. T. C. P. w-b. An. ☺.) pericarps spinose, erect, ovate: leaves ovate, glabrous. Odour very disagreeable.

tatula (C. T. P. Y. b. Ju. ☹.) pericarps spinose, erect, ovate: leaves cordate, glabrous, toothed.

5—2. DAUCUS. 45. 60.

carota (carrot. E. w. Ju. ♁.) seeds hispid: petioles nerved underside: divisions of the leafets narrow-linear, acute.

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(1) Dryas trifoliata, Pallas. (2) Avena spicata, E.

22—6. DEDALEA. 58. 1.

quercina, coriaceous, pale-woody : pileus regular, glabrous ; laminae branch-sinuate with the hollows large. On trunks of oaks, &c.

22—4. DELESSERIA. 57. 2.

alata, stem compressed : leaves pinnate, confluent, ribbed, linear, entire. In the sea.

13—5. DELPHINIUM. 26. 61.

consolidum (larkspur, E. b. Ju. ☺.) nectaries 1-leaved : stem subdivided.

ajacis (rocket larkspur, E. b. Au. ☺.) nectary 1-leaved : stem simple.

exaltatum, W. (1) (P. b. Ju. 4.) nectary 2-leaved ; lip oblong, 2-cleft ; divisions lanceolate, equal : leaves 3-parted, divisions 3-cleft.

azureum, W. (2) (Southern states. b. M. 4.) stem stiffly erect : leaves linear, many cleft : flowers spiked : petals very downy : spur arched.

staphisagria (E. b. ♁.) nectary 4-leaved, shorter than the petals : leaves palmate, with obtuse lobes.

15—2. DENTARIA. 39. 63.

diphylla, Mx. (tooth root, trickle, pepper-root. O. y. & r. M. 4.) stem with 2 leaves near each other ; which are ternate, ovate-oblong, unequally gash-toothed : root toothed. The root is white, brittle, and has a strong taste resembling the horse-radish.

laciniata, W. (3) (New-England. C. P. Niagara. p. M. 4.) leaves in threes, ternate ; leafets 3-parted, linear-oblong, gash-toothed : root tuberous, moniliform.

heterophylla, N. (P. p. w. J.) stem 2-leaved ; leaves ternate, petioled, leafets linear, sublanceolate, acute, entire, margin rough, ciliate ; radical leafets ovate-oblong, coarsely gash-toothed. Very small. Always one radical leaf with a long petiole.

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(1) trydactylum, Mx. urceolatum, Jn. (2) carolinianum, Wr.
(3) concatenata, Mx.

10—2. Dianthus. 39. 63.

barbatus (sweet william. E. r. & w. Ju. 4.) flowers fascicled : scales of the calyx ovate-subulate, equalling the tube : leaves lanceolate.

armeria (pink. New-Jersey ? r. Ju. ☺.) flowers aggregate, fascicled : scales of the calyx lanceolate, villose, equalling the tube.

+ *caryophyllus* (carnation. E. r. & w. 4.) flowers solitary : scales of the calyx sub-rhomboid, very short : petals crenate, beardless : leaves linear-subulate, channelled. By rich culture the stamens mostly change to petals.

chinensis (china pink E. Ju. ☺.) flowers solitary : scales of the calyx subulate, spreading, leafy, equalling the tube : petals crenate : leaves lanceolate.

plumarius (single pink. E. r. & w. 4.) flowers solitary : scales of the calyx sub-ovate, very short and obtuse, awnless : corol many-cleft, with the throat hairy.

5—1. Diapensia. 21. 43.

lapponica, W. (1) (Whitehills. Bw. w. Ju. 4.) leaves spatulate, glabrous : anthers oblique, awnless.

cuneifolia, Sy. (2) (Whitehills. Peck. C. w. J. ♄.) leaves lance-wedge-form, pubescent below : anthers horizontal, beaked at the base.

22—1. Dicksonia. 55. 5.

pilosiuscula, W. (3) (fine-haired fern. O.) frond doubly-pinnate ; leafets lance-oblong, pinnatifid ; divisions gash-toothed at the upper margin : stem sub-pilose.

22—2. Dicranum. 56. 4.

1. *Capsule with apophyses.*

cerviculatum, monoecious : stem simple : leaves capillary, without nerves, spreading, lax : capsule ventricose, erectish ; apophysis gibbose.

virens, stems divided ; branchlets erect, sub-divided : leaves clasping at the base, linear, flat, spreading, coiled : capsules nodding, at length curved ; appohysis wen-like.

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(1) obtusifolia, Sy. (2) Pyxidanthera barbulata, Mx.
(3) pubescens, Sh.

fragile, stem erect, ramose, very fragile : leaves erect, densely crowded together, somewhat whorled, lance-ovate, acuminate, sub-entire, with the margin undulated : capsule nodding, elongated ; apophysis wen-like, at length striate.

2. *Capsules without apophysis, or truncated processes on the foreside of the base.*

(Leaves turned to one side.)

scoparium, stem ramose : leaves lance-ovate, acuminate, keeled, falcate : pedicels sheathed, solitary : lid long-beaked.

condensatum, stem short simple : leaves lance-oblong, mucronate with extended fascicular points : capsules nodding ; lids subulate. On the earth.

heteromallum, stem sub-simple : leaves capillary one-nerved, dilated at the base : capsule ovate ; lid long-beaked.

orthocarpon, small ; stem short, simple : leaves setaceous, dilated at the base ; peduncle lateral, longish : capsule suberect, oblong-ovate ; lid beaked.

varium, stem sub-simple : leaves somewhat one-sided, lower ones lanceolate, upper ones subulate : capsules urceolate, somewhat nodding ; lid conic.

(Leaves not one-sided.)

xanthodon, minute, leaves lanceolate, long-acuminate : capsules ovate ; teeth of the peristome yellow.

polycarpon, stem ramose : leaves linear-subulate, twisted when dry, investing the stem on all sides : capsule obovate, erectish, furrowed. On rocks in mountains.

glaucum, small : stem ramose, thick with a dense foliation ; leaves glaucous, convex-channelled : capsule sub-inclined, oblong-ovate ; lid slenderly subulate, sub-inflexed.

3. *Capsules with truncated prominences on the foreside of the base.*

purpureum, stem dichotomous : leaves lanceolate, twisted when dry, furnished with a purple nerve ; capsule oval ; lid conic.

22—2. DIDYMODON. 56. 4.

rigidulum, leaves lanceolate, cuspidate from the middle nerve, somewhat rigid : lid subulate, a little curved.

5—1. DIERVILLA. 48. 58.

humilis, P. (1) (bush honeysuckle. O. y. Ju. ♄.) peduncles axillary and terminal, dichotomous, 3-flowered : leaves ovate, serrate, acuminate. Variable in size, 1 foot to 6.

14—2. DIGITALIS. 40. 40.

purpurea (foxglove. E. p. Ju. ♂.) leafets of the calyx ovate, acute : corol obtuse : upper lip entire : leaves lance-ovate rugose.

intermedia (E. p. Ju.) leafets of the calyx lanceolate, equal : corol slightly pubescent ; upper lip emarginate, 2-cleft : leaves pubescent at the margins and base. Both species are powerful diuretics and absorbents.—The purpurea is extensively cultivated by the Shakers near Albany.

3—2. DIGITARIA. 4. 10.

sanguinalis, M. (2) (finger-grass. O. g-p. Ju. ☺.) spikes many : flowers imbricate, in pairs : sheaths and leaves papillose-pilose : culm creeping.

paspaloides, Mx. (3) (C. P. Au. ☺.) spikes in pairs, subvillose at the base : rachis broadish, glabrous : flowers solitary, imbricate two ways, glabrous : leaves spreading ; sheaths glabrous, villous at the neck : culm creeping.

filiformis, M. (4) (C. D. P. Ju. ☺.) racemes terminal, in pairs and threes, alternate, pilose at the base, erect ; rachis flexuose, glabrous, florets 1 to 4, pedicelled : one valve of the calyx 3-nerved, the other 5-nerved : seeds black : leaves glabrous beneath : lower sheaths hairy, upper ones glabrous : culm strait, with dark glabrous joints.

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(1) lutea, Ph. tournefortii, Mx. canadensis, M. Lonicera diervilla, L.
(2) Panicum sanguinale, L.
(3) ischaemum, M. Paspalus digitaria, Pt.
(4) pilosa ? Mx. Milium panicum, Sw. Paspalus, filiformis, Rs.

3—1. **Dilatris.** 6. 18.

tinctoria, Ph. (1) (red root C. y. Ju. 4.) petals lanceolate, downy outside: panicle corymbed, downy: leaves long, naked, linear.

10—1. **Dionaea.** 20. 68.

muscipula, W. (Venus' flytrap. Southern states. w. Ju. 4.) radical leaves with terminal ciliate appendages, somewhat resembling a rat-trap. This is suddenly closed, on being irritated. Swamps.

21—6. **Dioscorea.** 11. 12.

villosa (2) (yam-root. P. C. J. 4.) leaves alternate, opposite and whorled, cordate acuminate, pubescent beneath, 9-nerved, lateral nerves simple. Stem climbing.
glauca, M. (P. J. 4.) leaves glaucous, glabrous, cordate, acuminate, 9-nerved, in fours, alternate. Stem twining.

21—13. **Diospyros.** 18. 50.

virginiana (persimon, seeded plum. C. P. w-y. M. ♄.) leaves ovate-oblong, acuminate glabrous, reticulate-veined; petioles pubescent: buds glabrous.

22—2. **Diphyscium.** 56. 4.

foliosum, stemless: capsule sub-sessile: leaves lance-linear.

22—2. **Diplocomium.** 56. 4.

longisetum, caulescent: leaves gradually narrow-acute, upper ones subulate-acuminate from a broad base: peduncle very long; lid conic, the setaceous teeth of the inner peristome about 4 times as long as those of the outer peristome.

4—1. **Dipsacus.** 48. 56.

fullonum (teasel. E. w. Ju. ♁.) leaves sessile, serrate: chaff hooked.
sylvestris (wild teasel. P. C. Sheffield, Mass. Ju. ♁.)

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(1) heritiera, B. Heritiera gmelini, Mx.
(2) paniculata, Mx.

leaves connate sinuate : chaff strait : head involucred. Very abundant in Pompey, N. York.

8—1. DIRCA. 31. 25.

palustris (leather-wood, moose-wood, american mezereon. O. y. Ap. ♄.) leaves oval : flowers axillary, 2 or 3 in a hairy, bud-like involucre. Small bush—bark very tough. Woods.

5—1. DODECATHEON. 20. 34.

meadia, W. (false-cowslip. P. p. M. 4.) leaves oblong-oval, repand-toothed : umbels many-flowered, lax : bracts oval. Woods near rivers.

integrifolium, Mx. (P. b. J. 4.) leaves spatulate, entire : umbels few-flowered, strait : bracts linear.

17—10. DOLICHOS. 32. 93.

pruriens (cowage or cowitch. E. p. ☺.) twining : leaves hairy beneath : legumes in racemes, valves slightly keeled, hairy ; peduncles in threes.

purpureus (wild cowhage. P. p. ☺.) twining, stem glabrous : petioles pubescent : corol with spreading wings.

18—2. DORONICUM. 49. 55.

nudicaule, Mx. (1) (leopard's bane. P. y. J. 4.) stem nearly leafless : in some the peduncles are divided at the top : leaves decussate, opposite, oblong-ovate.

15—1. DRABA. 39. 63.

verna (whitlow grass. C. P. w. Ap. ☺.) scape naked, leaves oblong acute, sub-serrate, rough-haired : petals bifid : stigma sessile.

umbellata, M. (2) (C. p. w. Ap. ☹.) scape naked : leaves oval, acute, very hirsute : silicles long-linear, glabrous, approximate.

arabisans, Mx. (P. New-England. M. ♄.) stem leafy, somewhat branched : radical leaves wedge-lanceolate ; cauline ones lanceolate ; all acute, divaricate-toothed : silicles acuminate with the permanent style.

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(1) acaule, Wr. Arnica claytoni, Ph.
(2 caroliniana, Wr. hispidula, Mx.

6—1. DRACAENA. 11. 12.

borealis, W. (1) (wild lily of the valley, or dragoness plant. H. g. y. J. 4.) sub-caulescent: leaves oval-obovate, margin ciliate: scape pubescent: umbel corymbed, sometimes proliferous: pedicels naked, nodding. (2)

14—1. DRACOCEPHALUM. 40. 40.

virginianum, W. (dragon-head. P. p. Au. 4.) spikes elongated, with the flowers crowded: bracts subulate: teeth of the calyx nearly equal, short; leaves linear-lanceolate, serrate.

canariense (balm of gilead herb. E.) flowers spiked: leaves ternate oblong.

denticulatum, W. (3) (P. p. Ju. 4.) spikes elongated, with remote flowers: bracts subulate: teeth of the calyx nearly equal: leaves obovate-lanceolate, toothed above.

Dracontium, see Ictodes.

5—5. DROSERA. 20. 68.

rotundifolia (sundew. O. y-w. Au. 4.) scape simple; leaves nearly orbicular, narrowed at the base; petioles long downy. Wet or damp.

longifolia (4) (Y. P. C. y-w. Ju. 4.) scape simple; leaves spatulate-obovate; petioles long, naked. Wet.

filiformis, R. (5) (D p. J. 4.) scape sub-ramose, terete, glabrous: leaves very long, filiform: styles 6 to 9. Wet.

3—1. DULICHIUM. (6) 3. 9.

spathaceum, Rd. (galingale. O. g-y. Ju. 4.) culm 3-cornered, leafy: spikelets spreading, about 6-flowered. Wet.

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(1) Convallaria umbellata, Mx. the best name. Smilacina borealis, Ph or probably his S. umbellata.

(2) This is the Clintonia nutans of Mr. Rafinesque. My personal obligations to Mr. Clinton would certainly induce me to unite in any act of justice to his literary and scientific merit. But to aid in an attempt to force his name upon an old genus, would not comport with my views of propriety, and I am sure it would be offensive to him.

(3) Prasium purpureum, Wr. (5) tenuifolia, M.

(4) americana, M. (6) Schoemes, L. Scirpus, Mx. Cyperus, W.

E.

18—5. ECHINOPS. 49. 54.

sphaerocephalus (globe thistle. E.) leaves pinnatifid : stem branching.

5—1. ECHIUM. 41. 42.

vulgare (viper's bugloss, blue thistle. C. P. b. Ju. ☿.) stem tuberculate-hispid : cauline leaves lanceolate hispid ; flowers spiked, lateral.

18—5. ELEPHANTOPUS. 49. 55.

carolinianus, W. (1) (elephant-foot. P. Collins. r. Au. ♃.) leaves radical and cauline oblong, narrowed at the base, pilose on both sides : stem simple, erect, pilose.

3—2. ELEUSINE. 4. 10.

indica, Mx. (2) (dog-tail grass, wire grass. C. P. Ju ☺.) glabrous : sheaths compressed, pilose at the neck : spikes digitate, long-linear strait ; spikelets about 6-flowered : flowers lanceolate.

3—2. ELYMUS. 4. 10.

villosus (wild rye, limegrass. O. Ju. ♃.) spikes erect ; spikelets 3-flowered, awned, villose, ternate : calyx awned, exceeding the spikelets.

canadensis (O. Ju. ♃.) spike nodding, spreading ; spikelets 6-flowered, awned ; lower one ternate, upper ones binate.

virginicus (O. J. ♃.) spike erect ; spikelets 3-flowered, awned ; glabrous, in pairs : calyx lanceolate, nerved, equalling the spikelets.

striatus (W. T. P. Ju. ♃.) spike erect ; spikelets 2-flowered awned, hispid, in pairs : rachis pubescent ; involucre 4 to 6-leaved, leaves 2-nerved, pubescent, awned : calyx linear, nerved, awned, rather exceeding the spikelets : leaves and sheaths glabrous.

hystrix (P. V. C. Ju. ♃.) spike terminal erect ; rachis scabrous ; spikelets 6 to 9-flowered, diverging : involucre 1 or 2-leaved, lateral leafets linear of the length

(1) scaber, Mx. (2) Cynosurus indica, L.

of the corol: leaves lanceolate, glabrous with scabrous margins; sheaths glabrous. One variety has pubescent sheaths.

glaucifolius, W. (1) (C. T. W. V. P. Ju. 2f.) spike nodding, somewhat spreading, with a compressed rachis having a pubescent margin; spikelets ternate below and binate above, 2 and 3-flowered: involucre 4 or 5-leaved: sheaths nerved, glabrous.

21—3. EMPETRUM. 18. 51.

nigrum, Mx. (black crowberry. Whitehills. Bw. Ju. ♄.) procumbent: branchlets glabrous: leaves oblong, glabrous, with a revolute margin.

22—5. ENDOCARPON. 57. 2.

hedwigii, frond sub-cartilaginous, roundish-angled and lobed, somewhat olive-coloured; under side pale at the edge, then dark-coloured and fibrous: the little mouths sub-prominent, dark sooty-yellow. On naked earth, rocks and sides of mountains. Var. *lachneum*, has the frond with aggregated sub-imbricated lobes; margin elevated, repand-lobed, undulated, dark woolly beneath.

muhlenbergii, frond thick, crusty-cartilaginous, foliaceous, orbicular, peltate, obscurely tawny-green, thin, rugose-plicate and somewhat in chinks; dark tawny and tubercled beneath: little mouths convex.

miniatum, frond thick, crusty-cartilaginous, foliaceous, orbicular, peltate becoming cinereous, repand at the periphery, flexuose-plicate; beneath smooth becoming rugose and yellowish: little mouths minute, few, subapproximate, tawny.

10—1. EPIGAEA. 18. 51.

repens (trailing arbutus. O. r. & w. Ap. ♄.) stem creeping: branches and petioles very hirsute: leaves cordate, entire: corol cylindric.

8—1. EPILOBIUM. 17. 88.

spicatum, P (2) (willow-herb. H. p. Ju. 2f.) leaves scattered, lance-linear, veiny, glabrous: flowers unequal:

(1) philadelphicus, Sw. (2) angustifolium, W.

stamens declined. This species grows from 4 to 6 feet high.

lineare. M. (1) (O. w. & r. Ju. 4.) stem terete, pubescent, wand-like, branched above : cauline leaves opposite, branch leaves alternate, linear, very entire : flowers few, terminal, long-peduncled. Flowers small.

coloratum M. (3) (O. r. Ju. 4.) stem terete, pubescent, leaves lanceolate, serrulate, petioled, opposite ; upper ones alternate, glabrous, red-veined. Var. *tetragonum*, has the stem 4 cornered part of its length. Damp or wet.

palustre, W. (W. P. Ju. 4.) stem terete : leaves sessile, lanceolate, sub-denticulate : stigma undivided. Damp.

alpinum (Whitehills. w-r. Au. 4.) stem simple, sub-terete, 1 or 2-flowered : leaves opposite, oval, entire ; flowers sessile. Very minute.

Epipactis, See Listera.

14—2. EPIPHEGUS. N. (3) 40. 35.

virginianus (4) (beech drops, cancer-root. O. y. p. Ju. 4.) stem very branching : flowers alternate, distant : calyx short, cup-form shorter than the capsule. The whole plant is yellowish-white and of a naked appearance. I have retained the old specific name, for there is a species of Orobanche in our district called americana ; and this genus being taken from that, it would be a violation of a Linean rule to follow Nuttall in naming this plant americanus. Barton says, this plant is an astringent ; and that it is useful in cases of indolent ulcers and perhaps cancers, applied externally.

22—1. EQUISETUM. 55. 6.

arvense (horsetail. O. Ap. 4.) barren stems with simple branches ; the branches scabrous, 4-sided : fructification simple : sheaths cylindric gash-toothed, teeth acute.

sylvaticum, W. (O. Ap. 4.) barren and fertile stems doubly-branched : branches scabrous, deflected, 4-sided ; branchlets somewhat 3-sided.

uliginosum (D. P. W. M. 4.) stem sub-ramose : branches

(1) oliganthum, Mx. rosmarinifolium, Ph. squamatum, N.
(2) levigatum, Le Conte. (3) Orobanche, L. (4) americanus, N.

generally in fours, 4-sided, glabrous : spike terminal, cylindric. Wet or damp.

torreyanum, Stewart (C.) stems branched ; branches thick, roughish, hexagonal, close-pressed to the stem : spike terminal. Vide Stewart's article in the Wernerian Transactions ; wherein he dedicates this new species to Dr. John Torrey of New-York.

palustre, Sh. (D. M. 4.) stem simply ramose, glabrous, sulcate : branches pentagonal, bearing spikes at their apexes.

scirpoides, Mx. (C. W.V. D. Ju. 4.) stem simple, ascending, glabrous, filiform, bearing a spike at the top : sheaths 3-toothed ; teeth withering, with caducous awns at the apex Wet.

hyemale, Sh. (scouring rush. O. Ju. 4.) stems erect, very scabrous, bearing spikes at the apex : sheaths 2-coloured, withering at the base and apex : teeth with caducous awns.

8—1. ERICA. 18. 51.

pubescens (downy heath. E. r. M.) corol linear, pubescent, with the limb erect : capsule glabrous : leaves fringed.

tetralix (E. ♄.) anthers awned : corol ovate ; style inclosed : leaves in fours, ciliate : flowers in heads.

5—2. ERIGENIA. N. 45. 60.

bulbosa (1) (bulbous navel wort. P. g-w. Ap. 4.) leaf solitary, radical, biternate, segments many-cleft : scape terete, with an involucre-like leaf. 4 or 5 inches high. Anthers dark purple.

18—2. ERIGERON. 49. 55.

canadense (2) (fleabane, pride-weed. O. w. Ju. ☺.) stem hispid, panicled : leaves lance-linear, ciliate : calyx cylindric : rays crowded, short. Flowers small.—Plant strong-scented. Powdered leaves useful in stopping blood.

strigosum, M. (P. C. W. w. Ju. ♄.) strigose-pilose : leaves lanceolate, tapering to both ends ; in the middle are a few coarse teeth or it is entire : flowers corymb-panicled.

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(1) Sison bulbosum, Mx. Hydrocotyle bipinnate, M. composita and ambigua, Ph. (2) pusillum, N.

heterophyllum, M. (1) (O. w. J. ♁.) radical leaves round-ovate, deeply-toothed, petioled; cauline ones lanceolate, acute, serrate in the middle: corymb terminal.

philadelphicum (O. b-p. Au. 4.) pubescent: leaves wedge-oblong, rarely gash-toothed; cauline ones half-clasping: stem weak, simple, corymbed above: peduncles elongated, 1-flowered: rays capillary, twice as long as the hemispheric calyx.

purpureum, A. (P. W. V. C. p. Ju. 4.) pubescent: leaves oblong, toothed, clasping: upper ones entire: peduncles thickened, corymbed; lower ones elongated: scales of the calyx hairy on the keel: rays twice as long as the calyx.

bellidifolium, W. (2) (O. b. & w. M. 4.) hirsute, hoary: radical leaves obovate, sub-serrate; cauline ones few, distant, lanceolate, entire: stem about 3-flowered: rays long.

22—6. ERINEUM. 58. 1.

acerinum, depressed, broadish, reddish-tawny—at first thick clotted and pale.

fagineum, sub-immersed, compact, sub-elliptic, chesnut-brown.

pyrinum, oblong, lax, chesnut-brown.

20—3. ERIOCAULON. 6. 13.

pellucidum, Mx. (pipewort. O. g. Au. 4.) scape very slender, about 7-striped: leaves linear-subulate, channelled, glabrous, pellucid, 5-nerved, transversely striate: head small globose: scales of the involucre oval-obtuse. Grows in water from six to twelve inches high.

decangulare, Mx. (3) (tall pipewort. P. D. S. 4.) scape 10-striped: leaves ensiform, glabrous: heads large, depressed-globose: scales of the involucre ovate, acute: chaff of the receptacle mucronate. Three or four feet high.

gnaphalioides, Mx. (4) (Sheffield, Mass. D. Ju. 4.) scape

(1) Aster annuus, L. (2) pulchellum, Mx.
(3) serotinum, Wr.
(4) decangulare, Wr. compressum, Lk.

sub-compressed, with 10 grooves : leaves short, subulate-ensiform, glabrous : heads hemispheric-convex : the involucre consists of shining scarious, oval, round-obtuse scales.

3—1. ERIOPHORUM. 3. 9.

virginicum (cotton grass. C. P. J. 4.) culm terete, leafy : leaves flat : spikes crowded, sub-sessile, shorter than the involucre. In bog-meadows, as all the following species are.

angustifolium (O. J. 4.) culm leafy, terrete : leaves 3-sided, channelled : spikes peduncled : seeds ovate.

polystachium (1) (C. V. P. Ju. 4.) culm leafy, terete : leaves flat : spikes peduncled : seed ovate.

cespitosum (P. V. Stockbridge, Mass. J. 4.) culm 3-cornered above : spikes simple, oblong ; scales scarious. Very slender—8 to 14 inches high. On marshes in Stockbridge, and in Castleton, Vt.

16—5. ERODIUM. 14. 73.

ciconium (stork-bill geranium. E. ☺.) peduncle many-flowered : leaves pinnate : leafets pinnatifid, toothed : petals oblong, obtuse : stem ascending.

cicutarium (hemlock geranium. P. p. Ap. ☺.) peduncles many flowered : leaves pinnate ; leafets sessile, pinnatifid, gashed : corol larger than the calyx : stem prostrate hirsute.

moschatum (musk geranium. E. ☺.) peduncles many-flowered : leaves pinnate ; leafets sub-petioled, oblong, gash-toothed : petals equalling the calyx : stem procumbent.

17—10. ERVUM. 32. 93.

hirsutum, W. (2) (creeping vetch. C. Y. p. J. ☺.) peduncles many flowered : legumes hirsute, 2-seeded : leafets linear, obtuse.

5—2. ERYNGIUM. 45. 60.

ovalifolium, Mx. (3) (sea-holly. P. D. b. Ju. 4.) simple :

(1) vulgare, P. (2) Vicia mitchilla, R.
(3) virgatum, Lk integrifolium, Wr.

leaves heart-ovate, with very short petioles : heads all peduncled : leafets of the involucre chaffy and 3-cleft : stem wand-like, branching above not below.

virginianum, Lk. (1) (P. C. Y. g. & b. Ju. 2.) very tall : leaves long lance-linear, serrate : branches linear, many-parted : leafets of the involucre longer than the head, chaffy, 3 to 5-cleft : heads panicled.

15—2. ERYSIMUM. 39. 63.

officinale (hedge-mustard. O. y. J. ☉.) siliques close-pressed to the rachis of the spike : leaves runcinate.

Erysimum, see Barbarea.

6—1. ERYTHRONIUM. 11. 14.

dens-canis, Mx. (2) (dog-tooth violet, adder's tongue. O. y. Ap. 2.) leaves oblong-ovate, glabrous, spotted. Scape 4 to 8 inches high. Woods.

5—1. EUONYMUS. 43. 95.

atropurpureus, Jn. (spindle-tree. D. P. p. J. ♄.) leaves petioled, lance-oblong, acuminate, serrate : peduncles divaricate, many flowered ; flowers 4-cleft : fruit smooth. Fruit red.

americanus, W. (burning bush. D. P. r-y. J. ♄.) branches 4-angled : leaves sub-sessile, lance-oval, acute, serrate : peduncles about 3-flowered ; flowers all 5-cleft : fruit warty-muricate. Fruit red. Said to grow in New-England.

obovatus, N. (P. p-g. J.) stem prostrate, rooting, twigs erect, obtusely 4-cornered : leaves broad-obovate, obtuse, acute at the base, sub-sessile, acutely serrate, flat, peduncles 3-flowered. About a foot high. Stamens, as well as petals, sometimes but 4.

18—2. EUPATORIUM. 49. 55.

1. *Calyxes not more than 5-flowered.*

hyssopifolium, W. (hyssop-thoroughwort, hempweed. C.

(1) aquaticum, Mx.
(2) lanceolatum, Ph. longifolium, Pt. americanum, S.

w. Au. 4.) leaves opposite, somewhat whorled, linear, entire, pubescent, 3-nerved, punctate; radical ones subdentate. About one foot high.

sessilifolium, W. (P. C. W. Au. 4.) leaves sessile, clasping, distinct, lance-ovate, rounded at the base, serrate, very glabrous: stem somewhat glabrous. About two feet high. Grows in rocky hills.

truncatum, W. (P. Ju. ½.) leaves sessile, clasping, distinct, lanceolate, truncate at the base, serrate, somewhat glabrous: stem pubescent. Resembles the last.

album, W. (P. Au. 4.) leaves sub-sessile, lance-oblong, roughish, serrate, inner scales of the calyx long, lanceolate, scarious, coloured. About 18 inches high.

lanceolatum, W. (P. Au. 4.) leaves sessile, distinct, lance-oblong, scabrous, deeply serrate: scales of the calyx one-coloured. Resembles the last.

trifoliatum, W. (D. P. Au. 4.) leaves petioled, in threes or fours, ovate, tapering to both ends, serrate roughish. Tall, not branched.

teucrifolium, W. (1) (P. D. W. Au. 4.) leaves sessile, distinct, ovate, scabrous; upper oneswith coarse teeth at the base and with the summit entire. About two feet high.

melissioides, W. (P. Au. 4.) leaves petioled, ovate, obtusish, obtusely-serrate, veiny, somewhat glabrous. Resembling the last.

rotundifolium, W. (P. Au. 4.) leaves sessile, distinct, round-cordate, obtusely-serrate, veiny: scales of the calyx acuminate. About 12 to 18 inches high.

pubescens, W. (2) (C. P. Au. 4.) leaves sessile, distinct, ovate, scabrous, veiny; lower ones doubly-serrate, upper ones sub-serrate, stem panicled, pubescent; branches fastigiate. Not above two feet high.

altissimum, W. (P. Au. 4.) leaves sub-sessile, lanceolate, 3-nerved, tapering to both ends, pubescent; lower ones serrate in the middle. From 3 to 7 feet high.

amoenum, Ph. (C. p. S. 4.) leaves with short petioles, opposite and in threes, lance-oblong, acute at both ends, serrate, sub-glabrous, sub-rugose, net-veined beneath: corymb fastigiate; scales of the calyx oblong, coloured. 2 feet high.

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(1) pilosum, Wr. verbenaefolium, Mx!

(2) glandulosum, Mx.

ceanothifolium, W. (C. P. Au. 4.) leaves petioled, ovate, acuminate, toothed, 3-nerved, glabrous. Resembles, in general aspect, the New-Jersey tea.

laevigatum, Torrey, (D. p. Au. 4.) calyx mostly 5-flowered: leaves in fives, petioled, lanceolate, very glabrous both sides, slender: stem hollow, smooth, sub-glaucous. 5 or 6 feet high—stem marked with purple lines. Vid. Torrey's catalogue, p. 92.

2. *Calyxes more than 5-flowered.*

purpureum (purple thoroughwort, or joe-pye. (1) O. p. Au. 4.) leaves in fours or fives, petioled, lance-ovate, serrate, rugose-veined, roughish: stem hollow. 5 or 6 feet high.

maculatum (C. W. P. p. Au. 4.) leaves in fours or fives, unequally serrate, pubescent beneath: stem solid, furrowed. Hardly so tall as the last.

punctatum, W. (P. D. p. Au. 4.) leaves in fours or fives, petioled, ovate, acuminate, serrate, scabrous both sides: stem solid, terete. Hardly so tall as the last.

virticillatum, W. (joe-pye's weed. O. p. Au. 4.) leaves in threes or fours, lance-ovate, wedge-form at the base, unequally serrate, somewhat glabrous: stem solid, smooth. 4 to 6 feet high.

perfoliatum (2) (boneset, thoroughwort. O. w. Au. 4.) leaves connate-perfoliate, oblong-serrate, rugose, downy beneath: stem villose. About 3 feet high. Excellent tonic and diaphoretic. B. Also a mild cathartic and emetic. Hosack.

coelestinum, W. (P. b. Au. 4.) leaves petioled, heart-ovate, obtusish, 3-nerved, obtusely-serrate: flowers corymbed.

ageratoides, W. (3) (O. w. Au. 4.) leaves petioled, ovate, acuminate, 3-nerved, unequally and coarsely toothed, serrate, glabrous; corymb many-flowered, spreading: calyx simple. About 2 feet high.

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(1) The two species, called joe-pye (from the name of an Indian) are in common use in the western counties of Massachusetts as diaphoretics &c. in typhus fever. President Moore of William Col. ascribes his recovery from a very alarming fever to the liberal, and continued use of a tea made with these plants.

(2) connatum, Mx.

(3) urticaefolium, Mx. Ageratum altissimum, L.

11—3. Euphorbia. 38. 96.

1. *Flowers not in involucred umbels.*

hypericifolia, W. (1) (spurge. O. Ju. ☺.) dichotomous, glabrous, very branching, sub-erect, spreading: leaves opposite, serrate, oval-oblong, sub falcate: corymb terminal.

depressa, R. (2) (spotted spurge. O. w Ju. ☺.) stem prostrate, spreading: leaves opposite, serrate, oblong, hairy: flowers axillary, solitary: appendages to the calyx coloured. Leaves when young and in dry ground, spotted.

dentata, Mx. (P. Ju. ☺.) small, hirsute: leaves opposite, oval, dentate: flowers crowded together at the summit. Upper leaves spotted.

polygonifolia, Ju. (C. P. Ju. ♃.) very glabrous, diffused: leaves opposite, entire, lance-linear, obtuse: flowers solitary, axillary.

ipecacuanhae, W. (D. P. Ju. 2.) procumbent, small, glabrous, leaves opposite, oboval or lanceolate; peduncles axillary, elongated, 1-flowered. Very long root.—Emetic, a good substitute for the ipecac. B.

portulacoides, W. (P. Ju. 2.) erect: leaves entire: oval, retuse: peduncles axillary, 1-flowered, equalling the leaves.

Flowers with involucred umbels. (3)

lathyrus (spurge caper. E. J. ♄.) umbel 4-cleft, dichotomous: leaves opposite, entire, lanceolate, pointing four ways.

peplus, W. (wild caper. P. Ju. ☺.) umbel 3-cleft, dichotomous, involucels ovate: leaves entire, obovate, petioled.

mercurialina, Mx. (P. Ju. 2.) stems slender, weak, leaves opposite or in threes, sub-sessile, oval, entire: peduncles terminal, solitary, 1-flowered.

corollata, W. (C. T. P. Ju. 2.) umbel, 5-cleft, 3-cleft, and dichotomous; involucels and leaves oblong, obtuse: petals obovate and resembling appendages of the calyx.

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(1) maculata, L. (2) maculata? W.

(3) This section comprizes the genus Esula, 2d Ed.

14—2. EUPHRASIA. 40. 35.

officinalis (eyebright. Can. P. w. Ju. ☺.) leaves ovate, obtusely toothed: lower divisions of the lip emarginate.

F.

20—13. FAGUS. 50. 99.

ferruginea, A. (red beach. O. y-w. M. ♄.) leaves ovate-oblong, acuminate, pubescent beneath, coarsely toothed, at the base obtuse, sub-cordate-oblique: nuts ovate, acutely 3-sided. Middling sized tree.

sylvatica, Mx. (white beach. O. y-w. M. 4.) leaves ovate, acuminate, slightly toothed, ciliate at the margin, acute at the base: nuts ovate 3-sided, obtuse mucronate.

3—1. FEDIA. 48. 56.

olitoria (lamb lettuce. E.) stem dichotomous: leaves lance-linear.

radiata, Mx. (1) (wild lamb-lettuce. T. C. P. w. J. ☺.) leaves spatulate-oblong, sub-entire: fruit pubescent, about 4-sided, naked at the apex. I found it on the side of the stage road between Troy and Albany.

3—2. FESTUCA. (2) 4. 10.

elatior, S. (fescue-grass. O. J. 4.) panicle nodding, very branching, lax; spikelets lance-ovate, acute: florets at first cylindric and closed, spreading in maturity, obsoletely nerved.

poaeoides, Mx. (Can. Ju. 4.) panicle somewhat crowded; lower branches simple: spikelets alternate, oblong, sub-sessile, awnless: leaves flat, very glabrous.

fluitans, Sr. (water-fescue. C. P. J. 4.) panicle long, lax; branches simple: spikelets close-pressed, linear-terete, many-flowered; florets awnless, striate: culm decumbent: leaves very glabrous.

nutans, W. (New-England. C. P. Ju. 4.) branches of the panicle one-way, nodding, scabrous: spikelets ovate, compressed, about 6-flowered, acute, awned: leaves lance-linear.

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(1) Valeriana radiata, P. (2) Schenodorus, Rs.

clandestina, M. (C.) panicle concealed ; branches solitary ; one spikelet sessile, another peduncled : leaves with long sheaths, linear nerved ; stipules acuminate.
tenella, W. (1) (C. W. P. J. ☺.) panicle very simple, one-way : spikelets about 9-flowered, awned : leaves linear-setaceous ; stipules 2-eared : culm 4-sided above, branching at the base.
duriuscula, S. (C. J. 4.) panicle one-way, diffuse : florets awned : culm terete : cauline leaves flat : root fibrous.
rubra? M. (P. 4.) culm striate, red at the base, pubescent, geniculate, with dark-coloured joints : panicle contracted, erect and a little nodding ; rachis 3-sided, zigzag : spikelets lanceolate, terete, pedicelled, having pedicelled florets : leaves very long, with striate glabrous sheaths.

21—3. FICUS. 53. 98.

carica (fig tree. E. g. Ju. ♄.) leaves cordate, 3 or 5-lobed, repand-toothed : lobes obtuse, scabrous above, pubescent beneath.

22—2. FISSIDENS. 56. 4.

hyoides, stem short : leaves facing 2 ways, lanceolate : pedicells terminal ; capsules erect. In damp shades.
taxifolius, stem short : leaves facing 2-ways, lanceolate, slenderly denticulate : capsules erect. In damp shades.
adianthoides, stem elongated, ramose : leaves lanceolate, sheathed at the base : pedicells lateral ; capsules suberect. In wet woods and meadows.

6—1. FLOERKEA. 15. 22.

uliginosa, M. (2) (false mermaid. T. P. w-y. Ap. 4.) leaves alternate ; those under water ternate, those above water quinate-pinnate. Found in ditches between Albany and Troy, by Dr. E. James.

22—2. FONTINALIS. 56. 4.

capillacea (water moss.) leaves acute, linear-awl-form, spread, longer than the capsule : sheath and peduncles long filiform.

(1) bromoides, Mx. octoflora, Wr. (2) Nectris pinnata, Ph.

antepyretica, stem branched, 3-sided : leaves facing three ways, lance-ovate, carinate, acute, pericheth obtuse. In water, both stagnant and flowing.

12—13. FOTHERGILLA. 50. 90.

alnifolia, W. (1) (witch alder. Southern states. w. Ap. ♄.) leaves wedge-obovate, crenate-toothed above. Var. *major*, has ovate-oblong leaves sub-cordate. Var. *acuta*, has ovate acute leaves.

12—13. FRAGARIA. 35. 92.

vesca (english strawberry. E. w. M. 4.) calyx of the fruit reflexed : hairs on the petioles spreading, on the peduncle close-pressed.

elatior (hautboy-strawberry. E. w. 4.) calyx of the fruit reflexed : hairs on the peduncle and petiole spreading.

grandiflora (pineapple-strawberry. E. w. 4.) calyx of the fruit erect : hairs on the peduncle and petiole erect : leaves coriaceous, somewhat glabrous above.

virginiana, W. (2) (wild strawberry O. w. M. 4.) calyx of the fruit spreading : hairs on the petioles erect, on the peduncles close-pressed : leaves somewhat glabrous above.

canadensis, Mx. (mountain strawberry. Can. P. w. M. 4.) large : leafets broad-oval, lateral ones manifestly petioled : pedicels long, recurve-pendulous : receptacle of the seeds globose, honeycomb-scrobiculate, villose. Is it a variety of virginiana ?

4—1. FRASERA. 54, 46.

caroliniensis, Wr. (3) (pyramid flower, columbo root. P. r. & y. Ju. ♃.) leaves whorled or opposite : flowers in clusters. From 3 to 6 feet high. Tonic bitter, mild cathartic and emetic. B.

21—2. FRAXINUS. 44. 37.

acuminata, Lk. (4) (white-ash. O. w-g. M. ♄.) leafets petioled, oblong, shining, acuminate, very entire, glaucous beneath : flowers calycled.

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(1) gardeni, Mx.
(2) glabra, Du Hamel.
(3) walteri, Mx.
(4) concolor, Mx. americana, W.

juglandifolia, W. (1) (walnut-leaf ash, swamp ash. P. W. M. ♄.) leafets petioled, ovate, opake, serrate, glaucous beneath, axils of the veins pubescent : branchlets glabrous ; flowers calycled.

pubescens, Wr. (2) (red-ash. P. M. ♄.) leafets petioled, oval-ovate, serrate, petioles and branchlets downy beneath : flowers calycled.

sambucifolia, Mx. (black ash. O. M. ♄.) leafets sessile, lance-ovate, serrate, rugose-shining, round-oblique at the base, axils of the veins villose beneath : flowers naked, not calycled.

epiptera, Vahl. (3) (P. D. Can. M. ♄.) leafets lance-oval, sub-serrate : samaras wedge-form, obtuse emarginate at the apex, terete below.

platycarpa, W. (C. Ap. ♄.) leaves sub-sessile lance-oval, leaves and samaras serrate outwardly.

6—1. FRITILLARIA. 10. 14.

imperialis (crown imperial. E. r. & y. M. 2↓.) flowers under a leafy crown, nodding : leaves lance-linear, entire. From Persia.

maleagris (fritillary, guinea-hen flower. E. p. & y. M. 2↓.) leaves alternate, linear, channelled : stem 1-flowered : nectary linear. Flower checkered.

8—1. FUCHSIA. 17. 88.

magellanica, Lk, (4) (ear-drop. E. r.) peduncles axillary, 1-flowered : leaves opposite or in threes, very entire. Flowers pendulous.

22—4. FUCUS. 57. 2.

siliquosus, stem compressed : branches 2-ranked, alternate : vesicles articulated, beaked ; receptacles beaked, lance-linear, compressed, petioled. In the sea, bearing fruit in the winter.

nodosus, stem compressed : vesicles imbedded, some of them inflated ; receptacles sub-opposite, pear-form, peduncled. In the sea.

vesiculosus, frond flat, ribbed, linear, dichotomous, very entire : vesicles spherical, in pairs, imbedded in the

(1) caroliniana, Wm.
(2) tomentosa, Mx.
(3) discolor, Mx.
(4) coccinea, A.

frond : receptacles terminal, thick oval. In the sea, large. Var. *spiralis*, frond slender, without vesicles, spirally twisted. At the mouths of rivers.

lorens, stem very short, dilated into a cup, sending out a fusiform, dichotomus receptacle. In the ocean.

3—1. FUIRENA. 3. 9.

squamosa, Mx. (umbrella grass. D. Ju. 2.) flowers in simple umbels ; spikelets ovate : culm glabrous ; leaves ciliate, sheaths hairy.

22—6. FULIGO. 58. 1.

rufa (soot fungus) cushioned, reddish-yellow : bark subrugose, fragile, sub-compact. On trunks in summer and autumn. Sometimes globose in the young state and sometimes hemispheric, from half an inch to an inch in diameter.

flava, opening and roundish, yellow, with a cellular-fibrous bark. On deciduous leaves, trunks, mosses, &c. in autumn.

vaporaria, at first covered, veiny, creeping ; when mature broad-cespitose, thick, cellular-fibrous, cinnamon-yellow. Among pulverized bark, at first appearing like vapor, then fibrous and coriaceous.

17—6. FUMARIA. 24. 62.

officinalis (fumitory. Y. C. P. Gr. Barrington, Mass. r. J. ☺.) stem branching, spread : leaves more than decompound ; leafets wedge-lanceolate, gashed.

22—2. FUNARIA. 56. 4.

hygrometica (hygrometer moss.) leaves ovate, acute, concave, entire, inflected : capsules swelling, drooping, pear-form ; pedicels very long, twisting spirally when dry.

flavicans, leaves setaceous, long-acuminate : peduncle capillary, pale.

muhlenbergii, leaves obovate, awned, concave, serrulate, spread : capsule obovate, oblique.

G.

17—10. GALACTIA. 32. 93.

glabella, Mx. (1) (milk-way plant. D. P. r. & w. J. 4.) prostrate, somewhat twining and glabrous: leaves ternate, oval-oblong, obtuse, emarginate at both ends: racemes axillary, simple, abbreviated, few-flowered: legumes villose. Root long, fusiform.

mollis, Mx. (2) (D. P. r. & w. Ju. 4.) twining, having soft whitish pubescence: leaves ternate, ovate-oblong, obtuse, smoothish, glaucous beneath: racemes axillary, simple, elongated, few-flowered: legumes villose.

6—1. GALANTHUS. 6. 17.

nivalis (snow drop. E. w. Ap. 4.) leaves linear, keeled, acute, radical: scape 1-flowered.

17—10. GALEGA. 32. 93.

†*virginiana* (3) (goat's rue. T. V. P. Y. r. 4.) erect, having whitish down: leafets (17 to 21) oval-oblong, acuminate: raceme terminal, short, sub-sessile: legumes reversed falcate, villose: calyx woolly. Sandy alluvion.

14—1. GALEOPSIS. 42. 39.

†*tetrahit* (flowering nettle. O. r. & w. Ju. ☺.) the spaces between the joints of the stem thicken upwards: the upper whorls nearer together: calyx prickly, a little shorter than the corol: stem rough-haired.

4—1. GALIUM. 47. 57.

1. *Fruit glabrous.*

†*trifidum*, W. (4) (bedstraw. W. C. P. w. Ju. 4.) stem procumbent, scabrous backwards: cauline leaves in fives, branch leaves in fours, linear, obtuse, scabrous at the margin and on the nerves: fasicles terminal, few-flowered; pedicels short: corols mostly 3-cleft.

tinctorium (dyer's cleavers. O. w. Ju. 4.) stem diffuse,

(1) Dolichos regularis, W. Ervum volubile, Wr.
(2) Hedysarum volubile, W.
(3) Plukenett, Tephrosia virginica, P. (4) claytoni, Mx.

smoothish : cauline leaves in sixes, branch leaves in fours, linear acutish ; margins and nerves with slender prickles : peduncles terminal, elongated, mostly 3-flowered.

asprellum, Mx. (rough bedstraw. O. w. Ju. 4.) stem diffuse, very branching, prickly backwards : cauline leaves in sixes ; branch leaves mostly in fours, lanceolate, acuminate, margins and nerves prickly : branchlets flower-bearing, many-flowered : pedicels short.

2. *Fruit hirsute.*

brachiatum, Ph. (bedstraw. V. C. P. w. Ju. 4.) stem limber, long, brachiate-ramose, hispid ; branches short : leaves in sixes, lance-oblong, acuminate, glabrous, margin and keel ciliate : branches whorled, the longest dichotomous : pedicels 2-flowered : fruit with hooks. Pursh.

bermudianum, W. (1) (P. T. p. Ju. 4.) stem very branching, scarcely pubescent : leaves in fours, ovate, obtuse, glabrous, margins and nerves pubescent, sometimes pellucid : branchlets floriferous, elongated : fruit with hooked bristles.

micranthum, Ph. (Can. C. P. w. Ju. 4.) stem very branching, prickly backwards : leaves short, lanceolate, mucronate, glabrous, margin and keel prickly : pedicels about 2-flowered : fruit hispid. Flowers small, many.

circaezans, Mx. (2) (wild liquorice O. w-y. J. 4.) stem erect, smooth : leaves in fours, oval, obtuse, glabrous, margins and nerves a little ciliate : peduncles few-flowered ; flowers remote, sub-sessile : fruit with hooked bristles. Leaves taste much like liquorice.

triflorum, Mx. (O. w Ju. 4.) stem procumbent, smoothish : leaves in fives or sixes, lance-obovate, mucronate, glabrous, scarcely ciliate at the margin : branchlets 3-flowered at the end ; flowers pediceled ; fruit small, hispid.

aparine, W. (C. P. w. J. ☿.) stem limber scabrous backwards : leaves in about eights, lance-linear, mucronate, hispid above, margin and keel prickly : branchlets of the length of the leaves, about 3-flowered : fruit hook-bristled.

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(1) purpureum, Wr. puncticulosum, Mx. (2) brachiatum, M.

pilosum, W. (C. T. P. N. p. J. 4.) stem nearly simple, long, ascending, remotely geniculate, hispid: leaves in fours, oval, short-mucronate, very hirsute both sides, nerveless: branchlets nearly simple, about 3-flowered at the end: fruit pilose.

strictum, Eddy, (1) (C. T. P. w. Ju. 4.) stem stiffly erect, smoothish, branching; branches short, erect: leaves in fours, linear-lanceolate, obtuse, 3-nerved, with involute scabrous margins: flowers panicled crowded; peduncles short, 3-flowered at the top, forked, hispid.

10—1. GAULTHERIA. 18. 51.

procumbens (spicy wintergreen. O. w. J. 4. or ♄.) stem procumbent; branches erect: leaves obovate, acute at the base: flowers few, nodding. Berries red, consisting in part of the permanent calyx; a little mealy, pleasant tasted. Stimulant and anodyne. B

hispidula, M. (2) (creeping wintergreen. H. & N. w. M. ♄.) stem creeping, hispid, leaves oval, acute: flowers solitary, axillary, sub-sessile, having but 8 stamens, short-bell-form. Sensible properties like the last.

8—1. GAURA. 17. 88.

biennis, W. (virginian loosestrife. T. P. Hudson. r. & y. Au. ♂.) leaves lanceolate, toothed: spike crowded: fruit roundish-4-cornered, pubescent.

22—6. GEASTRUM. 58. 1.

rufescens, rays many-cleft reddish; fruit sessile, glabrous, pale. In pine woods.

hygrometricum, rays many-cleft, inflexed, liver-brown; fruit reticulate, sessile, nearly of an uniform colour.—On gravelly soil, in spring and autumn.

17—10. GENISTA. 32. 93.

tinctoria (dyer's broom. E. y. Au. 4.) leaves lanceolate, glabrous: branches terete, striate, erect: legumes glabrous.

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(1) boreale, Ph.

(2) serpillifolia, Ph. Vaccinium hispidulum, L. Oxycoccus hispidulus, P. Arbutus thymifolia, A. filiformis, Lk.

5—2. GENTIANA. 20. 46.

lutea (yellow gentian. D. y.) leaves broad-ovate, nerved: corols about 5-cleft, wheel-form, whorled. Muhlenberg quotes Kalm, as an authority for this being found in New-Jersey.

pneumonanthe, W. (calathian violet. P. Can. b. Au. 4.) stem terete: leaves lance-linear, obtusish: flowers terminal, fascicled; lateral ones solitary, peduncled; corol 5-cleft, bell-form, divisions roundish, inner folds with one acute tooth.

saponaria, W. (1) (soap-gentian. O. b. & w. S. 4.) stem terete, glabrous: leaves lance-oblong, 3-nerved: flowers sessile, fascicled, terminal and axillary: corol 5-cleft, bell-ventricose, almost closed at the top; inner folds toothed. Damp.

ochroleuca, W. (2) (C. D. P. y. & b. S. 4.) stem somewhat angled, roughish: leaves lance-ovate, roughish: flowers sessile, fascicled, terminal; corol 5-cleft, bell-ventricose; divisions acute, inner folds, simple, acute.

linearis, W. (3) (P. b. Au. 4.) stem roughish: leaves lance-linear, undulate, ciliate as the calyxes: flowers 5-cleft, bell-form, terminal, sessile, crowded; divisions short, obtuse: interior folds denticulate.

quinqueflora, W. (4) (H. &. T. b. Au. ♂.) stem 4-cornered, branching: leaves half-clasping, oval, acute, 3-nerved: flowers 5-cleft, bell-tubular with a glabrous throat, terminal and lateral, in threes or fives, sub-pedicelled, divisions lanceolate, acuminate: calyx short, narrow.

angustifolia, Mx. (5) (D. b. S. 4.) stem terete, simple, 1-flowered: leaves narrow-linear, spreading: corol 5-cleft, divisions oval, inner folds torn.

crinita, W. (6) (fringed gentian. O. b. S. 4.) stem terete: branches long, 1-flowered: leaves lanceolate, acute: corol 4-cleft, divisions obovate, gash-ciliate, interior folds simple. Damp.

22—6. GEOGLOSSUM. 58—1.

hirsutum, sub-fascicled, hirsute, black.

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(1) fimbriata, Vahl. Catesbaei, Wr.
(2) saponaria, Wr. villosa, W. (3) puberula, Mx.
(4) quinquefolia, L. amarelloides, Mx.
(5) purpurea, Wr. (6) fibriata, Bot. rep.

viride, fassicled, green ; clavate pileus obtuse : stipe scaly.

16. 10. GERANIUM. 14. 73.

sanguineum (bloody geranium. E. 4.) peduncle 1-flowered : leaves 5-parted, 3-cleft, orbicular : capsule bristly at the top.

maculatum (crowfoot geranium, O. r. & b. J. 4.) erect : pubescence reversed : stem dichotomous : leaves opposite, 3 or 5-parted, upper ones sessile : peduncles 2-flowered : petals obovate. The root is a powerful astringent. B.

carolinianum (D. w. r. Ju. ♄.) diffuse, pubescent : leaves opposite, 5-lobed ; lobes 3-cleft, gashed : peduncles 2-flowered, sub-fascicled : petals emarginate, equalling in length the awned calyx : arils villose.

columbinum (P. C. b. M. 4.) peduncles 2-flowered, longer that the leaves : leaves 5-parted ; lobes many-cleft, linear : petals emarginate, of the length of the awned calyx : arils glabrous.

pusillum, W. (P. b. M. ☺.) peduncles 2-flowered ; flowers pentandrous, petals emarginate of the length of the awnless calyx : leaves about 7-lobed, 3-cleft : arils pubescent.

robertianum (herb robert. O. r. J. ♄.) spread, hirsute : leaves opposite, ternate and quinate, 3-cleft-pinnatifid : peduncles 2-flowered : petals entire, twice as long as the awned calyx : aril net-veined. Several centuries ago, this plant was highly commended in hemorrhage, fresh wounds and old ulcers.

dissetum, W. (D. r. J. ☺.) spread, hairy : leaves opposite, 5-parted, lobes 3-cleft, gashed, linear : peduncles 2-flowered, long : petals emarginate, the length of the awned calyx : aril with glandular hairs.

Geranium, see Pelargonium and Erodium.

14. 2. GERARDIA. 40. 40.

flava (false foxglove. O. y. Ju. 4.) pubescent : stem simple : leaves sub-sessile, lanceolate, entire or toothed ;

lower ones sub-pinnatifid, gashed : flowers axillary, opposite, subsessile. 2 or 3 feet high.

glauca, Eddy. (1) (oak-leaf foxglove. O. y. Ju. 2.) glabrous, stem glaucous, purple, panicle-like ; leaves petioled, sinuate-pinnatifid with acute lanceolate divisions : upper leaves lanceolate entire. 3 to 5 feet high.

pedicularia (lousewort foxglove. N. Y. C. P. y. S. ♄.) pubescent, brachiate-panicled : leaves oblong doubly gash-serrate and pinnatifid : flowers axillary, opposite, pedicelled : divisions of the calyx leafy, gash-toothed.

purpurea (P. Y. C. p. Au. ♄. ☺.) stem with opposite branches : leaves linear, slender : flowers axillary, opposite, sub-sessile.

crinita, Eddy. (2) (W. C. T. p. Ju. ♄.) stem with opposite branches : leaves short and fleshy. Discovered by Dr. C. W. Eddy. Resembles the *purpurea*. It is from 6 to 12 inches high.

auriculata, Mx. (P. p. Au. ☺.) nearly simple, rough : leaves lance-ovate, 2-eared at the base, entire : flowers axillary, opposite ; leaves and flowers closely sessile. About 8 inches high.

erecta, Vahl. (3) (P. C. p. Au. ♄.) small : ramose-panicled : leaves very narrow-linear ; peduncles capillary, longer than the flower.

setacea, Wr. (P. Au. ☺.) stem very branching : leaves setaceous : branches axillary, longer than the leaves, mostly 1-flowered.

12. 13. GEUM. 35. 92.

virginianum (avens. O. w. Ju. 2.) pubescent : radical and lower cauline leaves ternate, upper ones lanceolate : stipules ovate, sub-entire : flowers erect : petals shorter than the calyx : awns hooked, naked ; at the apex twisted, hairy.

strictum, W. (4) (upright avens. W. V. Can. C. y. J. 4.) hirsute : leaves all interruptedly pinnate, the odd one largest ; leafets ovate, toothed : stipules gashed : divi-

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(1) quercifolia, Ph. Rhinanthus virginicus, G.
(2) maritima, R. crassifolia, Var. of purpurea, Ph.
(3) tenuifolia, W. (4) canadense, Mr. aleppicum, Jn.

sions of the calyx 5, alternately linear, short: flowers erect; petals roundish, longer than the calyx, awns naked, hooked.

geniculatum, Mx. (Can. 4.) many-flowered, sub-panicled: cauline leaves sub-sessile, 3-parted: stipules entire: petals wedge-obcordate: awns all over hairy, geniculate in the middle.

+ *rivale*, Mx. (purple avens. O. p. M. 4.) pubescent: stem simple: radical leaves interruptedly pinnate; cauline ones 3-cleft: flowers nodding; petals of the length of the calyx: awns plumose, nakedish above, a little hooked. Excellent tonic. Damp.

album, W. (1) (P. w. Ju. 4.) pubescent: radical leaves pinnate; cauline ones ternate, upper ones simple, 3-cleft: lower stipules gashed: flowers erect; petals of the length of the calyx: awns hooked, naked, hairy at the end.

peckii (Whitehills. Ju. 4.) somewhat glabrous: stem 1-flowered: radical leaves reniform, rounded, sub-truncate at the base, gash-toothed: petioles very long, sometimes appendaged: petals of the length of the calyx. Discovered by Professor Peck, of Harvard college.

12. 5. GILLENIA. 36. 92.

+ *trifoliata*, Mn. (2) (Indian physic, Bowman's root. P. D. w. J. 4.) leaves ternate, lanceolate, serrate, nearly equal; stipules linear, entire: flowers terminal, in loose panicles: calyx bell-tubular. Styles 5. An emetic and tonic. B.

stipulacea (P. w. J. 4.) leaves ternate, lanceolate, gash-serrate, nearly equal; stipules leafy, ovate, gash-toothed: flowers in a lax panicle: calyx bell-form. Medicinal properties like the last. B.

5. 1. GLAUX. 17. 91.

+ *maritima*, W. (sea milkwort. Can. r. Ju. 4.) leaves oblong, smooth: flowers axillary, sessile. In salt marshes.

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(1) canadense, Jn. carolinianum, Wr. (2) Spiraea, Mx.

14. 1. GLECHOMA. 42. 39.

hederacea (ground ivy, gill-overground. O. b. & r. M. 24.) leaves reniform, crenate : stem rooting.
cordata, M. (P. b. 24.) leaves heart-form.

21. 13. GLEDITSCHIA. 33. 93.

triacantha (honey-locust. P. w. J. ♄.) thorn strong, cross-branched : leaves linear-oblong : legumes very long, compressed. A large tree. One side of the long flat legume contains a sweet pulp. Cultivated.

17. 10. GLYCINE. 32. 93.

angulosa (1) (wild bean. P. p. Au. ☺.) stem prostrate, sometimes twining : leaves ternate : lateral leafets 2-lobed, terminal leafet with a rounded apex (or parabolical ;) peduncles longer than the leaves : flowers capitate. E.
apios (2) (ground-nut. O. b. & p. Au. 24.) twining, glabrous : leaves unequally pinnate ; leafets 5 or 7, lance-ovate, upper ones narrow : racemes crowded, shorter than the leaves. Roots tuberous, farinaceous, and in taste resembling the cocoanut. In loose rich soil.
umbellata, E. (P. w. p. Au. ☺.) prostrate, sometimes twining : leaves ternate, ovate, glabrous : peduncles umbelled, longer than the petioles : legumes linear.
helvata, E. (3) (D. P. r.) prostrate, sometimes twining : leaves ternate, deltoid oblong : flowers capitate : banner short ; wings large, expanded.
peduncularis, E. (4) (P. p. Ju. ☺.) stem prostrate, sometimes twining : leaves ternate, oblong-ovate and deltoid : flowers capitate : banner rather large, emarginate ; the other petals small : seed woolly.
Remark. I adopt Elliot's arrangement of the species of Phaceolus and Glycine.

17. 10. GLYCIRRHIZA. 32. 93.

officinalis (liquorice. E. 24.) leaves pinnate, the terminal one petioled. Root tuberous-cylindric, sweet.

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(1) Phaseolus trilobus, Mx. (2) Apios tuberosa, Ph.
(3) Phaseolus helvolus, W.
(4) Phaseolus helvolus, Mx. vexillatus, Ph.

18. 2. GNAPHALIUM. 49. 55.

margaritaceum (large-flowered life-everlasting. O. y. & w. Ju. 4.) leaves lanceolate, gradually narrowing, acute: stem branching above: corymb fastigiate: flowers pedicelled. About 18 inches high. Flowers with white pearly rays and yellow disks. Wrongly applied in the Boston Florula.

polycephalum, Mx. (1) (sweet-scented life-everlasting. O. y-w. Ju. ☺.) leaves lance-linear, acute, glabrous above, downy beneath: stem panicled, downy; corymbs terminal. The heads of this species are more numerous than of the preceding, more close, and the flowers are smaller. Grows to about the same height.

decurrens, Ives, (2) (neglected life-everlasting. O. y-w. Ju. ☺.) leaves lanceolate, broad at the base, acute, decurrent, somewhat scabrous above, tomentose beneath: stem leafy, branched, spreading. From one to three feet high. This plant has always been confounded with the pylycephalum, until Professor Ives detected its essential differences. Since he published the distinctive characteristics, I have found it at Hudson, Troy, and various parts of Vermont and Massachusetts; and I have seen a specimen of it from Niagara.

plantagineum (early life-everlasting. O. w. Ap. 4.) shoots procumbent: stem simple: radical leaves obovate, nerved: corymb close-pressed: flowers dioecious: inner scales of the calyx elongated, acutish, coloured. About 6 inches high.

dioicum, P. (mousear. W. P. w. J. 4.) shoots procumbent: stem simple: radical leaves spatulate: corymb close-pressed: flowers dioecious: inner scales of the calyx elongated, obtuse, coloured. Differs from the last a little in the forms of the radical leaves, the scales of the calyx and time of flowering. But perhaps it may be a variety of it.

purpureum, W. (C. P. p. Ju. 4.) leaves linear-spatulate, downy beneath: stem erect, simple: flowers sessile, glomerate, terminal and axillary. Hardly so tall as the two last species. Calyx purple.

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(1) obtusifolium, W. (2) luteo-album ? M.

uliginosum (mud life-everlasting. O. w. Ju. ☺.) stem branched, spread, woolly: leaves lance-linear, narrowed at both ends, downy: flowers terminal heaped; 4 or 5 inches long, half-prostrate, calyxes brown. Damp.

germanicum (P. w. Ju. ☺.) stem erect, dichotomous: leaves lance-linear, acute, tomentose: flowers in a globular head, terminal and lateral, 5 or 6 inches high.

pensylvanicum, M. (1) (P. C. w. J. ☺.) leaves lance-obovate, acute, glabrous above, tomentose beneath; margin pubescent; flowers sub-sessile, axillary and terminal, crowded. B.

5. 1. GOMPHRENA. 54. 30.

globosa (globe amaranth, bachelor's button. E. r. Au. ☺.) stem erect: leaves lance-ovate: heads solitary: peduncles 2-leaved.

20. 5. GONOLOBUS. 30. 47.

obliquus (false choak-dog. P. p. J. 4.) stem twining, hirsute: leaves heart-ovate, acute: corymbs, axillary; segments of the corol ovate, acuminate.

19. 1. GOODYERA. Br. (2) 7. 21.

pubescens (rattle-snake leaf, scrophula-weed, O. y. w. Ju. 4.) leaves radical, ovate, petioled, veins coloured, reticulate: scape sheathed; scape and flowers pubescent: lip ovate-acuminate; petals ovate. This plant is confounded with the Hieracium venosum by our root doctors, as the leaves of both are reticulate, radical and depressed. Said to be useful in scrofula.

16. 13. GORDONIA. 37. 74.

lasianthus (lolly bay. E. S. ♄.) flowers long-peduncled: leaves coriaceous, glabrous: capsules ovate.

16. 13. GOSSYPIUM. 37. 74.

herbaceum (cotton. E. Au. ♁.) leaves 5-lobed, mucronate, one gland beneath: stem herbaceous, smooth.

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(1) americanum, W. (2) Neottia.

22. 5. GRAPHIS. 57. 2.

scripta, crust membranaceous, smooth, somewhat shining, white and becoming somewhat cinereous: receptacles rising up, naked, flexuose, simple and branched; disk somewhat in the form of chinks; margin frond-like, elevated, membranaceous. On smooth bark, &c. Var. *macrocarpa*, crust effuse, becoming white: receptacles very long, strait, sub-parallel, simple and forked at the apex. Var. *pulverulenta*, crust effuse, membranaceous, becoming white: receptacles rising up, flexuose; disk channelled, dehiscent, bluish-white; margin frond-like, elevated, a little tumid. Var. *cerasi*, crust very thin, white, becoming glaucous, shining: receptacles rising up, strait, elongated, somewhat simple, acuminate, sub-parallel: disk channelled, somewhat frosty-white; margin frond-like, thin. On the bark of cherry and plum trees.

serpentina, crust cartilaginous-membranaceous, not uniform, a little rugose, determinate, white and cinereous: receptacles immersed, elongated, crowded, flexuose, sub-simple and ramose, obtuse, bluish-white; disk at length flat, margin frond-like, lateral, thick. On bark of trees.

2. 1. GRATIOLA. 40. 40.

†*aurea*, M. (hedge hyssop. O. y. Ju. 4.) leaves broad-linear, sessile, entire, 3-nerved, punctate above: peduncles opposite, hardly so long as the leaves: filaments sometimes wanting and sometimes without anthers. In damp ground.

virginica, Ph (1) (creeping hedge-hyssop. Y. P. C. w-y. Ju. 4.) leaves oblanceolate, attenuate below, remotely toothed, nerved, glabrous: peduncles alternate, very short: capsules acuminate, longer than the calyx. In wet ground.

acuminata, Wr. (P. y. Ju. 4.) leaves lanceolate, serrate, pubescent: peduncles opposite, longer than the leaves: leafets of the calyx linear, of the length of the subglobose capsule. In wet places.

(1) officinalis, Mx.

neglecta, Torrey, (C. T. W. V. w-y. Ju. 4.) stem pubescent, assurgent, terete: leaves glabrous, lanceolate, sparingly tooth-serrate, tapering and connate at the base: leafets of the calyx equal: no barren filaments. See Torrey's catalogue, p. 89.

22. 2. Grimmia. 56. 4.

1. *Capsules sub-sessile, immersed.*

alpicola, stem ramose: leaves lanceolate, obtusish: capsule ovate-urceolate, smooth, sub-sessile; clayptre torn at the base; lid obliquely beaked.

apocarpa, stem ramose: leaves ovate-acuminate, carinate, naked at the apex: capsule oblong, striate, subsessile. On moist trunks.

michauxi, Torrey, slenderly caulescent: leaves lanceolate, terminating in a capillary, white-pellucid and roughish point: pedicel terminal: capsule short-ovate, smooth. Michaux describes this species under the name *gracilis*; but this name having been applied to another species, Dr. Torrey substituted the name of its discoverer. Herb. Tor.

pilifera, stem erect, branching: leaves densely imbricate, lanceolate, erect-spreading and incurved: hairy pericheth large: capsules ovate, sub-sessile: lid conic, cuspidate.

2. *Capsules peduncled, exsert, short.*

ovata, stem very branching, fastigiate: leaves lanceolate, obtusish, erect-spreading, somewhat inflexed, hairy: capsules oblong-ovate: lid convex-conic.

22. 5. Gyalecta. 57. 2.

bryophila, crust rugose-plicate, white, becoming somewhat cinereous: receptacles dark-blue, dilated at the bottom; the periphery elevated, inflexed, somewhat contracted, acutish; at length crowned at the base.

22. 2. GYMNOSTOMUM. 56. 2.

1. *Stem simple, erect.*

pyriforme, stem very short: leaves ovate, acute, flat: dioecious; capsules erect, pear-form; lid obtusely conic; calyptre split laterally.

turbinatum, stem short, simple: leaves lanceolate, apiculate, serrulate: capsules somewhat oblong-turbinate; lid convex, obtuse, acuminate.

splachnoideum, capsules contracted in the middle: leaves deeply serrate at the margin.

2. *Stems divided, procumbent or floating.*

prorepens, stipe creeping--stem erect, short, obtuse: leaves closely imbricate, lance-oval, acuminate: capsules globose; lids subulate.

6. 3. GYROMIA. N. (1) 11. 12.

† *virginica* (Indian cucumber. O. y. g. M. ♃.) several leaves in a whorl near the middle of the stem, and 3 in a whorl at the top, lance-oval: pedicels aggregate terminal. Root white. Diuretic. B.

22. 5. GYROPHORA. 57. 2.

postulata, frond papulose, becoming cinereous-green; deeply pitted or lacunose beneath and smooth, naked, pale-tawney: receptacles distant, flat, marginated; disk sub-equal, papillose and plicate. On rocks, &c.

papulosa, frond rugose, papulose, obscurely cinereous; underside lacunose, pale-tawney: receptacles very thick together, minute, urceolate; disk uniform and plicate, in some places heaped and conglomerate. On rocks.

pensylvanica, frond papulose, tawney-olive; underside pitted or lacunose, rough-granulate, dark-coloured: receptacles marginated; disk flattish, uniform and plicate. On rocks and mountains.

muhlenbergii, frond somewhat glabrous, lacunose-reticulate, tawney-olive; underside papulose, with ridges

(1) Medeola, L.

lacerated and joining ends; scales of one colour: receptacles in pitts, depressed, flattish, round-plicate. On mountains.

mammulata, frond smooth, pale-olive, at length dark-tawney; underside very dark, scabrous and fibrous: receptacles convex, rugose-chinked, nearly destitute of any margin; disk sometimes concave and papillose. On rocks.

vellea, frond smoothish, becoming dull cinereous; underside fibrous, hirsute, nearly of an uniform colour, dark-tawney: receptacles sessile, flat, marginated; folds or wrinkles concentric. On rocks in mountains.

H.

22. 5. HALYMENIA. 57. 2.

palmata, frond flat, sub-palmate; divisions oblong, subsimple: colour reddish-purple, substance at first thin and membranaceous, at length passing into a soft leathery substance. In the sea.

4. 2. HAMAMELIS. 54. 78.

virginica, W. (witch-hazle. O. y. Oc. ♄.) leaves obovate, acute, toothed, cordate with a small sinuse. Flowers in the fall and perfects the fruit the next summer. A shrub from 5 to 15 feet high.

21. 5. HAMILTONIA. 43. 95.

oleifera, W. (1) (oil-nut. P. g-y. J. ♄.) pubescent: leaves oblong, entire, acuminate: flowers in terminal racemes. A shrub about 5 or 6 feet high. Flowers small.

14. 1. HEDEOMA. 42. 39.

pulegioides (penny-royal. O. b. J. ☉.) pubescent: leaves oblong, serrate: peduncles axillary, whorled: lower lip of the calyx with 2 ciliate bristles. 5 or 6 inches high.

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(1) Pyrularia pubera, Mx.

glabra (C. 4.) glabrous: lower leaves oblong, upper ones lanceolate, remotely serrate: peduncles terminal, ternate.

5. 1. HEDERA. 46. 58.

helix (english ivy. E. g-w S. ♄.) leaves 3 or 5-lobed, floral ones ovate: umbel erect.

4. 1. HEDYOTIS. Mx. (1) 13. 84.

glomerata (creeping green-head. W. D. w-g. M. ☉.) procumbent: leaves lance-ovate: flowers axillary and terminal, united or heaped in heads, pedicelled: germs hispid. Damp or wet.

17. 10. HEDYSARUM. 32. 93.

canadense (bush trefoil. O. r. Ju. 4.) erect, smoothish: leaves ternate, lance-oblong: stipules filiform: flowers racemed: joints of the loment obtusely-triangled, hispid.

canescens, W. (P. C. r-b. Au. 4.) erect, pilose: stem angled-ciliate, hispid: leaves ternate, roundish, with close-pressed hairs beneath: stipules ovate, acuminate: racemes panicled: bracts cordate: joints of the loment triangular, hispid.

marilandicum (C. P. p. Ju. 4.) erect, branching, pilose: leaves ternate, oblong, villose beneath: stipules subulate: racemes panicled: loment 3-jointed; the joints rhomboid, reticulate, a little hairy. Flowers large.

obtusum, W. (C. P. p & g. Au. 4.) erect, pubescent: leaves ternate, ovate, obtuse, sub-cordate at the base: stipules lance-subulate: panicle terminal: joints of the loment sub-orbiculate, reticulate, hispid: loments rough, joints oval.

viridiflorum (C. D. g. & p. Au. 4.) erect, branching, pubescent: leaves ternate, ovate-oblong, scabrous beneath: stipules lance-cuspidate: racemes panicled, bracted. About 3 feet high. Flowers become greenish when old.

glabellum, Mx. (2) (O. p. Ju. 4.) erect, glabrous: leaves

(1) Oldenlandia, L. (2) paniculatum, W.

ternate, ovate obtuse, sub-glaucous beneath : stipules small, subulate : panicle terminal : joints of the loment rhomb-triangular.

ciliare, W. (O. p. Au. ♃.) erect, a little glabrous : leaves ternate, ovate, pubescent beneath, margin ciliate : stipules filiform : panicle terminal : joints of the loment (2 or 3) half-orbicular, hispid.

rotundifolium, Mx. (O. p. Au. 4.) prostrate, hirsute : leaves ternate, orbicular, pilose both sides : stipules round-cordate, reflexed : racemes axillary and in the terminal panicles few-flowered : bracts cordate : joints of the loment sub-rhombic, reticulate scabrous.

bracteosum, Mx. (O. r. Au. ♃.) erect, glabrous : leaves ternate, oblong-oval, acuminate : stipules subulate : racemes terminal with scattered flowers : bracts ovate, acuminate, striate, glabrous : joints of the loment sub-oval. Flowers large.

cuspidatum, W. (P. C. W. p. Au. ♃.) erect, glabrous : leaves ternate, petioled, ovate-oblong, long-acuminate, glabrous, margin scabrous : stipules lance-ovate : panicle terminal : joints of the loment triangular, reticulate, glabrous, at the margin pubescent. Is this a variety of the last ?

laevigatum (D.) very smooth : stem simple, erect, sub-glaucous : leaves ternate, long-petioled ; leafets ovate, acute : stipules subulate, minute, caducous : panicle terminal, sub-simple ; flowers in pairs on long peduncles ; bracts ovate, acute, shorter than the flower buds. The smoothest of all American species.

glutinosum, W. (O. p Ju. ♃.) erect, simple : leaves long-petioled, ternate, round-ovate, acuminate : panicle scape-like, proceeding from one side of the base of the stem : peduncles with glutinous hairs : joints of the loment oblong-triangular, a little glabrous.

nudiflorum (C. p. Ju. 4.) erect, simple, glabrous : leaves ternate, broad-oval, acuminate : scape panicled, glabrous, radical : stem-bearing leaves higher : joints of the loment round-triangular, somewhat glabrous.

acuminatum, Mx. (1) (O. p. Ju. 4.) erect, simple, pubescent, leafy at the summit : leaves ternate, ovate,

(1) This is made a variety of glutinosum by some authors. On comparing many specimens in the growing state, they appear to be manifestly distinct.

long-acuminate, with scattered hairs on both sides close-pressed, long-petioled ; the odd leafet round-rhomboid : panicle long-peduncled, terminal.

strictum, Ph. (O. p. Ju. 4.) stiffly erect, glabrous, simple : leaves petioled, ternate, linear-oval, glabrous, net-veined, glaucous beneath : stipules subulate : panicle terminal, peduncled, few-flowered. Resembles the glabellum.

Hedysarum, see Lespedeza.

18. 2. HELENIUM. 49. 55.

autumnale (false sunflower. D. T. P. y. Au. 4.) leaves lanceolate, serrate, sub-decurrent : stem corymbed above : disk florets 5-cleft ; rays flat, reflexed. Damp; at Hudson it grows in the mud of South Bay.

18. 3. HELIANTHUS. 49. 55.

1. *Leaves opposite.*

atrorubens, W. (P. y. & p. Au. 4.) hispid : stem nakedish above, lax-panicled, leaves spatulate, ovate, crenate, 3-nerved, scabrous : scales of the calyx lance-ovate, of the length of the disk.

trachelifolius, W. (1) (C.W. P. T.V.Can. y. Au. 4.) leaves lance-ovate, acuminate serrate, 3-nerved, very rough both sides : scales of the calyx lance-linear, ciliate, outer ones longest. About 3 feet high.

divaricatus, W. (C. T. P. Can. y. Au. 4.) stem glabrous, very branching : leaves nearly opposite, sessile, lance-ovate, 3-nerved : panicle trichotomous, slender, few-flowered. 5 or 6 feet high.

frondosus (C. T. P. Can. y. Ju. 4.) stem glabrous below : leaves ovate, sharply-serrate : peduncles scabrous : calyx squarrose, undulate, leafy, ciliate : rays 8-flowered. 4 feet high.

2. *Upper leaves alternate.*

annuus (common sunflower. E. y. & w. Ju. 4.) leaves all cordate, 3-nerved : peduncles thickening upwards :

(1) gigas, Mx.

flowers nodding. Cultivated for the fixed oil obtained from the seed by compression. 6 to 10 feet high, flowers very large.

macrophyllus, W. (P. y. Au. 4.) leaves ovate, acuminate, 3-nerved, serrate; scabrous above, white pubescent beneath: scales of the calyx linear, squarrose.

tuberosus (jerusalem artichoke. E. y. S. 4.) leaves 3-nerved, scabrous, lower ones heart-ovate, upper ones ovate, acuminate; petioles ciliate. Root tuberous. Naturalized.

strumosus, W. (New-England. T. 4.) leaves ovate, acuminate, serrate, 3-nerved, scabrous beneath: scales of the calyx lance-linear, ciliate at the base.

altissimus (C. P. y. Au. ♃.) leaves alternate, lance-ovate, serrate, scabrous, 3-nerved, slender at the apex, with ciliate petioles: scales of the calyx lanceolate, ciliate. Chaff on the receptacle green, stem purple.

decapetalus (O. y. Au. 4.) leaves ovate, acuminate, remotely serrate, 3-nerved, scabrous: scales of the calyx lanceolate, subequal, subciliate: rays ten or twelve. Three or four feet high.

mollis, W. (1) (P. y. Ju. 4.) leaves ovate acuminate, 3-nerved, with close-pressed serratures, scabrous above, white-pubescent beneath, very soft: scales of the calyx lanceolate, close-pressed.

angustifolius, W. (2) (D. y. S. ♃.) stem slender, about 1-flowered: leaves linear, with a revolute margin, very rough. Rays yellow, disk brown. In pine barrens.

18. 2. HELIOPSIS. 49. 55.

laevis, P. (3) (ox-eye. O. Ju. 4.) leaves opposite, ovate, serrate, 3-nerved. Tall, resembling the sunflowers, for which it is often mistaken by botanists.

5. 1. HELIOTROPIUM. 41. 42.

indicum (turnsole. Southern states. b. Ju. ☉.) leaves

(1) tomentosus, Mx.

(2) Rudbeckia angustifolia, W. in the same work.

(3) Helianthus laevis, L. Rudbeckia oppositefolia, L. in another place. Buphthalmum helianthoides, W. Silphium solidaginoides, L. the last time he notices it.

heart-ovate, acute, roughish ; spikes solitary : fruit bifid. Cultivated.

13. 13. HELLEBORUS. 26. 61.

foetidus (hellebore. E.) stem many-flowered, leafy : leaves pedate, remotely serrate, coriaceous : corol somewhat converging.

Helleborus, see Coptis.

6. 3. HELONIAS. 10. 13.

latifolia, Mx. (1) (helonias. D. P. p. M. 4.) scape almost leafless : spike ovate crowded : bract lance-linear, mucronate, nerved. Anthers blue.

erythrosperma, Mx. (2) (P. w. & g. J. 4.) scape leafy : racemes oblong : bracts short, oblong : leaves glabrous, lance-linear ; seed ovate, reddish : pericarp legume-like, fleshy.

+*dioica*, Ph. (3) (blazing star, false unicorn root. C. T. Catskill. Great Barrington. w. J. 4.) scape leafy : racemes spiked, nodding : pedicels short, sub-bracted : filaments longer than the corol : petals linear : leaves lance-oblong. Always dioecious. From 6 to 18 inches high.

22. 6. HELVELLA. 58. 1.

nigricans, small, from sooty-yellow becoming black : pileus free but pressed together both sides : pileus smooth, having bran-like scales in some cases.

6. 1. HEMEROCALLIS. 10. 16.

flava (yellow day-lily. E. y. Ju. 4.) leaves broad-linear, keeled : petals flat, acute ; nerves of the petals undivided.

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(1) bullata, W.

(2) Melanthium luteum, W. phalangioides, Lk. muscaetoxicum, Wr. Anthericum subtriginum, Jn.

(3) pumila, Jn. Melanthium dioicum, Wr. densum, Lk. Veratrum luteum, L. It is still placed where Linneus left it by N. but it differs too widely in habit and sensible qualities to remain with the Veratrum viride.

fulva (tawny day-lily. E. y. Ju. 4.) leaves linear-lanceolate, keeled : three inner petals obtuse, undulate ; nerves of the outer petals branching.

13. 13. HEPATICA. 26. 61.

triloba, W. (1) (liverleaf. O. w. & b. Ap. 4.) leaves 3-lobed, entire, obtuse : calyx leaves broad-ovate, obtuse. Var. *acuta*, leaves 3 to 5-lobed, acute : calyx leaves acute.

5. 2. HERACLEUM. 45. 60.

lanatum, Mx. (O. w. Ju. 4.) petioles and nerves of the leaves very villose beneath : leafets petioled, broad, round-cordate, sub-palmate-lobed : seed orbicular. A large umbelliferous plant of a white woolly appearance. Meadows and other damp places. Very poisonous.

15. 2. HESPERIS. 39. 63.

tristis (yellow rocket. E. ♂.) stem hispid ; branches spreading : leaves lance-ovate : silique sword-form.

matronalis (garden rocket, dame violet. E. 4.) stem simple, erect : leaves lance-ovate denticulate : petals emarginate, mucronate. Var. *hortensis*, flowers double, odoriferous, white.

pinnatifida, Mx. (wild rocket, P. J. ♂.) leaves sharply serrate ; upper ones lanceolate, lower ones pinnatifid : silique sub-peduncled, shortish.

3. 1. HETERANTHERA. 6. 17.

reniformis, Mx. (2) (mud-plantain. T. D. P. Hudson. g-w. Ju. 4.) leaves heart-reniform, long-petioled, glabrous, bearing the flowers on the sides of the petioles and clasping the peduncles with membranaceous wings. Flowers very obscure, and an inattentive student would not suppose it to be in flower even when in full bloom. About 3 or 4 inches high ; in muddy overflowed places. Very abundant in South Bay, below Hudson city.

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(1) Anemone hepatica, L.

(2) acuta, Vahl. Leptanthus reniformis, Mx. virginica, P.

5. 2. Heuchera. 13. 84.

†*viscida*, Ph. (1) (allum root. C. T. P. Catskill. r. Ju. 4.) viscid-pubescent: scape and leaves roughish: leaves moderately round-lobed, with dilated obtuse mucronate teeth: peduncles of the panicle very dichotomous, spread: calyx short obtuse. In dry woods and bushy fields. An active astringent. B.

pubescens, Ph. (P. r. & y. J. 4.) dusty-pubescent: scape glabrous below: leaves sub-acute-lobed, toothed, glabrous beneath: peduncles of the panicle short, with crowded flowers: calyx large, bell-form: petals longer than the calyx, large.

16. 13. Hibiscus. 37. 74.

moscheutus, W. (2) (marsh mallow. C. w. & p. Au. 4.) leaves ovate, acuminate, serrate, sub-3-lobed, sub-5-nerved, white-downy beneath: peduncles flower-bearing, calyx downy: capsules glabrous.

palustris (marsh hibiscus. C. P. p. Au. 4.) leaves broad-oval, obtusely serrate, sub-3-lobed, 3-nerved, downy beneath: peduncles axillary, longer than the petiole.

riparius (P. p. Au. 4.) very glabrous: leaves 3-lobed-hastate, acuminate, serrate: corol tubular-bell-form: capsules ovate, acuminate, glabrous: seeds silky.

syriacus (syrian mallow. E. w. & p. Au. ♄.) leaves wedge-ovate, 3-lobed, toothed: outer calyx about 8-leaved, of the length of the inner: stem woody. A shrub 4 to 6 feet high.

phoeniceus (phenicean mallows. E. r. Ju. 4.) leaves ovate, acuminate, serrate and crenate, lower ones 3-cuspidate: peduncles jointed: seeds woolly. 6 to 8 feet high.

esculentus (okra. E. ☉.) leaves heart-5-lobed, obtusish, toothed: petiole longer than the flower: outer calyx about 5-leaved, deciduous, bursting lengthwise.

†*virginicus*, (3) (sweat weed. C. P. r. Au. 4.) downy, rough: leaves acuminate, unequally toothed; lower ones cordate, undivided, upper ones cordate, undivided, upper ones cordate-oblong, 3-lobed: peduncles axillary and in terminal racemes; flowers nodding: pistils nodding. In salt marshes.

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(1) cortusa, Mx. americana, W. (2) palustris, Wr.
(3) clypeatus, Wr.

trionum (bladder ketmia, flower of an hour. E. ☉.) outer calyx many-leaved, inner one inflated : capsule membranaceous : leaves toothed, upper ones 3-parted.

18. 1. HIERACIUM. 49. 53.

aurantiacum (orange hawkweed. E. y. 2.) scape leafy, hispid : flowers corymbed, peduncles glomerate : leaves oblong, acutish, pilose-hispid.

venosum (vein-leaf hawkweed. O. y. Ju. 2.) scape naked, corymb-panicled, glabrous ; pedicels filiform : leaves lance-obovate with thin hairs above and naked beneath, margin ciliate, glandular-toothed, veins coloured : calyx glabrous.

gronovii (C. T. P. Ju. 2.) scape somewhat leafy, or naked, corymb-panicled : calyx pubescent : radical leaves entire, obovate, obtuse, ciliate.

paniculatum (O. y. Ju. 2.) very glabrous : stem erect, leafy, panicled, white-woolly beneath : pedicels capillary : leaves lanceolate, naked, toothed, membranaceous.

marianum, W. (1) (O. y. Ju. 2.) stem erect, villose : leaves oval-obovate, strigose, villose on the keel, lower ones sub-dentate : peduncles and calyxes downy. Resembles the H. gronovii.

kalmii, W. (O. y. Au. 2.) stem erect, many-flowered, glabrous : leaves sub-sessile, lanceolate, acuminate, sharply toothed outside : peduncles cauline, near the top of the stem alternate, about 1-flowered, downy.

virgatum, Ph. (2) (O. Ju. 2.) stem erect, simple, villose : leaves sessile, lanceolate, acute, glabrous, pilose beneath, sharply repand-toothed at the margin, entire towards the apex : panicle sub-corymbed : calyx and peduncle tomentose.

fasciculatum, Ph. (Can. Middlebury, Vt. James. Au. 2.) a little glabrous : stem erect, leafy, simple, glabrous : leaves sessile, oblong, acute, sharp-toothed and the teeth elongated : branches of the panicle divaricate, short : pedicells sub-fascicled, pubescent.

3. 2. HIEROCHLOA. 4. 10.

odorata (3) (sweet summer grass, seneca grass. C. P.

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(1) scabrum, Mx. (2) canadense, Mx.
(3) fragrans, Rs. Holcus odoratus, Mx. lanatus, L.

Seneca lake. M. 24.) panicle spreading: glumes 3-flowered, awnless: florets crowded, a perfect diandrous glabrous one in the middle, and a staminate one triandrous.

22. 6. HIMANTIA. 58. 1.

domestica, large tawney violet, soft; somewhat cohering in a membrane. Often between timbers of a building.
sulphurea, pale sulphur-yellow, flaxen and fibrous; branches sub-terete, interwoven. On trunks.
candida, white, thin and tender; dilated at the apex and sub-plumose. On fallen leaves.

21. 4. HIPPOPHAE. 16. 24.

canadensis, W. (sea buckthorn. Can. D. P. M. ♄.) leaves ovate, acutish, a little glabrous above, silver-haired and brilliant beneath; scales scattered, ferruginous. Near rivers and lakes.

1. 1. HIPPURIS. 15. 88.

vulgaris (mares tail. T P. y-g. M. 4.) leaves mostly in sixes, linear. In water. Rare. Dr. L. C. Beck found it near Schenectady.

3. 2. HOLCUS. 4. 10.

lanatus, Sr. (soft grass. P. C. J. 4.) glumes 2-flowered, the perfect flower awnless, the staminate one awned, recurved, flower much shorter.
monticola, Bw. (Whitehills. Ju.) glumes 3-flowered, intermediate one diandrous, perfect; lateral ones staminate, triandrous: outer valve awned upon the back.

3. 2. HORDEUM. 4. 10.

vulgare (barley. E. Ju. ☉.) florets all perfect, awned: in two erect rows.
jubatum, A. (New-England. Ju. ♁.) awns and involucres setaceous, very long.

10. 3. HORTENSIA. 13. 84.

speciosa (changeable hydrangea. E. r. & w. J. ♄.) leaves

broadly ovate, serrate, acuminate : flowers corymbed. From the East Indies. This is the common flower-pot shrub, usually called hyderindia.

5. 1. HOTTONIA. 21. 34.

palustris (water violet. D. Ju. ♃.) flowers whorled, subsessile : stem geniculate, with inflated joints. In stagnant waters.

4. 1. HOUSTONIA. 47. 57.

coerulea (1) (Venus' pride. O. b. & w. M. ♃.) stem erect, setaceous, dichotomous : radical leaves spatulate ; cauline ones oblanceolate, opposite : peduncles 1-flowered elongated.

purpurea, W. (2) (D. T. P. p. w. Ju. ♃.) stem erect, branching above, pubescent at the knee joints : leaves sessile, ovate, lanceolate or lance-linear : fascicles terminal, corymbed. 4 to 8 inches high. Most abundant on the dry ridges in Catskill five mile-woods.

longifolia, (3) (P. p. Ju. ♃.) stem erect, very branching, glabrous : leaves linear : flowers terminal, fascicled, sub-sessile, often ternate.

11. 1. HUDSONIA. 18. 80.

ericoides (false heath. D. y. J. ♄.) leaves acerose-subulate, hirsute : peduncles filiform, solitary. About 6 inches high, a very delicate shrub. Pine barrens.

21. 5. HUMULUS. 53. 98.

lupulus (hop. O. g-y. Au. ♃.) stem twining with the sun : leaves lobed. One of the best of tonics.

22. 4. HUTCHINSIA. 57. 2.

fastigiata, threads dichotomous, sub-equal, fastigiate; joints shorter than their diameters, marked in the middle with dark dots. In the sea. Will not adhere to paper.

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(1) linnei, Mx. Anonymous, Wr.
(2) varians, Mx. Hedyotis umbellata, Wr. Knoxia purpurea, Lk.
(3) angustifolia, Mx.

violacea, very branching, diffuse: branches wand-like, spreading, lower joints shorter than their diameter, those of the branches six times as long. In the sea. Adheres to paper loosely.

stricta, threads strait equal; branches dichotomous, erectish; joints about thrice as long as the diameter.

6. 1. HYACINTHUS. 10. 16.

orientalis (garden hyacinth. E. r. Ap. 4.) corol funnel-form, half-6-cleft, ventricose at the base.

muscari (musk hyacinth. E. b. Ap. 4.) corols ovate, all equal.

botryoides (grape hyacinth. E. b. Ap. 4.) corols globose, uniform: leaves cylindric, channelled, strait.

comosus (purple grape hyacinth. E. p.) corol angular-cylindric; at the summit sterile, long-peduncled, erect.

racemosus (hare-bell hyacinth. E. 4.) flowers thick, ovate, those at the top sessile; leaves lax, pendant, linear, carinate.

22. 6. HYDNUM. 58. 1.

imbricatum (prickly fungus) pileus fleshy, umbilicate, scaly; scales thick, sub-erect, obscure.

repandum, pale-fleshy: pileus rugose, flexuose, somewhat lobed, glabrous; teeth thickish, mostly compressed: stipe tuberous, a little out of the centre of the pulius. Sometimes it is halved.

concrescens, in groups, confluent: pileus corky, funnel-form, having zones, chesnut-brown: teeth slender, shining tawney: stipe short, sub-tuberous, deformed. Colour varies with the season.

gelatinosum, gelatinous, white-glaucous: pileus flat both sides: stipe lateral. About three fourths of an inch broad.

coralloides, large, very branching; branches crouded, incurved: terminal teeth sub-fascicled.

chrysorhizum (paper punk.) yellow, membranaceous, stemless, spread: root golden-yellow, filiform, with intersecting branches; extending far along the grains of decaying wood. The root of this fungus has been often noticed several yards in length; but Dr. J. Tor-

rey, of New-York, was the first, I believe, who traced it to the pileus, and proved it a *hydnum*. (1)

10. 2. HYDRANGEA. 13. 84.

vulgaris, W. (hydrangea. P. w Au. ♄.) leaves oblong-ovate, obtuse at the base, acuminate, toothed, glabrous beneath: cymes naked. A shrub about 5 feet high.

nivea, Mx. (P. w. Ju. ♄.) leaves ovate, acuminate, toothed, snow-white down beneath, serratures mucronate: cymes radiate.

Hydrangea, see Hortentia.

13. 13. HYDRASTIS. 26. 61.

canadensis (orange root. C. P. w-r. Ap. 4.) stem with 2 opposite leaves above; leaves petioled, emarginate at the base, palmate, serrate, gashed: peduncle terminal, solitary, 1-flowered. Roots yellow.

5. 2. HYDROCOTYLE. 45. 60.

umbellata, W (water navelwort. P. M. 4.) leaves peltate, crenate, at the base emarginate: umbels peduncled, many-flowered.

americana (O. g-w. J. 4.) glabrous, tuberous: leaves sub-peltate, orbicular, doubly-crenate: sub-umbelled, glomerules few-flowered. Flowers very small. Plant low and sub-prostrate. Damp.

vulgaris (P. Can. g-w. J. 4.) leaves orbicular, peltate, slightly crenate: scape interruptedly spiked, few-flowered.

13. 13. HYDROPELTIS. 26. 61.

purpurea, Mx. (2) (water shield. O. p. Au. 4.) leaves peltate, oval, entire: peduncles solitary, 1-flowered. The leaves float on the surface of water, having long flexi-

(1) Dr. Torrey did not publish this species in his catalogue, because some doubts had arisen since the publication of the second edition of the Manual. I have concluded to let it remain for the present. I am still inclined to believe it is a hydnum; but the pileus is rarely found. I have a very perfect specimen now before me.

(2) Brasenia peltata. Ph.

ble petioles. Plant mostly covered with mucilage. In all stagnant ponds.

5. 1. HYDROPHYLLUM. 26. 61.

appendiculatum, Mx. (waterleaf. P. b. M. 4.) very hirsute: radical leaves sub-pinnatifid, cauline ones lobe-angled: sinuses of the calyx appendaged: the fascicles of flowers sub-panicled. Calyx very hispid.

† *virginicum* (burr-flower. O. b. J. 4.) glabrous and hairy: leaves pinnate and pinnatifid, divisions lance-oval, gash-serrate: fascicles of the flowers conglomerate. The flowers have the appearance of a burr several weeks before they expand. Damp

† *canadense*, W. (rough burr-flower. W. P. p. &. w. Ju. 4.) hirsute: leaves lobe-angled: fascicles of the flowers crowded. Resembles the last in some respects; but the leaves are much larger.

5. 1. HYOSCYAMUS. 28. 41.

† *niger* (henbane. E. Ju. ♂.) leaves clasping sinuate: flowers veiny, sessile. Naturalized about Middlebury college. An active narcotic.

13. 5. HYPERICUM. 20. 68.

1. *Flowers with 5 styles.*

ascyroides, W. (1) (St. John's wort. W. P. T. C. V. y. Ju. 4.) herbaceous, glabrous: stem simple 4-cornered: leaves sessile, oblong, acute, glabrous: flowers terminal: styles of the length of the stamens: leafets of the calyx lance-ovate. Flowers very large.

prolificum, W. (2) (P. lake Huron. J. 4. or ♄.) branches 2-edged: leaves lance-linear, obtusish: corymbs axillary and terminal, few-flowered: flowers at first sessile; stamens and styles of the length of the petals: leafets of the calyx lanceolate.

2. *Flowers with 3 styles or fewer.*

† *angulosum*, Mx. (3) (C. P. y-r. Ju. 4.) erect: stem 4-

(1) macrocarpum, Mx.
(2) kalmianum, Du Roi.
(3) denticulatum, Wr.

sided: leaves oblong, acute, closely sessile: panicle terminal, dichotomous: branches divaricate, with distant alternate flowers: calyx sub-campanulate, divisions lanceolate, acute, keeled below, almost as long as the corol: petals with a single lateral tooth.

canadense (N. C. W. P. Ju. ☺.) erect, small-flowered: stem 4-sided, dichotomous above: leaves, sessile, linear, slender at the base: the branches of the panicle opposite, the branchlets dichotomous: capsule long, conic, coloured. Capsules red.

virginicum (1) (O. p. Au. 4.) flowers with 9 or 12 stamens, distinctly arranged in three parcels and separated by nectaries: leaves oval, obtuse, clasping: stem compressed.

adpressum, B. (P. y. Ju. 4.) stem erect, 2-edged immediately below each pair of leaves, and sub-cylindric near the root: leaves opposite, closely sessile, lanceolate-obtuse, transparently punctate with very fine dots; those of the branches sub-linear, crowded; those of the cymes small, acute, crowded: flowers terminal and axillary, with obtuse entire petals: style 1: capsule sub-conic.

petiolatum, Wr. (2) (P. y. Ju. 4.) leaves petioled, oblong-oval, round-obtuse: flowers opposite, axillary, sub-sessile, sub-ternate: stamens adnate as far as the middle: capsule oblong.

parviflorum, W. (3) (O. y. Ju. 4.) erect, small, glabrous; dichotomous-ramose, somewhat 4-sided: leaves ovate-oblong, subcordate, obtuse, nerved, sessile: panicles terminal, dichotomous-corymbed: petals shorter than the lanceolate calyx.

corymbosum, W. (4) (O. y. Ju. 4.) erect, glabrous, darkly-punctate: stem terete, branching: leaves clasping, oblong-oval, obtuse: corymbs terminal brachiate, dense-flowered: divisions of the calyx lanceolate, acute.

perforatum (5) O. y. J. 4.) erect, branching: stem 2-edged: leaves oblong, obtuse, transparently-punctate:

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(1) campanulatum, Wr. Elodea campanulata, Ph.
(2) axillare, Mx. Elodea petiolata, Ph.
(3) quinquenervium, Wr. multilum, L.
(4) punctatum, Lk. maculatum, Wr.
(5) virginicum? Wr.

panicle terminal, brachiate, leafy: petals twice as long as the acute lanceolate calyx. This is the common St. John's wort, so troublesome to farmers.

22. 2. Hypnum. 56. 4.

1. *Leaves two-ranked.*

sylvaticum, branches divided: leaves imbricate, compressed, spread at the apex, lance-ovate, entire, nerveless: lid subulate. Woods

denticulatum, stems simple: leaves imbricate, compressed, spreading at the apex, lance-ovate, entire, nerveless: lid conic. On trunks and ground in woods.

serrulatum, shoots creeping; branches simple, bearing fruit at the base and middle: lid beaked.

praelongum, stem pinnate, creeping: leaves lance-ovate, acuminate, serrate, 1-nerved, spreading: lid subulate, incurved. (1)

riparium, stem ramose, spreading: leaves lax, lance-ovate, entire, one-nerved: lid convex, slightly mucronate. On stones, &c. in flowing streams.

2. *Leaves imbricate, close-pressed—sometimes a little spreading, part of their length.*

cuspidatum, stem pinnate, sub-erect: branches cuspidate: leaves lance-oblong, nerveless, smooth: lid conic. In ditches and brooks.

illecebrum, stem with scattered obtuse branches: leaves ovate, ventricose, obtuse, mucronate; obsoletely one-nerved. Woods and meadows.

abietinum, stem pinnate, villose: leaves lance-ovate, entire, one-nerved, 2-furrowed: lid conic. In dry places and among pines, &c.

splendens, stem bipinnate: leaves lance-ovate, almost nerveless, shining, close-pressed: lid subulate, recurved. In woods.

delicatulum, stem decumbent, bipinnate: leaves cordate, with raptered nerves and 2 grooves, scabrous: lid beaked.

minutulum, very slender, decumbent, pinnately branch-

(1) This description, taken from Lk. and Dc. is similar to that given in Turton's Linneus of the serrulatum.

ed: leaves very minute, oval, acute; margins and keel somewhat scabrous, separately incurved when dry: capsule recurved; lid long beaked.

adnatum, small; branchlets simple: leaves cordate-acuminate, destitute of fascicles: capsules nodding; lids conic.

3. *Leaves imbricate, spreading.*

graminicolor, stem creeping; branches sub-simple, erectish: leaves lax, sub-alternate, heart-lanceolate, acuminate, sharply serrate, with a nerve somewhat continued: capsules ascending, oblong, unequal; lid round conic.

hians, stem decumbent; branches short, simple: leaves somewhat lax, heart-ovate, acute, serrulate: peduncles a little scabrous; capsules oblong, slightly inclined; lid conic.

asprellum, stem decumbent, sub-pinnate: leaves remotish, somewhat bifariously imbricate, acuminate, serrulate with sub-continued nerves: capsules oblong, a little curved; lid conic, sub-mucronate.

lutescens, stem procumbent, ramose: leaves imbricate, lanceolate, acuminate, 3-striate: peduncles a little scabrous: lid conic, acute. On dry earth, walls and rocks.

rutabulum, stem procumbent: branches erect, sub-simple: leaves lance-ovate, acuminate, one-nerved: peduncles scabrous: lid conic. On the earth and trunks.

chrysostomum, procumbent; inordinately branched: leaves laxish, spreading, lance-oval, acuminate, entire, sub-linear: peduncles smoothish: capsules oblong, recurved; lid perfectly conic with a very acute spinose tip: peristome yellow.

triquetrum, stem sub-erect, ramose: leaves deltoid, acuminate, striate, somewhat nerveless, spreading every way: capsule ovate; lid conic, obtuse.

4. *Leaves imbricate, sub-reflexed or recurved.*

fragile, outer peristome has the teeth lanceolate, remotely tubercled, yellow; inner one is a membrane, extended into an equal number of solid, lance-acuminate, very acute teeth, with ciliae a little less than the teeth, capillary, very acute.

stellatum, stem weak, procumbent: leaves ovate, long-acuminate, nerveless, entire, spreading: capsule oblong; lid with an obtuse apex.

squarrosum, stem ascending: leaves keeled, nerveless, ovate at the base, close-pressed, acuminate at the apex, recurved-spreading: capsule ovate; lid short conic.

5. *Leaves turned to one side, and conical falcate.*

crista-castrensis, stem elongated, somewhat simple, recurvedly and elegantly wing-branched: leaves recurve-curled one-way, subulate, with slender lineate nerves: capsules very long-peduncled, oblong, arched; lid conic.

commutatum, stem procumbent, ramose; branches subramose: capsule large, becoming white, striate; peduncles pretty large. In water or mud.

cupressiforme, stem prostrate, sub-ramose: leaves lance-ovate, falcate, nerveless: lid conic.

imponens, very short, somewhat feather-branched, recurved: leaves uncinate, one-way, nerveless: capsule erect, cylindric-oblong; lid conic, obtusely beaked.

torreyanum, Sl. [This is a new species, named by Professor Sprengel, of Halle, in honor of Dr. John Torrey. I mislaid Sprengel's description, and could not obtain another in season to publish here; but vid. additions and corrections.]

6. *Leaves turned to one side, and not circinal-falcate.*

fluviatile, branches rather long, simple: leaves lance-ovate, laxish, somewhat spreading: capsules oblong, erect-nodding. On rocks under water in rivers, &c.

orthocladon, decumbent, bulbiferous; branches simple; leaves ovate, nerves solid, very entire: lid conic. Flowers monoecious. Calyptre subulate, white. Bulbs in the axils of the leaves or at the apexes of the branches.

7. *Leaves remote, lax-spreading.*

serpens, stem creeping: leaves laxish, small, lanceolate, acuminate, one-nerved at the base: capsule elongated, obconic; lid convex, mucronate. Shades.

10. 1. HYPOPITHIS. N. (1) 18. 51.

lanuginosa (false beech-drops. O. y-w. Ju. 2ℓ.) scape spike-flowered; whole plant, including the flower, woolly, except the base of the stem. Grows on roots of trees, &c. whole plant yellowish-white.

europea, N. (2) (yellow beech-drops. P. Can. y. J. 2ℓ.) scape spike-flowered: flowers and scales on the stem glabrous outside: lateral flowers octandrous.

6. 1. HYPOXIS. 10. 17.

erecta, W. (3) (star grass. O. y. Ju. 2ℓ.) pilose: scape 2 or 3-flowered: leaves lance-linear: divisions of the corol lance-oblong. Var. *graminea*, has longer and narrower leaves; more flowers, longer lance-linear divisions to the corol—and altogether a more grassy appearance.

14. 1. HYSSOPUS. 42. 39.

officinalis (hyssop. E. Ju. 2ℓ.) flowers whorled, racemes one-way: intermediate division of the corol 2-lobed, entire: leaves lance-linear.

nepetoides, W. (giant hyssop. T. C. P. W. g-y. Ju. 2ℓ.) spikes whorled, cylindric: leaves subcordate, ovate, acuminate, acutely toothed. Near Williams college and in Pownal, it grows from 4 to 7 feet high.

scrophularifolius, W. (P. p. Ju. 2ℓ.) spikes whorled, cylindric: styles longer than the corol: leaves heart-ovate, acuminate, obtusely toothed. About two feet high.(4)

20. 6. HYSTERIUM. 58. 1.

pulvicare, gregarious, oblong or oval, striate. On oaks.

fraxini, bursting, black, sub-ovate; lips a little swollen. On the branches of ash and maple.

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(1) Monotropa, L.

(2) Monotropa hypopithys, L.

(3) caroliniensis, Mx.

(4) These two indigenous species differ in habit very widely from our exotic species. Their whorled spikes are larger than those of Nepetus.

quercinum, bursting, flexuose, sub-ventricose, soft, dark-cinereous. On the young branches of oaks.

I.

15. 1. IBERIS. 39. 63.

umbellata (candy tuft. E. w. J. ☉.) leaves lanceolate, acuminate; lower ones serrate, upper ones entire.

4. 1. ICTODES. (1) 2. 7.

foetida, Mx. (skunk cabbage, fetid hellebore. O. p. Ap. 4.) stemless: leaves radical, heart-ovate, very large: spadix supporting the flowers in a sub-globose head. Odour resembles that of the skunk. Valuable expectorant, and antispasmodic. B.

4. 4. ILEX. 43. 95.

canadensis, Mx. (2) (mountain holly. H. & Y. Mt. g-y. M. ♄.) leaves deciduous, ovate, entire or a little serrate at the apex, glabrous: peduncles sub-solitary, long, 1-flowered: fruit somewhat 4-sided. A shrub 3 to 5 feet high.

opaca, A. (evergreen holly. Y. C. P. g-w. M. ♄.) leaves evergreen, ovate, acute, spinose, glabrous, flat: flowers scattered at the base of the shoots of the preceding year. A middle size tree.

5. 1. IMPATIENS. 24. 73.

balsamina (balsam weed. E. y. Au. ☉.) peduncles aggregate, 1-flowered: leaves lanceolate, upper ones alternate: nectary shorter than the flowers.

nolitangere (3) (jewel-weed, touch-me-not. O. y. Ju. ☉.)

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(1) Pathos, L. Symplocarpus, Sy. Dracontium, L. in another part of his work

(2) Nemophanthus fascicularis, R. This species certainly differs much in habit from the opaca, and perhaps it ought to form a new genus. Prof. Dewey of Williams college proposes the following description for a new genus, but does not propose any name. Calyx 0: petals 4, lanceolate, sub-acute, alternating with the stamens: stigmas sessile; pericarp 4-celled, 1-seeded. Stamens 3 to 5, stigmas 3 to 5. Polygamous. MS.

(3) aurea, M. pallida, N.

peduncles many flowered, solitary: leaves ovate, obtusely toothed: joints of the stem tumid.

biflora, W. (1) (speckled jewels. C. W. T. P. y. & r. Ju. ☺.) peduncles mostly 2-flowered, solitary: leaves ovate, sharply toothed. Is not this a variety of the last?

5. 2. IMPERATORIA. 45. 60.

ostruthium (masterwort. E. 4.) leaves ternate, broadish, serrate.

17. 10. INDIGOFERA. 32. 93.

tinctoria (indigo. E. ♄.) leaves pinnate, oblong, glabrous, in four pairs: racemes shorter than the leaves: legumes terrete, somewhat arched. From the East Indies.

18. 2. INULA. 49. 55.

helenium (elecampane. O. y. Au. 4.) leaves clasping, ovate, rugose, tomentose beneath: scales of the calyx ovate.

falcata, Ph. (D. y. S. 4.) woolly: leaves sessile, linear, very acute: subfalcate, nerves hairy both sides: peduncles few, axillary, corymbed: calyx and peduncle villose. 5 or 6 inches high.

mariana (2) (D. y. Au. 4.) villose: leaves sessile, lanceoblong, tapering to the base, obtuse, glandular-toothed, lower ones petioled, serrate: peduncles axillary, corymbed, glandular-hairy. About 12 or 14 inches high.

argentea, P. (P. y. 4.) silky: leaves lanceolate, 3-nerved, erect, zigzag; corymb subcompound, erect: scales of the calyx flat, pubescent.

5. 1. IPOMAEA. 29. 43.

quamoclit, W. (jasmine bindweed. P. r. w. Au. ☺.) leaves pinnatifid linear: flowers subsolitary; corol subtubular.

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(1) maculata, M. fulva, N. Var. of nolitangere or noli-me-tangere, Mx.

(2) glendulosa, Lk.

coccinea, Mx. (Southern states. y-r. Ju. ☺.) pubescent: leaves cordate, acuminate, subangled: peduncles about 5-flowered: calyx awned: corol tubular: limb subintire. Cultivated.

lacunosa, Mx. (P. w. & p. J. ☺.) glabrous: flowers cordate, acuminate, scrobiculate, angled at the base: peduncles short, about 1-flowered: calyx hairy: corol tubular, short: capsules hairy.

bona-nox, W. (Southern states. w. Ju. ☺.) very glabrous: leaves cordate, entire or angled: peduncle 1 to 3-flowered: calyx awned: corol undivided, tube long. Cultivated.

nil, Mx. (1) (morning glory. P. b. Ju. ☺.) hirsute: leaves ventricose 3-lobed: peduncles short, 1 or 2-flowered: bracts subulate: calyx very villose, long-acuminate.

purpurea, Ph. (2) (common morning glory. E. b. p. J. ☺.) pubescent: leaves cordate, entire: peduncles 2 to 5-flowered: pedicels nodding, thickened: divisions of the calyx lanceolate: capsules glabrous.

3. 1. Iris. 6 18.

pumila (dwarf flower-de-luce. E. b. M. 4.) bearded: scape 1-flowered: leaves ensiform, glabrous: tube of the corol exsert: petals oblong, obtuse.

prismatica, P. (3) (boston iris. Y. D. Boston. b. y. J. 4.) beardless: stem solid, terete, equalling the leaves: leaves very narrow, long: capsules elongated, prismatic, acute at both ends, with two grooves on each side. Very abundant north side of pine rock, New-Haven, half a mile east of Mr. Lewis Bradley's.

plicata (garden iris. E. p. w. M. 4.) bearded: stem many flowered, higher than the leaves: petals undulate-plicate, erect ones broadest.

virginica, W. (4) (wild flag, wild iris. O. b. p. y. J. 4.) beardless: stem 2-edged, many-flowered, taller than the ensiform leaves: stigmas shorter than the inner petals: capsules oblong, with furrowed angles.

ochroleuca (yellow iris. E. y. M.) beardless: leaves ensiform, depressed, striate: scape subterete: germ 6-cornered.

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(1) Convolvulus nil, W.
(2) Convolvulus purpureus, W.
(3) gracilis, Bw.
(4) hexagona, Wr.

versicolor, W. (C. p. J. 4.) beardless: stem terete, zigzag, equalling the leaves: leaves ensiform: stigmas equalling the inner petals: capsules ovate, angles obtuse.

lacustris, N. (Great lakes. b. 4.) beardless: leaves short, ensiform; scape much shorter than the leaf, 1-flowered: petals sub-equal? attenuated on the tube: capsule turbinate, 3-sided, margined: seed roundish, smooth: root tuberous.

14. 1. ISANTHUS. 42. 39.

coeruleus, M. (blue gentian, false pennyroyal. C. T. P. b. Ju. ☺.) viscid-hairy: leaves lance-oval, acute at both ends, 3-nerved: peduncles 1 or 2-flowered. Along the Hudson from Stillwater to the Highlands. Odour resembles the spikenard.

22. 6. ISARIA. 58. 1.

mucida, cespitose, effuse: branchlets sub-depressed, forked, nearly soft. On decaying wood in summer and autumn.

15. 4. ISATIS. 39. 63.

tinctoria (woad. E. J. ♄.) radical leaves crenate; cauline ones sagittate, oblong.

22. 5. ISIDIUM. 57. 2.

corallinum (corol lichen) crust tartarous, somewhat cushioned or areolate; becoming somewhat cinereous: peduncle (podetia) at length rather long, terete, simple and branched: lamina of the receptacle tawney-cinereous. Among rocks.

4. 1. ISNARDIA. 17. 88.

palustris (1) (water purslane. O. g. J. 4) leaves ovate, entire: flowers axillary, solitary, sessile. In water and wet places.

22. 1. ISOETES. 55. 5.

lacustris (quill-wort. 4.) frond dilated and imbricate at

(1) Ludwigia palustris, E. nitida, Mx.

the base, narrow and subulate above, flat : root fibrous. From 2 to 12 inches high, colour green, growing immersed or at the margin of ponds. Resembles a zophyte.

5. 1. ITEA. 18. 50.

virginica, W. (itea. P. w. J. ♄.) leaves oblong, serrate. 4 to 6 feet high.

18. 4. IVA. 49. 55.

frutescens (high-water shrub. L. g. Au. ♄.) leaves lanceolate, punctate-scrabrous, deeply serrate : glomerules of florets globose, depressed. Somewhat shrubby, 3 or 4 feet high. Grows along the margin of salt marshes, &c.

J.

2. 1. JASMINUM, 44. 37.

fruticans (jasmine. E. y. ♄.) leaves alternate, ternate, simple : leafets obovate, wedge-form, obtuse : branches angled.

officinale (jasmine. E. w. ♄.) leaves pinnate, opposite : leafets acuminate.

8. 1. JEFFERSONIA. 27. 62.

diphylla, B. (1) (twin leaf. P. w. M. 4.) stemless : peduncles naked, 1-flowered : leaves in pairs.

20. 13. JUGLANS. (2) 50. 94.

regia (madeira nut. E. M. ♄.) leafets about 9, oval glabrous, sub-serrate, subequal : fruit globose. Var. *fraxinifolia*, has 9 or 10 leafets, oblong, serrate, smooth, lateral lower one adnate on the common petiole. It is said that this variety is indigenous to North America.

nigra (black walnut. P. C. M. ♄.) leafets numerous, lance-ovate, serrate, sub-cordate, narrowed above ; pe-

(1) Podophyllum diphyllum, L. (2) See Carya.

tioles and under sides of the leaves sub-pubescent, fruit globose, with scabrous punctures ; nut wrinkled.

cinerea (butternut. O. M ♄.) leafets numerous, lanceolate, serrate, rounded at the base, soft pubescent beneath ; petioles villose : fruit oblong-ovate, viscid, long-peduncled ; nut roughly sculptured. The bark is a strong cathartic.

6. 1. JUNCUS. 5. 13.

1. *Culms leafless.*

effusus, S. (rush-grass. O. J. 2.) culm strait : panicle lateral, spread, more than decompound : capsules obtuse. Resembles the Scirpus acutus in habit.

acutus, S. (1) (D Ju. 2.) culm terete : panicled, terminal : involucre 2-leaved, spinose capsules roundish, mucronate. Sea coast.

setaceus, M. (Y. P. Ju. 2.) culm filiform, nodding : umbels lateral, compound, few-flowered : peduncles many-flowered : calyx subulate.

marginatus, M. (2) (C. P. J. 2.) leaves flat, glabrous : corymb terminal, simple, proliferous ; little heads about 10-flowered : calyx equalling the obtuse capsule.

nodosus, M. (O. Ju. 2.) leaves with nodding joints, terete : corymb simple : little heads globose ; capsules acuminate, longer than the calyx.

2. *Culms leafy.*

polycephalus, Mx. (3) (O. J. 2.) stem erect, few-leaved : leaves with notted joints : little heads globose, many-flowered, sub-panicled : calyx linear, triandrous. Var *tenuifolius* has filiform leaves.

sub-verticellatus, M. (4) (Can.) culm compressed, erect, hollow : leaves compressed, jointed : peduncles somewhat whorled, sheathed at the base, unequal, flat or terete, terminating in 3 to 5-flowered glomerules : out-

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(1) maritimus, Lk. (2) aristatus, Mx.
(3) Var. crassifolius, Mx. nodosus, Var. polycephalus, P.
(4) fluitans, Mx.

er calyx 2-leaved, ovate, acuminate ; inner one 6-leared, linear, somewhat awned : capsule longer than the calyx.

conglomeratus, S. (D. J. ♃.) stem naked, upright, panicle lateral-conglomerate : capsule retuse : triandrous.

acuminatus, Mx. (1) (C. P. Ju. ♃.) culm leafy, erect : leaves somewhat notty-jointed : panicle terminal, compound glomerules about 3-flowered, peduncled and sessile : calyx slender, acuminate. Triandrous.

bulbosus, M. (2) (C. Ju ♃.) stem sub-compressed, undivided : leaves linear channelled : corymb terminal : calyx obtuse, shorter than the roundish obtuse capsule. On dry ground.

tenuis, Roth. (3) (O. J. ♃.) culm leafy, simple, teretish : leaves channelled : corymb terminal, dichotomous, shorter than the bracts : capsule oblong, obtuse, shorter than the calyx.

bufonius (O. J. ☺.) culm leafy, dichotomous : leaves angled, sub-setaceous : flowers oblong, solitary, sessile.

spicatus (Whitehills. Au. Bw.) leaves flat : spike racemed, nodding, compound at the base : capsules acute.

Remark. The three following species have been placed under genus Luzula by Willdenow, Desvoux and some others.

pilosus (O. Ap. ♃.) leaves flat, hairy : corymb sub-simple : peduncles single-flowered, nodding : petals ovate, acute, shorter than the capsule.

campestris (O. Ap. ♃.) leaves flat, with long fine hairs : spikelets peduncled, somewhat nodding, intermediate one sessile : leafets of the calyx mucronate, longer than the obtuse capsule.

melanocarpus (Whitehills. Ju.) culm leafy ; leaves broadish, sub-lanceolate, glabrous : panicle capillary, very lax : flowers distinctly pedicelled : capsules becoming black.

22. 3. JUNGERMANNIA. 57. 3.

1. *Fronds bearing simple leaves.*

epiphylla, fronds sinuate, bearing capsules in the middle. On the earth in damp woods, &c.

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(1) sylvaticus M. (2) dichotomus, E.
(3) bicornis, Mx.

pinguis, fronds oblong, sinuate: pedicells arising from the margin of the frond beneath. On moist earth.

multifida, fronds many-cleft, lobes narrow, mostly 2-parted: pedicells arising from the axils of the lobes near the base. On damp earth and rotten wood.

palmata, frond digitate-palmate, bearing capsules at the base. In mountain woods, on bark, the earth, &c. Very small.

2. *Fronds pinnate.*

pusilla, fronds smooth, simply pinnate; leafets toothed or obtusely lobed. On moist earth.

scalaris, fronds simply pinnate; leafets very entire, ovate, 2-ranked, alternate; the stem or cauline plant bearing globules at the apex. In groves.

bicuspidata, fronds simply pinnate, bearing capsules in the middle; leafets imbricate, 2-toothed. In moist shades.

bidentata, fronds simply pinnate, bearing capsules at the apex: leafets round-ovate, emarginate and 2-toothed at the apex. In woods, on the earth and rotten wood.

viticulosa, fronds sub-ramose, two-ranked; leafets entire, round-obtuse: pedicells scattered. In damp woods.

polyanthos, fronds simply pinnate, hearing capsules at the base; leafets roundish, sub-imbricate, convex, entire. In groves.

lanceolata, fronds simply pinnate, bearing capsules at the apex; leafets flat, obtuse, very entire. On the earth in damp shades.

dilatata, fronds doubly-compound-pinnate, bearing capsules at the apex, covered beneath with stipules in tripple order. On rocks and trunks of trees.

complanata, frond doubly-compound-pinnate; leafets imbricate, lying flat, round, eared below. Very common on trees, &c.

nemorosa, fronds erect, simple or sub-ramose; leafets auricled and ciliate. In damp groves.

21. 16. JUNIPERUS. 51. 100.

sabina (savin. Can. ♄.) leaves opposite, obtuse, glandular in the middle, imbricate four ways, delicate, acute, opposite. A low shrub.

prostrata (american savin. P. Can. ♄.) leaves opposite, acute, imbricate about 4 ways, smooth glaucous: branches horizontal or prostrate. A shrub.

virginiana, Wm. (red cedar. O. M. ♄.) leaves in threes, adnate at their bases; in the young state they are imbricate, older they become spreading. Hardly a middle sized tree.

communis (juniper. Y. N. T. C. M. ♄.) leaves in threes, spreading, mucronate, longer than the berry. On the sand plains, at the foot of Pine-rock, in New-Haven, a root of it often sends off shoots, about 3 feet in length, so close to each other, as to make a kind of mat 12 or 14 feet in diameter.

2. 1. JUSTICIA. 40. 36.

+ *adhatoda* (malabar nut. E. p. ♄.) leaves lance-ovate: bracts ovate, nerved, permanent: helmet of the corol concave.

pedunculosa, Vahl. (1) (Niagara river. Cooper. Ju. ♄.) spikes axillary; flowers crowded; peduncles elongated, alternate: leaves lanceolate.

K.

10. 1. KALMIA. 18. 50.

+ *latifolia* (laurel. O. r. Ju. ♄.) leaves long-petioled, scattered and in threes, oval, smooth both sides: corymbs terminal, with viscid hairs. Generally 4 or 5 feet high. But on Catskill mountain it is found more than 20 feet high.

angustifolia (sheep laurel. O. J. ♄.) leaves in threes, petioled, oblong, obtuse, sometimes rusty beneath: corymbs lateral: bracts linear: peduncles and calyx with glandular hairs. A shrub one or two feet high.

glauca, A. (2) (swamp laurel. P. N. Plainfield and Hinsdale, Mass. r. M. ♄.) branchlets 2-edged: leaves opposite, subsessile, oblong, smooth, glaucous beneath, margin revolute: corymb terminal, bracted: peduncles and calyxes very glabrous. Var. *rosmarinifolia*, leaves linear, green beneath.

(1) Dianthera americana, L. ensiformis, Wr.

(2) polifolia, Wm.

18. 1. KRIGIA. 49. 53.

virginica, W. (1) (dwarf-dandelion. O. y. M. ☺.) small: leaves lyrate, glaucous, smoothish, ciliate: scape 1-flowered, twice as long as the leaves: calyx about 8-leaved. Var. *dichotoma*, caulescent, dichotomous. Nuttall considers it a new species. Barton calls it a variety. A caulescent variety, probably the same, is often seen about Catskill, New-Haven, &c.

18. 1. KUHNIA. 49. 55.

eupatorioides, W. (2) (false boneset. P. w. Au. 4.) glabrous: leaves petioled, broad-lanceolate, serrate: corymb terminal, few-flowered, compact.

critonia, W. (3) (P. y. Au. 4.) pubescent: leaves narrow-lanceolate, about 2-toothed below, petioled, punctate beneath; upper ones linear entire, sessile: panicle terminal, spreading.

3. 1. KYLLINGIA. 3. 9.

monocephala, M. (false bog-rush. D. N. T. 4.) culm filiform, 3-sided, with a leafy base: heads globose, sessile; involucres 3-leaved, very long.

L.

18. 1. LACTUCA. 49. 53.

sativa (lettuce. E. y. Ju. ☺.) leaves roundish; cauline ones cordate: stem corymbed. Var. *romana* has oblong strait leaves, narrowed at the base. Var. *crispa* has sinuate-crenate leaves, toothed, undulated, crisped; radical ones hairy on the keel. Var. *laciniata* has the lower leaves pinnatifid and the upper ones runcinate.

elongata (4) (wild lettuce. O. y. J. ♄ or 4.) leaves smooth beneath, lower ones runcinate, entire, clasping; lowest ones toothed, highest ones lanceolate: flowers corymb-panicled. 3 to 6 feet high.

22. 4. LAMINARIA. 57. 2.

esculenta, frond ribbed: stipe pinnate with petioled wedge-

(1) Hyoseris, L. (2) Eupatorium alternifolium, L.
(3) Critonia Kuhnia, Mx. (4) longifolia, Mx.

form leaves, running through a sub-coriaceous ensiform frond. Colour olive becoming sooty yellow when dry. On the sea shore

saccharina, frond not ribbed, coriaceous: stipe flattened into a nerveless ensiform entire frond, ovate at the base. Colour olive. On the sea shore.

14. 1. LAMIUM. 42. 39.

garganicum (dead nettle. E. 4.) leaves cordate, concave: throat of the corol inflated, tube short.

purpureum (P. p. ☺.) leaves cordate, obtuse, toothed, petioled, crowded at the top: stem nakedish downwards.

† *amplexicaule* (henbit, dead-nettle. O. p. M. ☺.) floral leaves sessile, clasping, gashed: radical leaves lobed.

22. 2. LASIA. 56. 4.

trichomitrion, branch compressed: leaves oval, acuminate, striate longitudinally: peduncle of the length of the calyx: capsule ovate: calyptre profusely hairy. In mountains.

marginata, in very branching fascicles; branchlets erect, tapering, filiform: leaves oval, acuminate, revolute both sides so as to appear as if margined: nerves prominent: capsule oblong; lid subulate.

17. 10. LATHYRUS. 32. 93.

palustris, W. (Can. w-p. Ju. 4.) stem winged: stipules lance-semisagittate: leafets six, lance-linear, acute: peduncles about 3-flowered.

myrtifolius, W. (1) (C. P. T. Hudson, r. Ju. 4.) stem naked, winged, 4-cornered: stipules semisagittate, lance-ovate, acuminate: leafets 4, lance-oblong, acute, mucronate, net-veined: peduncles longer than the leaves, about 4 or 5-flowered. Damp.

venosus, W. (P. p. Ju. 4.) stem naked, 4-cornered: stipules semisagittate, ovate, acuminate: leafets numerous somewhat alternate, ovate, obtuse, mucronate, veiny, peduncles 5, shorter than the leaves.

† *odoratus* (sweet pea. E. J. ☺.) peduncles 2-flowered: tendril with 2 ovate-oblong leafets: legumes hirsute.

(1) stipulaceus. Le Cont.

latifolius (everlasting pea. E. Au. 4.) peduncles many flowered: tendril with 2 lance-ovate leaves; membranaceous between joints.

clymenum (various pea. E. ☺) peduncles 2-flowered: tendril with many lanceolate leafets: stipules toothed.

articulatus (jointed pea. E. Ju. ☺.) peduncles about 1-flowered: tendril with many alternate lanceolate leafets: legume jointed.

sativus (chick-vetch. E. ☺.) peduncles 1-flowered: tendrils with 2 and 4 leafets: legumes ovate, compressed, with two narrow wings on the back.

9. 1. LAURUS. 12. 27.

camphoratus (camphor-tree. E. ♄.) leaves about 3-nerved, lance-ovate: panicle spreading. From Japan.

benzoin (spice-bush. fever-bush. O. g. y. Ap. ♄.) leaves wedge-obovate: flowers in umbelled glomerules. A shrub from 4 to 8 feet high, spicy tasted. Aromatic, stimulant and tonic. B.

sassafras (sassafras tree. O. y. M. ♄.) leaves entire and lobed on the same plant. Size from a low shrub to a smallish tree. The bark of the root is very fragrant. The gum is useful for inflamed eyes. Silliman.

14. 1. LAVANDULA. 42. 39.

spica (lavender. E. Au. 4.) leaves sessile, lance-linear, with revolute margins: spike interruptedly naked.

16. 13. LAVATERA. 37. 74.

thuringiaca (gay mallows. E. 4.) lower leaves angled; upper ones 3-lobed, with the middle one longest: peduncles solitary.

arborea (tree mallows. E. S. ♄.) leaves 7-angled: peduncles crowded.

3. 3. LECHEA. 22. 82.

major (pin-weed. O. g-p. Ju. 4.) hirsute: leaves lance-oblong, mucronate: panicle leafy: branches bearing flowers at their tops: flowers in fascicled racemes, one way, short pedicelled: stem erect. A dull unsightly weed, in barren fields, about one foot high.

minor (O. g-p. Ju. ♃.) smoothish: leaves lance-linear, acute: panicle leafy: branches elongated, bearing flowers on all parts: stem ascending.

racemulosa, Mx. (C. Ju. 2f.) pubescence close-pressed: leaves linear, acute, ciliate: panicle slender, very branching, nakedish: flowers small, alternate, pedicelled: stem erect.

thymifolia, Mx. (C. Dr. P. Townsend.) white down close-pressed on all sides: leaves linear, acute: panicle elongated, leafy: branches short: flowers in lateral and terminal fascicles; pedicells very short, flowers white-downy and very small: stem erect.

22. 5. LECIDEA. 57. 2.

1. *Receptacles black and naked constantly.*

atrata, crust thin, in little cracks, punctate, very black: receptacles in the crust, wart-form, one coloured: disk unceolate. Dry rocks.

lapicida, crust tartarous, cracked, becoming white-cinereous: receptacles depressed between the elevations of the crust, flat, at length convex, sub-confluent, dark; corneous within and becoming dark-cinereous—margin thin. On stones.

parasema, crust thin, sub-membranaceous, white, becoming cinereous, with dark edges, at length effuse, subgranulated: receptacles flattish, sessile, margined, dark; becoming dark within. On bark of trees and on wood.

emeroleuca, crust sub-cartilaginous, becoming cinereous: receptacles close-pressed, flattish, somewhat margined, dark, white within. On bark of trees and decaying woods.

subuletorum, crust effuse, granulated, in some parts lobe-branched, white-cinereous. receptacles crowded, sessile, plano-convex, hemispheric, sub-confluent, somewhat margined, dark; somewhat dusty within, one-coloured. Var. *geochroa* is fuscous-cinereous: receptacles sub-globose, often crowded into conglomerate masses and shining. On the earth and decayed moss.

alba, crust sub-determinate, membranaceous, somewhat

cracked, white, with conglomerated cinereous or greenish-milky dust at length scattered over it: receptacles minute, close-pressed, flat, dark. On trunks of trees.

asserculorum, crust effuse, thin, unequal, dark sooty: receptacles sessile, a little plano-concave, dark; one-coloured within. On timber and dead wood.

urceolata, crust cartilaginous, membranaceous, determinate, rugose-cracked, glabrous, very white: receptacles sessile, urceolate, white-hoary; corneous and livid within under the disk; margin inflexed, sub-coarcate. On bark of trees.

1. *Receptacles black and naked, becoming reddish or sooty-yellow when damp.*

immersa, crusts effuse, thin, contiguous, becoming white: receptacles plano-convex, immersed in the stone; margins dark, disks somewhat hoary, when moistened dark red, at length somewhat convex, becoming white within. On stones, particularly on lime-stones.

3. *Receptacles dark-glaucous grey, becoming hoary.*

albocaerulescens, crusts tartarous, contiguous, uniform, at length cracked, whitish: receptacles sessile and elevated, flat, dark, becoming bluish-hoary; margin free, flexuose, naked, black. On rocks and stones.

corticola, crust sub-tartarous, granular areolate, unequal, very white: receptacles minute, sub-immersed, grey-hoary; at length sub-globose, immarginate, naked, dark, becoming cinereous within. On the bark and trunks of trees.

4. *Receptacles dark fuscous, or becoming fuscous, blended with some other colour.*

spadicea, crust cartilaginous, unequal, sub-granulated, becoming white-cinereous: receptacles thick, flat, fuscous liver-brown, at length becoming dark; margin very thin and a little wrinkled; at length a little convex with the margin evanescent—colour uniform within. On bark of trees.

varians, crust sub-membranaceous, cracked, afterwards granulated, becoming green-cinereous with dark limits: receptacles small, crowded, yellowish, fuscous

and dark, impressed in the middle, sub-immarginate. On the bark of ash trees, &c.

russela, crust sub-cartilaginous, rugose, areolate-rimose, becoming pale-green with dark limits: receptacles sessile glabrous, a little tumid, red-fuscous; the disk higher than the pale thin entire margin. On bark of trees.

pineti, crust very thin, dirty pale cinereous: receptacles sessile, minute, aggregated, urceolate, yellowish flesh-colour, entire. In pine woods on roots, &c.

sanguineoatra, crust thin, membranaceous, effuse, light green cinereous, at length sprinkled over with granelated dust: receptacles hemispheric, sub-immarginate, somewhat glabrous, dark purple and at length black.

5. *Receptacles red or light flesh-coloured.*

icmadophila, crust leprous-like, unequal, sub-granulated, whitish-green: receptacles sub-sessile, flat, flesh-coloured, at length flexuose; the disk a little wrinkled, the margin thin or none. On the earth, on trunks and decaying wood.

cupularis, crust sub-tartarous, whitish green: receptacles superficial, urceolate, white; disk light brick-colour, scattered pulverulent spots on the outside. This is a variety of *marmorea* of Acharius. On lime and slate rocks.

6. *Receptacles pale, becoming yellow, wax-coloured and orange.*

lutea-alba, crust thin, smooth, white: receptacles crowded, at length convex, hemispheric margined, yellowish red, white within. Var. *holocarpa* has a dirty cinereous yellow crust and minute flattish yellowish orange sub-obliterated receptacles. On the bark of trees, rarely on rocks.

7. *Crust deformed or foliaceous.*

globifera, crust imbricate, fuscous; lobes round, entire and sub-lobed, flexuose, sub-rugose, white beneath: receptacles at length sub-immarginate, sub-globose, obscurely reddish-yellow. On rocks.

decipiens, crust sub-imbricate; lobes somewhat separated, sub-peltate, roundish, flesh coloured and becoming

fuscus, white beneath : receptacles marginal, convex and sub-globose, sub-imarginate, black. On the earth in mountains, particularly lime-stone mountains.

sorediata, crust orbicular, rugose-plicate, imbricate, cinereous, margins of the lobes elevated and bearing the fruit-dots, dark beneath with spongy fibres : receptacles scattered, close-pressed, flat, dark.

10. 1. LEDUM. 18. 50.

palustre, W. (marsh-tea. Can. w. M. ♄.) leaves linear, margins revolute, iron-rust down beneath : stamens longer than the corol.

latifolium, Lk. (1) (labrador-tea. T. P. Pittsfield, Mass. w. r. J. ♄.) leaves linear-oblong, folded in at the margin, iron-rust down beneath : stamens mostly 5, equalling the corol. About swamps.

Ledum, see Leiophyllum.

3. 2. LEERSIA. (2.) 4. 10.

virginica, W. (cut grass. O. Ju. 2f.) panicle contracted : glumes semi-oval, close pressed, keel ciliate. In water and wet ground. A very rough harsh grass.

oryzoides, Sw. (Y. C. Au. 2f.) panicle diffused : glumes white pubescent, with ciliate margins. Wet.

10. 1. LEIOPHYLLUM. 18. 50.

thymifolium, P (3) (sand myrtle. D. M. w. ♄.) leaves ovate, obtuse, glabrous ; umbels terminal, head-form, sessile.

22. 4. LEMANIA. 57. 2.

fluviatilis, threads sub-simple, olive colour ; papillae sub-ternate, internodes cylindric, the length 5 times the diameter. In rivers.

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(1) palustre, Mx. (2) Phalaris, L. Asprella, Lk.

(3) buxifolium, A. Amyrsine buxifolia, Ph. Ledum thymifolium, Lk.

20. 2. LEMNA. 54. 6.

trisulca, M. (duck-meat, Stockbridge, Mass. Litchfield, Con P.) leaves lanceolate, tapering into the petiole, adhering together cross-form : root single.

minor (green duck meat. O. J. ☉.) leaves round-oval, flat, adhering by their bases, a single root proceeding from the under side of each leaf. Water.

polyrhiza (water flaxseed. W. P. T. V. Ju. ☉.) leaves round-oval flat, adhering by the bases: several roots proceed from the under side of each leaf in a fascicle. The leaves of this species become purplish and greatly resemble flaxseed, scattered on the surface of the stagnant waters. The roots rarely reach the ground ; but merely extend downwards a few inches into the water.

18. 1. LEONTODON. 49. 53.

taraxacum (dandelion. O. y. Ap. 4.) outer calyx reflexed : scape 1-flowered : leaves runcinate, with toothed divisions.

14. 1. LEONURUS. 42. 39.

cardiaca (motherwort. O. w r. Ju. 4.) leaves 3-lobed, toothed, bases wedge-form : calyx prickly, less than the corol.

22. 6. LECTIA. 58. 1.

bulliardi, stipe elongated, snow-white, undulated : pileus ovate, obtuse, orange-coloured.

lubrica, yellowish-green, sub-tremulous : pileus convex : stipe cylindric.

15. 1. LEPIDIUM. 39. 63.

sativum (peppergrass. E. w. Ju. ☉.) leaves oblong, many-cleft.

virginicum (wild peppergrass. Y. C. P. J. ♄.) radical leaves pinnatifid, cauline ones lance-linear, somewhat gash-serrate : flowers 4-petalled, mostly with but two stamens : silicles lens-form.

22 5. Lepraria. 57. 2.

chlorina (leprous lichen.) crust thick, cushion-like, greenish-yellow; made up of little pulverulent masses aggregated into sub-viliose globules. On lime rocks, &c.

flava, crust effuse, equal, thin, subrimose, very yellow; made up of nakedish, sub-globose granulations. On bark of trees and walls.

farinosa, crust very thin, membranaceous, becoming white; suffused with white conglobated dust. On the bark of old trees.

3. 1. Leptanthus. 6. 17.

gramineus, Mx. (1) (yellow-eyed water grass. O. y. Ju. ♃) leaves all linear: stem slender, dichotomous, floating.

Leptanthus, see Heteranthera.

22. 2. Leskia. 56. 4.

compressa, decumbent; branches two-ranked, facing two ways, compressed: leaves lanceolate, flattish, somewhat extended: capsule oblong, strait; lid conic. On trunks of trees.

acuminata, creeping; branches short, subsimple: leaves lance-acuminate, extended, fascicled: capsule erect; lid oblique, conic. On trunks of trees.

imbricata, creeping: branches shortish, simple, erect, bearing flowers: leaves extended, ovate, acutish, imbricate: capsule oblong, erect; lid conic.

gracilescens, creeping: branches somewhat simple: leaves acute, lanceolate, extended, imbricate-spreading: capsule strait; lid conic. On the earth.

rupincola, creeping: branches somewhat simple, rising: leaves cordate-acuminate imbricate, spreading: capsule cylindric, erect. On rocks.

fasciculosa, creeping: branches often crowded together in fascicles, short, simple; leaves cordate, extended, imbricate: calyx extended, long-acuminate: capsule nodding. In damp places.

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(1) Heteranthera, Pb. Schollera, M. Commelina dubia, Jn.

varia, creeping: branchlets simple, erectish, varying in length: leaves concave, spreading, lance-acuminate: calyx and leaves oblong, extended, fascicled: capsule nodding.

squarrosa, creeping: the foliation somewhat two-ranked, depressed, lax-imbricate, with squarrose hooks behind; leaves lanceolate, slenderly acuminate: calyx rather long, linear-subulate: capsule nodding in an arch. Damp places.

17. 10. LESPEDEZA. 32. 93.

sessiliflora, Mx. (1) (bush clover. O. p. Ju. 4.) erect: leaves oblong: fascicles of flowers sessile, numerous: legume nearly naked, acute; calyx minute. Var. *reticulata*, stem simple, erect or erectish; leaves pubescent beneath.

violacea, P. (2) (T. Y. C. V. P. p. Ju. 4.) very branching, spreading: leaves long-petioled: leafets oval, obtuse, with close-pressed hairs beneath: racemes short, umbelled: flowers in pairs: legume rhombic, reticulate, glabrous.

repens (P. p. Au. 4.) leaves round-oval, emarginate: racemes axillary: legume repand-toothed: stem creeping.

stuvei, N. (D. p.) erect, simple, soft-downy: leafets oval: spikes peduncled, scarcely longer than the leaves: legume naked, pubescent.

divergens, B. (P. p. Ju. 4.) diffuse, branched: leafets oblong, obtuse, close-pressed, hairy beneath: racemes longer than the petioles; flowers in pairs; legumes ovate, reticulate, smooth.

procumbens, Mx. (3) (C. P. p. y. J. 4.) procumbent, slender, hairy: leaves oval: peduncles long: legumes naked, with minute calyx.

capitata, Mx. (4) (O. w-p. J. 4.) erect, simple: leaves subsessile; leafets oval: spikes capitate, short-peduncled, axillary and in terminal glomerules: calyx villose, of the length of the corol: legume much smaller than the calyx.

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(1) Hedysarum reticulatum, M. Medicago virginica, L.
(2) divergens, Ph.
(3) prostrata, Ph. Hedysarum prostratum, W.
(4) fruticosa, P. Hedysarum frutescens, L.

polystachia, Mx. (1) (O. w-r. Ju. 4.) erect, branching, very villose: leaves subsessile; leafets round-oval: spikes axillary, long-peduncled: corol and legume about equal to the calyx.

22. 2. LEUCODON. 56. 4.

sciuroides, stem elongated, sub-simple, curved when dry: leaves closely imbricated, lanceolate, striate: peduncle lateral, shortish, wholly sheathed within the long calyx or pericheth.

18. 1. LIATRIS. 49. 54.

spicata, W. (2) (gay feather, button snakeroot. P. r. Au. 4.) stem simple, tall: leaves linear, glabrous, ciliate at the base, nerved and punctate: spike very long: flowers sessile: scales of the calyx linear-oblong, obtuse, close-pressed. Diuretic and tonic. B. Under the direction of one of their members, Garret Lawrence, who is a very accurate botanist, the New-Lebanon Shakers cultivate this and many other indigenous plants, for medical uses.

scariosa, W. (3) (P. D. Au. 4.) stem simple, subpubescent: leaves lanceolate, tapering to both ends, glabrous with scabrous margins: calyxes squarrose below, racemed, alternate, distant; scales spatulate, with membranous coloured margins.

squarrosa, W. (3) (C. T. N. Y. r. Au. 4.) stem simple, hairy: leaves long-linear, nerved, margins a little scabrous: raceme few-flowered: scales of the calyx leafy above, lanceolate, rigid, spreading.

5. 2. LIGUSTICUM. 45. 60.

levisticum (lovage, smellage. E. w. 4.) leaves long, numerous; leafets above gashed. Strong scented.

scoticum, Mx. (Can. Ju. 4.) cauline leaves biternate, upper ones trifoliate; lateral leafets trapezoid, termi-

(1) Hedysarum hirtum, L.

(2) macrostachia, Mx. Anonymos graminifolius, Wr. Serrulata spicata, L.

(3) Serrulata, L.

nal one rhomboid: umbels stifly erect: involucres many-leaved.

2—1. LIGUSTRUM. 44. 37.

vulgare (prim. Y. C. P. w. J. ♄.) leaves lanceolate, acutish: panicle compact. Common in the woods about New-Haven. Though it may have been introduced.

6—1. LILIUM. 10. 14.

candidum (white lily. E. w. J. 4.) leaves lanceolate, scattered, tapering to the base: corol bell-form, glabrous within.

catesbaei, Wr. (1) (southern lily. P. y-r. J. 4.) leaves scattered, lance-linear: stem 1-flowered: corol erect; petals with long claws, margin undulate, apex reflexed. About a foot high.

superbum (superb lily. P. Y. T. C. Catskill. y. p. Ju. 4.) leaves lance-linear, 3-nerved, glabrous, lower ones whorled, upper ones scattered: flowers in a pyramid-raceme, reflexed; petals revolute. 3 to 6 feet high.

canadense (nodding lily. O. y. r. Ju. 4.) leaves remotely whorled, lanceolate, 3-nerved, subhirsute beneath at the nerves: peduncles terminal, elongated, mostly in threes: corol nodding, raceme spreading.

philadelphicum (red lily. O. r. y. J. 4.) leaves whorled, lance-linear: stem about 2-flowered: corol erect, bell-form, spreading: petals lanceolate, having claws.

pennsylvanicum (P. Sandusky. r. y. Ju. 4.) leaves scattered, lance-linear; the uppermost ones whorled about equal to the flowers: stem about 1-flowered, somewhat 5-sided: peduncles woolly: corol erect, woolly outside.

bulbiferum (orange lily. E. y. J. 4.) leaves scattered, 3-nerved: corol campanulate, erect, scabrous within.

3—1. LIMNETIS. 3. 9.

juncea, P. (2) (rush salt grass. L. Ju. 4.) leaves 2-rank-

(1) Spectabile, Sy. carolinianum, Lk.
(2) Spartina, Sr. Trachynotia, Mx. Dactylis cynosuroides, Wr.

ed, shortish, setaceous-convolute: spikes few, remote, spreading: calyx acuminate, keel rough.

polystachia, P. (many-spiked saltgrass. L. T. Au. 4.) spikes many (10) approximate on a 3-cornered rachis, scabrous, short-peduncled: leaves flat, the margins scabrous; sheath striate glabrous: one valve of the corol hispid on the keel. Very abundant near the Patroon's mansion house, in Albany.

glabra, M. (L. Ju. 4.) spikes 6 to 10, close-pressed: rachis compressed and 3-sided, glabrous, with sessile florets, leaves convolute, nerved, pungent, glabrous: calyx and corol awnless.

15—2. LIMOSELLA. 40. 40.

subulata (mudwort. Y.) leaves radical, cylindric, twice as long as the scape. Very minute. This is a new species, first discovered by professor Ives on the banks of the Housatonick, in the summer of 1816; and afterwards it was found by Messrs. Nuttall and Collins, on the banks of the Delaware.

2—1. LINDERNIA. 40. 40.

attenuata, M. (1) (false hedge hyssop. O. b. Au. ☉.) leaves repand-toothed: peduncles short. Damp.

dilatata, M. (O. b. Au. ☉.) leaves oblong-ovate, obsoletely toothed, sessile: peduncles axillary, 1-flowered. Damp.

4—1. LINNAEA. 48. 50.

borealis, W. (twin-flower. H. N. T. w-r. J. 4.) stem prostrate: branches erect, each bearing 2 flowers: leaves roundish, crenate forward. Woods.

5—5. LINUM. 14. 73.

usitatissimum (flax. E. b. Ju. ☉.) leafets of the calyx ovate, acute, 3-nerved: petals crenate: leaves lanceolate, alternate: stem subsolitary.

virginianum (wild flax. O. y. Ju. ☉.) leafets of the calyx

(1) Pyxidaria, Ph. Gratiola anag a idea, Mx. inequalis, Wr.

acute: panicle terminal: flowers remotely alternate: leaves lance-linear, scattered; radical ones ovate.

perenne (garden flax. E. b. Ju. 4.) calyxes and capsules obtuse: leaves alternate, lanceolate, entire: stems numerous.

20—13. LIQUIDAMBAR. 51. 99.

styraciflua (sweet-gum. T. C. P. N. M. ♄.) leaves palmate, with acuminate lobes, serrate, villose at the at the meeting of the veins beneath.

Liquiritia, see Glycyrrihiza.

13—13. LIRIODENDRON. 52. 75.

tulipifera (white wood, tulip tree. C. T. N. Catskill. P. y. r. J. ♄.) leaves truncate at the end, with 2 side lobes. A beautiful flowering tree. The timber is useful to cabinet makers. It is also a useful tonic. B.

19—1. LISTERA, Br. 7. 21.

convallaroides (1) (lily orchis. H. D. g-p. M. 4.) stem with two round-cordate, acuminate, opposite leaves: spike few-flowered: lip oblong, dilated at the apex, obtusely 2-lobed: germ sub-globose: root fibrous. Grows from 4 to 6 inches high in the spruce woods on Catskill mountain.

5—1. LITHOSPERMUM. 41. 42.

latifolium, Mx. (P. T. y-w. J. 4.) seed turgid ovate, shining, with hollowed punctures: calyx spreading, exceeding the corol: leaves ovate-oblong, nerved.

arvense (steen-crout, stone-seed, wheat-thief. O. w. M. ☺.) seed rugose: corol scarcely longer than the calyx: leaves obtuse, veinless.

5—1. LOBELIA. 29. 52.

cardinalis (cardinal flower. O. r. Ju. 4.) erect, simple, pubescent: leaves lance-ovate, acuminate, erectly-

(1) Epipactis, Sw. Ophrys cordata, Mx.

denticulate: racemes somewhat one-sided, many flowered: stamens longer than corols. Damp. Said to be anthelmintic.

kalmii (O. b. Ju. ☺.) slender, erect, subsimple: radical leaves spatulate, cauline ones linear, delicately toothed: flowers racemed, alternate, remote, pedicelled. Var. *gracilis* has a minutely scabrous stem: peduncles shorter than the flowers: segments of the calyx longer than the capsule.

pallida, M. (O. b. J. ♃.) somewhat hairy: stem erect, slender, simple: leaves oblong-spatulate, toothed: flowers in a spike.

dortmannia, Mx. (T. D. Boston. b. Ju. ♃.) radical leaves linear, recurved, fistulous, with two cavaties, entire: scape simple, racemose, somewhat naked; flowers remote, peduncled.

siphilitica (C. T. W. V. P. b. Ju. ♃.) erect, simple, hirsute with short hairs: leaves lance-ovate, subserrate: raceme leafy: calyx hirsute, with reflexed sinuses. Flowers much larger than those of the pallida and inflata. Emetic, cathartic and diuretic, but not so active as the inflata. B.

inflata (wild tobacco. O. b. Ju. ☺.) erect, branching, very hirsute: leaves ovate, serrate: racemes leafy: capsules inflated. A powerful emetic and expectorant B.

puberula, Mx. (P. b. Ju. ♃.) erect, very simple, pubescent: leaves oblong-oval, repand-serrulate: flowers spiked, alternate, subsessile: germs hispid: calyx ciliate.

claytoniana, Mx. (1) (C. P. V. b. Ju. ♃.) erect, simple, sub-pubescent: leaves oblong, obtusish; radical ones entire, cauline ones denticulate above: raceme wand-like: bracts subulate.

3—2. Lolium. 4. 10.

perenne (darnel grass. O. M. ♃.) spike awnless; spikelets compressed, many-flowered.

tumulentum (P. New-England. Ju. ☺.) spikes awned; spikelets compressed, about 6-flowered, equalling the calyx.

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(1) spicata, Lk. goodenioides, W.

5—1. LONICERA. (1) 48. 58.

caprifolium (honeysuckle. E. ♄.) corols ringent-like, terminal, sessile: leaves connate-perfoliate at the top.

periclymenum (woodbine. E. J. ♄.) flowers in ovate, imbricate, terminal heads: leaves all distinct. Var. *quercifolia*, leaves sinuate.

fraseri, Ph. (2) (Catskill Mt. y. J. ♄.) spikes with whorled heads; corol subringent-like with divisions oblong, obtuse: leaves ovate, glaucous beneath, with cartilagenous margin; upper ones connate-perfoliate.

grata, W. (C. r. y. J. ♄.) spike with whorls very near each other: corol ringent-like, with a long tube: leaves perennial, obovate, sub-mucronate, net-veined and paler beneath, upper ones connate-perfoliate.

parviflora, Lk. (3) (O. y. J. ♄) spikes with whorled heads, sub-sessile: corol shortish, ringent-like, gibbous at the base: filaments bearded: leaves deciduous, glaucous beneath, mostly connate, floral ones perfoliate.

sempervirens, W. (C. P. r. y. M. ♄.) spikes with distant, nakedish whorls: corols sub-equal, tube ventricose above: leaves ovate and obovate, glauceous beneath, upper ones connate-perfoleate.

hirsuta (rough woodbine. W. V. y. J. ♄.) leaves hirsute, abruptly acuminate, lower ones obovate. Found at Williams college, in the summer of 1817. It grows in great plenty on a hill two miles west of the college. It twines around trees from left to right to the height of twenty or thirty feet. I have been informed, that Mr. Le Conte had gathered the same plant in the state of New-York, before it was found in Williamstown; but he never published it. Last summer, 1821 Mr. J. Rice of the Medical Academy, Vt. found it near Middlebury colleges.

Lonicera, see Diervilla and Xylosteum.

4—1. LUDWIGIA, 17. 88.

alternifolia, L. (4) (seed box. O. y. Ju. ☉. or 4.) erect

(1) Caprifolium, J. (2) flava, C.
(3) dioica also media, L. Caprifolium bracteosum, Mx
(4) macrocarpa, Mx.

branching, sub-glabrous : leaves alternate, lanceolate, hoary beneath : peduncles axillary, 1-flowered : capsules 4-sided : divisions of the calyx large, coloured. Damp.

pilosa, Wr. (1) (D. Ju. 4.) erect, branching, hirsute : leaves alternate, oblong, sessile, hirsute, both sides : capsule with 2 bracts at the base.

15—1. LUNARIA. 39. 63.

annua (honesty. E. p. ♁.) leaves obtusely toothed : silicles oval, obtuse at both ends.

rediviva (satin flower. E. b-p. 4.) leaves with mucronate teeth : silicles tapering to both ends. Flowers odorous.

17—10. LUPINUS. 32. 93.

perennis (wild lupine. O. b. M. 4.) stem and leaves smoothish : leaves digitate with about 8 to 10 leafets, which are oblanceolate, obtusish : calyxes alternate, not appendaged : banner emarginate, keel entire. The keel terminates in a kind of beak when the flowers are first open.

hirsutus (garden lupine. E. b. ☺.) calyxes appendaged, alternate : banner 2-parted, keel 3-toothed.

pilosus (rose lupine. E. r. w. ☺.) calyxes appendaged, whorled : banner 2-parted, keel entire.

luteus (yellow lupine. E. y. ☺.) calyxes appendaged, whorled : banner 2-parted, keel 3-toothed.

villosus (hairy lupine. Southern states. w. r. p. J. 4.) very villose : leaves simple, oblong : calyxes not appendaged, alternate in a long spike : banner 2-cleft, keel entire, long.

albus (white lupine. E. w. Au. ☺.) calyxes not appendaged, alternate : banner entire, keel 3-toothed.

10—5. LYCHNIS. 22. 82.

chalcedonica (scarlet lichnis. E. r. J. 4.) flowers fascicled, level-top, or convex.

viscaria (clammy lichnis. E. 4.) stem geniculate, viscous : petals entire : capsule 5-celled.

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(1) hirsuta, Lk.

flos-cuculi (ragged robin. E. 4.) petals torn : capsule 1-celled, roundish.

4 or 5—1. **Lycium.** 28. 41.

barbarum (matrimony vine. E. r. J. y. ½.) stem angled ; branches erect : leaves lanceolate, tapering to both ends : calyx mostly 3-cleft.

22—6. **Lycogala.** 58. 1.

punctata, cespitose, round, punctate, sub-cinereous.
miniata, gregarious, globose, at first scarlet ; at length dark yellow with rose-coloured dust. Frequent on trunks in summer and autumn after a storm.

22—6. **Lycoperdon.** 58. 1.

bovista (common puff-ball. O.) at first white and obconic, becoming black and spherical : outer coat downy, which pealing off leaves the leathery inner coat : seeds black, lighter than air, and appearing like smoke. In meadows.
giganteum, almost stipeless, globose, large ; from white becoming pale : scales scattered, sub-obsolete. In grassy situations in autumn.
pratense, white, soft, fruit hemispheric, smoothish ; having small warts : stipe very short. In meadows and on grassy hills, in the summer.
excipuliforme, large, white, various ; fruit sub-globose, with scattered spinose warts : stem sub-terete, long, plicate. Scattered on the earth in autumn, in pine woods, &c.
umbrinum, turbinate, somewhat bossed ; at first cinereous, at length dark brown ; rough with slender warts. Gregarious in pine woods in autumn.
pyriforme, dirty brownish white : an inch and a half high : base tapering, top pointed : scales thin ; roots fibrous, long. On putrid trunks.

22—1. **Lycopodium.** 55. 5.

1. *Spikes peduncled.*

elavatum, W. (club-moss. O. g. Ju. 4.) stem creeping :

branches ascending ; leaves scattered, incurve-bristle-bearing : spikes in pairs or single, cylindric : scales ovate, acuminate, erose-dentate. Woods.

complanatum (ground pine. O. g-y. Ju. 4.) stem erect : branches alternate, dichotomous : leaves bifareous, connate, spreading at the tips : peduncles 4-cleft, 4-spiked ; spikes terete. Woods.

carolinianum, W. (P. C. Ju. 4.) stem creeping : leaves somewhat two ranked, spreading, lanceolate, close-pressed : peduncles erect, solitary elongated, 1-spiked : bracts sub-lanceolate.

2. *Spikes sessile, leaves surrounding the stem.*

dendroideum, W. (tree weed. O. g. Ju. 4.) stem erect : branches alternate, crowded, dichotomous, spreading ; leaves scattered, pointing 6 ways, lance-linear, spreading : spikes solitary terminal. L. obscurum. Woods.

annotinum, W. (P.Can. Ju. 4.) stem creeping ; branches twice 2-parted, ascending : leaves pointing 5 ways, lance-linear, mucronate, spreading and serrulate near the tips : spike solitary, terminal.

inundatum, W. (D. Ju. 4.) stem creeping, sub-ramose ; branches simple, solitary, erect, 1-spiked at the top ; spike leafy : leaves linear scattered, acute, entire, curved above.

alopecuroides, W. (D. P. Ju. 4.) stem creeping, sub-ramose ; branches simple, long, ascending, 1-spiked at the top : leaves linear-subulate, ciliate-toothed at the base, spreading : spike leafy.

selaginoides, W. (C. P. Ju. 4.) stem creeping : branches simple, ascending : leaves scattered, lanceolate, spreading, ciliate-toothed : spikes solitary, terminal, leafy.

rupestre, W. (festoon pine. T.C. N. P. Taghkonnuk. Ju. 4.) stem creeping, branching ; branches sub-divided, ascending : leaves scattered, lance-linear, ciliate, with hairs at the apex : spikes solitary terminal. Rocks and gravelly banks.

3. *Spikes sessile, leaves 2-ranked.*

albidulum, W. (P. Au. 4.) leaves ovate acute denticulate, alternate, close-pressed : spikes terminal, long, 4-sided.

apodum, W. (P. C. Ju. 4.) leaves round-ovate, acute, flat, denticulate; with superficial ones, alternate, acuminate: stem branching, rooting near the base: spike terminal, sub-solitary.

4. *Capsules axillary.*

lucidulum, W (1) (moon-fruit pine. O. M. y. 4.) leaves pointing 8 ways, lance-linear, denticulate, acute, reflexed-spreading: stem ascending bifid: fruit lunulate. Woods.

2—1. LYCOPUS. 42. 39.

† *europaeus*. L. (2) (water-horehound. T. V. C. Y. P. w. Ju. 4.) lower leaves gashed, upper ones lanceolate, serrate: calyx acuminate-spined. Flowers small, whorled. Damp.

† *virginicus* (O. w. J. 4.) leaves broad-lanceolate, serrate, at the base narrowed and entire: calyx very short, spineless. Var. *quercifolius*, leaves sinuate pinnatifid. Damp.

uniflorus, Mx. (3) (Can. w. J. 4.) leaves lanceolate, sub-serrate, glabrous; suckers procumbent. A low plant, with flowers mostly solitary.

22—1. LYGODIUM. (4) 55. 5.

palmatum, Sw. (climbing fern. Granby. Mass. g-y. Au. 4.) stem climbing: leaves palmate, 5-lobed; divisions lanceolate, obtuse; spikelets terminal, compound-panicled. It generally climbs to the height of about 3 or 4 feet.

5—1. LYSIMACHIA. 20. 34.

† *racemosa*, Mx. (5) (loose strife. O. y. Ju. 4.) very glabrous, tallish: leaves lance-oval, opposite: raceme terminal, long, lax: divisions of the corol oblong-

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(1) reflexum, Sh. (2) vulgaris, P. americanus, M.
(3) pumilus, Vahl.
(4) Hydroglossum, W. Ophioglossum, L. Ctesium paniculatum, Mx.
(5) stricta, A. bulbifera, C.

ovate. Often bears bulbs in the axils of the leaves. Damp.

capitata, Ph. (1) (C. T. V. P. y. J. 4.) glabrous: stem very simple, punctate: leaves opposite, sessile, broad-lanceolate, acute punctate: peduncles lateral, elongated: flowers in compact heads. Damp.

quadrifolia, L. (2) (O. y. J. 4.) pubescent: leaves subsessile, oval, acuminate, punctate: whorled or in nearly opposite pairs, with axillary, 1-flowered peduncles: divisions of the corol oval, entire. Near the outlet of the Beaver pond, New-Haven, I found this species with 2, 3, 4, 5, and 6 leaves together; though Linneus allows but 4. Damp.

+ *ciliata*, Mx. (O. y. J. 4) sub-pubescent: leaves opposite, long-petioled, sub-cordate-oval, margin pubescent; petioles ciliate: pedicels somewhat in pairs: flowers nodding: divisions of the corol roundish, acuminate, crenate.

+ *hybrida*, Mx. (P. D. y. J. 4.) glabrous: leaves opposite, petioled, lanceolate, acute at both ends; petioled ciliate: flowers nodding: corol shorter than the calyx; divisions crenulate.

revoluta, N. (northern lakes. y. J. 4.) smooth: stem 4-sided, simple, leaves opposite, linear, sessile, tapering to both ends, margin revolute: peduncle solitary; divisions of the calyx lanceolate, very acute: segments of the corol round oval, abruptly acuminate. Six to eight inches high.

11—1. LYTHRUM. 17. 91.

salicaria (milk-willowherb. Can. New-England. p. Ju. 4.) pubescent: leaves opposite and ternate, sessile, lanceolate, cordate at the base: flowers terminal, whorled-spiked: capsules oblong: stamens always 12. About two feet high.

verticillatum, L. (3) (swamp-willowherb, grass poley. O. p. Au. 4.) pubescent: leaves opposite, or in threes, lanceolate, petioled: flowers axillary, corymbed, ag-

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(1) thyrsifolia, Mx. (2) hirsuta, Mx.
(3) Anonymos aquatica, Wr. Decodon aquaticum, Gm el.

gregated, somewhat in whorls : fruit globose : stamens often 10. Wet.

hyssopefolium, N. (state of New-York. w p. 4.) leaves alternate and opposite, longer than the flowers, lance-linear, somewhat oval : flowers solitary, axillary. Hexandrous.

M.

18—1. Macrotys. R. (1) 26. 61.

serpentaria (bugbane, black snakeroot, cohosh. Y. C. P. Hudson. w. Ju. 4.) leaves decompound ; leafets oblong-ovate, gash-toothed : racemes in wandlike spikes. From 3 to 9 feet high. In woods.

18—13. Magnolia. 59. 75.

+*glauca* (beaver tree, swamp laurel. Cape Ann. C. P. D. w. J. ♄.) leaves oval, glaucous beneath : petals obovate, tapering to the base. Var. *latifolia*, has obtusish leaves. Var. *longifolia*, has leaves acute at both ends. Valuable tonic. B.

acuminata, Mx. (cucumber tree. P. b-y. J. ♄.) leaves oval, acuminate, pubescent beneath : petals obovate, obtusish.

tripetala, W. (2) (umbrella tree. P. w. J. ♄.) leaves oblong, wedge-obovate, acute, in the young state all over silky : petals 9, oval, acute, outer ones reflexed.

grandiflora, W. (big laurel, magnolia. Southern states. w. M. ♄) leaves evergreen, oval, thick, leathery : petals broad obovate, abruptly narrowed into a claw. Cultivated.

19—1. Malaxis. Sw. (3) 7. 21.

liliifolia (twayblade. O. w. y. p. J. 4.) leaves 2, lance-ovate or oval ; scape 3-cornered : inner petals filiform, reflexed, two coloured ; lip concave, obovate, mucronate. This species is often mentioned as somewhat rare. But I have seen hundreds in flower at one time along the north side of Pine-rock, New-Haven.

Malaxis, See Microstylis.

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(1) Cimicifuga serpentaria, Ph. racemosa, N. Actaea, L.
(2) umbrella, Lk. (3) Ophrys, L

16—13. MALVA. 37. 74.

americana, M. (rough mallows. P. y. J. ☺.) leaves ovate, acute, toothed, scabrous: flowers axillary, solitary, terminal, head-spiked.

rotundifolia (low mallows. O. r. w. J. ♃.) leaves heart-obicular, obsoletely 5-lobed, peduncles bearing the fruit declined: stem prostrate.

sylvestris (mallows. E. r-b. J. ♁. and ♃.) stem erect: leaves about 7-lobed, acutish: peduncles and petioles hairy.

crispa (curled mallows. E. Au. ☺.) stem erect: leaves angular, crispid: flowers axillary, glomerate.

moschata (musk mallows. E. ♃.) stem erect: radical leaves reniform, gashed; cauline ones 5-parted, pinnate, many-cleft: leafets of the outer calyx linear.

virgata (whip-stalk mallows. E. r. ♃ and ♄.) leaves deeply 3-lobed toothed, wedge-form at the base: peduncles in pairs, longer than the petiole.

22—3. MARCHANTIA, 57. 3.

polymorpha (brook-liverwort. O. g-y. Ju. ♃.) receptacles flat; pistillate ones deeply 10-parted, lobes linear; staminate ones 8-lobed, toothed, broad, roundish. On earth and stones in wet or damp places.

hemispherica, pistillate receptacles hemispheric, obtusely 5 or 6-lobed—no pericheth. On shady mountains.

conica. pistillate receptacles cinic sub-ovate, 5 to 7-lobed, and bearing as many capsules. Damp shady places.

cruciata, pistillate receptacles deeply 4 or 5-parted; lobes sub-tubular. Damp.

3—1. MARISCUS. 3. 9.

echinatus, E. (1) (hedgehog clubrush. C. Ju. ♃.) culm 3-sided, nearly naked, glabrous: spike ovate-globose: spikelets horizontal, 4-flowered: involucre 3 or 4-leaved: root globose.

retrofractus, Vahl. (2) (P. C. Ju. ♃.) spikes 6 to 8, erect, ovate, peduncled, on a many angled receptacle; involucre 3-leaved, outer one very long, scabrous; peduncles 6 to 8, unequal, compressed, gla-

(1) ovularis, Vahl. Scirpus, M. Kyllingia ovularis, Mx.
(2) Scirpus, M.

brous, sheathed at the base ; the spikelets linear, acute, terete, imbricate, sub-pedicelled ; bracts 3-flowered, upper ones erect, the rest at length reflexed : lower valve ovate, middle one lanceolate, terminal one subulate : culm 3-sided, 1 or 2 feet high, striate, nearly leafless : the sub-radical leaves lanceolate striate, keeled, glaucous beneath ; sheath striate : seed 3-sided, peduncled, beardless.

cyperiformis, (1) (D. C. Ju. 4.) spikes roundish, terminal, 3 peduncled and one sessile (sometimes but the one sessile ;) involucre longer than the spike, 3-or 4-leaved, channelled, margin scabrous : spikelets 7-flowered, linear, alternate, terete : glumes alternate, remote, ovate, obtuse, upper ones acute : culm 3-sided, almost leafless, a span high : sub-radical leaves linear, glabrous ; seed 3-sided, beardless.

14—1. MARRUBIUM. 42. 39.

vulgare (horehound. O. w. Ju. 4.) leaves round-ovate, toothed, rugose-veined : calyx toothed, setaceous, uncinate.

14—2. MARTYNIA. 40. 45.

proboscidea, W. (2) (unicorn plant. Western states. w. p y. Ju. ☺.) stem branching, leaves alternate, cordate, entire, villose. Fruit somewhat gourd-like, with one long horn.

17—10. MEDICAGO. 32. 93.

sativa (lucerne medick. E. Ju. 4.) peduncles racemed : legume smooth, cochleate ; stipules entire : leaves oblong, toothed.

lupulina (hop medick O. y. J. ☺.) spikes oval : legumes reniform, 1-seeded : stipules entire : leaves obovate : stem procumbent.

tribuloides (hedge-hog. E. ☺.) peduncles 2-flowered : legume cochleate, cylindric, flat both sides, aculeate, conic 2-ways, reflexed : stipules toothed : leaves toothed, obovate.

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(1) glomeratus, B. umbellatus, Ph. Scirpus, M.

(2) annua, L. altetnifolia, Lk.

scutellata (snail-shell, bee-hive. E. Ju. ☺.) peduncles about 2-flowered : legumes unarmed, cochleate in an orbicular form, with a convex base and a flat top : stipules toothed : leaves oblong toothed.

maculata (P. y. Ju. ☺.) peduncles about 2-flowered : legumes cochleate, compressed both sides, aculeate, subulate, arched : stipules toothed : leafets obcordate, toothed, spotted.

22—2. MEESIA. 56. 4.

uliginosa, stem simple, short : leaves oblong-linear, obtuse : capsule pear-form ; lid convex. In marshes.

14—2. MELAMPYRUM. 40. 35.

americanum, Mx. (1) (cow-wheat. O. y. Ju. ☺.) slender : lower leaves linear entire ; floral ones lanceolate, toothed behind : flowers axillary, distinct. Var. *latifolium*, has very broad leaves. Woods.

6—3. MELANTHIUM. 10. 13.

virginicum, W. (2) (black flower. D. P. w. becoming black. J. 4.) panicle pyramid-form : petals oval, subhastate, flat, with 2 spots : flowers mostly perfect. Flowers at first greenish-white, afterwards turn to dark brown.

racemosum, Mx. (3) (bunch flower. P. w. J. 4.) panicles racemed above, pistillate : petals roundish, having claws, undulate-plaited, hardly spotted, hirsute outside.

glaucum, N. (Northern lakes. g-w. Ju.) root bulbous : leaves glaucous, margined : raceme mostly simple, few-flowered : petals roundish, unguiculate, with two peculiar spots : seed subulate, alated.

10—1. MELIA. 54. 71.

azedarach (bead tree. E. ½.) leaves doubly-pinnate : leafets, smooth, ovate, toothed.

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(1) lineare, Lk.
(2) Helonias virginica, C.
(3) latifolium, Lk. hybridum, Wr.

3—1. MELICA. 4. 10.

speciosa, M. melic grass. P.J. 2) panicle 1-sided: branches of the panicle solitary, 3 flowered: stipules 2-cleft.
trifora, Bw. (Whitehills. Au.) villose: panicle coarctate: glumes 3-flowered, with a small appendage: floret awned.

17—10. MELILOTUS. 32. 93.

vulgaris (melilot. T. P. y. J. ☺. or ♄.) stem erect: leaves obovate, serrate: spikes axillary, panicled; legumes 2-seeded, rugose, acute. Var. *alba* (1) has white flowers. There seems to have been some confusion among modern botanists respecting the yellow-flowered and white-flowered varieties of this species, both in Europe and America. Both varieties are very abundant on the islands near Troy, in Schodack and Schaghtikoke. On comparing them with Parkinson's descriptions, written about two centuries ago, I find he had the same plants before him. To avoid perplexity, I have adopted his names, &c. See page 718, London ed. 1640.

14—1. MELISSA. 42. 39.

officinalis (balm. E. w. b. Ju. 2) flowers whorled half way around, subsessile: bracts oblong, pedicelled leaves ovate, acute, serrate.
nepeta (calamint. P. r. b. S. ♃.) peduncles axillary, many-flowered, dichotomous-corymbed: leaves ovate, obtuse, sub-serrate, somewhat glabrous: stem subhirsute: teeth of the calyx about equal, glabrous.

20—16. MELOTHRIA. 34. 97.

pendula, Mx. (creeping cucumber. T. P. y. J. ☺.) leaves subreniform, lobe-angled; terminal lobe equalling the rest: berry cylindric, ovate. River alluvion.

21—13. MENISPERMUM. 11. 77.

canadense (moonseed. O. w-y. Ju. ♄.) stem climbing:

(1) officinalis. Ph. Trifolium officinale. L.

leaves subcordate, round-angled, peltate with the petiole near the base.

virginicum, W. (P. w J. ♄) leaves lobed, cordate, pubescent beneath, subpeltate. Perhaps a variety of the last.

14—1. MENTHA. 42. 39.

+ *viridis*, Wr. (1) (spear mint. O. w. J. 4.) spikes oblong, interrupted: leaves lanceolate, naked, serrate, sessile: stamens longer than the corol. Damp.

+ *piperita* (peppermint. E. p. Au. 4.) spikes obtuse, interrupted below: leaves subovate, somewhat glabrous, petioled: stem glabrous at the base.

gracilis, M. (slender mint. P. w. b. Ju. 4.) flowers whorled: leaves lanceolate, subsessile: stem branching, erect: calyx at the base and pedicels, glabrous.

+ *borealis*, Mx. (2) (northern mint. O. w. Ju. 4.) ascending, pubescent, leaves petioled, lance-oval, acute at both ends: flowers whorled: stamens exsert. Damp.

canadensis (D. Can.) flowers whorled: leaves lanceolate, serrate, petioled, pilose: stamens equalling the corol.

5—1. MENYANTHES. 21. 46.

+ *trifoliata* (buck-bean. C. T. V. Pittsfield, Mass. P. r. J. 4.) leaves ternate: corols densely bearded above. In stagnant waters.

Menyanthes, see Villarsia.

8—1. MENZIESIA. 18. 50.

coerulea, Sw. (3) (mountain heath. Whitehills. r. Ju. ♄.) leaves scattered, crowded, linear, obtuse, cartilaginous-toothed: peduncles terminal, aggregate, 1-flowered; flowers bellform; calyx acute. Decandrous. Very small.

22—6. MERISMA. 58. 1.

foetida, fuscous-purple: branches palmate approximate; white and shining at the apex. On the earth in woods.

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(1) tenuis, Mx. (2) acutifolia.

(3) Andromeda taxifolia, Pallas. Erica coerulea, W. Phyllodoce taxifolia, Sy.

22—6. MERULIUS. 58. 1.

1. *Pileus entire, stipe central.*

cantharellus, in groups, all reddish-yellow: pileus fleshy, glabrous, depressed.

cornucopoides, cespitose, becoming black: pileus membranaceous, scaly: veins obsolete. In woods in autumn.

2. *Effuse, stemless.*

serpens, coriaceous, elongated, glabrous, white becoming red in the middle: folds or veins sub-obsolete, and resembling wrinkles.

12—5. MESEMBRYANTHEMUM. 13. 87.

crystallinum (ice plant. E. w. Au. ☺.) branching: leaves alternate, ovate, papillose: flowers sessile: calyx broad-ovate, acute, retuse. From Greece.

22—6. MESENTERICA. 58. 1.

lutea, orange or gold colour.

12—5. MESPILUS. 36. 93.

germanica (medlar. E. ♄.) leaves lance-ovate, downy beneath: flowers sessile, solitary.

10—4. MICROPETALUM. P. (1) 22. 82.

lanceolatum (blind starwort. H. Ju. 4.) glabrous: leaves lanceolate, narrow at both ends: flowers panicled: petals ovate, very short or wanting. Damp. I have found this plant on Catskill mountain and its western spurs, near Williams college, and in the mountain towns of Vermont.

19—1. MICROSTYLIS. N. (2) 7. 21.

ophioglossoides, W. (3) (addermouth. T. C. Y. V. g-w. J. 4.) leaves two, lance-ovate: scape 3-sided.

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(1) Spergulastrum, Mx. (2) Malaxis, Sw. Ophrys, L.
(3) unifolia, Mx.

18—1. MIKANIA. 49. 55.

scandens, W. (1) (climbing thoroughwort. P. Y. C. w. Au. 4.) stem glabrous, climbing: leaves cordate, repand-toothed, acuminate, lobed, divaricate, unequal; flowers corymbed. Damp or wet.

melissaefolia, W. (2) (P. w. p. S. 4.) pubescent: stem erect: leaves ovate, crenate, sessile, pubescent beneath: corymbs terminal.

3—2. MILIUM. 4. 10.

nigricans (African millet. E.) flowers panicled, crowded: valves of the calyx shining, becoming black: leaves ensiform, very long.

effusum (common millet. E.) flowers in whorled panicles, dispersed, awned.

ciliatum, M. (3) (millet grass. D. Ju.) culm glabrous, leaves lance-linear, hirsute, ciliate: panicle simple; branches erect, bearing racemes; perfect flowers lanceolate, 3-nerved; pistillate flowers on a sheathed, radical, one-flowered scape: glumes oblong, ventricose, acuminate, glabrous. Torrey's catalogue, p. 90.

16—10. MIMOSA. 33. 93.

sensitiva (sensitive plant. E.) prickly: leaves pinnate; the leafets in pairs, inmost ones minute.

14—2. MIMULUS. 40. 40.

ringens (monkey flower. O. b. Ju. 4.) erect, glabrous: leaves sessile, lanceolate, acuminate, serrate: peduncles axillary, opposite, longer than the flower: teeth of the calyx acuminate.

alatus (C. T. P. b. Ju. 4.) erect, glabrous: leaves petioled, ovate, acuminate, serrate: peduncles axillary, opposite, shorter than the flower: stem winged at the 4 corners.

5—1. MIRABILIS. 54. 32.

jalapa (four o'clock. E. r. y. Ju. 4.) flowers heaped, peduncled; leaves glabrous.

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(1) Eupatorium scandens, L. (2) pubescens, M.
(3) amphicarpon, Ph.

longiflora (E. w. Au. 4.) flowers crowded, very long, a little nodding; leaves sub-villose.

4—1. MITCHELLA. 48. 57.

repens (partridge berry, checker berry. O. w. J. 4.) stem creeping; leaves roundish. Woods.

10—2. MITELLA. 13. 84.

diphylla, W. (currant-leaf. O. w. Ap. 4.) leaves cordate, sub-trilobate, dentate: scape 2-leaved. Woods.

cordifolia, Mx. (P. w. M. 4.) leaves round reniform, somewhat doubly-crenate: scape setaceous, leafless.

prostrata, Mx. (V. Pittsfield, Mass. w. M. 4.) leaves round-cordate: stem prostrate, leafy. Wet ground. I have found scores of specimens in Pittsfield and Lenox, of this species, which agreed perfectly with the description of *cordifolia*. Is not the cordifolia a variety of the prostrata, which happens to be without the sarmentose shoot?

reniformis, Lk. (1) (V? w. J. 4.) leaves reniform, repand, ciliate: scape naked.

22—2. MNIUM. 56. 4.

hornum, leaves lance-ovate, serrate: peduncles curved: capsule ovate, pendulous: lid obtuse.

palustre, stem erect, elongated, branching: leaves lanceolate, keeled, acute; upper ones bent over to one side: capsule oblong, sub-erect; lid conic, acute. In damp woods and fens.

3—3. MOLLUGO. 22. 82.

verticillata (carpet weed. O. w. Ju. ☺.) stem sub-divided prostrate: leaves in whorls, wedge-form, acute: peduncles 1-flowered. Generally grows in gardens among purslain.

14—1. MOLUCELLA. 42. 39.

laevis (molucca balm, shell-flower. E. w. g. Ju. ☺.) calyx campanulate, 5-toothed; teeth equal, awnless:

(1) nuda, W.

leaves petioled, round-ovate, toothed. Calyx much longer and larger than the corol.

20—16. MOMORDICA. 34. 97.

balsamina (balsam apple. E. S. ☺.) pomaceous berry angled. tubercled : leaves glabrous, spreading, palmate.

echinata (W. T. P. w. Au. ☺.) pomaceous berry 4-seeded, roundish : setose-echinate : leaves cordate, 5-lobe-angled, acuminate, entire. Calyx 6-cleft, corol 6-parted.

2—1. MONARDA. 42. 39.

didyma, W. (1) (mountain mint. P. r. J. 4.) somewhat glabrous : heads large, proliferous : outer bracts coloured, large, oblong, acuminate sub-entire : calyx and corol long : leaves broad-ovate, sub-cordate, acuminate, serrate, rugose ; serratures mucronate : stem glabrous.

+ *kalmiana*, Ph. (Oswego tea, Oswego county. r. 4.) thinly hirsute : heads large, simple : outer bracts coloured, lanceolate, slender : calyx and corol pubescent : corols very long : leaves oblong tapering, serrate, having thin scattered rough hairs all over : stem sharp-cornered ; stem and petioles ciliate hairy.

clinopodia, W. (2) (Can. P. St. Clair's river. y. p. Ju. 4.) glabrous : heads small, simple, terminal : outer bracts broad-ovate, acute, entire, smoothish : calyx ciliate, short : corol pubescent, slender ; leaves ovate-oblong acuminate, serrate, a little hairy : stem obtuse-angled, glabrous.

ciliata, W. (P. C. p. Au. 4.) hirsute : flowers small, whorled : bracts ovate, glabrous, veiny, ciliate, equalling the calyx ; leaves ovate-oblong, tapering, subsessile, serrate, sub-pilose : stem acute-angled ; hirsute.

+ *oblongata*, A. (3) (P. W. T. C. y. r. Ju. 4.) hirsute : head simple : outer bracts ovate, acute : calyx short, bearded in the throat, teeth spreading : stem obtuse-angled, hirsute above.

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(1) purpurea, Lk. coccinea, Mx. (2) glabra, Lk.
(3) allophylla, Mx. mollis, W.

fistulosa, Ph. (P. D. Can. p. Ju. 4.) hirsute with scattered hairs: heads simple, proliferous, leafy: outer bracts oblong, acute, glabrous: calyx long, bearded: corol hirsute, of middling length: leaves ovate, acuminate, serrate: petioles long, ciliate: stem glabrous, obtuse-angled.

rugosa, A. (Can. w. Ju. 4.) smoothish: heads simple, middling size: outer bracts oblong: calyx smoothish: leaves ovate, sub-cordate, acute, rugose, glabrous: nerves coloured and pilose beneath: stem acute-angled, hirsute.

punctata, W. (1) (D. P. y. J. 4.) smoothish: flower middling size, whorled: bracts lanceolate, nerved, coloured, longer than the whorls: leaves lance-oblong, remotely serrate, glabrous: stem obtuse-angled, with whitish down.

22—6. MONILA. 58. 1.

aurea, stiped: threads constituting a little head: cespitose, golden yellow.

fructigena, stemless, cespitose, roundish, white-cinereous: threads mould-like, indeterminately effuse, having ovate articulations.

10—1. MONOTROPA. 18. 51.

uniflora (birds-nest, indian-pipe. O. w. J. 4) stem 1-flowered; flower nodding at first, at length erect: scales of the stem approximate. Whole plant ivory-white at first.

20—4. MORUS. 53. 98.

alba (white mulberry. E. M. ♄.) leaves heart-form with oblique base, ovate or lobed, unequally serrate, smoothish. From China and Persia.

nigra (black mulberry. E. Ju. ♄.) leaves cordate, ovate, or sub-5-lobed, unequally toothed, scabrous. From Persia.

rubra (P. C. M. ♄.) leaves cordate, ovate, acuminate, or 3-lobed, equally serrate, scabrous, soft hairs beneath: pistillate spikes cylindric.

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(1) lutea. M.

22—6. MUCOR. 58. 1.

1. *Stipe racemed.*

aspergillus (mould,) stipe filiform, dichotomous; little heads terminal, sub-conjugate, oblong when mature. On putrid fungi in autumn, grey.

2. *Stipe simple.*

muceda, receptacle or fruit inflated, dark grey; mouth round, dehiscent about the stipe. On putrid cabbage, in autumn and winter.

caninus, crowded together, byssus-like or flax-like, white; fruit minute, becoming yellowish. Stipe long and lax. In mild winters and after storms, on manure, &c.

3. *Without a stipe.*

herbariorum, yellow, permanent; fruit globose sitting among down. On dry plants in moist places.

3—2. MUHLENBERGIA. Sr. (1) 4. 10.

diffusa (dropseed-grass. Y. C. P. J. 4.) culm weak, branching; branches and leaves glabrous: panicle compact: calyx 1-valved.

erecta (woods dropseed-grass. H. Ju. 4.) culm strong, simple; culm and leaves pubescent: panicle lax: calyx 2-valved; awn long. Dry woods.

5—1. MYOSOTIS. 41. 42.

scorpioides, W. (2) (scorpion weed, Hudson. C. P. M. 4.) seeds smooth: calyx leaves sub-oval, about as long as the tube of the corol: stem sub-ramose: leaves lance-oval: racemes bractless.

virginiana (H. w-b. J. ☺) pilose: seed prickly-bearded: leaves lance-ovate acuminate: racemes divaricate. Flowers small, leaves large.

arvensis (forget-me not. C. T. P. w-b. J. ☺.) seeds smooth: calyx-leaves oval, acuminate, very hirsute, longer than the tube of the corol: stem very branching: racemes conjugate: leaves lance-ovate. Flowers small.

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(1) Dilepycum. Mx.

(2) palustris. Roth.

lappula (W. C. T. V. Can. b. Ju. ☉.) hispid: seeds prickly, bearded: leaves linear-oblong: stem stiffly branched.

21—4. MYRICA. 50. 99.

gale (sweet gale. Y. H. M. ♄.) leaves wedge-lanceolate, obtuse, serrate at the apex: staminate aments imbricate; scales acuminate, ciliate: fruit in a scaly head. Very abundant at the margin of Crooked lake in Plainfield.

cerifera (bayberry. Y. C. P. g-p. M. ♄.) leaves wedge-lanceolate, acute, with distant serratures at the apex: staminate aments lax, scales acute: fruit small, globose, covered with a whitish wax, in a mealy state. This is the bayberry tallow, which is obtained by melting it off in hot water.

caroliniensis, W. (New-England. Pursh. M. ♄.) leaves wedge-oblong, coarsely toothed: staminate aments lax; scales acute: berries globose, large. Three or four feet high.

20—13. MYRIOPHYLLUM. 15. 88.

verticillatum (water milfoil. C. P. Can. Schenectady, Beck. Ju. 4.) leaves capillaceous, upper ones pectinate-pinnatifid: flowers all in axillary whorls: lower ones pistillate, upper ones staminate or perfect, octandrous. In stagnant waters.

spicatum (Can. D. Ju. 4.) leaves all pinnate, capillaceous: spikes interruptedly naked: flowers staminate, polyandrous.

ambiguum, N. (D.) stem floating, dichotomous: leaves petioled, obsoletely pinnate; lowest ones capillary, middle ones pectinate, upper ones nearly entire. Var. *limosum*, stem rooting, erect: leaves rigid, mostly 3-cleft; segments setaceous, acute.

12—1. MYRTUS. 45. 60.

communis (myrtle. E. w. Ju. ♄.) flowers solitary: involucre 2-leaved: leaves ovate.

N.

22—6. Naemaspora. 58. 1.

chrysosperma, receptacle manifest, spherical, sub-conic, truncate; hairs gold-yellow. Under the bark of poplar.

crocea, receptacle obsolete or none, naked; hairs crowded, unequal, somewhat woody, saffron-yellow. Chiefly on beech wood in winter.

20—1. Najas. 15. 6.

canadensis, Mx. (water-nymph. W. Can.) small, filiform, smooth: leaves narrow-linear.

16—13. Napaea. 37. 74.

laevis, L. (1) (false mallows. P. w. Ju. ♃.) leaves heart-5-lobed, glabrous: lobes oblong, acuminate, toothed: peduncles many-flowered: capsules awnless, acuminate. 2 to 4 feet high.

scabra, L. (2) (P. w. Oc. ♃.) leaves 7-lobe-palmate, scabrous: lobes lanceolate, gash-toothed: corymbs bracted: flowers dioecious.

6—1. Narcissus. 9. 17.

†*pseudo-narcissus* (daffodil. E. M. ♃.) spathe 1-flowered: nectary bellform, erect, crisped, equalling the ovate petals.

tazetta (polyanthos. E. M. ♃.) spathe many-flowered: nectary bellform, plicate, truncate, thrice as short as the petals; petals alternately broader: leaves flat.

jonquilla (jonquil. E. M. ♃.) spathe many-flowered: nectary bellform, short: leaves subulate.

poeticus (poet's narcissus. E. ♃.) spathe 1-flowered: nectary wheelform, very short, scarious (red) crenulate: leaves inflexed at the margin.

6—1. Narthecium. 10. 16.

americanum, Ker. (3) (false asphodel. D. y. Ju. ♃.) ra-

(1) Sida napaea, W. (2) Sida dioica, W.
(3) Phalangium ossifragum, M.

cemes sometimes interruptedly spiked, lax : one cauline bract clasping the pedicel, another chaff-bristle-form below : filaments with short wool.

22—2. NECKERA. 56. 4.

1. *Leaves 2-ranked.*

pennata, foliage 2-ranked, compressed ; leaves lance-oval, acuminate, nerveless, disk undulated : capsule immersed in the calyx (pericheth.) lid sub-conic and somewhat cuspidate. On trunks of trees.

macropodia, decumbent, subramose : leaves flattish, lanceolate, facing 2 ways : capsule cylindric, strait, terminating in a long bristle.

2 *Leaves imbricate every way.*

cladorhizans, creeping ; branchlets spreading and somewhat 2-ranked ; summit rooting in some : leaves somewhat depressed-imbricate, oval, acute, nerveless : capsule cylindric ; lid somewhat conic, oblong, obtuse —columella exsert. On trees.

seductrix, creeping, somewhat ascending ; branchlets erect.in some places fascicled : leaves closely imbricate in a cylinder, oval, acuminate nerveless : capsule cylindric ; lid from the base conic, shortish, cuspidate.

viticulosa, stem ascending, simple or with few branches : leaves lax, from the side of the base ligulate-obtuse : capsule oblong ; lid conic, long-cuspidate, small. On trunks of trees.

Nectris, see Floerkia.

13—13. NELUMBIUM. 26. 61.

luteum, Mx. (1) (sacred bean. P. y. Ju. 4.) leaves peltate, orbicular, entire : corol polypetalous : anthers linear above. A most superb plant.

19—1. NEOTTIA. 7. 21.

aestivalis, P. (2) (summer ladies' tresses. O. w. J. 4.)

(1) speciosum, W. Cyamus, Sy. Nymphaea nelumbo, L.

(2) torilis, W. Ophrys aestivalis, Mx. Satyrium spirale, Sw. Limodorum, praecox, Wr.

stem leafy : roots bulbs oblong, aggregate : leaves lance-linear : spikes spiral : flowers one-sided : lip crenate, crispid.

cernua, Sw. (1) (nodding ladies' tresses. O. w. Au. 4.) leaves lanceolate, 3-nerved : stem sheathed : spike oblong, dense-flowered ; flowers recurve-nodding : lip oblong, entire, acute. The high primitive mountains east of Pittsfield, Mass. exhibit patches white with these flowers, in Oct. and Nov.

14—1. NEPETA. 42. 39.

cataria (catmint, catnep. O. b-w. 4.) flowers in whorled spikes : leaves petioled, cordate, tooth-serrate.

22—5. NEPHROMA. 57. 2.

resupinata, frond crustaceous-livid, palish, pubescent, granulated : fertile lobes short : laminæ of the receptacle reddish-yellow. On the earth at the roots of trees in mountains.

5—2. NERIUM. 54. 47.

oleander (rose bay, oleander. E. Au. ♄.) leaves lanceolate, narrow, ternate, ribbed beneath : divisions of the calyx squarrose : nectary flat, tricuspidate.

Nicandra, see Atropa.

5—1. NICOTIANA. 28. 41.

tabacum (virginian tobacco. E. w-r. Ju. ☺.) leaves lance-ovate, sessile, decurrent : flowers acute.

rustica (common tobacco. E. Au. ☺.) leaves petioled, ovate, entire : flowers obtuse.

paniculata (small-flowered tobacco. Au. ☺.) leaves petioled, cordate, entire : flowers panicled, obtuse, clavate.

13—5. NIGELLA. 26. 61.

damascena (fennel-flower. E. M. ☺.) flower surrounded with a leafy involucre.

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(1) Ophrys cernua, L. Limodorum autumnale, Wr.

sativa (E.) pistils 5: capsules muricate, rough leaves subpilose.

5—1. NOLANA. 41. 42.

prostrata (E.) stem prostrate: divisions of calyx triangular-saggittate.

22—4. NOSTOC. 57. 2.

commune, on the earth: frond plated-lobed, ventricose, gelatinous. On the earth after a storm, an inch or two in extent, olive-green.

pruniforme, frond solitary, spherical, smooth, olive, gelatinous, coriaceous, surface smooth: threads interwoven-crisped. In lakes.

botryoides, fronds minute, globular, aggregated into a green crust. In moist shady places, and on decaying wood.

13—1. NUPHAR. S. (1) 13. 62.

lutea, A. (water lily. T. V. C. P. y. J. 4.) leaves cordate, entire: lobes near each other: calyx 5-leaved: stigma repand, with 14 to 20 radiated lines, and a deep central hole. Water.

+ *kalmiana*, A. (2) (C. T. Can. y. Ju 4.) leaves cordate, lobes near each other: calyx 5-leaved: stigma gashed with 8 to 12 radiated lines. Flowers small. Water.

+ *advena*, A. (O. y. Ju. 4.) leaves erect, cordate, entire: lobes spreading asunder: calyx 6-leaved: stigma with a slight central depression, and 13 radiating lines: pericarp furrowed. In stagnant waters.

13—1. NYMPHAEA. 13. 62.

+ *odorata*, A. (3) (pond lily. O. w. Ju. 4.) leaves round-cordate, entire, subemarginate: lobes spreading asunder, acuminate, obtuse: petals equalling the 4-leaved calyx: stigma with 16 to 20 radiating erectish lines. Var. *rosea* has the flower purplish beneath, and the hind lobes of the leaves acutish. Water.

(1) Nymphaea, L. (2) minima, M. (3) alba, Mx.

21—5. NYSSA. 12. 24.

villosa, Mx. (1) (pepperidge, tupelo. O. y-g. M. ♄.) leaves oblong, entire, acute at both ends; the petioles, midribs and margins villose: pistillate petioles sub-3-flowered: nut short-obovate, obtuse, striate.

biflora, Mx. (2) (sour-gum. C. M. ♄.) leaves ovate oblong, entire, acute at both ends, glabrous: pistillate peduncles 2-flowered: drupe short-obovate; nut obtusely striate.

O.

14—2. OBOLARIA. 40. 35.

virginica, W. (penny-wort. P. r. Ap. ♃.) stem simple: leaves oblong, truncate, fleshy, purple beneath: flowers axillary, solitary, sessile.

14—1. OCYMUM. 42. 39.

basilicum (basil. E. ☺.) leaves ovate, glabrous: calyx ciliate.

5—2. OENANTHE. 45. 60.

ambigua, N. (water dropwort. D. P. ♃.) leaves few, obsoletely pinnate; leafets in 3 to 5 pair, narrow-linear, long, entire, acute, sessile, glaucous beneath: involucre 2 or 3-leaved: umbels terminal, sub-solitary. Grows 6 to 10 feet high in marshes.

rigidus, N. (3) (D. P. w. S. ♃.) leaves obsoletely pinnate; leafets in 4 or 5 pair, sessile, lance-oblong, entire or gash-toothed: involucre none: styles dilated at the base in a peltate form, very short: fruit sub-oval. About 3 feet high.

8—1. OENOTHERA. 17. 88.

biennis (scabish, tree-primrose. O. y. J. ♂.) stem villose, scabrous: leaves lance-ovate, flat, toothed: flowers terminal, subspiked, sessile: stamens shorter than the corol. Phosphorescent. Pursh.

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(1) multiflora, Wr. (2) aquatica, L. integrifolia, A.
(3) Sium rigidus, L. Sison marginatum, Mx.

parviflora, W. (C. D. y. Ju. ♄.) stem smooth, sub-villose: leaves lance-ovate, flat: stamens longer than the corol.

+*longiflora*, Ju. (P. T. y. ☺. or ♄.) leaves denticulate: stem simple, pilose: petals distant, 2-lobed: tube of the flower very long: capsule hirsute.

+*grandiflora*, W. (P. y. Ju. ♄.) stem glabrous, branching: leaves lance-ovate, glabrous: stamens declined. Flowers very large.

+*sinuata*, W. (P. y. J. ☺.) stem diffused, having soft hairs: leaves oval-oblong, tooth-sinuate: flowers axillary, villose: capsules prismatic. Barton says this species is semi-decumbent.

+*fruticosa*, W. (sundrops. C. Y. P. T. y. Ju. 4.) smoothish: leaves lanceolate, subdentate, acute: capsules pedicelled, oblong-clavate, angled. Var. *ambigua*, is somewhat hairy: stem simple: leaves lanceolate or lance-ovate, acute, sub-denticulate: petals obcordate, width exceeding the breadth: capsule sub-sessile, smooth, oblong, 4-winged.

muricata, W. (P. T. y. Ju. ♄.) stem purple, muricate: leaves lanceolate, flat: stamens of the length of the corol.

pusilla, Mx. (P. Can. y. Ju. 4.) subpubescent: stem small, subsimple: leaves lance-oblong, obtusish, entire: flowers axillary at the top: capsules clavate turbinate, about equally 8-sided

chrysantha, Mx. (dwarf scabish. O. y. J. 4.) stem slender, pubescent: leaves lanceolate, obtusish, flat, entire: tube of the calyx but half as long as the divisions: capsule clavate, acute-angled, mostly sessile.

22—1. ONOCLEA. 55. 5.

sensibilis, W. (sensitive fern. O. J. 4.) barren frond pinnate, fertile one doubly-pinnate: stem glabrous. The leafets slowly approach each other, on squeezing the stem in the hand.

obtusiloba, Sh. (P) barren frond pinnate; fertile one doubly-pinnate; stem scaly.

nodulosa, Sh. (1) (P. 4.) lower frond bi-pinnatifid, divisions entire, obtuse; lower ones elongated, acute.

(1) Struthiopteris pensylvanica, W.

18—1. ONOPORDUM. 49. 54.

acanthium (cotton thistle. Boston. p. Ju. ♄) scales of the calyx spreading every way, acuminate: leaves ovate-oblong, toothed-spinose, woolly. Dr. Bigelow says, this exotic is now naturalized about Boston.

5—1. ONOSMODIUM. 41. 42.

hispidum, Mx. (1) (false gromwell. Y. C. y-w. J. 4.) very hispid: leaves lance-oval, acute, papillose-punctate: divisions of the coral subulate. Very abundant on the barren plains between Ball's springs and Love's tavern, New-Haven.

22—6. ONYGENA. 58. 1.

equina, gregarious, pale-white and reddish; fruit orbicular, glabrous, rugose, bran-like; stipe short, somewhat fibrous. On hoofs of horses and horns of cattle, which are thrown into wet places.

22—5. OPEGRAPHA. 57. 2.

macularis (lettered lichen) crust determinate, unequal, dark-fuscous: receptacles minute, crowded, round-oval, at length rugose, irregular: disk rimose-like. On the bark of beech and oak.

abnormis, crust thin, softish, white: receptacles immersed, very thin, short and long, flexuose, confluent, rugose-crisped: scarcely any distinct margin and disk. On the hard bark of trees.

rimalis, crust effuse, becoming cinereous: receptacles sessile, oblong, straitish, simple, tumid: disk channelled, concave; margins elevated, sub-inflexed, parallel. On bark of trees.

22—1. OPHIOGLOSSUM. 55. 5.

vulgatum (addertongue fern. T. C. P. M. 4.) frond ovate, simple: spikes about an inch long.

bulbosum, W. (2) (D. M. 4.) root bulbous: frond heart-ovate, obtuse.

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(1) Lithospermum virginianum, L. Purshia hispida, Sl.
(2) crotalopharoides, Wr.

19—1. Orchis. 7. 21.

1. *Roots oval, or palmate.*

ciliaris (orchis. C. Y. P. T. y. Ju. 4.) lip lance-oblong, pinnate-ciliate, twice as long as the petals : spur longer than the germ.

blephariglottis, W. (D. T. Plainfield, Mass. w. J. 4.) lip lanceolate, ciliate, of the length of the upper petal : spur longer than the germ. Resembles the last.

psycodes, W. (P. Can. y. J. 4.) lip 3-parted, divisions capillary-many-cleft : petals obtuse : spur filiform-clavate, ascending, of the length of the germ.

cristata, Mx. (C. P. y. J. 4.) lip oblong, pinnate-ciliate : petals round, 2 lateral ones toothed : spur shorter than the germ.

lacera, Mx. (C. Y. T. g-w. Ju. 4.) lip 3-parted ; divisions sub-digitate-filiform : spur about equalling the germ : flowers alternate.

discolor, Ph. (D. Ju. 4.) lip 3-parted, longer than the petals ; lateral divisions short acute ; middle one extended, spatulate : spur filiform, about twice as long as the germ : leaf one, radical, heart-ovate.

flava, W. (P. y. Ju. 4.) lip 3-cleft, entire, middle division larger : spur filiform, of the length of the germ : spike elongated, compact : bracts longer than the flower.

tridentata, W. (C. Y. P. w. J. 4.) lip lanceolate, 3-toothed at the apex : petals obtuse : spur filiform, clavate, ascending, longer than the germ.

bracteata, W. (1) (vegetable satyr. O. g-w. M. 4.) lip linear, emarginate at the apex, obsoletely 3-toothed : spur short, sub inflated, somewhat 2-lobed : bracts twice as long as the flowers, leaf-like, spreading : roots palmate. 6 to 10 inches high.

obsoleta, W. (1) (New-England. P. J. 4.) lip lance-oblong undivided : bracts short : germ pedicelled : scape naked : spur short, sub-inflated, somewhat 2-lobed : root palmate.

spectabilis, W. (2) (O. r. M. 4.) lip obovate, undivided, crenate, retuse : petals strait, lateral ones longest :

(1) Satyrium, P. (2) Humilis, Mx.

spur clavate, shorter than the germ : bracts longer than the flowers : stem leafless. 3 to 5 inches high.

2. Roots fascicled.

virescens, W. (P. g. Ju. 4.) lip lanceolate, crenate : bracts longer than the flowers : spur short sub-inflated, somewhat 2-lobed : root fascicled. 12 to 18 inches high.

fuscescens, W. (Catskill Mt. P. p-y. Ju. 4.) lip ovate, toothed at the base : petals spreading : spur subulate, of the length of the germ : bracts longer than the flowers.

incisa, W. (C. P. w-p. Ju. 4.) lip 3-parted, divisions wedge-form, gash-toothed, middle one emarginate : lateral petals obtuse, sub-dentate ; spur subulate, ascending, of the length of the germ. Very tall.

rotundifolia, Ph. (P. w. J 4.) lip 3-cleft, intermediate divisions 2-cleft : spur shorter than the germ : leaves round-oval.

fimbriata, W. (O. p. Ju. 4.) lips 3-parted ; divisions wedge-form, ciliate-fringed : lateral petals ovate, toothed : spur filiform, clavate, longer than the germ. Damp.

+ *orbiculata*, Ph. (H. g-w. J. 4.) lip linear, entire, obtusish : 3 upper petals converging, upper one deltoid, obtuse ; 2 lateral ones oblique at the base : spur longer than the germ, clavate, flattish, curved : leaves 2, radical, orbicular, prostrate, glabrous, very shining. Flowers green and white. Mountain woods.

+ *bifolia*, L. (H. g-y. J 4.) lip lanceolate, entire, acuminate : spur longer than the germ, terete, straitish : upper petal ovate, acute : leaves 2, radical, broad-oval, ascending, glabrous. Flowers green and yellow. This plant has long been collected and labelled promiscuously with the orbiculata. It is certainly a different species ; but future collectors may possibly call it a new species. It is very abundant on the side of the mountain a mile east of the village of Great Barrington, Mass. I have collected it in Stockbridge, Pittsfield, and near Williams college also.

fissa, W. (P. p. Ju. 4.) lip 3-parted ; divisions wedge-form, toothed, intermediate one 2-lobed : spur filiform, clavate, ascending, longer than the germ. Tall.

dilatata, Ph. (giant orchis. T. V. W. w. or g. J. 4.) spur shorter than the germ: lip entire, linear, with the base dilated, of the length of the spur: bracts of the length of the flower: stem leafy. In the mountain woods, the flowers are green; in the open meadows, white. It may be found in flower from 1 to 4 feet high.

14—1. ORIGANUM. 42. 39.

vulgare (wild marjoram. Y. T. V. P. r. Ju. 4.) spikes round-panicled, heaped: bracts ovate, longer than the calyx.

majorana (sweet marjoram. E. ♄.) spikes roundish, ternate, compact, peduncled: leaves petioled, oval, obtuse, smoothish. From Palestine.

6—1. ORNITHOGALUM. 10. 16.

umbellatum (star-of-bethlehem. E. M. 4.) flowers corymbed, peduncles higher; filaments dilated at the base.

14—2. OROBANCHE. 40. 35.

uniflora (squaw-root, cancer-root. O. p-w. J. 4.) scape naked, 1-flowered: calyx without bracts: corol recurved. About 3 inches high, of a yellowish white colour. Astringent and antiseptic. B.

americana (P. W. V. p-y. Ju. 4.) stem simple, covered with imbricate lance-oval scales: spike terminal, glabrous: corol recurved: stamens exsert. Hardly a span high: brownish yellow. In clay woods near Hudson.

6—1. ORONTIUM. 2. 7.

aquaticum (golden club. Y. P. C. Hudson. y. M. 4.) leaves lance-ovate: spike cylindric, on a scape. Very plentiful in the west meadows, 2 miles from New-Haven, and in South Bay, Hudson.

22—2. ORTHOTRICHUM. 56. 4.

cupulatum, peristome simple, teeth with pitts; capsule immersed, sub-sulcate; calyptre globe-bellform, glabrous: stem ramose: leaves lance-ovate.

strangulatum, peristome simple; teeth 16, entire; capsule immersed, sulcate, contracted in the middle: leaves lanceolate, sub-entire, obtusish: stems cespitose, erect, sub-ramose, calyptre campanulate, with 8 furrows.

coarctatum, inner peristome 8-toothed: germ exsert at the extremities, plaited.

striatum, teeth of the inner peristome 16, lanceolate, erose; germ immersed, smooth; leaves lanceolate.

6—2. ORYZA. 4. 10.

sativa (rice. E. ☺.) culm jointed: leaves clasping: panicle terminal.

3—2. ORYZOPSIS. 4. 10.

asperifolia, Mx. (mountain rice. O. M. 4.) culm naked-ish: leaves rough, erect, somewhat pungent. Woods and bushy fields.

melanocarpa, Dewey. (1) (W. 4.)

22—1. OSMUNDA. 55. 5.

cinnamomea, Mx. (flowering fern O. y. J. 4.) frond doubly pinnatifid; fertile ones distinct and panicle-racemed. Damp.

interrupta, Mx. (O. g-y. J. 4.) barren leafets on the frond with the fertile ones, above and below and sometimes among them. Damp.

regalis, Mx. (2) (O. r-y. J. ♃.) frond bipinate, terminating in several racemes, very branching and without hairs. Wet.

20—13. OSTRYA. 50. 99.

virginica, W. (3) (iron-wood, hop hornbeam. O. g. M. ♄.) leaves ovate-oblong, sub-cordate, acuminate, unequally serrate: strobiles oblong-ovate, erect: buds acute.

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(1) Sprengel, in a letter to Prof. Dewey, says that this is the Milium racemosum of Smith in Rees' Cycl. *See Additions and Corrections.*

(2) Spectabilis, W. (3) Carpinus virginicana, Lk.

10—5. Oxalis. 14. 73.

† *acetosella* (woodsorrel. H. T. C. w. r. M. 2.) stemless: scape 1-flowered, longer than the leaves: leaves ternate, broad-obcordate, with rounded hind lobes. Woods.

† *violacea* (violet woodsorrel. Y. T. C. p. J. 2.) stemless: scape umbelliferous; pedicels sub-pubescent: flowers nodding: leaves ternate, obcordate, glabrous: divisions of the calyx callous at the apex: styles shorter than the outer stamens. Damp

stricta, W. (yellow woodsorrel. O. y. J. ☺.) all over hirsute: stem erect, branching: peduncles umbelliferous, leaves ternate, obcordate: petals obovate: styles of the length of the inner stamens.

corniculata (C. P. y. M. ☺.) all over pubescent: stem branching, diffused, or procumbent: peduncles umbellate, shorter than the petioles: leaves ternate, obcordate: petals wedge-form, erose at the apex: styles of the length of the inner stamens.

8—1. Oxycoccus. 18. 51.

† *vulgaris*, Ph. (1) (low cranberry. H. T. r. J. ♄.) creeping: leaves oval, entire, margin revolute, sub-acute, glabrous, becoming white beneath: pedicels elongated: divisions of the corol oval. Wet.

macrocarpus, P. (2) (cranberry. O. r. J. ♄.) creeping stem ascending; leaves oblong, entire, flattish, obtuse, glabrous, becoming white beneath: pedicels elongated: divisions of the corol lanceolate. Wet.

P.

† 5—2. Panax. 46. 59.

† *trifolia* (dwarf ground-nut. O. w. 2.) leaves in threes, ternate or quinate; leafets serrate, lance-oblong, subsessile; root tuberous, roundish. Styles generally three. Root round-tuberous, and very deep in the earth in proportion to the size of the plant.

† *quinquefolia* (ginseng. O. w. M. 2.) root fusiform:

(1) palustris, 2d. ed. P. Vaccinium oxycoccus, Mx.

(2) Vaccinium macrocarpon, A. Var. oblongifolius, Mx.

leaves ternate, quinate : leafets oval, acuminate, petioled, serrate. Larger than the last. The Chinese panacea, or cure for all diseases. Mild stimulant. B. It is also a sialagogue.

13—5. PAEONIA. 36. 61.

officinalis (Peony. E. r. J. 4.) leaves decompound ; leafets lobed, lobes broad-lanceolate : capsules downy. Improperly called pina.

3—2. PANICUM. 4. 10.

crus-calli, L. (1) barn grass. O. Ju. ☺.) spikes alternate and in pairs, thick, squarrose : glumes hispid, awned : rachis angled ; sheath glabrous.

capillare (O. S. ☺.) panicle capillary, very branching, lax : flowers minute, all pedicelled, solitary, oblong-ovate, acuminate, awnless : leaves and sheaths very hirsute. The rachis is angled. Branches of the panicle are opposite and alternate, jointed at the base : branchlets, ternate nodding.

virgatum (O. Ju. 4.) panicle very branching, wand-like : glumes ovate, acuminate, awnless, 2-flowered : leaves very long, flat. The rachis, or main peduncle, is coloured. Lower branches of the panicle are whorled, the others solitary.

latifolium (O. J. 4.) panicle moderately spreading : glumes ovate, acutish, sub-pubescent ; leaves lance-ovate, clasping the stem with the base above the sheath, glabrous, broad ; sheath pilose. The leaves vary in breadth ; but the broadest are lance-cordate, and enclose most of the few-flowered panicle with the sheath when young. Willdenow calls this the Var. *clandestinum*. Muhl. makes it a new species.

nitidum, Lk. (O. Ju. 4.) panicle capillaceous, branching : glumes striate, pubescent : seed shining : leaves somewhat distant, lance-linear, bearded at the neck of the sheaths : stem glabrous.

umbrosum, Le Conte. (C.) culm glabrous, erect ; joints naked : leaves long-linear, glabrous ; sheaths bearded at the neck : panicle simple, few-flowered : glumes with long erect pedicels, large, ovate, glabrous, stri-

(1) Echinchloa, Rs.

ate : seed 2-furrowed on opposite sides. See Torry's catalogue. p. 91.

scoparium, Mx. (D. P. J. 4.) panicle erect, compound, setaceous branched ; glumes obovate, pubescent : leaves lanceolate villose. The sheaths are soft, and when young, glutinous. The lateral panicles are partly concealed.

hispidum, M. (1) (C.) sheath hispid, striate : spike compound, nodding ; spikelets alternate, oblong, awned : rachis pilose, scabrous : calyx 3-valved ; one very small and mucronate, the others nerved, hispid, awned.

geniculatum, M. (2) (C. P. S.) culm glabrous, ditchotomous, geniculate at the base ; panicle diffuse, very branching, dichotomous ; branches jointed at the base, scabrous, solitary : pedicels thickened or clavate under the calyx, scabrous : one valve short, obtuse, sub-3-lobed ; the others acuminate glabrous.

verrucosum, M (C.) culm with enlarged joints : terminal panicle spreading, lateral ones from the sheaths : branches alternate, solitary, divided, zigzag, glabrous : calyx 3-valved ; one small acute, two others warty, 3-nerved.

walteri, M. (3) (C. Can. Ju. ☺.) spikes alternate, erect, solitary, simple : glumes ovate, muricate-hispid, awned ; one awn very long : rachis 3-cornered : sheaths very hispid ; leaves glabrous. Grows near salt-water.

agrostoides, M. (C. P. Ju. 4.) panicles terminal and lateral, branching ; branches distant, in threes, pairs and solitary, erect when young, at length horizontal and reflexed, jointed at the base, scabrous, branchlets scabrous, divided, close-pressed, pedicels short : leaves keeled, glabrous.

nervosum, M. (C.) panicle terminal ; branches numerous, spreading, glabrous, somewhat zigzag : calyx unequal, the small one ovate, acute, the others acute nerved : leaves scabrous at the margins, ciliate at the base ; sheaths long, striate, pubescent at the margin.

pubescens, M. (C. P. J. 4.) erect, very branching, pu-

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(1) crust-galli, Nov. hispidum, E. muricatum, Mx. walteri, Ph. Setaria muricate, Rs. also Echinochloa echinata, Rs.

(2) dichotomiflorum, Mx. proliferum, Lk.

(3) This is not the walteri of Pu.

bescent: panicles small, few-flowered, lax, sessile: glumes globe-ovate, sub-pedicelled, pubescent. The branches of the panicle horizontal, zigzag.

macrocarpon, (C.) culm erect; culm and sheaths pubescent; joints naked: leaves broad-lanceolate, nerved and glabrous both sides, ciliate: panicle sub-compound, ramose, glaucous, largish, turgid, ovate; branches pubescent, striate. Le Conte. See Torry's catalogue. p. 91.

umbrosum (C. Ju.) slender, erect, small, glabrous: culm purple, joints naked: leaves remotish, spreading, lanceolate; sheaths ciliate: panicle smallish, simple: glumes ovate, glabrous, striate. Le Conte. A new species.

angustifolium (D.) culm glabrous, erect, joints naked: leaves glabrous, long linear; sheaths bearded at the neck: panicle few-flowered, long-pedicelled, largish, ovate, glabrous, striate. Le Conte. A new species.

barbatum (C. J.) erect, slender, glabrous; joints bearded: leaves lance linear, distant, spreading, short; radical ones lanceolate, with ciliate sheaths: panicle subcompound, racemose, glauceous, pubescent, striate. Le Conte. A new species

discolor, Sh. (1) (P. J. 24.) panicle terminal, sub-simple; branches horizontal, in pairs and solitary, zigzag, glabrous; florets all pedicelled: calyx 3-valved, 1-flowered; one valve minute and coloured: radical leaves abbreviated, those of the culm lanceolate, hairy at the base, margin crisped.

dichotomum, M. (2) (C. P. Ju. 24.) panicles perfectly simple, few-flowered, glumes obovate: leaves lance linear, divaricate, glabrous; bearded at the base and neck of the sheath: stem dichotomous. The lower joints are hairy, the upper ones glabrous. Radical leaves are lance-cordate, and abbreviated; those of the culm lance-linear, nerved, glabrous.

depauperatum, M. (P. V. J.) panicle terminal, erect, few-flowered, (depauperate) branches in pairs; one abbreviated 1-flowered, the other 2-flowered and twisted: leaves lance-linear, the lower ones abbreviated, the upper ones elongated.

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(1) heterophyllum, Sr. laxiflorum, Lk. borbulatum? Mx.
(2) ramulosum, Mx.

anceps, Mx. (P. Ju. 24.) erect; branches of the panicle simple, interruptedly racemed: sheaths two-edged, rough-haired below: the perfect flowers have 2-valved corols, the staminate flowers have 1-valved corols.

13—1. PAPAVER. 27. 62.

rheas (wild poppy. O. r. J. ☺.) capsules glabrous, subglobose: stem many-flowered, pilose, with the hairs spreading: leaves gash-pinnatifid. This is usually considered as an exotic; if it was introduced it is certainly most effectually naturalized in many places.

somniferum (opium poppy. E. J. ☺.) calyx and capsule glabrous: leaves clasping, gashed, glaucous. Well known as an anodyne and narcotic.

20—4. PARIETARIA. 53. 98.

pensylvanica (pellitory. Hudson. W. P. J. ☺.) leaves lance-oblong, veiny, with opake punctures: involucre 3-leaved, longer than the flower. On rocky sidehills, &c.

22—5. PARMELIA. 57. 2.

1. *Divisions of the fronds all equal at the apex.*

saperata (shield lichen. O.) frond orbicular, pale yellow becoming green, rugose, at length granulated, dark and hispid beneath; lobes plicate, sinuate-laciniate, roundish, somewhat entire: receptacles scattered, subfrescous; margin incurved, entire, at length pulverulent Var. *cylisphora*, smoothish, naked; lobes gash-crenate: receptacles of the central lobes margined, elevated, small. On old timber, &c.

galbina, frond orbicular, smooth becoming cinereous, the outer margin leaden-blue, with dark punctures; dark beneath, hispid with spongy fibres; lobes imbricate, flat, sinuate-laciniate, crenate: central receptacles concave, dark-purple, shining; margin entire. On old wood.

placorodia, frond orbicular, smooth, pale-livid, sprinkled with black elevated specks: glabrous rugose, milky beneath, with dark-cinereous impressions; divisions plicate, concrete, round crispid crenate at the apex: receptacles scattered, elevated, light fuscous, some-

what concealed by the inflexed, rugose, crenate margin. On decaying woods.

crinita, frond orbicular, from white becoming pale-glaucous, scabrous with scattered grains and corol-like branchlets; dark glabrous, a little rugose beneath, rarely fibrous; divisions rather long, sinuate-lobed at the margin and erose-crenate ciliate, obtuse at the apex.

rudecta, frond orbicular, pale cinereous becoming green, thickly beset with corol-like opophyses of an uniform colour; dirty-white, wrinkled and fibrous beneath; divisions concrete undulate-plicate, roundish at the margins, torn-crenate: receptacles scattered, small obscurely fuscous: margin thin, at length rugose-crenate. On old wood.

scortea, frond orbicular, sub-coriaceous, white, glabrous, very thin, dark-punctate; dark-fibrous-hispid beneath; lobes longish, sinuate-crenate, gashed: receptacles red-fuscous, sub-entire at the margins. On rocks and trunks of trees.

perforata, frond orbicular, becoming glaucous-green, naked; dark fibrous beneath; lobes round, gashed, flat, sub-plicate, crenate, ciliate at the margin: receptacles reddish-yellow, at length perforated; margin entire. On trunks of trees, very common.

herbacea, frond orbicular, membranaceous-herbaceous, naked; pale fuscous-tomentose beneath; lobes gash-sinuate, round-laciniate, repand, sub-crenate: receptacles reddish yellow, margin inflexed, rugose-crenate. On trunks of trees and rocks among moss.

tiliacea, frond orbicular, membranaceous, becoming glaucous-cinereous, somewhat hoary; dark-fuscous beneath with black fibres; lobes sinuate-laciniate, the extreme ones round, crenate: receptacles sub-fuscous; margin sub-entire. On the bark of trees.

sub-marginalis, frond membranaceous, smoothish, becoming cinereous; very dark beneath, becoming fuscous at the perifery: receptacles somewhat margined, concave, fuscous, wrinkled outside, margin simple. On trunks of trees.

olivacea, frond orbicular, dark-olive, wrinkled, having elevated specks; pale becoming fuscous, scabrous and somewhat fibrous beneath; lobes radiated, close-pressed, flat, dilated, round crenate: receptacles flattish.

somewhat uniform coloured ; margin crenulate. On trunks of trees, split rails, &c.

parietina, frond orbicular, very yellow ; pale, somewhat fibrous beneath ; lobes radiating, close-pressed, flat, dilated round crenate and crisped at the apex : receptacles uniform-coloured, margin entire. On walks, old fences, rocks, trunks of trees, &c.

setosa, frond stellate, becoming white-glaucous ; becoming ragged beneath with the dark hispid ramose inte - woven fibres ; divisions many-cleft, linear, separated, flat ; margins here and there bearing fruit-dots ; ciliae very dense and long.

saxatilis, frond orbicular, becoming cenereous, a little scabrous, lacunose-reticulate ; black and fibrous beneath ; divisions imbricate, sinuate-lobed, flat, sub-retuse and dilated, round : receptacles liver brown, margin crenate. On rocks and in trunks of trees.

aquila, frond orbicular, fuscous-chesnut-brown ; paler beneath and dark-fibrous ; divisions many-parted, sub-linear, convex, the pheriphery dilated, flattish, crenate : receptacles dark-fuscous, margin crenulate On rocks and mountains.

michauxii, frond somewhat olive-colour, a little shining ; divisions convex, sinuate-lobed, dilated at the apex : receptacles chesnut-fuscous. On rocks.

congruens, frond stellate, becoming pale-white and fuscous-cinereous beneath, the fibres and impressions uniform-coloured ; divisions many-cleft, lax, flexuose, margins recurved, flattish and crenate at the apex : receptacles elevated, concave, liver-like, margin entire. On trunks of trees.

centrifuga, frond orbicular, with greenish-white zones receding from the centre ; white beneath, with fuscous-cinereous fibres ; divisions concrete, convex rugose, parted dichotomously, obtusish : receptacles with reddish-fuscous peripheries, margins sub-entire. On mountains and rocks.

conspersa, frond orbicular, pale, lived, smooth, dark-punctate ; becoming fuscous and fibrous beneath ; divisions sinuate-lobed, round, crenate, flattish : receptacles central, chesnut brown, margin sub-entire. On stones and rocks

diversicolor, frond sub-orbicular, golden-yellow, con-

crete with the rugose, narrow, torn-ramose divisions, white with age; becoming white-cinereous beneath, and the impressions uniform-coloured: receptacles crowded, concave, dark-red; margin thick, at length white.

speciosa, frond stellate glabrous, white becoming sub-cinereous; white softish beneath with obscure marginal fibres; divisions imbricate, flat, gash-ramose, crenate, the ascending crenatures pulverulent: receptacles central, sub-fuscous; margin inflexed, tumid, at length rugose-crenate. On rocks and trunks of trees.

hypoleuca, frond stellate, white, glabrous, naked; very white, soft, sub-tomentose beneath, with hispid dark marginal fibres; divisions linear, many-cleft, flat: receptacles scattered, sub-fuscous, at length black; margin inflexed, at length crenulate. On trunks of trees, on and among mosses.

lophyrea, frond stellate, white; dark, smooth, naked, excavated-punctate beneath; divisions linear, flat, flexuose, sinuate-many-cleft: receptacles reddish; margin sub-crenate.

granulifera, frond orbicular, white, hoary and granular, sprinkled over with snow-white heaps of globules: glabrous, one-coloured beneath, fibres and impressions dark; divisions flat, many-cleft, tooth-crenate, margins naked: rsceptacles dark fuscous; margin inflexed, granulated. Among mosses on trunks of trees.

conoplea, frond orbicular, becoming glaucous-green, here and there covered with granulated dust becoming blue; dark with spongy fibres beneath; divisions with flattish, round-lobed, crenate, naked outer edges; margins elevated, pulverulent: receptacles reddish-yellow. On mosses and trunks of trees.

obsessa, frond orbicular, white, beset with a corol-like excrescence, apex fuscous; dark, fibrous beneath; divisions with a separate solitary peripery, crose-many-cleft, flat: receptacles central, flat, dark-fuscous; margin granulate-toothed. On the bark of trees.

pulverulenta, frond stellate, light-grey-hoary; dark, tomentose-hispid beneath; divisions linear, many-cleft, separated in the periphery, flat, close-pressed, undulated, retuse at the apex: receptacles grey; margin entire and flexuose. On the bark of trunks of trees.

aipolia, frond stellate, becoming white-cinereous, grey and naked; white beneath with dark-fuscous fibres; divisions all sub-connate, flattish, many-cleft and lobed: receptacles dark grey-hoary. On the bark of trees.

stellaris, frond stellate, at length rugose-plicate, becoming green-cinereous; white, fibrous-cinereous beneath; divisions sub-linear, somewhat convex, gashed, many-cleft: receptacles becoming dark-glaucous; margin entire, at length flexuose and crenate. On the bark of trees.

caesia, frond stellate, becoming white-cinereous and grey, bearing fruit-dots; cinereous beneath, with dark fibres; divisions linear, gashed, many-cleft, somewhat convex, the extremities flat: receptacles sub-concave, black: margin sub-inflexed. On rocks, woods, on mosses and bark of trees.

ulothrix, frond stellate, cinereous-glaucous, sub-livid; dark fibrous beneath; divisions separated, linear, dichotomous, many-cleft, flat, sub-ciliate: receptacles dark-fuscous, margin entire, ciliate-fibrous beneath. On bark and trunks of trees.

2. *Divisions of the frond sub-inflated at the apex.*

physodes, frond sub-stellate, becoming white glaucous; divisions imbricate, sinuate-multifid, somewhat convex, glabrous, inflated and ascending at the apex: receptacles red, with entire margins. On split wood, rails, rocks and trunks of trees.

cristulata, frond orbicular, becoming green glaucous; divisions very smooth, flat, periphery round, incumbent, gash-crenate; all spongy and dark beneath, sub-inflated at the apex: receptacles red; margin entire. On the roots of trees.

colpodes, frond sub-stellate, becoming pale-green: divisions many-cleft, smooth, naked, flattish, sub-inflated at the apex; dark ragged beneath: receptacles sub-fuscous; margin sub-rugose. On bark of trees.

enteromorpha, frond sub-stellate, becoming whitish-green; divisions elongated, sub-divided, effuse, lax, sub-rugose, inflated; dark, rugose-plicate beneath: receptacles liver-brown; margin entire. On trunks of pines, &c.

5—4. PARNASSIA. 14. 64.

americana, M. (1) (parnassus grass, flowering plantain. T. W. V. C. P. w-p. Ju. 4) leaves radical, sub-orbicular-cordate: nectaries 3-parted, each divided into filaments, terminated by little heads. Damp or wet.

3—2. PASPALUM. 4. 10.

setaceum, Mx. (2) (paspalon grass. P. J. ☺.) spike single, slender: glumes round-obovate, glabrous: leaves villose: culm setaceous, erect.

ciliatifolium, Mx. (P. D. S. 4.) spikes alternate, somewhat in pairs: glumes somewhat in three rows, paired, round-obovate, obtuse, glabrous: leaves lance-linear, serrulate ciliate: culm decumbent.

laeve, Mx. (3) (P. J. ♃.) spikes many, alternate: glumes in two rows, round-ovate, glabrous, smooth: leaves glabrous; stipules ciliate; sheaths compressed: stem sub-erect.

stoloniferum, P. (4) (D. Ju. 4.) spikelets long-racemed somewhat whorled, spreading: glumes alternate, ovate, serrulate-ciliate, rugose transversely: leaves short, sub-cordate at the base: stem prostrate at its base.

16—5. PASSIFLORA. 45. 60.

lutea, W. (yellow passion-flower. P. y. S. 4.) leaves cordate, 3-lobed, obtuse, glabrous; petioles glandless: peduncles axillary, in pairs: petals twice as narrow as the calyx.

coerulea (blue passion-flower. E. b. Ju. ♄.) leaves palmate, 5-parted, entire: petioles glandular: involucre 3-leaved, entire: threads of the crown shorter than the corol.

alata (winged passion-flower. E. Oct. ♄.) leaves oblong-ovate, sub-cordate, entire, veiny; petioles with 4-glands: stipules lance-falcate, sub-serrate: involucre 3-leaved: stem 4-cornered, membranaceous.

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(1) caroliniana, Mx. palustris, 2d. ed. I was forced into that error by high authority, as I had previously given it the true name.
(2) dissectum, Wr. (3) lentiferum, Lk. membranaceum, Wi.
(4) racemosum, Jr. Milium latifolium, Cavanilles.

5—2. PASTINACA. 45. 60.

+*sativa* (parsnip. E. Au. ♃.) leaves simply pinnate: leafets glabrous. Var. *arvensis*, leafets sub-pubescent. This variety is often found in situations, which almost prove it to be indigenous.

14—2. PEDICULARIS. 40. 35.

+*canadensis* (lousewort. O. y-p. M. 2.) stem simple: leaves pinnatifid, gash-toothed: heads leafy at the base, hirsute: corol with a setaceous-2-toothed upper lip: calyx obliquely truncate. From 4 to 8 inches high; generally several stems growing from one root.

gladiata, Mx. (high heal-all. Y. T. C. N. y-p. J. 2.) stem simple: leaves lanceolate, pinnatifid, toothed: spikes leafy, with alternate florets, hirsute; capsules lengthened into an exsert, sword-mucronate form. Often 2 feet high.

+*pallida*, P. (1) (C. T. Niagara. Y. y. Ju. 2.) stem branching, tall: leaves sub-opposite, lanceolate, crenate, toothed: spikes leafless, glabrous: upper lip of the corol obtuse: calyx 2-cleft, roundish. From 2 to 3 feet high.

resupinata, W. (Can. p. Ju. 2.) stem simple, glabrous: leaves lanceolate, toothed, crenate: calyx bifid truncate: upper lip of the corol acute.

16—7. PELARGONIUM. 14. 73.

1. *Nearly stemless; root tuberous.*

triste (mourning geranium E.) umbel simple: leaves rough-haired, pinnate: leafets bi pinnatifid, divisions oblong acute. Flowers dark green.

daucifolium (carrot geranium. E. 2.) scape very simple: leaves thrice-pinnate, hirsute: leafets lance-linear.

2. *Leaves simple, not angled.*

odoratissimum (sweet-scented geranium. E. ♄.) peduncles sub-5-flowered: leaves round cordate, very soft,

3. *Leaves simple, more or less angled or lobed.*

zonale (horse-shoe geranium. E. ♄.) umbels many-flow-

(1) Serotina, M.

ered : leaves heart-orbicular, obsoletely lobed, toothed, with a coloured zone or band around near the margin.

inquinans (scarlet geranium. E. ♄) umbels many flowered : leaves round-reniform, hardly divided, crenate, viscid-downy.

acerifolium (lemon, or maple-leaf, geranium. E. ♄) umbels about 5-flowered : leaves 5-lobe-palmate, serrate; below wedgeform, undivided.

capitatum (rose-scented geranium. E. ♄.) flowers capitate : leaves cordate, lobed, waved, soft : stem diffuse.

quercifolium (oak-leaf geranium. E. ♄) umbels sub-many-flowered : leaves cordate, pinnatifid, crenate : sinuses rounded : filaments ascending at the apex.

graveolens (sweet rose geranium. E. ♄.) umbels many-flowered, sub-capitate : leaves palmate-7 lobed ; divisions oblong, obtuse, margins revolute.

Remark. These are all the species which I have seen in Troy, Albany, Northampton, or any other town in the interior ; but I have seen 20 or 30 other species in N. York. To include all these would be giving too much room to one genus of exotics, which is not among the common cultivated exotics, promised in the title page.

22—5. PELTIDEA. 57. 2.

scutata (target lichen) frond becoming cinereous ; whiter and nearly veinless beneath ; lobes round, gash-sinuate, crenate-crisped, fertile lobes very short : receptacles round, ascending, flattish, fuscous, sub-entire. On trunks of trees

horizontalis, frond becoming fuscous-glaucous-green, glabrous ; very white and reticulate with black veins beneath ; fertile lobes very short : receptacles terminal, flat, horizontal, transversely oblong, liver-brown, entire. On rocks among mosses in mountain woods.

venosa, frond cinereous-green ; veins beneath ramose, shooting out at a distance, fuscous-cinereous ; lobes round, gashed, sub-entire ; receptacles margined, flat, round, tumid, obscurely fuscous, sub-crenulate. On the earth at the margins of ditches, &c.

aphosa, frond becoming livid-green, smooth, knobs wart-like, close pressed ; receptacle with black veins ; fertile lobes rather long, narrow in the middle, reflexed

at the margin ; receptacles terminal, full, ascending, red, margin like the frond, inflexed, sub-lanceolate. On the earth and in woods.

canina, frond becoming cinereous-green, sub-tomentose ; reticulate beneath with cinereous-fuscous veins ; fertile lobes longish, reflexed at the margin : receptacles terminal, erectish, revolute, reddish-yellow ; margin like the frond, thin, sub-crenulate. On the earth in mountain woods and on mosses.

polydactyla, frond becoming glaucous-green, naked, glabrous ; reticulate with fuscous veins beneath ; fertile lobes very thick, elongated, and the terminal receptacles obscurely fuscous, margins cucullate-revolute. On the earth in woods and bush fields

3—2. PENNISETUM. N. (1) 4. 10.

glaucum (foxtail panic. O. y. J. ☺.) spikes terete : involucels 2-flowered, fasicle-setose : seed transversely rugose. Var. *laevigatum*, has glabrous leaves and sheaths.

italicum, L. (2) (C. P. Ju. ☺.) spike terminal, cylindric, nodding, compound, interrupted near the base ; rachis and peduncles pilose : bracts a little longer than the calyx, hispid upwards.

viride, L. (3) (C. P. Ju. ☺.) spike terete, sub-compound, nodding, undivided : involucels (bracts) 10 to 15, setose, soft : seeds nerved. The rachis is hirsute below the spike, furrowed and many-cornered.

verticillatum, W. (4) (V. D. P. Ju. ☺.) spikes whorled ; racemes in fours : involucres 1-flowered, 2-bristled ; culms diffuse : leaves with scabrous margins keeled ; shields glabrous.

10—5. PENTHORUM. 18. 83.

sedoides (virginian orpine. O. g-y. Ju. ♃.) stem branching, angled : leaves lanceolate, sub-sessile, unequally and densly serrate : spikes terminal, panicled, alternat eand cymed : seeds pitted.

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(1) Panicum, L. (2) Setaria italicum, Rs.
(3) Setaria viridis, Rs. (4) Panicum alopecuroideum, Wr.

14—2. PENTSTEMON. 40. 45.

pubescens, W. (1) (beard-tongue. W. T. C. P. w-p. J. 4.) stem hairy: leaves serrulate, lance-oblong, sessile: flowers panicled: the barren filament bearded from the apex to below the middle. Var. *latifolia* has broad smooth leaves. Var. *augustifolia* has narrow, hairy, obscurely denticulate leaves. From 1 to 2 feet high.

laevigata, W. (2) P. T. w-p. Ju 4.) stem glabrous: leaves smooth, oblong-ovate, clasping at the base, slenderly toothed, lower ones entire; flowers panicled: barren filament bearded above. About 2 feet high.

5—2. PERIPLOCA. 30. 47.

gracea, M. (milk vine. P. p. M. ♄.) flowers hirsute within, terminal; stigma with 10 crenatures.

22—6. PEZIZA. 58. 1.

1. Tremelloideae. *Substance more or less tremulous.*

inquinans, in groups, large, dark-stained, at length convex, ob-conic; rugose and brownish outside. Often grows in long series in autumn, along hewn or cut timber.

sarcoides, cespitose, fleshy-tremulous, somewhat firm in texture, flesh-red, somewhat veiny outside. In autumn, on cut decaying trunks, &c.

cinerea, in groups, small, cinereous or pale, sub-tremulous; margin whiter, sub-erect. On decaying trunks and branches, in spring and autumn.

2. Helvelloideae. *Larger, fleshy-membranaceous, fragile, externally sub-farinaceous.*

aurantia, stemless, cespitose, halved-flexuose, golden-yellow, white externally. P. coccinea, Bull. In autumn on roots and decaying trunks, &c.

umbrina, large, cespitose, contorted, brown. On sandy grass-ground, &c

badia, almost stemless, entire, margin sub-involute, obscurely fuscous, externally somewhat olive-coloured. An inch and a half broad. In autumn on the earth, on trunks, &c. in woods.

(1) Chelone pentstemon, Mant. (2) Chelone, Miller.

depressa, sub-orbicular, sessile, depressed, reddish-yellow. Var. *applanata*, cinnamon colour, expanded; flat and rugose above, paler beneath. In fields on the margin of rivers, &c.

acetabulum, wineglass-form, stiped; pileus angled outside: veins branching: colour earth brown fuscous. Stipe thick, lacunose as in some species of Helvella. In shades.

3. *Mostly small. Whole pileus strigose-hirsute, pilose, tomentose, or pubescent.*

hemispherica, in groups, pretty large, hemispheric; white glaucous within, brown outside. Half an inch broad. In autumn on the earth, rarely on trunks.

scutellata, largish, spread-flattened, reddish-yellow outside: hispid with dark diverging bristles. On wood in damp places.

coccinea, stiped, largish, turbinate or funnel-form: scarlet within, white without and somewhat downy; margin mostly crenate. In the spring on the earth and dead limbs.

anomala, stiped, crusty-crowded, turbinate; dry crisped, ferruginous or fawn-colour; mouth converging, paler. In spring and autumn on dry fallen branches.

4. *Mostly small. Wholly glabrous (or at least not manifestly tomentose) fleshy or wax-like.*

(Pileus stiped.)

bolaris, largish, sub-solitary: pileus orbicular-funnel-form; outside often rugose-veiny and a little fibrous: stipe thick, becoming dark at the base, shortish. In autumn on dry stipes, &c.

cyathoidea, in groups, small, white or pale; pileus wineglass-form, unarmed, rather thin: stipe long, a little thicker, downwards. On the dry stems of large herbs —stipes about the fourth of an inch long.

lutescens, small, somewhat in groups, becoming yellow: pileus orbicular: stipe thin, cylindric. On the decaying wood of firs, &c.

pallescens, crouded, glabrous, white at length becoming pale: pileus somewhat funnel-form: stipe rather thick. On trunks of beech, &c.

(Pileus sessile.)

leucoloma, narrow, depressed, spread, minute ; margin white, finely torn. On walls and moss in the spring.

5. *More or less coriaceous, dry, glabrous or pulverulent, mostly sessile.*

leucomela, bursting : sessile : pileus concave ; dark outside and white within. Sometimes on hazle branches.

patellaria, in groups, dark, spread flattened, sub-coriaceous, distinctly margined. On dry branches of basswood and sometimes on trunks of oak.

pinastri, scattered, sub-stiped, dark-shining ; margin acute. On the bark of pines and firs, &c.

5—1. PHACELIA. 28. 41.

bipinnatifida, Mx. (phacelia. P. b. M.) erect : leaves pinnatifid, divisions gash-lobed : racemes mostly bifid, oblong, many-flowered : divisions of the corol entire.

fimbriata, Mx. (P. b. M. ☺.) ascending, hairy : leaves sessile, pinnatifid : divisions lanceolate, acute, entire, hispid-pilose above, glabrous beneath : racemes solitary ; pedicels elongated : divisions of the corol ciliate-fringed.

parviflora P. (1) (P. b. M. ☺.) diffused, pubescent : leaves sub-sessile, pinnatifid : divisions oblong obtusish, entire : racemes solitary ; pedicels short ; divisions of the corol round, entire.

3—2. PHALARIS. 4. 10.

americana, E. (2) (ribbon grass, wild canary grass. W. Y. P. Ju. 4.) panicle oblong, ventricose, compact : glumes acuminate, 3-nerved : leaves scabrous at the margin ; sheaths striate. Var. *picta*, leaves variously striped.—This variety is the ribbon grass of the gardens.

canariensis (canary grass. E. ☺.) panicle spike-form, ovate : glumes of the calyx boat-form, entire : corol 4-valved ; outer ones lanceolate, glabrous, inner ones villose.

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(1) Polemonium dubium, W.

(2) arundinacea, Mx. Calamagrostis colorata, N.

22—6. PHALLUS. 58. 1.

impudicus (morel) stipe sieve-like, sub-oblique ; pileus cellular, pervious at the top. Very nauseous. On the ground in autumn in fields and shady places.

praeputiosus, stipe sieve-like, sub-incurved ; involucre indusium-like. Nauseous.

22—2. PHASCUM. 56. 4.

patens, caulesent, erect : capsule about sessile : leaves lance-ovate, serrate at top, spreading.

muticum, stemless : capsule sessile : leaves ovate, without points, concave, converging.

cervicollum, sub-caulescent : the leaves of the pericheth strait : peduncle incurved : capsule ovate. On dry gravelly earth.

subulatum, caulescent, erect : leaves lance linear, spreading ; the summits, from the broadish base, subulate, rigid : capsule sub-sessile.

coherens, sub caulescent, simple : leaves ovate, acute, nerves solid, serrulate, erect : capsules with short, bristles.

17—10. PHASEOLUS. 32. 93.

perennis, Wr. (1) (wild kidney-bean. C. P. p. Ju. 4.) twining, wholly pubescent : leaves broad-ovate, the odd one sub-cordate : racemes in pairs, longer than the leaves : peduncles in pairs : bracts obsolete : legumes peduncled.

vulgaris (common pole-bean. E. p. w. Ju. ☺) stem twining : racemes solitary, shorter than the leaves : peduncled in pairs : bracts smaller than the calyx, spreading : legumes pendulous. From the East Indies.

nanus (bush-bean, six-weeks bean. E. ☺.) stem erect, smooth : bracts larger than the calyx : legumes pendulous, compressed, rugose. Seeds variously coloured.

multiflorus (scarlet runner. E. r. w. Ju. ☺.) stem twining : racemes solitary, of the length of the leaves : peduncles in pairs : bracts close-pressed, smaller than the calyx : legumes pendulous.

(1) paniculatus, Mx.

macrostachyus, E. (P.) stem twining ; racemes simple, very long : peduncle sub-fascicled : leaves villose beneath.

12—1. PHILADELPHUS. 19. 89.

coronarius (mock-orange, false syringa. E. w. J. ♄.) styles distinct : leaves ovate, sub-dentate. From Asia-Minor or Greece.

inodorus (scentless syringa. Southern states. w. J. ♄.) leaves ovate, acuminate, entire : divisions of the calyx acute : style undivided, longer than the stamens ; stigmas 4, oblong. Flowers large. Cultivated.

grandiflorus (scentless syringa. Southern states. w. J. ♄.) leaves ovate, acuminate, denticulate : axils of the veins with fascicles of hairs beneath : divisions of the calyx acuminate : style undivided, longer than the stamens : stigmas 4, linear. Cultivated.

3—2. PHLEUM. 4. 10.

pratense (timothy grass. O. J. 4. and ♂.) spike cylindric, very long, ciliate : culm erect.

5—1. PHLOX. 20. 44.

paniculata, W. (smooth-stem lichnidia. P. r. w. Ju. 4.) glabrous, erect : leaves lanceolate, narrowing gradually, flat, margins rough : corymbs panicled : divisions of the corol rounded ; calyx awned. Cultivated.

pyramidalis, S. (1) (P. J. 4.) erect, glabrous ; stem scabrous : leaves heart-ovate, acute : panicle fastigiate, pyramidal ; divisions of the corol wedge-truncate : teeth of the calyx sub erect, lanceolate acute.

maculata, W. (spotted lichnidia. D. P. r. w. Ju. 4.) erect ; stem spotted, scabrous : leaves lance-oblong, glabrous, margins rough : panicle oblong, flowers crowded : divisions of the corol rounded : teeth of the calyx acute, recurved.

suaveolens, W. (P. w. Ju. 4.) erect ; stem very glabrous, not spotted : leaves lance-ovate, smooth : raceme panicled : divisions of the corol rounded : teeth of the calyx lanceolate, acute, erectish. Sweet scented.

(1) carolina, Wr.

aristata, Mx. (1) (P. D. Buffalo. r. w. J. ♃) weak, erect, visced-pubescent: leaves lance-linear: panicle lax, fastigiate; pedicels somewhat in pairs: divisions of the corol somewhat obovate; tube curved, pubescent: teeth of the calyx long, subulate.

+ *pilosa*, Mx. (creeping lichnidia. D. p. w. J ♃.) small, decumbent, pubescent: leaves lance-linear, short, roughish: flowers sub-sessile and fascicled at the top: divisions of the corol round-obtuse, tube straitish, glabrous: tooth of the calyx subulate-acuminate.

divaricata, W. (P. p b. M. ♃.) low, decumbent, pubescent: leaves lance-oval, upper ones alternate: branches divaricate, lax, few-flowered: divisions of the corol sub-cordate: teeth of the calyx linear-subulate.

stolonifera, C. (2) (P. b-p. J. ♃.) stoloniferous-creeping, pubescent: radical leaves obovate-spatulate, cauline ones lance-oval: corymb spreading, few-flowered: divisions of the corol obovate: teeth of the calyx linear, reflexed.

subulata, W. (mountain pink. D. r. M. ♃.) caespitose, white pubescent: leaves linear, pungent, ciliate: corymbs few-flowered, pedicels 3-cleft: divisions of the corol wedge-form, emarginate: teeth of the calyx subulate, scarcely shorter than the tube of the corol. Cultivated.

setacea (D. r. J. ♃.) caespitose, pubescent: leaves fascicled, subulate, pungent, ciliate: pedicels few, terminal, sub-umbelled; divisions of the corol wedge-form, emarginate: teeth of the calyx subulate, thrice as short as the tube of the corol.

14—1. PHRYMA. 40. 39.

+ *leptostachia* (lopseed. O. p. w. Ju. ♃.) leaves ovate, coarsely serrate, petioled: spike terminal, slender: flowers opposite. As the fruit begins to form, it lops down against the rachis.

20—16. PHYLLANTHUS. 38. 96.

obovatus, W. (3) (leaf-flower. P. J. ☉.) leaves obovate,

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(1) pilosa, C. (2) reptans, Mx.
(3) corolinensis, WF.

obtusish : flowers in pairs, axillary, pedicelled : stem erect, branching, terete. A span high.

5—1. PHYSALIS. 28. 41.

viscosa (yellow henbane. T. C. P. W. Hudson. y. Ju. 2.) leaves in pairs, heart-oval, repand, obtuse, sub-tomentose : stem panicled above : fruit-bearing calyx pubescent.

obscura, Mx. (1) (D. y. p. Ju.) leaves sub-cordate, orbicular, acuminate, unequally dentate : stem herbaceous, devaricate, much branched, branches angled. B.

pensylvanica (P. C. y. J. 2.) leaves ovate, sub-repand, obtuse, nakedish : stem branching ; peduncles solitary, a little longer than the petioles.

philadelphica, Lk. (New-England. y. p. Ju. ☺.) leaves ovate, repand-toothed, glabrous : stem very branching : peduncles solitary, much shorter than the petioles.

lanceolata, Mx. (P. y. J. 2.) leaves in pairs, lance-oval, sub-entire, gradually narrowing into the petiole, pubescent : stem dichotomous : calyx villose.

alkekengi (common winter cherry. E. 2.) leaves in pairs, entire, acute : stem sub-ramose below. Calyx of the fruit red or reddish.

22—6. PHYSARUM. 58. 1.

cinereum, sessile, globe-ovate, cinereous ; reticulate within with white threads. On trunks in autumn.

nutans, stiped, white-cinereous ; fruit lenticular, glabrous, a little wrinkled, nodding. On trunks, leaves and mosses in autumn, or in the summer after long storms.

aurantium, stiped, fruit roundish becoming yellow ; stipe striate thickening downward. On trunks.

farinaceum, stiped ; bark of the fruit very thin, mealy-villose, cinereous. On branches of pines, on moss, &c.

11—10. PHYTOLACCA. 54. 29.

decandra (poke weed. O. w. Ju. 2.) leaves ovate, acute

(1) angulata, Wr.

at both ends : flowers racemed, berries flattened at the ends. A good substitute for the Ipecac. See Bigelow's Medical Botany. The young shoots, used as a substitute for asparagus, are an excellent remedy in cases of habitual costiveness. Antiscorbutic, cathartic, emetic. B.

22—2. PILOTRICHUM. 56. 4.

bipinnatum, stem 2-pinnate ; branches 2-ranked, pinnate : leaves imbricate, ovate, 2-nerved : peduncles arcuate, short : capsules sub-cylindric, with a conic-subulate lid : calyptre sub-pilose.

20—16. PINUS. 51. 100.

1. *Leaves solitary, with separate bases.*

balsamea, W. (1) (fir tree, balsam tree. O. M. ♄.) leaves flat, emarginate or entire, glaucous beneath, sub-erect above, recurve-spreading : cones cylindric, erect : bracts abbreviated, obovate, long-mucronate, sub-serrulate.

fraseri, Ph. (double spruce. H. J. ♄.) leaves solitary, flat, emarginate, glaucous beneath, somewhat one-sided, thick above, erect : cones ovate-oblong, erect : bracts elongated, reflexed, wedge-oblong, emarginate, short mucronate, gash-toothed.

nigra, Lb. (2) (black spruce. O. M. ♄.) leaves 4-sided, scattered on all sides of the branchlets, erect, strait : strobiles ovate ; scales oval, with undulate margins, erose-toothed at the apex.

alba, Lb. (3) (with spruce. O. M. ♄.) leaves 4-sided, incurved : strobiles sub-cylindric, lax : scales obovate, entire.

canadensis, L. (4) (hemlock tree. O. M. ♄.) leaves flat, denticulate, two-ranked : strobiles ovate, terminal, scarcely longer than the leaves. The bark is used in tanning leather.

rubra, Lb. (5) (red spruce, spruce fir. Can. New-Eng-

(1) Abies balsamifera, Mx.
(2) mariana, Du Roi. Abies denticulate, Mx.
(3) laxa, Eh. canadensis, Du Roi. Abies alba, Mx.
(4) americana, Du Roi. Abies canadensis, Mx.
(5) Abies pectinata, Lk.

land. M. ♄.) leaves solitary, subulate: strobiles oblong, obtuse: scales rounded, sub-2-lobed, margin entire.

2. *Leaves in pairs, with the bases bound together by sheaths.*

resinosa, Lb. (1) (yellow pine, norway pine, red pine. T. W. N. Catskill. M. ♄.) leaves and sheaths elongated; strobiles ovate-conic, rounded at the base, sub-solitary, about half as long as the leaves; scales dilated in the middle, unarmed. Bark of a reddish colour and much smoother than the rigida and strobus. Often grows very tall and strait.

inops, Lb. (2) (jersey pine. C. M. ♄.) leaves short: strobiles oblong-conic, recurved, of the length of the leaves: prickles of the scales subulate, strait.

banksiana, Lb. (3) (scrub pine, grey pine. State of Maine. M. ♄.) leaves short, rigid, divaricate, oblique, recurved, twisted: scales without prickles.

3. *Leaves in threes, with the bases bound together by sheaths.*

variabilis, Lb. (4) (three leaved yellow pine. New-England? M. ♄.) part of the leaves in pairs, the others in threes, slender, channelled: strobiles ovate-conic, sub-solitary; prickles of the scales incurved.

rigida (pitch pine. O. M. ♄.) leaves with abbreviated sheaths: staminate aments erect-incumbent: strobiles ovate, scattered or aggregated; spines of the scale reflexed. Though very common, it grows the most plentifully on barren sandy plains.

serotina, Mx. (pond pine. P. New-Jersey. M. ♄.) leaves elongated: prickles of the scales strait and very slender. Probably a variety of the last.

4. *Leaves in fives, with bases bound together by sheaths.*

strobus (white pine. O. M. ♄.) leaves slender; sheaths short: strobiles pendant, cylindric, longer than the leaves; scales somewhat lax. This is called Wey-

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(3) rubra, Mx. (2) virginiana, Du Roi.
(3) rupestris, Mx. hudsonia, Lk. sylvestris, A.
(4) mitis, Mx.

mouth pine by the English. Perhaps nine-tenths of the boards, used in North America, are of this species.

5. *Leaves many in a fascicle.*

pendula, A. (black larch, tamarack, hack-matack. O. M. ♄.) leaves deciduous : strobiles oblong ; margins of the scales inflexed : bracts guitar-form with a slender point.

microcarpa, Lb. (1) (red larch. P. Can. T. V. M. ♄.) leaves deciduous : strobiles roundish, few-flowered ; scales reflexed : bracts oval, obtuse, acuminate. These two last species were considered as varieties of the same ; but Mr. Lambert proved their specific difference by raising them from the seed.

† *larix* (common larch. E. ♄.) leaves deciduous : strobiles ovate-oblong ; margins of the scales reflexed, torn : bracts guitar-form.

17—10. PISUM. 82. 93.

† *sativum* (pea. E. p-w. J. ☺.) petioles terete : stipules round and crenate at the base ; peduncles many-flowered. Var. *umbellatum*, (bouquet pea) has the stipules 4-cleft, acute. Var. *quadratum*, (quadrate pea) fruit ash-colour, 4-sided. Var. *humile*, (dwarf pea) stem erect, not climbing : leafets roundish.

maritimum (sea pea. Y. C. p-b. Ju. 4.) petioles flattish above : stem angled, decumbent : stipules saggittate : peduncles many flowered. At New-Haven it grows near Whitney's gun-factory, 2 miles from the sea-shore.

4—1. PLANTAGO. 54. 31.

† *major* (plantain. O. w. J. 4.) leaves ovate, sub-dentate, sub-glabrous : scape terete : spike oblong, imbricate.

† *lanceolata* (ribwort. O. J. 4.) leaves lanceolate, villose : spike short, cylindric : bracts ovate, acuminate : scape angled, with close-pressed hairs.

† *virginica* (dwarf plantain. Y. C. P. r-y. J. ☺.) whitish pubescence on all parts : leaves lance ovate sub-den-

(1) pendula, W. larcina, Du Roi. Larix americana, Mx. who considered the pendula and microcarpa as the same species.

ticulate : flowers remotish : scape angled. The corol adheres to the germ so closely, that at first view it appears to be superior.

cordata, Lk. (1) (P. C. T. Hudson. w. J. 4.) leaves heart-ovate, broad, sub-dentate, glabrous : spike very long ; flowers sub-imbricate, lower ones scattered : bracts ovate, obtuse.

pauciflora, Ph. (D. Hudson Au. 4.) leaves lance-linear, entire, sub-glabrous : scape terete, shorter than the leaves : spike few-flowered, interrupted : bracts ovate, acute, glabrous.

cucullata, Lk. (2) (State of Maine. Ju. 4.) leaves ovate, concave-cowled, 9-nerved, pubescent beneath : spike cylindric, imbricate : scape tall, terete.

+*meadia* (P. w. J. 4.) leaves lance-ovate, pubescent : spike cylindric ; scape terete. In one variety the leaves are hirsute and the spikes branching.

maritima (L. Au. 4.) leaves fleshy, subulate linear, hairy at the base : scape terete, pubescent : spike cylindric : bracts obtuse.

+ 20—13. PLATANUS. 50. 99.

+*occidentalis* (button wood, american planetree, false sycamore. O. J. ♄.) leaves quinquangular, obsoletely lobed, toothed : stem and branches becoming white. Grows to a greater size than any other tree in America. Very frequently hollow.

3—2. POA. 4. 10.

vratensis (common meadow grass, spear grass. O. M. 4.) panicle spread : spikelets about 4 flowered : glumes lanceolate, 5-nerved, connected by down : stipules abbreviated, obtuse. Not so good as the agrostis alba for bonnets, but it has been used with success.

compressa (blue grass O. J. 4.) panicle compact, somewhat 1-sided, glabrous : culm compressed, hardly erect : florets angled, connected at the base by entangled hairs ; branches of the panicle in pairs, abbreviated ; spikelets sessile. Root creeping.

palustris, M. (3) (swamp meadow grass. C. W. M. 4.) branches of the panicle aggregated, five, glabrous ;

(1) kentuckiensis, Mx. (2) maxima, Jn. (3) crocata, Mx.

branchlets scabrous with all the florets pedicelled : calyx 2-flowered ; valves equal, acuminate, scabrous at the keel : corol with the apex of the valves yellowish and the base pubescent : leaves somewhat clasping ; stipules ovate.

annua (O. M. ☺.) panicle spreading : spikelets ovate : florets remotish, 5-nerved free (libera) : culm oblique, compressed.

nervata, W. (1) (O. J. ♃.) panicle equal, diffused, spikelets ovate, 5-flowered : flowers free, 7-nerved, obtuse : culm sulcate, subangled : root a little creeping.

hirsuta, Mx. (C. P. Ju. ♃.) panicle capillary, very branching : spikelets scattered, long-pedicelled, about 5-flowered : flowers oblong, acute, glabrous : leaves longer than the culm, glabrous ; sheaths very hirsute : culm thick erect.

brevifolia, M. (C. W ? P. M. ♃.) panicle lax ; branches in pairs, horizontal, zigzag at the apex, or in threes, glabrous : spikelets all pedicelled ; the pedicells jointed at the base : calyx 2-valved, 3 or 4-flowered, valves acute : corol with one valve, keeled, 5-nerved, pubescent : culm sub-angled, erect : lower leaves abbreviated, keeled.

capillaris (C. P. Can. Ju. ☺.) panicle lax, capillary, very spreading : spikelets 3 to 5-flowered : flowers ovate, acute, pubescent : leaves hairy at the neck : culm very branching.

trivialis (W. C. P. J. ♃.) panicle spreading : spikelets 3-flowered : glumes lanceolate, 5-nerved, connected at the base by down : stipules elongated.

aquatica, W. (Can. P. J. ♃.) panicle erect, half-whorled : branchlets zigzag : spikelets ovate, 5-flowered, thick : flowers obtuse, glabrous, 7-nerved : culm erect, glabrous, terete.

parviflora, Ph. (2) (C. P. Ju. ♃.) panicle spread, capillary, half whorled, very branching : spikelets small, about 4-flowered : flowers oblong, sub-acute, delicately striate : leaves two ways, exceeding the culm, glabrous : stipules lanceolate acuminate.

pectinacea, Mx. (D. C. V. Ju. ☺.) panicle lax, spreading, erect : spikelets linear, 12-flowered : inner valves

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(1) striata, Mx. (2) striata, Lk.

of the florets remain after the remainder of the flowers are removed, and give the rachis a comb-like appearance : flowers ovate, acuminate, 3-nerved : neck of the sheath and axils of the panicle pilose : leaves and erect culm glabrous.

†*spectabilis*, Ph. (1) (C. P. Ju. ☺.) panicle divaricate, very branching : spikelets pendant, linear, 10-flowered : flowers ovate, acute, margin and back scabrous : neck of the sheaths and axils of the panicle pilose : leaves and short erect culm glabrous.

reptans, Mx. (2) (T.P.V.C.J.☺) culm ramose, creeping : panicle fascicled : spikelets sub-sessile, very long, many-flowered : flowers oblong, acute, lax : leaves short, pubescent. A very delicate grass

obtusa, M. (P. D. New-England. Au. 4.) panicle crowded, crispid, contracted ; branches in pairs or in threes, crowded ; branchlets zigzag : calyx 2-valved, less than the corol, 5 to 7-flowered ; valves white at the apex, obtuse or acute : outer valve of the corol obtuse, 5-nerved, glabrous : culm erect, glabrous.

philadelphica, B. (3) (P.) panicle elongated, almost simply branched at the base ; branches erect : spikelets compressed, oblong-ovate, obtuse, 8 to 15-flowered, peduncles short : valves of the calyx acute, inner one 1-nerved, outer one 3-nerved : corol 3-nerved, equal in length to the calyx : culm weakish and sub-compressed : leaves flat, smooth ; stipules obsolete, bearded. About 18 inches high.

maritima ? M. (New-England) panicle erect, with a glabrous, striate rachis ; branches in threes, the middle one shorter ; branchlets gradually thickening below the calyx : valves unequal, obtuse, one broader, 4-flowered : corol 2-valved, larger than the calyx : culm and leaves striate, glabrous : stipules abbreviated, torn. On the sea-shore.

uniflora, M (New-England. D.) panicle very slender, stiffly erect ; branches solitary, erect, scabrous : calyx 1-flowered, bifid at the apex : corol larger than the calyx, becoming black : leaves setaceous striate. This can hardly be called a poa, as the calyx is but 1-flowered.

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(1) Megastachya, Rs. (2) Megastachya, Rs.
(3) obtusa, N.

pungens, N. (P. Ap.) panicle small, half-whorled alternately, spreading horizontally, terminating in a subsimple raceme ; branches capillary, mostly in pairs or in threes : calyx smooth, inner valve acute : corol lance-ovate, obtusish, scarious at the tip, villose at the base, obsoletely 5-nerved : radical leaves erect, long and narrow ; leaves of the culm generally 2, flat, lance-oblong, scabrous at the margin.

Podalyria, see Baptisia.

13—1. PODOPHYLLUM. 27. 61.

peltatum (wild mandrake, may-apple. O w. M. 4.) stem terminated with 2 peltate palmate leaves ; flower single, inserted in the fork, formed by the petioles of the leaves. Sometimes the plant is 3-leaved, and sometimes the flower is inserted on the side of one of the petioles. Cathartic. B. In open woods and meadows.

20—2. PODOSTEMUM. 54. 6.

ceratophyllum (thread-foot. N. P. Ju. 4.) stem filiform, floating : leaves pinnate : flowers axillary. Attached to rocks and large loose stones in shallow waters. Found in Muddy Brook, Deerfield, Mass. by Dr. Cooley.

19—1. POGONIA. Br. (1) 7. 21.

ophioglossoides (snake-mouth arethusa O. r. Ju. 4.) root fibrous, scape with 2 distant leaves, 1 or 2-flowered : leaves lance oval : lip fringed. About 8 inches high, in damp places.

verticillata (Great Barrington and Deerfield, Mass. P. y. r. J. 4.) leaves 5, in whorls, lance-oblong : stem generally 1-flowered ; 3 outer petals long-linear, inner ones lanceolate ; lip 3-lobed, middle division undulated. Var. *medeoloides*, inner petals short obtuse : leaves more acuminate.

5—1. POLEMONIUM. 29. 44.

reptans, W. (greek valerian. P. b. M. 4.) leaves pinnate, in sevens : flowers terminal, nodding.

(1) Arethusa, L.

6—1. Polyanthes. 10. 17.

tuberosa (tuberose. E. ♃.) flowers alternate in pairs: rootlets tuberous: scape scaly: leaves linear, long. Sweet scented.

17—6. Polygala. 33. 35.

incarnata (milkwort. C. r. J. ☺.) stem somewhat simple, erect: leaves scattered, subulate: spikes oval-oblong: corol with a slender, elongated tube: flowers crested.

rubella, W. (false low-centaury, ground-flower. Y. C. P. r. J. ♃.) pubescent: stem simple, erect: leaves narrow-lanceolate, acute: raceme terminal: bracts subulate, solitary, caducous: wings of the flower nerve-veined, round-truncate, longer than the rest. This curious plant is very abundant on the sand plains west of Ball's spring in New-Haven. In the latter part of summer it sends off flowering shoots under ground, which produce numerous abortive capsules.

paucifolia, W. (flowering wintergreen. O. r. M ♃.) small, large-flowered: stem simple, erect, naked below: leaves ovate, acute, glabrous, near the top of the stem: flowers crested, terminal, about in threes. Three or four inches high; and differs much from the rest of the species—the leaves and flowers being much larger in proportion to its size.

uniflora, Mx. (Lake Ontario. ♃.) small: stem simple, erect, nakedish below: leaves few, broad-ovate, narrowing into the petiole: flowers not crested, solitary, scattered, pedicelled, nodding.

senega (seneca snake-root. T. C. P. Hudson. r. or w. J. ♃.) stem erect, simple, leafy; leaves alternate, lanceolate: spike terminal, filiform: flowers alternate, not crested Strongly diuretic, expectorant, sudorific, emetic and cathartic. B.

lutea (yellow milkwort. C. y. Ju. ☺. or ♄.) stem simple or branching: radical and lower cauline leaves spatulate, the others lanceolate: spike head-cylindric, crowded, peduncled.

sanguinea (O. r. Ju. ☺.) stem erect, corymb-branched at the top: leaves alternate, linear: flowers not crested, in a head-form spike; peduncles squarrose. Damp.

purpurea, N. (O. Nuttall. r. ☺.) stem fastigiate-branch-

ed : leaves alternate, oblong-linear : flowers beardless ; spikes cylindric, obtuse, imbricated on a squarrose rachis : wings of the flower cordate-ovate, twice as long as the capsule.

+ *verticillata* (dwarf snake-root. O. w. J ☺.) stem erect, branching : leaves whorled and scattered : spike filiform, peduncled, flowers distinctly alternate, approximate, crested. About 6 inches high, of a bluish appearance.

ambigua, N. (D. p. ☺.) first leaves whorled, the others alternate : stem with wand-like branches : spikes acute, long-peduncled : flowers bearded or crested, wings round and veined, equal, and close-pressed to the fruit : bracts caducous.

fastigiata, N. (D. ☺.) stem slender, fastigiate-branched : leaves alternate, linear, acute : spikes sub-capitate, peduncled : flowers somewhat crested, wings of the flower spreading, ovate acute, scarcely longer than the capsule.

brevifolia, N. (D. r. Ju. ☺.) stem erect, fastigiate-branched, angular-winged : leaves oblong-linear, short, resinous-punctate, in fours, whorled : spikes sub-capitate peduncled : flowers somewhat crested : wings cordate-ovate, acute, scarcely longer than the capsule.

cruciata, W. (P. N. Y. r. g. Ju. ☺.) stem erect, ramose, wing-angled : leaves in fours, lance-linear : flowers in spiked sessile heads, not crested.

Polygonatum, see Convallaria.

8—3. Polygonum. 12. 28.

1. *Flowers axillary.*

+ *aviculare* (knot-grass. O. w. M. 𝔍.) stamens 8, styles 3 : leaves lanceolate, scabrous at the margin ; stipules nerved, remote : stem procumbent : flowers sessile, small.

† *glaucum*, N. (D. w.) stamens 8, styles 3, stem diffuse, prostrate : leaves lance-ovate, thick, glaucous : pedicels as long as the flowers.

erectum, Roth. (O. w. J. 𝔍.) stem erect, branched : leaves oval ; stamens mostly five.

tenue, Mx. (1) (slender knot-grass. O. w. Ju. ☺.) leaves long-linear, strait, acuminate : stipules tubular, apex villose : stem slender, erect, branched, acute-angled : flowers alternate, sub-solitary.

2. *Flowers in slender spikes.*

+ *lapathifolium*, A. (P. r-w. Au. ☺.) stamens 6, styles 2 : stipules awnless : peduncle scabrous : seeds concave on all sides.

punctatum, E. (2) (water-pepper, biting knotweed. O. w. Au. ☺.) stamens 8, styles 3 : leaves lanceolate, glabrous : stipules lax, glabrous, ciliate at the apex, spotted : spike filiform, weak, somewhat nodding : bracts remotely alternate.

+ *mite*, P. (3) (tasteless knotweed. C. P. J ☺.) stamens 8, styles 3 : leaves narrow lanceolate, sub-hirsute : stipules hirsute, long-ciliate : spikes linear : bracts ciliate sub-imbricate.

+ *virginianum* (C. Y. P. V. T. w. Ju. 4.) stamens 5, styles 2, unequal : leaves broad oval : spikes wand-like : flowers remote.

3. *Flowers in thick crowded spikes.*

viviparum, Ph. (Whitehills. Au. 4.) stem simple : leaves lance-linear, glabrous, margin revolute : spike single, linear : bracts ovate, acuminate. Dr. Bigelow and Mr. Boot found this species growing on the Whitehills in New-Hampshire. Natural history in all its departments is greatly indebted to the incessant exertions of these two gentlemen.

+ *coccineum*, W. (4) (lake knotweed. W. C. N. T. P. r. Au. 4.) stamens 5, styles 2, or 1 half 2-cleft : spikes cylindric, dense : stipules truncate, glabrous : leaves ovate or oval, petioled.

natans (floating knotweed, Whiting's pond. r. Au. 4.) stamens 5 : styles 2, or 1 half 2-cleft : leaves lanceolate, glabrous, near the top of the stem ; petiole filiform, half as long as the leaf : stipules not ciliate : peduncle of the spike smooth : stem very long, lax, filiform, submersed-floating, leafless under water and

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(1) linifolium, M. barbatum, Wr.
(2) hydropiper, Mx. hydropiperoides, Ph.
(3) hydropiperoides, Mx. (4) amphibium, Mx.

rooting. Stems generally brown, often 10 to 15 feet in length and from the eighth to the sixteenth part of an inch in diameter; though generally larger and not so long. It is the P. amphibium. Var. natans of Mx. and a variety of the coccineum of Willdenow. But it appears sufficiently distinct for a species. It grows plentifully in Whiting's pond, 5 miles south of New-Lebanon springs.

† *barbatum*, W. (P. r-w. Ju.) stamens 6, styles 3: spikes wand-like, truncate, bristle-ciliate: leaves oblong-acute, smoothish. Barton says, it is common at Philadelphia.

† *persicaria* (ladies' thumb, heart-spot knotweek. O. r. Ju. ☺.) stamens 6, styles 2: spikes ovate-oblong, erect: peduncles smooth: leaves lanceolate: stipules smoothish, ciliate.

pensylvanicum (knee knotweed. O. Ju. ☺.) stamens 8, styles 2 or 1: spikes oblong: peduncles hispid: leaves lanceolate: stipules glabrous, not ciliate: stem with swelling knee-joints.

† *orientale* (prince's feather. E. r. Au. ☺.) stamens 7, styles 2: leaves ovate: stem erect, tall: stipules rough-haired, somewhat salver-form. Grows 5 or 6 feet high. It has become naturalized in many places.

4. *Flowers in spiked-panicled racemes.*

articulatum, W. (joint-weed. T. D. N. Granby (Con.) P. r. w. Ju. ☺.) stamens 8, styles 3: racemed spikes in a panicle, filiform: peduncles filiform, solitary, proceeding from above the imbricate truncate bracts: leaves linear: stipules sheathing, truncate. About a foot high, terminated by delicate racemes; to which the bracts give a jointed appearance. Very abundant on the sandy plains west of Albany.

5. *Flowers sub-racemed; leaves cordate-sagittate or hastate.*

† *sagittatum* (prickly knotweed. O. w. J. ☺.) stamens 8, styles 3 or 1; flowers in heads: leaves sagittate: stem with prickles reversed, or curved towards its base, climbing.

† *arifolium* (halbert knotweed. O. r-w. Ju. ☺.) stamens 6, styles 2 or 1; flowers distinct: spikes few-flowered:

leaves hastate : stem with prickles reversed, sub-erect.

fagopyrum (buck-wheat. E. r-w. Ju. ☺.) stamens 8, styles 3 : racemes panicled : leaves heart-sagittate : stem erectish, unarmed : angles of the seeds equal.

convolvulus (bind knotweed. O. w. r. Ju. ☹.) stamens 8, styles 3 : leaves oblong, heart-hastate : stem twining, angled, roughish : divisions of the calyx obtusely keeled.

scandens (climbing buckwheat. O. w. r. Au. 4.) stamens 8, styles 3 : leaves broad-cordate : stipules truncate, naked : stem twining, glabrous : calyx bearing the fruit 3 winged.

cilinode, Mx (P. Can. Ju. ☺.) stamens 8, styles 3 ; leaves cordate : stipules sub-acute, surrounded at the base with an outer ciliate series : stem angled, prostrate or climbing, roughish : divisions of the calyx obtusely keeled.

18—4. Polymnia. 49. 55.

canadensis, W. (white leaf-cup. P. Can. w. or y. J. 4.) viscid-villose : leaves denticulate, acuminate ; lower ones pinnatifid, upper ones 3-lobed or entire. Two or three feet high. Smell balsamic.

uvedalia, W. (1) (yellow leaf-cup. P. y. Ju. 4.) leaves opposite, 3-lobed, acute, decurrent into the petiole : lobes sinuate-angled : rays elongated. Taller than the last.

22—1. Polypodium. 55. 5.

vulgare, Sh. (polypod. O. Ju. 4.) frond deeply pinnatifid ; divisions lance-linear, obtuse, crenulate, approximate, upper ones gradually smaller : fruit-dots solitary : root chaffy. Var. *virginianum*, has a naked root.

hexagonopterum, W. (O. Ju. 4.) frond doubly pinnatifid, smoothish ; two lower divisions deflexed ; sub-divisions lanceolate, obtuse, ciliate, those of the under leafets gash-crenate and of the upper ones entire ; the lowest ones adnate-decurrent : fruit-dots minute, solitary. The whole frond together presents a triangular form.

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(1) maculata, Cavanilles.

connectile, W. (W. V. Can. Ju. 4.) frond doubly pinnatifid, ciliate, divisions opposite contiguous, adnate : subdivisions somewhat oval : stipe chaffy : fruit-dots minute.

calcareum, W. (1) (W. P. Ju. 4.) frond ternate, doubly pinnate, strait, subrigid ; divisions obtusish, sub-entire : fruit dots marginal, confluent.

22—2. POLYTRICHUM. 56. 4.

1. *Capsules with apophyses.*

juniperinum (hair-cap moss. O. M. 4.) stem generally simple : leaves lance-linear, entire, flattish, somewhat spreading : the apophysis depressed. In dry woods, &c.

piliferum, stem simple : leaves lanceolate, entire, bearing hairs at the apex : apophysis depressed. In dry sunny places.

perigonale, simple, largish : leaves serrate ; those of the pericheth differing, elongated, membranaceous, ending in a capillary form : capsule 4-sided ; lid orbicular, with a short apex in the centre. Apophysis under the capsule.

2. *Capsules without apophysis.*

capillare, stem short, simple : leaves few, laxish, linear, aculeate-serrate : peduncles longish, capillary : capsule erect, sub-ovate ; lid convex, abruptly-mucronate, slender, longish.

brachyphyllum, stemless : leaves conglobate at the root, very short, oblong-oval, apex obtuse and thickish : capsules sub-corneous, obovate, sub-oblong ; lid with a short apex.

brevicaule, stemless : leaves very few, lower ones close-pressed, dilated into an oblong form. upper ones mucronate-subulate, obscurely denticulate : capsule erect, oblong-cylindric ; lid convex, long-mucronate, inclined.

+ 6—1. PONTEDERIA. 6. 17.

+ *cordata* (pickerel weed. T. V. P. Y. C. Westfield, Mass.

(1) dryopteris, Nephrodium dryopteris, Mx.

b. Ju. 4.) leaves heart-oblong, obtuse : spike many-flowered, compact : divisions of the corol oblong. In wet places.

21—18. Populus. 50. 99.

tremuloides, Mx. (1) (white poplar, american aspen. O. Ap. ♄.) leaves heart-roundish, abruptly acuminate, tooth-serrulate, glabrous, a little pubescent at the margin, with 2 glands at the base on the upper side ; petioles compressed, in the young state silky. The flatness of the petioles causes the leaves to take a tremulous motion, from the slightest action of the atmosphere.

grandidentata, Mx. (tree poplar. O. Ap. ♄.) leaves round-ovate, acute, unequally and coarsely sinuate-toothed, glabrous ; in the young state villose : petioles compressed.

betulifolia, Ph. (2) (birch-leaf poplar. D. T. V. Ap. ♄.) leaves rhomboidal, long-acuminate, dentate, glabrous : young branches pilose.

angulata (balm-of-gilead, water poplar, cotton wood. O. Ap. ♄.) leaves ovate-deltoid, acuminate, obtusely hook-toothed, glabrous ; younger ones broad-cordate : branches wind-angled.

balsamifera, Wm. (balsam poplar. T. V. W. N. Can. Ap. ♄.) leaves ovate, acuminate, close-pressed, serrate, rusty or mealy under side ; buds resinous.

candicans, A. (3) (C. New-England. Ap. ♄.) leaves cordate, ovate, acuminate, obtusely and unequally serrate, whitish beneath, sub-3-nerved, net-veined ; petioles hirsute : buds resinous : branches terete.

laevigata, W. (4) (cotton tree. T. P. Ap. ♄.) leaves round-ovate, deltoid, acuminate, sub-cordate, unequally serrate, glabrous, glandular at the base ; petioles compressed : younger branches angled. Dr. L. C. Beck, found it near Albany.

heterophylla, Mx. (various-leaved poplar. P. M. ♄.) leaves round-ovate, cordate, with a small sinus, subauricled, obtuse, hook-toothed ; younger ones downy.

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(1) trepida, W.
(2) hudsonica, Mx. younger. nigra, Mx elder.
(3) latifolia, Mn. (4) canadensis, Mx.

dilatata (lombardy poplar, italian poplar. E. Ap. 4.) leaves glabrous both sides, acuminate, serrate, deltoid, the breadth equal to or exceeding the length : branches erect, close to the stem. It is said that no pistillate plant of this species has been brought to America. Consequently no seeds are obtained from it, and it has not been reproduced here from seed.

13—15. PORCELIA. 52. 76.

triloba, P. (1) (custard apple. P. p. Ap. ♄.) leaves smoothish, oblong-wedge-obovate : outer petals orbicular : fruit large, fleshy.

22—5. PORINA. 57. 2.

pertusa, crust smooth, equal, becoming white-cinereous : warts of the receptacles sub-globose ; mouths many, depressed, black. On the bark of trunks of trees. Very common.

lejoplaca, crust smooth, milk-white : warts of the receptacles convex ; mouth sub-solitary, becoming fuscous, opening into irregular chinks. On bark of trunks of trees.

fallax, crust sub-effuse, glabrous, plicate-rugose, olive-cinereous, warts of the receptacle crowded, irregular, depressed above, sub margined with a sub-gibbose, flexuose, tumid periphery ; mouths solitary and numerous, sub-confluent, deformed, black. On bark of trees.

papillata, crust smooth, broken-rimose, becoming white : warts of the receptacle convex : mouth elevated, solitary, papilla-like, pore reddish-yellow, pertuse. On bark of trees.

globularis, crust thin, granulated, becoming white-cinereous ; granulations crowded, white, sub-globose and branching : warts of the receptacles thinly scattered, globose, glabrous ; mouth solitary, impressed, punctate, black.

10—10. PORTULACCA. 54. 86.

oleracea (purslane. O. y. J. ☺.) leaves wedge-form : flowers sessile.

(1) Anona, W. Orchidocarpum arietinum, Mx

4—4. POTAMOGETON. 15. 13.

natans (pondweed. O. g. J. 2.) leaves long-petioled, floating, lance-oval; at first some of them are sub-cordate. On water.

fluitans (O. g. Ju. 2.) lower leaves long, linear; upper ones lanceolate, nerved, coriaceous; all petioled. In water.

heterophyllum, W. (1) (P. C. g. Ju. 2.) upper leaves petioled, oval, tapering to both ends; lower ones crowded, sessile, linear.

diversifolium, E. (2) (T. D. g. Ju. 2.) floating leaves opposite, lanceolate, 5 nerved, short-petioled; sub-mersed ones sessile alternate, filiform: spikes dense, axillary, alternate, shorter than the leaves. Water.

perfoliatum (P. C. T. Can. g. Ju. 2.) leaves heart-ovate, clasping, all immersed: spikes terminal, above water; flowers alternate. In water.

lucens, Mx. (O. g. J. 2.) leaves very large, lanceolate, sub-sessile, middle rib thick: spikes long, cylindric. The substance of the leaf is composed of translucent cellules; so that to the naked eye it appears to be a thin pallucid membrane. Spike from 1 to 2 inches long, with a peduncle thrice as long. The stipule above each leaf is about an inch in length; its substance resembling the leaf. Water.

crispum (Can. P. r-g. J. 2.) leaves alternate, or opposite, lance-oval, undulate, serrate: spikes few-flowered.

pectinatum, S. (3) (Can. T. C. Hudson. Pittsfield. P. g. J 2.) leaves long-bristle-form, approximate, two-ranked, sheathed at the base: spikes terminal, interrupted, whorled: fruit ovate, turgid. All immersed in water but the spike.

gramineum, Mx. (grass pondweed. D. W. V. P. T. g. Ju. 2.) leaves lance-linear, alternate, sessile: stipules broad: stem terete, sub-dichotomous. In July some of these plants begin to raise their spikes of unopened flower buds to the surface of the water. As soon as the stigmas are fertilized by the pollen, the spikes are

(1) porcatum, M. (2) setaceum, Ph.
(3) marinum, Mx.

again withdrawn to ripen the fruit under water. Other individuals, succeed them, and the process goes on for several weeks.

compressum, W. (P. T. C. g. Ju. ☉. or 4.) leaves linear, obtuse : stem compressed : spikes short, 4 to 6-flowered. Water.

12—13. POTENTILLA. 35. 92.

1. *Leaves ternate.*

norwegica (cinquefoil O. y. J. ☺.) erect, branching, hairy : stipules oval, toothed : leafets lance-rhombic, gash-toothed : branches dichotomous : pedicels short, axillary, solitary : petals shorter than the calyx. Large.

tridentata, A. (mountain cinquefoil. H. w. Ju. 4.) ascending, smoothish : stipules subulate : leaves wedge-oblong, 3-toothed at the end, a few close-pressed hairs : flowers in a terminal forked corymb : petals oblong-ovate, longer than the calyx. Grows plentifully north-east from Williams college on the mountain.

hirsuta, Mx. (Can. western part of New-York. w. Ju. 4) erect, simple, very hirsute : stipules lanceolate, entire : leaves obovate, gash-laciniate : panicle few-flowered ; panicles short : petals smaller than the calyx.

2. *Leaves digitate in fives, rarely in sevens.*

canadensis (common five-finger. O. y. M. 4.) procumbent, sub-ramose, whitish-silky : stipules ovate, gashed : leaves wedge-obovate, gash-toothed : stem ascending and creeping, hirsute : peduncles solitary, elongated, divisions of the calyx lance-linear : petals orbicular sub-entire, of the length of the calyx. This plant is so long in flower, and assumes so many forms and sizes, that students in botany often make several species of it. Persoon's diagnosis of *reptans* can be found in this plant ; but we have no such species.

simplex, Mx. (C. T. V. P. y. M. 4.) erect, unbranched, hirsute : stipules gashed : leaves oblong-oval, coarsely toothed, upper ones sessile : peduncles axillary, solitary, elongated, 1-flowered : divisions of the calyx lance-linear : petals round-obcordate, longer than the calyx

argentea (silver five-finger. O. w-y. Ju. 4.) stem prostrate and ascending, rarely sub erect, branching, white-downy : stipules ovate acute : leaves wedgeform, gash-toothed, silvery white down beneath : petals retuse, scarcely longer than the calyx. Willdenow's description of this plant is certainly erroneous ; and I have ventured to correct it.

recta, P. (P. y. J. 4.) stem erect : leaves in fives and sevens ; leafets lanceolate, coarsely toothed : petals obcordate, larger than the calyx. Corol large, pale.

3. *Leaves more or less pinnate.*

fruticosa (shrubby cinquefoil. V. W. C. P. Stockbridge, Mass. y. J. ♄.) erect, very branching, hirsute : stipules ovate, entire : leaves quinate-pinnate ; leafets linear, oblong, flat ; petals long : branchlets 1 or 2-flowered : five alternate divisions of the calyx linear ; the rest broad-ovate, acute : petals obovate, longer than the calyx. 3 to 5 feet high. Damp.

floribunda, Ph. (1) (C. Can. y. Ju. ♄) erect, very branching, hirsute : stipules ovate, entire : leaves quinate-pinnate ; leafets linear-oblong, margin revolute ; petioles short : corymbs terminal, dichotomous, dense-many-flowered : divisions of the calyx sub-equal : petals roundish, of the length of the calyx. About 18 inches high, and resembles the last.

anserina, W. (tansy cinquefoil. P. Can. T. y. J. 4.) creeping : leaves interruptedly pinnate, numerous, gash-serrate, silky, white downy beneath : peduncles solitary, 1-flowered. On the banks of the Hudson, near Troy.

pensylvanica, Mx. (2) (C. P. W. V. T. y. Ju. 4.) erect, down soft and whitish : leaves pinnate ; leafets oblong, obtuse, sub-pinnatifid, tomentose : panicle strait, many-flowered : divisions of the downy calyx semi-oval. Var. *strigosa*, has tooth-pectinate leaves with revolute margins ; flowers corymbed.

supina, W. (Can. P. y. J. ☺.) procumbent, dichotomous : leaves pinnate ; leafets oblong, deeply toothed : peduncles lateral, solitary, 1-flowered, spreading : leaves pinnate ; leafets serrate : flowers in heads.

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(1) Sprengel in a letter to Prof. Dewey, says this is the fruticosa of L.
(2) Geum agrimonioides, Ph.

20—13. POTERIUM. 54. 92.

sanguisorba (burnet. E. J. 4.) stem somewhat angled, unarmed : leaves pinnate ; leafets serrate : flowers in heads.

Pothos, see Ictodes.

18—1. PRENANTHES. 49. 53.

alba (white lettuce. O. w. p. Au. 4.) radical leaves angled, hastate, toothed, somewhat lobed ; cauline ones round-ovate, toothed, petioled ; uppermost ones lanceolate : panicle lax, the terminal fascicle nodding : calyx 8-cleft, 9 or 10-flowered. About two or three feet high.

altissima (O. p-y. Au. 4.) stem branching : leaves petioled, 3-lobed, angled, denticulate, margin scabrous : racemes axillary : flowers nodding : calyx about 5-flowered. Very tall.

cordata, W. (D. w-y. Au. 4.) stem panicled above : leaves petioled, cordate, toothed, ciliate ; floral ones sessile, oblong, entire : panicle lax, raceme-flowered. Tall.

virgata, Mx. (1) (P. D. C. Pittsfield, Mass. w p. Au 4.) glabrous : stem very simple : leaves all lyrate-sinuate : branchlets somewhat one-sided : flowers pendant : calyx glabrous, 8-cleft, 10-flowered. 3 to 6 feet high.

5—1. PRIMULA. 21. 34.

acaulis (primrose. E. 4.) leaves rugose, toothed, hirsute beneath : scape 1-flowered.

veris (cowslip primrose. E. r-y. 4.) leaves rugose, toothed : limb of the corol concave ; neck of the tube oblong, calyx inflated.

elatior (oxlip primrose. E. w-y. 4.) leaves rugose, toothed, hirsute : limb of the corol flat, neck of the tube hemispheric ; flowers naked within.

auricula (auricula primrose. E. 4.) leaves serrate, fleshy, obovate : scape many-flowered : calyx mealy.

farinosa (bird's eye primrose, Can. r. 4.) leaves rugose, crenate, sub glabrous, mealy beneath ; umbel erect.

(1) autumnalis, Wr. rubicunda ? W.

mistasinica, Mx. (Can. 4.) small, glabrous: leaves oval-spatulate, sub-dentate: scape elongated: umbel few-flowered: limb of the corol reflexed, the divisions wedge-oblong, obtusely 2-cleft: capsule oblong, exsert.

6—1. PRINOS. 43. 95.

verticillatus, L. (1) (winter berry, false alder. O. w. J. ♄.) leaves oval, serrate, acuminate, pubescent beneath: fascicles of staminate flowers axillary, umbelliferous; the pistillate flowers are aggregated; both 6-parted. Sometimes this shrub is monoecious and sometimes perfect-flowered. Generally in wet places. Berries red, permanent. Damp or wet. Astringent and antiseptic, applied externally and internally. B.

glaber (ink berry. C. P. Can. Ju. ♄.) leaves evergreen, wedge-lanceolate, coriaceous, glabrous, shining, equally sub-dentate above: pedicels axillary, sub-solitary, mostly 3-flowered. A low shrub.

laevigatus, Ph. (D. C. P. Ju. ♄.) leaves lanceolate, close-pressed-serrate, acuminate, glabrous both sides, shining at the upper side, hardly pubescent at the nerves beneath: pistillate flowers axillary, solitary, sub-sessile; staminate flowers scattered—all 6-cleft.

ambiguus, Mx. (D. T. w. Ju. ♄) leaves oval, acuminate at both ends, mucronate-serrulate, sub-pubescent beneath: flowers 4 or 5-cleft; staminate ones crowded together at the lower branches, pistillate ones solitary. Wet or damp.

3—3. PROSERPINACA. 15. 22.

palustris (mermaid weed. Y. C. P. Boston, Pittsfield. g. Ju. ☺.) leaves linear-lanceolate, serrate above water; pinnatifid below. Water.

pectinata, Lk. (C. P. g. Ju. ☺.) leaves all pectinate-pinnatifid. Water.

14—1. PRUNELLA. 42. 39.

pensylvanica, W. (heal-all, self-heal. O. J. 4.) leaves petioled, oblong-ovate, toothed at the base: lips of the

(1) gronovii, Mx.

calyx unequal, upper one truncate, awned : stem ascending. Willdenow calls this the *vulgaris*, and says the *pensylvanica* has the lips of the calyx equal, and that the upper one is 3-awned. But Muhlenberg has not adopted this division of the species.

12—1. PRUNUS. 36. 92.

† *virginiana*, W. (1) (wild cherry, rum cherry, cabinet cherry. O. w. M. ♄.) racemes erect, elongated : leaves oval-oblong, acuminate, unequally doubly-toothed, glabrous both sides ; petioles generally bearing 4 glands. In open fields the limbs of this tree spread out into an elegant oval top. But in dense forests it grows to a very great height, with a few contracted branches. The bark is an excellent tonic.

serotina, W. (2) (choke-cherry. O. w. J. ♄.) flowers in lax racemes : leaves simply serrate ; lower serratures sub-glandular, middle rib bearded towards the base. In Muhlenberg's catalogue the English names of this and the preceding species are exchanged ; probably through the mistake of the printer. Pursh seems, by his popular remarks, to have totally mistaken this and several other species of the Prunus.

canadensis, W. (Can. P. w. ♄.) flowers in racemes : leaves glandless, broad-lanceolate, rugose, sharply serrate, pubescent both sides, tapering into the petiole.

pensylvanica, A. (C. P. New-England. w. M. ♄.) umbels sub-sessile, aggregated, many-flowered, and at length panicle-form : leaves lance-oblong, serrate, glabrous, 2 glands at the base : branchlets punctate.

nigra, W. (T. W. P. w. M. ♄.) umbels sessile, solitary, few-flowered : leaves ovate, acuminate, unequally and sharply serrate, glabrous both sides : petioles with 2 glands.

pygmaea, W. (american sloe. New-England. w. M. ♄.) umbels sessile, aggregated, few-flowered ; leaves oval-ovate, acute, glabrous both sides, sharply serrate, 2 glands at the base.

hiemalis, Mx. (winter plum. Can. P. w. M. ♄.) pedicels aggregated, glabrous : divisions of the calyx lanceolate : stipules setaceous, compound : leaves oblong-

(1) rubra, A. Cerasus, Mx. (2) virginiana, Miller.

oval, or obovate, abruptly long-acuminate : fruit sub-ovate.

chicasa, Mx. (1) (summer plum, meadow plum. O. w. M. ♄.) branches very glabrous, somewhat thorny : leaves oblong-oval, acute or acuminate, minutely serrulate : buds aggregated, each about 2-flowered : pedicels very short : divisions of the glabrous calyx obtuse ; fruit sub-globose. The plums are yellow and reddish.

sphaerocarpon, Mx.(2) (along the maritime parts of New-England. C. w. M. ♄.) leaves short-oval, serrulate, generally 2 glands at the base : calyx with fine hairs : drupe spherical : not round-oval.

maritima, Mx. (C. w. M. ♄.) peduncles sub-solitary : leaves ovate-oblong, acuminate, doubly-serrate. Pursh has copied in the P. *acuminata* of Mx. as a synonym, which is—branchlets glabrous : leaves oblong-oval, long acutely-acuminate : calyx glabrous : drupe long-peduncled, ovate, acuminate.

pumila, Mx. (P. W. w. M. ♄.) umbels sessile, aggregate, few-flowered : calyx-acute : branches wand-terete : leaves narrow-lanceolate, serrate above, the under sides pale.

depressa, Ph. (sand cherry. P. T. Can. w. M. ♄.) umbels sessile, aggregate, few-flowered : calyxes obtuse : branches angled, depressed-prostrate : leaves wedge-lanceolate, remotely serrate, glabrous, glaucous beneath : fruit ovate. Is this the pumila ?

spinosa, W. (english sloe. P. W. ♄.) peduncles solitary : leaves lance-oval, pubescent beneath : fruit strait : branches thorny. Said to be introduced.

susquehanna, W. (P. w. M. ♄.) peduncles solitary : leaves obovate-oblong, glaucous beneath, serrate, entire at the base.

cerasifera, W. (P, w. M. ♄.) peduncles solitary : leaves oval, glabrous : fruit pendant : branches almost thornless.

cerasus, (garden cherry. E. w. r. ♄.) umbel sub-peduncled : leaves lance-ovate, glabrous, conduplicate.

padus (bird cherry. E. w. M. ♄.) flowers racemed, lax : leaves doubly-serrate, sub-rugose, petioled, with two glands.

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(1) insititia, Wr (2) pubescens, Ph.

avium (small bird cherry. E. w. ♄.) umbels sessile: leaves lance-ovate, pubescent beneath, conduplicate.
domestica (plum. E. w. M. ♄.) peduncles sub-solitary: leaves lance-ovate, convolute: branches thornless. Var. *juliana* (damson plum) fruit oblong, blue. Var. *claudiana* (sweet plum, horse plum) fruit round, at first green, becoming yellowish. Var. *enucleata* (stoneless plum) the putamen obsolete.

Prunus, see ARMENIACA.

22—2. PTERIGOPHYLLUM. 56. 4.

rigidum, stem erect, pinnate above; leaves somewhat 2-ranked, obovate, mucronate, serrate, 2-nerved.

22—2. PTERIGYNANDRUM. 56. 4.

intricatum, creeping and rooting entangled: branches simple, short: leaves concave, acuminate, lanceolate, lengthened out: capsule oblong-ovate; lid sub-oblique. On the trunks of trees.
julaceum, stem erect, terete: leaves thick-imbricate, oval acuminate, smooth: peduncles scarcely projecting out of the long pericheth: capsules short-ovate; lid conic: calyptre glabrous. On trunks of trees.
brachycladon, stem creeping; branches very short, crowded, erect, simple, terete, acutish: leaves lance-ovate, acuminate, nerveless: capsules erect, sub-cylindric with a long-conic, sub-oblique lid.
hirtellum, branchlets slender-filiform, simple, short: leaves imbricated in a cylinder, sub-cordate, a little hirsute, fringed: capsule oblong: lid long-conic. On trees.
sub-capillatum, creeping, rarely rising, simple, flower-bearing: leaves ovate-acuminate with a halved prolongation, imbricate: capsule oblong: lid beaked: calyptre sub-pilose.

22—1. PTERIS. 55. 5.

aquilina (common brake. O. Ju. 4.) frond pinnate-3-parted; barren branches doubly pinnate, with leafets lance-linear, obtuse pinnatifid, toothed; fertile branch-

es pinnate, with leafets pinnatifid, divisions acutish—all ciliate.

atropurpurea (rock brake. T. C. W. P. Cattskill. Ju. 4.) frond pinnate; lower leafets lanceolate, obtuse, ternate or pinnate; at the base obtusely truncate or subcordate. From three to ten inches high, bluish green, leaves stiff. In ripening, the marginal involucre unrolls, and the capsules on opposite sides meet; so that it exhibits the generic character of the Acrostichum. Stipe dark purple.

gracilis, Mx. (Can. Ju. 4.) frond pinnate; leafets lanceolate, obtuse, alternate, sessile, lower ones pinnatifid, fertile ones entire, barren ones crenate, round-obtuse. About 4 inches high.

caudata, Jn. (P. Au. 4.) frond 3-parted-pinnate: barren branches doubly-pinnate, leafets linear, elongated, obtuse, entire, lower ones doubly pinnatifid; fertile branches pinnate, leafets remotish below, at the base pinnatifid toothed.

10—1. PTEROSPORA. 18. 51.

andromeda, N. (1) (Albany beech-drops. T. r-y. Ju. ☺.) scape purple, very tall, bearing a many-flowered raceme: flowers lateral and terminal, nodding: peduncles filiform, longer than the flowers: lanceolate scales below, none above. Found at Greenbush by E. James, and in great abundance a mile south of Albany, by A. B. Eaton.

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(1) Monotropa procera, 2d. ed. This plant was discovered near Albany, in the summer of 1817, by Dr. Edwin James. He considered it a Monotropa, and I published it as described by Dr. Torrey, in the 2d ed. of this work, under the name M *procera*. Certainly the Monotropa, Hypopithis and Pterospora, ought to be united in one genus with some extention of the generic description, *if the genus is to give the character*, according to the maxim of Linneus. The present rage for cutting up genera has gained such an ascendancy, that I am compelled to yield to it, though with pain and regret. Every *artificial character* is seized with greadiness and applied with great ingenuity in mangling the Linnean system of genera. I consider it the ephemeral reign of innovators, which our successors will remember but to despise. And most of these new names which are founded on artificial characters will soon sleep with their authors.

22—6. PUCCINIA. 58. 1.

polygoni-avicularіae, sub-linear, scattered, chesnut-brown; fruit globose. On the stems and leaves of knotgrass.

graminis (blight, black rust) crowded, linear, becoming black; fruit sub-turbinate, narrowed in the middle. In the culms of wheat and various other grasses, in summer and autumn.

5—1. PULMONARIA. 41. 42.

officinalis (lung-wort. E. b. M. 4.) radical leaves heart-ovate, hirsute: flowers racemed.

parviflora, Mx. (Can. New-England. b. Ju. 4.) stem diffuse, procumbent, glabrous: leaves oval-spatulate, fleshy: peduncles lateral, one-flowered.

virginica, W. (P. T. b. M. 4.) calyx abbreviated, glabrous: leaves ovate: stem erect: flowers sub-panicled, terminal. Near Albany.

sibirica, A. (Can. J. 4.) calyx abbreviated: radical leaves cordate.

12—1. PUNICA. 36. 92.

granatum (pomegranite. E. ½.) leaves lanceolate: stem woody.

14—1. PYCNANTHEMUM. 42. 39.

1. *Stamens exsert.*

incanum, Mx. (1) (wild basil, mountain mint. O. w. r. Ju. 4.) leaves oblong-ovate, acute, sub-serrate, white downy: flowers in compound heads, lateral ones peduncled: bracts setaceous. About 3 feet high.

linifolium, Ph. (2) (virginian thyme. O. w Ju. 4.) stem stiffly erect, very branching, roughish: leaves linear, 3-nerved, entire: heads terminal, corymb fassicled.

2. *Stamens inclosed.*

lanceolatum, Ph. (3) narrow-leaf virginian thyme. O. w.

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(1) Clinopodium incanum, L.

(2) virginicum, P. Brachystemum virginicum, Mx. linifolium, W. Thymus virginicus, L. Origanum flexuosum, W.

(3) Brachystemum, Mx. Origanum clinopodioides, Wr.

J. 4.) stem stiffly erect, very branching, roughish: leaves lance-linear, veiny, entire: heads terminal, corymb-fascicled.

verticillatum, P (1) (O. w. J. 4.) leaves lance-ovate, entire, whorled, sessile, compact: bracts acuminate.

muticum, P. (1) (C. P. w. Ju. 4.) leaves lance-ovate, sub-dentate, sub-glabrous: heads terminal: bracts lanceolate acutish.

22—5. PYRENULA. 57. 2.

nitida, crust cartilage-membranaceous, smooth; from pale becoming fuscous-cinereous: warts of the receptacles glabrous, closed; closely surrounding the upper, naked, prominent wrinkled part of the frond, which is perforated with a depressed mouth. On bark of trunk of trees.

18—2. PYRETHRUM. 49. 55.

serotinum, W. (2) (North America. W. Oc. 4.) leaves lanceolate; lower ones serrate at the apex, upper ones entire: branches corymbed.

10—1. PYROLA. 18. 51.

rotundifolia (shin-leaf, pear-leaf wintergreen. O. w. J. 4.) leaves round or round-obovate, obsoletely serrulate: spike with the flowers reversed: pistil declined: stigma round, with 5 tubercles.

secunda (one-sided shin-leaf. O. g-w. Ju. 4.) leaves round-ovate, acute, serrate: spike with 1-sided flowers: pistil strait: stigma peltate, gibbous.

uniflora (P. Can. J. 4.) leaves sub-orbicular, serrate: scape 1-flowered: style strait. Very abundant near the Patroon's in Albany.

minor (W. P. Plainfield, Mass. w-r. Ju. 4.) leaves round-oval, serrulate: scape sub-naked: spike with flowers reversed: pistil strait.

asarifolia (P. P. Can. g-w. Ju. 4.) leaves reniform: scape remotely furnished with scales, sometimes convolute and sheathing: pistil declined. On mountains.

elliptica, N. (P. D. w. J. 4.) leaves membranaceous, ob-

(1) Brachystemum, Mx. (2) Chrysanthemum serotinum.

long-oval or ovate, plaited-serrate, acute : laminae much longer than the piole : scape naked, or having a single scale : bracts linear, subulate : calyx 5-toothed, subulate, points reflexed.

Pyrola, see Chimaphila.

Remark. Dr. Smith, president of the Linnean society at London, says, there is no diversity in the habit to justify the establishment of the genus Chimaphila. Those of us, who live among so many species of both genera, growing in their native wildness, and have independence enough to exercise our own judgment, want no arguments to convince us, that in this instance, the greatest botanist in the world is in an error.

12—5. Pyrus. 36. 92.

communis (pear. E. w-r. M. ♄.) leaves ovate, serrate, (rarely entire) peduncles corymbed. Var. *pyraster* (dwarf) fruit very small and acid. Var. *falerna* (bergamot) fruit orbicular, apple-form. Var. *pompeiana* (good christian.) Var. *favonia* (musk-pear) Var. *liquescens* (butter-pear.) Var. *refuscens* (russet-pear.) Var. *pyramidalis* (leg-pear.) These five last varieties are distinguished more by their flavor, than by any external marks.

malus (apple. E. w-r. M. ♄.) flowers in sessile umbels ; leaves ovate-oblong, acuminate, serrate, glabrous : claws of the petals shorter than the calyx : styles glabrous. Var. *sylvestris* (wild apple) leaves ovate serrate ; fruit small, austere. Var. *prasomila* (pippin.) Var. *castanea* (chesnut apple.) Var *apiosa* (ape apple) fruit small, round, red, pleasant-tasted. Var. *cavillea* (cornered apple) leaves broad-ovate, downy beneath : fruit angled.

†*cydonia* (quince. E. w. J. ♄.) flowers solitary : fruit tomentose : leaves ovate, entire. Var. *lusitanica*, leaves very broad.

Remark. The varieties into which the above species have been extended by culture, are very numerous. I have given those only, which are set down by Persoon, as the most distinct.

coronaria, L. (1) (crab apple. T. Y. C. P. Catskill. w-r. M. ♄.) leaves broad-oval, at the base rounded, sub-angled or sub-lobed, serrate, smooth : peduncles co-rymbed. Flowers sweet scented.

angustifolia, Wm. (P. C. M. ♄.) leaves lance-oblong, at the base acute : slightly crenate-toothed, shining : pe-duncles corymbed. Fruit very small.

Pyrus, see Aronia.

Pyxidanthera, see Diapensia.

Q.

20—13. Quercus. 50. 99.

1. *Fruit sub-sessile ; leaves mucronate with a bristle-form awn* (excepting virens) *entire.* Fructification bien-nial.

phellos, W. (willow oak. P. D. M. ♄.) leaves lance-line-ar, tapering to both ends, entire, glabrous, mucronate : calyx saucer-form : acorn roundish.

virens, W. (2) (live oak. Southern states. M. ♄) leaves perennial, coriaceous, oblong-oval, entire, revolute at the margin, at the base obtuse, at the apex acute, awn-less, stellate-pubescent beneath : fruit pedicelled : calyx turbinate, scales abbreviated : acorn oblong. 40 to 50 feet high, very branching.

imbricaria, Mx. (shingle oak, laurel oak. P. M. ♄.) leaves oblong, acute at both ends, mucronate, entire, shining, pubescent beneath : calyx saucer-form, scales broad-ovate : acorn sub-globose. 40 or 50 feet high.

2. *Fruit sub-sessile ; leaves mucronate with a bristle-form awn, toothed or lobed.* Fructification biennial.

heterophylla, Mx. (burrier's oak. M. ♄.) leaves long-peti-oled, lance-ovate or oblong, entire or unequally coarse-toothed : calyx hemispheric ; acorn sub-globose. Pursh says, there is but one individual of this species known in the world, which is now growing on the Bartram plantation near Philadelphia.

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(1) Malus coronaria, Mx. (2) sempervirens, Wr.

triloba, W. (1) (downy black oak. P. D. M. ♄.) leaves wedge-oblong, acute at the base, sub-3 lobed at the apex; lobes equal in breadth, mucronate, middle lobe longest, downy beneath: calyx saucer-form; acorn compressed-globose. 20 to 40 feet high.

aquatica, W. (2) (water oak. P. M. ♄.) leaves wedge-ovate, glabrous, very entire; apex obscurely 3-lobed with the intermediate lobe longest: calyx hemispheric; acorn sub-globose. Leaves very variable.

nigra, W. (3) (barren oak, black jack. P. New-Jersey. M. ♄.) leaves coriaceous, wedge-form, sub-cordate at the base, spread and retuse-3-lobed at the apex, in the young state it is mucronate, glabrous above, mealy rust beneath: calyx turbinate, scales obtuse, scarious: acorn short-ovate. Small.

tinctoria, W. (4) (quercitron oak, black oak. O. M. ♄.) leaves obovate oblong, a little sinuate, pubescent beneath; lobes oblong, obtuse, obtusely denticulate, setaceous-mucronate: calyx saucer-form; acorn depressed-globose.

discolor, W. (5) (false red oak. O. M. ♄.) leaves oblong, sinuate-pinnatifid, pubescent beneath and on both sides when young; lobes oblong, toothed, setaceous-mucronate: calyx turbinate: acorn ovate.

coccinea, Wm. (scarlet oak, ink-ball oak. O. M. ♄.) leaves long-petioled, oblong, deeply sinuate, glabrous; lobes divaricate, toothed, acute, setaceous-mucronate: calyx turbinate, marked with scales: acorn short-ovate. This, the last, and the next species, are usually called red oak by farmers. And it requires some attention for the botanist to distinguish them. The leaves of this species become reddish and even scarlet in autumn. Produces brownish-purple nut-galls.

rubra, Wm. (red oak. O. M. ♄.) leaves long-petioled, oblong, glabrous, obtusely sinuate; lobes acutish, toothed, setaceous-mucronate: calyx saucer-form, smoothish: acorn subovate, turgid.

falcata, Mx. (6) (spanish oak. P. D. Chatham, N. York. M. ♄.) leaves long-petioled, at the base obtuse, downy beneath, 3-lobed or sinuate; lobes sub-falcate, se-

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(1) cuneata, Wm.
(2) nigra L. not W. uliginosa, Wm.
(3) ferruginea, Mx.
(4) tinctoria-angulosa, Mx.
(5) tinctoria-sinuosa, Mx.
(6) elongata, W.

taceous-mucronate, terminal one elongated : calyx bowl-form : acorn globose. Large tree.

palustris, W. (pin oak. O. M. ♄.) leaves long-petioled, oblong, deeply sinuate, glabrous, axils of the veins villose beneath ; lobes divaricate, toothed, acute, setaceous-mucronate : calyx saucer-form, smooth : acorn sub-globose. Generally grows in wet places. The small limbs along the body of the tree die as the tree advances, which gives it the appearance of having pins or trunnels driven into it.

ilicifolia, W. (1) (scrub oak. O. M. ♄.) leaves long-petioled, wedge-obovate, 4 or 5-lobed, margin entire, whitish downy beneath ; lobes setaceous-mucronate : calyx subturbinate : acorn sub-globose. A low shrub.

S. *Fruit peduncled ; leaves without awns, lobed.* Fructification annual.

stellata, W. (2) (iron oak, post oak. T. Y. P. Catskill. M. ♄.) leaves oblong sinuate, wedge-form at the base, pubescent beneath ; lobes obtuse, upper one dilated-2-lobed (often the lobes are so arranged in the young plants, as to form a cross-form or stellate leaf) calyx hemispheric : acorn oval.

macrocarpa, Mx. (over-cup oak. P. M. ♄.) leaves downy beneath, deeply lyrate-sinuate-lobed ; lobes obtuse, repand, upper ones dilated : calyx bowl-form, upper scales setose : acorn turgid, ovate, large. A large tree.

olivaeformi, Mx (mossy-cup oak. P. New-York. M. ♄.) leaves oblong, glabrous, glaucous beneath, deeply and unequally sinuate-pinnatifid : calyx deeply bowl-form with locks above (superne crinita) : acorn oval-ovate. Large tree.

alba, Wm. (white oak. O. M. ♄.) leaves oblong, sinuate-pinnatifid, pubescent beneath ; lobes sub-linear, obtuse, entire, narrowed at their bases (particularly on full grown trees) fruit peduncled : calyx somewhat bowl-form, tubercled, flattened at the base : acorn ovate. The most useful timber tree in America.

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(1) banisteri, Mx.
(2) obtusiloba, Mx.

4. *Fruit peduncled; leaves without awns, toothed, not lobed.* Fructification annual.

prinus, W. (1) (swamp oak. P. M. ♄.) leaves long-petioled, obovate, acute, pubescent beneath, coarsely toothed: teeth about equal, spread, callous at the apex: calyx bowl-form, tapering at the base; acorn ovate, large, sweet tasted. Large tree.

prinoides, W. (2) (dwarf chesnut oak, chinquapin. P. M. ♄.) leaves short-petioled, obovate, at the base acute, coarsely toothed, glaucous beneath; teeth nearly equal, spread, callous at the apex: calyx hemispherical; acorn ovate. A low shrub.

montana, W. (3) (rock oak, chesnut oak, mountain oak. O. M. ♄.) leaves moderately petioled, broad-obovate, oblong, white downy beneath, shining above; coarsely toothed, at the base obtuse, oblique; teeth sub equal, very obtuse, short: fruit in pairs, short-peduncled: calyx hemispheric, scales rugose tubercled: acorn ovate.

castanea, W. (4) (yellow oak. P. T. Catskill. New-England. M. ♄.) leaves long-petioled, lance-oblong, obtuse at the base, acuminate, downy beneath, coarsely toothed: teeth sub-equal, spread, acute, callous at the apex: calyx hemispheric; acorn globular-ovate. Large tree. The bark is used for dying yellow.

bicolor, W. (5) (swamp white oak. P. M. ♄.) leaves short-petioled, oblong-obovate, white-downy beneath, coarsely toothed, entire at the base; teeth unequal, spread, acutish, callous at the apex: fruit in pairs, long-peduncled; the peduncle terminating in a bristle: calyx hemispheric: acorn oblong-ovate. Large tree.

3—3. QUERIA. 22. 82.

canadensis, L. (6) (fork chickweed. O. w. Ju. 2.) stem dichotomous, very branching, spread: leaves lanceolate, glabrous, erect. About 6 or 8 inches high, very slender and branching.—Flowers very small, stamens

(1) prinus-palustris, Mx.
(2) prinus-chinquapin, Mx. chinquapin, Mx.
(3) prinus monticola, Mx. (4) prinus acuminate, Mx.
(5) prinus tomentosa, and discolor, Mx.
(6) Anychia dichotoma, Mx.

from 2 to 5. Var. *capillacea*. branches capillary : leaves obtusish : flowers mostly longer than the stipules.

R.

22—6. Racodium. 58. 1.

rupestre, compact, black, adnate to rocks.

cellare, broad-expanded, very soft, black. Often in wine cellers, &c.

xylostroma,(1) very broad, soft, ochre-yellow. This is the oak leather, or punk. In the natural cleavages of decaying wood, often many inches broad and very tough.

papyraceum, white, thin, paper-like. Called paper-punk as well as the hydnum chrysorhizum, and may be the same plant. Grows between the cleavages of dry wood.

22—5. Ramalina. 57. 2.

homalea, frond compressed, 2-edged, smooth, naked, ramose, becoming pale-white, sub-ramose crosswise ; branches dichotomous attenuated : receptacles scattered, affixed at the centre, a little concave, somewhat margined, uniform-coloured.

polymorpha, frond flat-compressed or teretish, torn-branched, pale, longitudinally lacunose : fruit-dots scattered, sub-elliptic and terminal, head-form : receptacles sub-marginal, a little concave ; disk fleshy, somewhat hoary. On rocks and stones.

fraxinea, frond flat, linear-laciniate, white-cinereous, glabrous both sides, rugose-lacunose, sub-reticulate ; extreme divisions lance-attenuated : receptacles marginal, flat, pale-flesh-coloured. On trunks and branches of trees, chiefly ash and oak.

fastigiata, frond terete-sub-compressed, smooth, lacunose, ramose, white-glaucous ; branches thickening upwards, fastigiate : receptacles terminal, peltate-subsessile, white. On trunks of trees.

farinacea, frond terete-compressed, glabrous, sub-lacunose, bearing fruit-dots, rigid, ramose, becoming white-cinereous ; branches linear-tapering : receptacles scattered, pedicelled, flat, somewhat margined, white. On trunks and branches of trees.

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(1) Xylostroma giganteum, Tode.

13. 13. RANUNCULUS. 26. 61.

acris (crowfoot, butter cup. O. y. M. 2.) hairs close-pressed : leaves 3-parted-many-cleft, upper ones linear : peduncles terete : calyx spreading.

abortivus (1) (O. y. M. 2.) glabrous : stem striate, naked below : radical leaves heart-reniform, obtusely crenate ; cauline ones petioled, ternate, angled ; upper ones sessile : branches about 3-flowered. Damp.

repens (W. T. C. P. y. M. 2.) hirsute : leaves ternate, 3 cleft, gashed : creeping shoots sent off in the summer : peduncles furrowed : calyx spreading. Damp.

recurvatus (C. W. T. y-w. J. 2.) pubescent : leaves 3-lobed, wedge-form at the base, gashed at the apex, acute : stem many-flowered : calyx and corol recurved : petals linear. Flowers small.

fascicularis, M. (O. y. M. 2.) leaves sub-pubescent, radical ones long-peduncled, ternate or sub-pinnate ; leaflets 3-lobed, the terminal one deeply 3-cleft : calyx spreading, hairy underneath ; petals longer than the calyx : root fascicled. See Big. Florula Bost.

fluviatilis (river crowfoot. O. w-y. M. 2.) stem submersed : leaves all capillary, dichotomous. The whole under water, excepting the fructification while the corol is expanded. Water.

lacustris, Beck and Tracy. (2) (lake crowfoot. Lansingburgh. y. M. 2.) leaves all sub-merged, alternate, dichotomously divided into numerous capillary segments ; with clasping membranaceous stipules : peduncles emerging, dichotomous, slightly furrowed : flowers terminal, large : calyx spreading, hairy, fleshy, caducous : petals 5 to 8, obovate, larger than the leaves of the calyx : nectary petal-like, cucullate-tubular, nearly equalling the length of the filaments : stem rooting at the lower joints, hollow, branched, glabrous, floating : root fibrous. Stem sometimes 4 or 5 feet long. Very abundant in a small lake east of the village of Lansingburgh. The flower is very large, bright yellow. The leaves are diaphanous-reticulate. Dr. L. C. Beck and Mr. J. G. Tracy of Al-

(1) nitudus, Pt.

(2) multifidus ? Bradbury; fluviatilis ? Bw. See his enlarged description, p. 139. Boston Flora.

bany presented this as a new species. If this is Bradbury's multifidus, Pursh has certainly described it very imperfectly.

delphinifolius (C. y. 4.) submersed, leaves very finely divided, divisions dichotomous; those above water coarser; calyx expanding, smooth, concave: petals orbicular, entire, twice as long as the calyx; nectary orbicular, bifid. A new species by Dr. Torry; though he suspects it may be a variety of the fluviatilis. Water.

+ *bulbosus* (T. P. C. y. M. 4.) very hirsute: leaves ternate, 3 cleft, gashed and toothed: stem erect, many-flowered: peduncles sulcate: calyx reflexed: root bulbose.

+ *hirsutus*, C. (1) (W. T. P. V. y. Ju. 4.) hirsute: leaves ternate, gash-lobed: stem erect, many-flowered: peduncles sulcate: calyx reflexed, acuminate; fruit globose, seeds tubercled: root fibrous. Damp.

+ *intermedius*, S. (T. y. J. 4.) lower leaves 3-lobed, gashed; upper ones sub-digitate: peduncles solitary; calyx reflexed; seeds compressed, smooth: root fibrous. Found on the banks of the Hudson near Albany, by Mr. J. G. Tracy.

+ *flammula* (spearwort. T. Y. C. P. y. 4.) glabrous: stem declined: leaves narrow-lanceolate, acute, entire and denticulate, lower ones petioled: peduncles terminal, axillary, 1-flowered: calyx sub-reflexed. Flowers small. Damp.

+ *sceleratus* (celery crowfoot. O. y. J. 4.) glabrous: lower leaves palmate; upper ones sessile, digitate: fruit oblong. Wet.

pensylvanicus, W. (2) (C. Y. P. y. Ju. 4.) stem pilose, erect, branching: leaves ternate, 3-cleft, gashed, hairy beneath; peduncles terete, calyx reflexed: petals about equalling the calyx. Flowers large. Is not this the hirsutus?

pusillus, Ph. (3) (C. y. Ju. 4.) glabrous: leaves petioled: lower ones ovate, toothed; upper ones lance-linear, toothed at the apex, the very uppermost ones linear, bract-like: peduncles alternate, solitary, 1-flowered.

lingua (great spearwort. P. T. y. Ju. 4.) hairs close-

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(1) philonotis, W. (2) canadensis, Jn. (3) flammula, Wr.

pressed: leaves lanceolate, sub-denticulate, acuminate, sub-sessile; stem erect, many flowered.

reptans (dwarf spearwort. P. T? y. Ju. 4.) leaves linear entire: stem creeping. Perhaps a variety of the flammula.

marylandicus. Lk. (P. w-y. M. 4.) pubescent: stem simple, sub-naked: radical leaves ternate; leafets 3-lobed, lobes acute gashed; calyx reflexed.

hispidus. Mx. (P. w-y. J. 4.) very hirsute, erect: leaves ternate; leafets acutely lobed: stem naked below the first peduncle, few-flowered: calyx close-pressed.

cymbalaria (Onondaga. w-y. J. 4.) glabrous, very small, filiform, creeping, rooting at the joints: leaves heart-reniform, obtusely 5-toothed: radical peduncles solitary, mostly 2-flowered: petals linear: fruit oblong.

+*filiformis*. Mx. (P. V T. Can. w-y. J. 4.) glabrous, small: stem filiform, creeping, geniculate, with the joints 1-flowered; flowers axillary, peduncled: leaves linear-subulate, obtuse.

nitidus. Wr. (D. P. w. Ju. 4.) very glabrous: stem fistulous: radical leaves round-reniform, obtusely crenate, cauline ones sessile, digitate; leafets gashed, divisions obtuse: seeds sub-globose, very glabrous.

lanuginosus (P. y. J. 4.) hirsute: leaves 3-cleft, lobed, toothed, all over silky: peduncles elongated, terete: calyx spreading.

saniculaeformis, M. (sanicle-crowfoot. T. V. C.) very hirsute: leaves all 3-parted; divisions gash-serrate: peduncles short, bearing 2 or 3 small flowers: calyx reflexed, hirsute: leafets lanceolate, acute, longer than the petals.

15—2. RAPHANUS. 39. 63.

+*sativus* (garden-radish. E. w. J. ☺.) leaves lyrate: silique terete, torose, 2-celled. There are several varieties of this species—one has a fusiform, another a globose, another a black root.

raphanistrum (wild radish, charlock. N. y. Au.) leaves lyrate: siliques terete, jointed, smooth, 1-celled. Before the silique is mature, it is generally 2-celled and not jointed. It may have been introduced; but it is now growing wild in all the middle and southern towns of the western counties of Massachusetts.

11—3. Reseda. 54. 64.

odorata (mignonette. E. w-y. Ju. ☉.) leaves entire, and 3-lobed : calyx equalling the corol.

luteola (dyer's weed. Y. y. Au. ☉.) leaves lanceolate, undulate, entire, a tooth on each side of the base : calyx 4-cleft : flowers spiked. Prof. Ives found this plant growing near New-Haven, in situations and with habits, which induced him to suspect it to be indigenous.

5—1. Rhamnus. 43. 95.

franguloides, Mx. (1) (dwarf alder. O. w-g. M. ♄.) unarmed : leaves oval, acuminate, serrulate, pubescent at the nerves beneath : peduncles aggregate, 1-flowered : calyx acute : fruit turbinate. Berries black. Pursh calls this the franguloides, after Mx. and gives alnifolius to a species found up the Missouri.

catharticus (buckthorn. E. ♄.) thorns terminal : flowers 4-cleft, dioecious : leaves ovate, serrate.

9—3. Rheum. 12. 28.

palmatum (rhubarb. E. J. 4.) leaves palmate, acuminate. From China.

tataricum (pie rhubarb. E. J. 4.) leaves heart-ovate, entire, flat, glabrous : petioles semiterete, angled : branches of the panicle sulcate. The radical leaves very large. From Tartary.

8—1. Rhexia. 17. 90.

virginica (meadow beauty, deer-grass. Y. C. P. p. Ju. 4.) stem wing-angled, with scattered hairs : leaves sessile, lance-oval, denticulate, setaceous, ciliate-cerrate. About 8 inches high.

mariana, Mx. (D. w-r. Ju. 4.) stem and leaves very hirsute : leaves sub-petioled, lance-oval or lance-linear : calyx smoothish, tubular, long.

14—2. Rhinanthus. 40. 85.

crista-galli, W. (yellow rattle, yellow coxcomb. Can. y.

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(1) alnifolius, W.

J. ☉.) upper lip of the corol emarginate, 2-toothed, middle division of the under lip very short.

22—5. RHIZOMORPHA. 57. 2.

sub-corticalis, frond compressed, dark-fuscous, shining: branches scatterd, reticulate with anastomoses (meeting and joining of mouths): receptacles conglomerate. On dead trunks of trees.

sub-terranea, frond terete, glabrous, black, very branching; branches and branchlets crowded, attenuated, free. On stones and decaying wood.

setiformis, frond terete, very slender, black, shining, simple, apex divided. On fallen leaves.

cornicularioides, frond and branches a little terete, flexuose, interwoven, widely spreading, dark, opake, very tender. On the earth.

10—1. RHODODENDON. 18. 50.

maximum (wild rose-bay, P. Dedham, Mass. C. r. Ju. ♄.) leaves oblong, glabrous, paler beneath; umbels terminal, dense: corols sub-bellform; petals rounded. A small tree.

ponticum (rose bay. E. p. ♄.) leaves oblong, glabrous, both sides coloured alike: corymbs terminal: corol bell-wheelform; petals lanceolate.

10—1. RHODORA. 18. 50.

canadensis (false honey-suckle, rhodora. C. Boston, Pittsfield and Granby, Mass. b. r. M. ♄.) leaves oval, entire, glaucous-pubescent beneath: flowers in terminal umbels. About 2 feet high.

5—3. RHUS. 43. 94.

† *typhinum* (sumach. O. y-g Ju. ♄.) branches, and petioles very villose: leaves pinnate, many-paired, leafets lance-oblong, serrate, somewhat downy beneath. Berries red and very sour.

glabrum (sleek sumach. O. g. r. Ju. ♄.) branches petioles and leaves glabrous: leaves pinnate, many paired; leafets lance-oblong, serrate, whitish beneath: fruit silky. The leaves of both the species are used for tanning morocco leather. Berries red and sour.

copallinum (wing-rib sumach, mountain sumach. O. y-g. Ju. ♄.) branches punctate: leaves pinnate, in about 5 or 6 pairs, with the main petiole joint-winged; leafets lance-oval entire: panicle leafy, branches sub-sessile: flowers dioecious. Berries red

vernix (poison sumach, poison elder. O. y-g. Ju. ♄.) very glabrous: leaves pinnate, many-paired; leafets oval, abruptly acuminate, entire: panicle lax: dioecious: fruit glabrous. Berries green, at length whitish. Panicle few-flowered compared with the preceding species. Very poisonous. See Bigelow's Med. Bot. Damp.

toxicodendron (poison vine, poison ash. O. g. Ju. ♄.) rooting: leaves ternate; leafets oval, entire or sinuate-crenate: racemes on the branches and axillary, sessile: dioecious. Var. *radicans* (poison ivy) stem climbing and rooting; leafets broad, entire or with scattered teeth. Var. *quercifolium* (poison oak) erect, low: leafets variously sinuate-lobed. Var. *microcarpon*, leafets oblong-oval, long acuminate, sub-rhombic: fruit very small. The sap of this species is an excellent marking ink for linen.

aromaticum, W. (P. W. Catskill. y. M. ♄.) a very little woody: flowers amentaceous, naked: leaves ternate: leafets rhombic-oval, toothed, pubescent beneath. Dioecious.

cotinus (false fringe-tree, aaron's beard. E. p-g. Ju. ♄.) leaves simple, obovate and ovate: panicle-racemes plumose. A small tree with very minute flowers supported on capillary, downy or hairy peduncles: grows wild in Siberia, Austria and Lombardy.

3—1. RHYNCHOSPORA. 3. 9.

†*sparsa*, (Vahl. (1) (false bog-rush. C. P. Ju. 4.) corymbs diffuse, axillary, compound: terminal ones decompound: peduncles capillary: seeds longer than the beaks.

glomerata (2) (O. J. 4.) spikes corymbed-fascicled, remote in pairs: culm obtuse-angled: leaves linear.

alba (2) (O. Ju. 4.) spikes corymbed-fascicled: culm and leaves setaceous.

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(1) Schoenus, sparsus, Mx. miliaceus, Lk. (2) Schoenus, L.

5—1. RIBES. 36. 85.

1. *Currant-like. Flowers racemed.*

+ *rubrum* (currant. E. g. M. ♄.) unarmed: racemes glabrous, nodding: corol flat; petals obcordate: leaves obtusely 5-lobed: stem erect. Berries red.

nigrum (black currant. W. V. g. M. ♄.) unarmed: leaves punctate beneath: racemes lax: flowers bell-form: bracts shorter than the pedicels. Berries black.

albinervium, Mx. (H g-y. M. ♄.) unarmed: leaves abbreviated, acutely lobed, smoothish, nerves white: racemes recurved; berry glabrous. Berries red.

trifidum, Mx. (P. Can. y-g. M. ♄.) unarmed: leaves moderately lobed, glabrous above, pubescent beneath: racemes lax, pubescent: flowers flattish: divisions of the calyx about 3-cleft: petals spatulate, obtuse: berries hirsute. Berries red.

ringens, Mx. (Can. W. P. M. ♄.) unarmed: branches strait: leaves acutely lobed and toothed, reticulate-rugose, pubescent beneath: racemes lax, becoming stiffly erect: berries sub-hispid. Berries red, erect.

glandulosum, A. (1) (O. r-y. M. ♄.) unarmed: branches reclined-prostrate: leaves lobed, smoothish, younger ones pubescent: racemes sub-erect: petals deltoid: bracts minute: berry hispid. Most of the plant, particularly the calyx, covered with glandular hairs.

floridum, W. (2) (wild black-currant. O. M. ♄.) unarmed: leaves punctate both sides: racemes pendant: calyx cylindric: bracts longer than the pedicels.

2. *Gooseberry-like. Peduncles mostly few-flowered; rarely sub racemed.*

+ *grossularia* (english gooseberry. E. g. M. ♄.) branches prickly: petioles hairy: bracts 2-leaved: berry glabrous or hirsute.

uva-crispa (smooth gooseberry. E. g. M. ♄.) branches prickly: berry glabrous; pedicels with 1-leaved bracts. Perhaps a variety of grossularia.

triflorum, W. (wild gooseberry. O. g. M. ♄.) spine subaxiliary: leaves glabrous, 3 to 5-lobed, gash toothed: peduncles sub-3-flowered with the pedicels elongated:

(1) prostratum, Hr. (2) pensylvanicum, Lk.

bracts very short : petals spatulate, undulate : style hirsute, half 2 or 3-cleft, exsert : berry glabrous. Berries pale red.

hirtellum, Mx. (W. T. Can. P. g. M. ♄.) spines very small, sub-axillary : branches sub-hispid : leaves small, semitrifid ; lobes sub-dentate : peduncles 1-flowered : berry glabrous. Berries red.

oxyacanthoides, W (P. Can. M. ♄.) the large sub solitary prickles near the buds, the smaller ones scattered : leaves glabrous, with toothed lobes : peduncles short, about 2-flowered : berries glabrous.

gracile, Mx. (P. W. T. M. ♄.) little spines sub-axillary : leaves petioled, slender, pubescent both sides ; lobes acutely gash toothed : peduncles capillary, about 2-flowered : calyx bell-tubular : berries glabrous. Berries bluish purple.

lacustris, P. (1) (Can. W. V. P. g-y. M. ♄.) spines many-fold, sub-axillary : stem every where aculeate-hispid : leaves lobed beyond the middle : petioles villose : berries somewhat racemed, hispid.

conobasti, Mx. (Can. P. Catskill Mt. Pittsfield. g. M. ♄.) prickles in pairs : leaves short-lobed, gash toothed, with soft pubescence : racemes nodding, few-flowered : calyx erect, bell-form : berry prickly. Berries dark brown.

22—3. Riccia. 57. 3.

natans (floating liverwort. W. T. C. Ju.) fronds obcordate, with apexes meeting, so as to form the sectors of circles, flat : radicles beneath flat. It floats on the water, with its short flat roots extending a little distance into it. Colour sea-green. Each congeries of floating fronds hardly an inch in diameter. Channels run on their backs, like midribs in leaves.

fluitans (forkstems. W. J.) fronds repeatedly forked, linear, convex or sub-cylindric, smooth, reticulate, obtuse and cloven at the tips. Very plenty in stagnant water near Williams college among lemna. It is pellucid and cellular, 2 or 3 inches long. It has nothing resembling a root ; but the whole plant appears rather like the stems of some plants.

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(1) oxycanthoides, Mx.

glauca, frond radiating from a center, dichotomous, flat, reticulate.

crystallina (Wallingford, Vermont,) frond lobed, obtuse, emarginate, pitted. Dillenius. Found in a pond (for the first time I believe in North America) by my pupil, Dr. Jedediah Smith. It is generally a flattish 3-lobed frond; several of which are connected together by threads. Each frond is about half an inch in length. and has a cruciform appearance.

20—16. RICINUS. 33. 96.

communis (caster-oil plant, palma christi. E. ☺.) leaves peltate, palmate; lobes lanceolate, serrate: stem with hoary mealiness.

17—10. ROBINIA. 32. 93.

pseudo-acacia (locust tree, false acacia Can. P. w. M. ♄.) leaves pinnate, with a terminal leafet: stipules thorny, or a thorn: racemes pendant: teeth of the calyx awned: legumes smooth. Cultivated every where.

viscosa, W. (1) (clammy locust. Southern states. Ju. ♄.) racemes with 1-flowered pedicels: leaves pinnate, with a terminal leafet: branches and legumes with viscous glands: calyx acuminate. Racemes axillary, dense-flowered, erect; flowers approaching from white to red. Cultivated.

hispida, W. (2) (rose locust. Southern states. P. ♄.) racemes axillary, sub-erect: calyx acuminate: stem mostly unarmed; most of the plant hispid: leaves pinnate, with a terminal leafet; leafets round-oval, mucronate, sometimes alternate. An elegant shrub. Cultivated.

12—13. ROSA. 35. 92.

corymbosa, Eh. (3) (swamp rose. O. r-w. Ju. ♄.) germs (permanent calyxes) globose; germs and peduncles a little hispid, or glabrous: petioles hairy and a little

(1) glutinosa, C.
(2) montana, Bartram, rosea, Du Hamel.
(3) pensylvanica, Mx. carolina, W.

prickly : stem glabrous : prickles stipular, sub-uncinate : leafets 5 or 7, lance-oblong, acute, sharply serrate, glaucous beneath : flowers solitary or corymbed. From 3 to 6 feet high. Very variable. Dr. Bigelow sent three specimens to the greatest botanist in Europe, which were all taken from different parts of the same plant. He received an answer making two of the specimens different described species, and the third one a new species. Damp or wet.

† *parviflora*, W. (1) (wild rose. O. r. w. ♄.) germs depressed-globose ; germs and peduncles hispid : petioles pubescent, sub-aculeate : stem glabrous : prickles stipular, strait : leafets lance-oval, simply serrate, glabrous : flowers somewhat in pairs. Very variable. Grows mostly on dry land.

rubiginosa, M. (2) (sweet briar. T. C. Y. P. N. r. J. ♄.) germ ovate : peduncles and petioles glandular-hispid ; petioles somewhat prickly : stem glabrous ; prickles scattered, strait, slender ; leafets (5 or 7) ovate, serrate, scarcely glandular-hairy beneath : branchlets 1-flowered : divisions of the calyx entire. The leaves have often a rusty appearance beneath.

lucida, W. (P. C. r. Ju. ♄.) germs depressed-globose : germs and peduncles sub-hispid : petioles glabrous, sub-aculeate : stem glabrous ; prickles stipular, strait : leafets lance-ovate, obtusish, coarsely serrate, glabrous, shining : flowers somewhat in pairs : divisions of the calyx entire. 4 to 6 feet high.

gemella, W. (P. New-England. C. r. Ju. ♄.) germs depressed-globose : germs and peduncles glabrous : flowers somewhat in pairs : leaves oblong, acute, opake ; petioles and veins pubescent beneath : prickles uncinate, the cauline ones in pairs below the axils.

pendulina, W. (thornless rose. North America ? E ? r. J. ♄.) unarmed : germs oblong : peduncles and petioles hispid : stem and branches glabrous : fruit pendant. Cultivated.

canina, M. (dog-rose D. ♄.) germs ovate ; germs and peduncles glabrous ; stem and petioles prickly ; leaves ovate, glabrous.

† *gallica* (french rose, common rose. E. r. J. ♄.) germs

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(1) carolina, Mx. (2) suaveolens, P.

ovate ; germs and peduncles hispid : stem and petioles hispid-prickly. Sometimes the colours are variegated.

† *damascena* (damask rose. E. w. r. J. ♄.) calyx half-pinnate : germ ovate, turgid (thickened near its top) bristly : stem and petioles prickly ; leafets ovate, pointed, downy beneath.

muscosa (moss rose. E. r. Au. ♄.) germs ovate : calyx, peduncles, petioles and branches hispid, glandular-viscid (mossy-like) spines of the branches scattered, strait.

moschata (musk rose. E. ♄.) germs ovate ; germs and peduncles villose : stem and petioles prickly : leafets oblong, acuminate, glabrous : panicle many-flowered.

burgundiaca (burgundy rose. E. ♄.) germs sub-globose ; germs and peduncles hispid : leafets ovate, pubescent beneath : corol small, full, fleshy-white, disk obscure. Var. *provincialis*, has scattered reflexed prickles on the branches, and glandular serratures.

semperflorens (monthly rose. E. ♄.) germs ovate-oblong, tapering to both ends : germs and peduncles hispid : stem prickly : flowers in erect corymbs. Resembles damascena.

alba (white rose. E. w. J. ♄.) germs ovate, glabrous or hispid : stem and petioles prickly : leafets ovate, villose beneath.

pimpinellifolia (burnet rose. E. r. ♄.) germs globose ; germs and peduncles glabrous : stem with scattered strait prickles : leaves obtuse ; petioles scabrous. Very small.

centifolia (hundred leaved rose. E. r. ♄.) germs ovate ; germs and peduncles hispid : stem hispid, prickly : leaves pubescent beneath ; petioles unarmed.

cinnamomea (cinnamon rose. E. ♄.) germs globose ; germs and peduncles glabrous : stem with stipular prickles : petioles somewhat unarmed : leafets oblong. R. majalis. Stem brown-cinnamon colour.

† *multiflora* (japan rose. E. ♄.) germs ovate ; germs and peduncles unarmed, villose : stem and petioles prickly. Branches generally purple ; leafets ovate ; flowers small, panicled.

spinosissima (scotch rose. E. ♄.) germs globose, gla-

brous : peduncles hispid ; stem and petioles very hispid. Var. *scotica*, is smaller.

parvifolia (small-leaf rose. E. ♄.) small : germs ovate, sub-glabrous : peduncles glandular : stem and petioles with slender prickles : leafets rugose, a little villose beneath, ovate, glandular-serrate.

Remark. These 13 exotic species were mostly analyzed in the living state, and obligingly furnished for this work by the much lamented, Mrs. Frances Dewey, late of Williamstown.

2—1. Rosmarinus. 42. 39.

officinalis (rosemary. E. ♄.) leaves some green both sides, others whitish beneath, linear, margins revolute.

4 or 5—1. Rubia. 47. 57.

tinctoria (madder. E.) leaves lanceolate, about in sixes : stem prickly, climbing. Var. *sylvestris*, lower leaves in sixes, upper ones in fours or in pairs.

12—13. Rubus. 85. 92.

ideus (garden raspberry. E. w. M. ♄.) leaves quinate-pinnate and ternate ; leafets rhomb-ovate, acuminate, downy beneath ; petioles channelled : stem prickly-hispid ; flowers sub-panicled. A variety has a smooth stem.

strigosus, Mx. (1) (red raspberry. O. w. J. ♄.) unarmed : rigidly hispid : leafets 3, or pinnate-quinate, oval, at the base obtuse, acuminate, marked with lines and white-downy beneath : calyx acuminate : flowers axillary, solitary at the ends of the branches : peduncles and calyx hispid. Berries red, sweet, acines very slightly attached.

odoratus (flowering raspberry. O. r. J. ♄.) unarmed, erect, viscid-hispid : leaves simple, acutely 3 or 5-lobed : corymbs terminal, spreading : calyx appendiculate ; petals sub-orbiculate. Flowers large, berries rather dry and thin.

occidentalis, W. (black raspberry. O. w. J. ♄.) branches

(1) pensylvanicus, Lk.

and petioles glaucous and prickly : leaves ternate, oval, acuminate, sub-lobate and doubly serrate, white downy beneath ; petioles terete : prickles recurved.

villosus (high blackberry. O. w. J. ♄.) pubescent, hispid and prickly : leaves digitate, in threes or fives ; leafets ovate-oblong, acuminate, serrate, hairy both sides : stem and petioles prickly : calyx short, acuminate : racemes lax, pedicels solitary. Valuable astringent. B.

trivialis, Mx. (1) (creeping blackberry, dew-berry. O. w. J. ♄.) sarmentose-procumbent : petioles and peduncles aculeate-hispid, with the prickles recurved : stipules subulate : leaves ternate or quinate, oblong-oval, acute, unequally serrate, sub-pubescent : pedicels solitary, elongated : petals obovate, thrice as long as the calyx. Var. *flagellaris*, has orbicular petals and small smooth leaves.

saxatilis (brier herb, rock blackberry. O. w. J. ♃.) herbaceous, pubescent : stem creeping : leaves ternate, rhombic, acute, gash-toothed, naked, terminal one petioled : flowers somewhat in threes ; peduncles elongated.

obovalis (D. M. ♃.) stem becoming a little woody, hispid, with stiff hairs : leaves ternate, round-obovate, serrate, naked : stipules setaceous : racemes sub-corymbed, few-flowered : bracts ovate : pedicels elongated.

cuneifolius, Ph. (P. D. J. ♄.) branches, petioles and peduncles downy, with recurved prickles : leaves digitate, in threes or fives ; leafets wedge-obovate, unequally toothed above, plaited, downy beneath, margin entire, revolute : racemes terminal, panicled ; pedicels divaricate nakedish.

hispidus, Kalm. (P. Can. w. J. ♄.) sarmentose-procumbent : stem, petioles and peduncles very hispid with rigid bristles : leaves ternate, gash-serrate, naked, middle one peduncled.

canadensis (Can. New-England. J. ♄.) a little glabrous : leaves digitate in tens, fives and threes ; leafets lanceolate, naked both sides, sharply serrate : stem unarmed : bracts lanceolate. Stem purple.

chamaemorus (cloud-berry. Can. New-England. w. J.

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(1) procumbens, M.

2.) herbaceous, small: stem unarmed, 1-flowered, erect: leaves simple, sub-reniform round-lobed: petals oblong.

acaulis (Can. J. 2.) herbaceous, small, nearly stemless, 1-flowered: leaves almost radical, ternate: leafets sessile, lateral ones somewhat trapezoidal.

parviflorus, N (great lakes. w. ½.) shrubby, unarmed: leaves simple, palmate-lobed: peduncles 2 or 3-lobed: flowers small: segments of the calyx villose, ovate, abruptly acuminate: petals oblong-ovate.

18—3. Rudbeckia. 49. 55.

laciniata, W. (cone-flower, cone-disk sunflower. O. y. An. 2.) lower leaves pinnate, leafets 3-lobed; upper ones ovate: egret crenate: stem glabrous. From 5 to 10 feet high. Damp.

digitata, W. (P. y. Au. 2.) lower leaves pinnate: leafets pinnatifid; upper ones simply pinnate; top ones 3-cleft: egret crenate: stem smooth.

pinnata, Mx. (1) (P. y. Ju. 2.) leaves all pinnate; one or more of the lower leafets 2-parted, the rest undivided: egret entire; stem furrowed, hispid.

triloba, W. (P. y. Au. ♂.) pilose-hispid: stem panicled; branches divaricate, many-flowered, leafy: leaves lanceolate acuminate at both ends, serrate, lower ones 3-lobed: leafets of the calyx linear, deflexed, of the length of the rays. 4 or 5 feet high.

fulgida, W. (P. Au. 2.) stem hispid; branches wand-like, elongated, 1-flowered: leaves lance oblong, denticulate, hispid, narrow at the base, sub-cordate: calyx leafy, about equalling the ray: disk hemispheric, with lanceolate chaff.

hirta, W. (P. y. Ju. 2.) very hirsute: stem wand-like, sub-ramose, 1-flowered: peduncles naked: leaves ovate-spatulate, 3-nerved, serrate, rough-haired: calyx leafy, nearly equalling the rays; disk conic, with lanceolate chaff.

purpurea, C. (P. p. Ju. 2.) rough: lower leaves broad-ovate, tapering to the base, remotely toothed; cauline leaves lance-ovate, acuminate at both ends, sub-entire: rays long, pendant, 2-cleft.

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(1) digitata, W. odorata, S.

14—2. RUELLIA. 40. 36.

† *strepens* Sh. (ruel. P. w-b. Ju. 4.) erect, hirsute: leaves petioled, lance-ovate, entire: peduncles 1 to 3-flowered: divisions of the calyx lanceolate, hispid, half as long as the tube of the corol. Flowers large.

6—3. RUMEX. 12. 28.

† *crispus* (dock. O. Ju. 4.) valves of the calyx ovate, entire, all bearing grain-like appendages on their backs: leaves lanceolate, undulate, acutish.

† *obtusifolius* (O. J. 4.) valves toothed, one principally bearing a grain-like appendage: radical leaves heart-oblong obtuse: stem a little scabrous.

verticillatus, W. (T. V. P. J. 4.) valves entire, all bearing grain-like appendages: spikes (about 3) leafless, with the flowers half-whorled: leaves lanceolate: sheathing stipules cylindric.

britanicus (P. T. Y. C. J. 4.) valves entire, all bearing grain-like appendages: spikes of the panicle leafless: sheathing stipules obsoletely torn: leaves broad-lanceolate, flat, smooth.

† *sanguineus*, W. (bloody dock. P. J. 4.) valves entire, oblong, one principally bearing the grain-like appendage: leaves heart-lanceolate.

aquaticus, (water dock. P. Y. C. Ju. 4.) valves ovate, entire, bearing obsolete grains: leaves heart lanceolate, acute.

patientia (garden dock, patience. E. 4.) valves entire, one of them bearing a grain-like appendage: leaves lance-ovate.

acetosa (garden sorrel. E. 4.) stem elongated: leaves oblong, sagittate acute, clasping.

† *acetosella*, L. (1) (field sorrel. O. g. and p. M. 4.) leaves lance-hastate, with ear-like processes near the base, entire. Taste very sour.

4—4. RUPPIA. 5. 13.

maritima (sea tassel-grass. C. D. P. J. 4.) floating: leaves pectinate, obtuse: flowers spiked.

(1) Lapathum, 2d ed. but the acetosa and patientia seem to unite the two genera.

10—1. Ruta. 26. 81.

+ *graveolens* (rue. E.) leaves more than decompound; leaflets oblong, terminal ones obovate: petals entire.

S.

5—1. Sabbatia. Adanson. (1) 20. 40.

+ *angularis* (American century. P. p. Au. ♂.) erect: leaves heart-ovate, clasping, flowers with long peduncles, corymbed; divisions of the calyx lance-linear: stem with 4 margined angles.

gracilis, Sy. (2) (P. r. Ju. ♂.) slender: branches lax elongated, 1-flowered: leaves oval-linear: divisions of the calyx linear, about equalling the corol: divisions of the corol obovate: stem angular.

chloroides, Ph. (3) (C. P. r. Au. ♂.) weak: leaves lanceolate, erect: branches few, 1-flowered; flowers 7 to 13-parted: divisions of the calyx linear, shorter than the divisions of the corol.

stellaris, Ph. (C. r. Au. ♂.) erect: branches dichotomous, elongated, 1-flowered: leaves lanceolate, acute: calyx subulate: divisions of the corol obovate: stem terete.

calycosa, Mx. (C. P. r. Au. ♂.) erect, leafy: leaves oblong-obovatish: flowers solitary, about 7-parted; calyx leafy, exceeding the corol, divisions oblanceolate.

paniculata, Mx. (4) (C. w. Ju. ♃.) leaves lance-linear: panicle many-flowered, brachiate, sub-fastigiate: calyx subulate: stem 4-cornered.

3—2. Saccharum. 4. 10.

officinarum (sugar cane. E.) flowers panicled, in pairs, one sessile and one pedicelled: corol 1-valved, awnless. From the East Indies originally.

+ 4—4. Sagina. 22. 82.

+ *procumbens*, S. (pearlwort. T. Y. C. Stockbridge. w. g. J.

(1) Chironia, L.
(2) campanulata, L.
(3) Chlora dodecandra, L.
(4) Swertia difformis, L.

4.) stem procumbent, glabrous : petals very short.—At New-Haven it grows only in running water or very wet shady places, forming a kind of water mat ; but it grows along dry road-sides in Stockbridge, Mass.

+*apetala*, C. (P. J. ☺.) stem erectish, pubescent : flowers sub-apetalous. Both species have linear, glabrous, connate leaves and axillary flowers.

20—13. SAGITTARIA. 5. 13.

+*sagittifolia* (arrow-head. O. w. Ju. 4.) leaves lanceolate, acute, sagittate : lobes lanceolate, acute, strait : scape simple : bracts and calyx lanceolate, acute. In water or very wet places.

latifolia, (O. w. Ju. 4.) leaves ovate acutish, sagittate ; lobes ovate, slenderly acuminate, strait : scape simple : bracts roundish, obtuse. Var. *major*, leaves large, abruptly acute : scape sub-ramose. Dioecious.

obtusa, W. (P. w. J. 4.) leaves broad-ovate, round-obtuse, mucronate, sagittate ; lobes near each other, oblong, obliquely acuminate, strait : scape simple : bracts ovate acute. Dioecious.

hastata, Ph. (D. P. w. Ju. 4.) leaves lance-oblong, gradually acute, sagittate ; lobes spreading, lanceolate, long-acuminate : scape simple : bracts and calyx roundish obtuse. Dioecious.

gracilis, Ph. (C. Litchfield. w. Ju. 4.) leaves linear, obtusish, 3-nerved, sagittate ; lobes spreading, linear, elongated, gradually becoming slenderly acuminate : scape simple, few-flowered : bracts short, sub-orbiculate. Leaves very slender, about 3 inches long including the petiole.

heterophylla, Ph. (O. w. Au. 4.) leaves simple, linear and lanceolate, acute at both ends ; or oval, acute, at the base obtuse, sagittate ; lobes spreading, linear : scape simple, few-flowered : pistillate flowers sub-sessile : bracts broad-ovate, acuminate.

rigida, Ph. (Oswego. w. Ju. 4.) leaves narrow-lanceolate, keeled below, rigid, very acute at both ends : scape ramose. Grows in deep water

simplex, Ph. (D. w. Ju. 4.) leaves lance-linear, acute, narrow below : scape simple, many-flowered : bracts and calyx round, obtuse. Dioecious.

graminea, Mx. (1) (Y. C. Can. P. w. Ju. 4.) leaves linear, long, 3-nerved : scape simple, few-flowered : bracts oblong, obtuse.

acutifolia, Ph. (P. N. C. w. Ju. 4.) leaves subulate, sheathed at the base, convex on the back : scape simple, few-flowered : bracts dilated, acuminate.

pusilla, N. (2) (P. D. Au. ☺.) leaves linear, obtuse, short; summits more like the leaves of dry land plants : scape simple, shorter than the leaves : flowers few ; pistillate ones solitary, deflected ; stamens about 7, one to three inches high. Leaves rarely subulate, about the twelfth of an inch wide. In mud.

natans. Mx. (P. w. Ju. 4.) leaves nodding, lance-oval, obtuse, 3-nerved, tapering to the base ; lower ones sub-cordate : scape simple, few-flowered : lower peduncles elongated.

1—1. SALICORNIA. 12. 29.

herbacea (samphire, glasswort. L. Onondaga. Au. ☺.) herbaceous, spreading : joints compressed at the apex, emarginate-bifid. Var. *virginica*, has the branches undivided and the jointed spikes very long. The fructification is very obscure ; but it may be known by its leafless nearly cylindric jointed branches. It grows in salt marshes along the sea-board. I collected it at Onondaga salt springs. It is used for pickles and for making soda. Bigelow says, the specimens about Boston have not the emarginate-compressed apex, as expressed above.

ambigua, Mx. (C. Ju. ♄ . ♄.) somewhat woody, ascending, very branching.

21—2. SALIX. 50. 99.

1. *Leaves entire, or obsoletely serrate.*

viminalis, Hn. (basket willow. E. Ap. ♄.) leaves lance-linear, very long, acuminate, entire, sub-undulated, white-silky beneath, glands scattered near the margin : stipules small : aments precede the leafing ; scales al-

(1) graminifolia, M.

(2) Alisma subulata, Mx. I included it under Alisma in this ed. before I observed Nuttall's remarks.

most round, very hairy : germs sessile, ovate : style filiform ; stigmas acute, undivided. Cultivated. B.

candida, W. (white willow. P. Catskill Mt. Ap. ♄.) leaves lance-linear, very long, obsoletely denticulate at the apex, pubescent above, white-downy beneath, margin revolute : stipules lanceolate, about equalling the petioles : aments precede the leafing, cylindric ; scales lance-obovate, down very long.

muhlenbergiana, W. (1) (speckled willow. P. Ap. ♄) leaves lanceolate, acutish, sub-entire, white-hairy, rugose-veiny beneath, margin revolute ; stipules lanceolate, caducous : aments precede the leafing ; scales oblong with villose margins : germs lance-ovate, silk-villose, long-pedicelled : styles short, stigma 2-cleft. Scale of the ament tipped with red. 3 to 5 feet high.

tristis, W. (mourning willow. Y. W. P. T. C. Ap. ♄.) leaves lance-linear, acute at both ends, entire, margin revolute, smoothish above, rugose-veined and downy beneath : stipules none : aments precede the leafing, oblong.

recurvata, Ph. (shrub willow. P. New-Jersey. Ap. ♄.) leaves lance-obovate, acute, entire, margin glandular, glabrous, glaucous beneath, in the young state silky : stipules none : aments precede leafing, recurved ; scales black at the apex, hairs of the length of the germs : germs ovate, short pedicelled, silky : style short, stigma 2-cleft. Probably a variety of S. rosmarinifolia.

repens, W. (2) (creeping willow. Whitehills. J. ♄.) creeping : leaves lance-oval, entire, acute, glabrous, somewhat silky beneath : stipules none : aments precede the leafing, ovate ; scales obovate, obtuse, hairy, sooty-yellow at the apex : germs ovate-oblong, pedicelled, pubescent : style short, stigma 2-lobed : capsules glabrous. Very small. Found on the Whitehills by Bigelow and Boot. We are indebted to these two gentlemen and Professor Peck, for most of the discoveries on this mountain, in every department of natural history.

prostrata, S. (W. ♄.) leaves without stipules, obtusely

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(1) incana, Mx. tristis, M. alpina, Wr.

(2) depressa, Hn, polymorpha, Eh.

dentate, oval acute, glaucous-silky beneath : stem prostrate.

pedicellaris, Ph. (stem-berried willow. N. Pittsfield, Catskill Mt. Ap. ♄.) branchlets smooth : leaves lance-ob-ovate, acute, entire, both sides glabrous and coloured alike : stipules none : aments flower at leafing time, peduncled, glabrous ; scales oblong, scarcely pilose, but half as long as the pedicels : germs ovate-oblong, glabrous, with very long pedicels : stigma sessile, 2-cleft.

rosmarinifolia, W. (rosemary willow. P. Ap. ♄.) leaves strait, lance-linear, acute at both ends, entire, sub-glandular at the margin, caducous-pubescent above, silky-beneath : stipules narrow-lanceolate, erect : aments precede the leafing, ovate, recurved : scales oblong, obtuse, ciliate : germs pedicelled, lanceolate, villose : stigma sub-sessile, 2-cleft. About three feet high.

fuscata, Ph. (sooty willow. P. Ap. ♄.) leaves lance-obovate, acute, glabrous, sub-serrate, glaucous beneath, in the young state pubescent : stipules very narrow : aments precede the leafing, nodding ; scales obtuse, scarcely hairy within : germs short-pedicelled, ovate, silky : stigma sessile, 2-lobed.

2. *Leaves remotely and obtusely serrate.*

conifera, W. (1) (rose willow, cone-gall willow. O. Ap. ♄.) leaves lance-oblong, remotely serrate, acute, glabrous above, flat and downy beneath, the first year's growth glabrous : stipules lunulate, sub-dentate : aments precede the leafing : scales lanceolate, obtuse, villose : germs pedicelled, lanceolate, silky : style 2-cleft : stigma 2-lobed. The scaly cones are mere excresences or galls, caused by the stings of insects.

myricoides, W. (gale leaf willow. O. Ap. ♄.) leaves lance-oblong, acute, 2 glands at the base, glabrous, glaucous beneath : stipules ovate, acute, glandular-serrate : aments flower at leafing time, villose, leafy at the base ; scales lanceolate, obtuse, villose, dark-coloured : germs long-pedicelled, lanceolate, glabrous : style 2-cleft ; stigma 2-cleft.

prinoides, Ph. (P. C. W. Ap. ♄.) leaves oval-oblong,

(1) eriocephala, Mx. longirostris, Mx. the elder.

acute, remotely wave-serrate, glabrous, glaucous beneath : stipules half-cordate, gash-toothed : aments precede the leafing, villose ; germs pedicelled, ovate, acuminate, silky : style long ; stigma 2-cleft.

discolor, W. (red-root willow, basket willow. O. Ap. ♄.) leaves oblong, obtusish, glabrous, remotely serrate, entire at the apex, glaucous beneath : stipules caducous, lanceolate, serrate : aments flower near leafing time, oblong, downy : scales oblong, acute, dark-coloured, hairy : germs sub-sessile, lanceolate, downy : stigma 2-parted.

angustata, Ph. (P. Ap. ♄.) leaves lanceolate, acute, very long, gradually tapering to the base, serrulate, glabrous, both sides coloured nearly alike : stipules half-cordate : aments precede the leafing, erect, smoothish : germs pedicelled, ovate, glabrous : style 2-cleft ; stigma 2-lobed. Resembles prinoides.

longifolia, W. (long-leaf willow. P. T. M. ♄.) leaves linear, acuminate at both ends, elongated, remotely denticulate, glabrous, both sides coloured alike : stipules narrow-lanceolate, denticulate : aments flower after leafing, peduncled, downy ; scales flat, retuse : filaments bearded at the base, twice as long as the scales. About 2 feet high.

3. *Leaves closely and acutely serrate.*

Remark. The first six of the following species have about 3 stamens to each flower.

babylonica (weeping-willow. E. M. ♄.) branchlets pendant : leaves lanceolate, acuminate, serrate, glabrous, upper and lower sides of different colours : stipules roundish, contracted : aments flower at leafing time : germs sessile, ovate, glabrous. Supposed to be the willow on which the Israelites hung their harps, when captive in Babylon. See the 137th Psalm.

falcata, Ph. (P. ♄.) leaves long, lance-linear, gradually tapering above, sub-falcate, acute at the base, close-serrate, glabrous both sides, in the young state silky : stipules lunulate, toothed, deflected. Branches very slender and brownish.

nigra, W. (1) (brittle-joint willow, black-willow. O. M. ♄.) leaves lanceolate, acute at both ends, serrulate,

(1) caroliniana, Mx. pentandra, Wr. vulgaris, Clayton.

same colour both sides, glabrous, petioles and midribs downy above: stipules contracted, toothed: aments flower at leafing time, erect, cylindric, villose: scales oblong, very villose: filaments 3 to 6, bearded at the base: germs pedicelled, ovate, glabrous: style very short; stigma 2-cleft. About 20 feet high.

lucida, W. (shining willow. O. M. ♄.) leaves ovate-oblong, cuspidate-acuminate, rounded at the base, serrate, glandular, glabrous both sides, shining: stipules oblong, glandular-serrate: aments flower in leafing time; scales lanceolate, obtuse, hairy at the base, serrate at the apex, glabrous: germs lance-subulate, glabrous; style 2-cleft; stigma obtuse. Size between shrub and tree.

rigida, W. (1) (stiff-leaf willow. P. C. T. W. Ap. ♄.) leaves lance oblong, acuminate, sub-cordate at the base, rigid, glabrous, sharply serrate; lower serratures elongated: petioles villose: stipules broad, cordate, obtuse, glandular-serrate: aments flower at leafing time: scales lanceolate, dark coloured, woolly: germs long-pedicelled, lanceolate, glabrous: style very short; stigma 2-parted. Branches red towards the end, in the young state pubescent. Used also in basket-making.

cordata, W. (heart-leaf-willow. P. T. W. Ap. ♄.) leaves lance-oblong, acuminate, cordate at the base, sharply serrate, glabrous, paler beneath: stipules broad, round-ovate, cartilaginous-serrate: aments flower at leafing time; scales lanceolate, dark coloured, woolly: germs pedicelled lanceolate, glabrous; style very short, stigma 2-cleft. 6 to 8 feet high.

grisea, W. (2) (grey-willow. P. W. Ap. ♄.) leaves lanceolate, acuminate, serrulate, glabrous above, downy on the midrib, silky or naked beneath: stipules linear, deflected, caducous; ament precedes the leafing; scales oblong, hairy, dark coloured at the apex; germs oblong, pedicelled, silky; stigma sessile, obtuse. About 8 feet high, joints brittle at the base.

vitellina (yellow-willow. O. M. ♄.) leaves lanceolate, acuminate, thickly-serrate, glabrous above, whitish-silky beneath: stipules none: aments flower in leafing time, cylindric: scales lance-ovate, both sides colour-

(1) cordata, Mx. cordifolia, Banks. (2) sericea, M.

ed like. outside pubescent: germs sessile, lance-ovate, glabrous: stigma sub-sessile, 2-lobed. Middle size tree. Every where indigenous, in the interior of the northern states. Var. *alba*, has the leaves white-silky both sides, and very long aments. This variety is usually the tallest,

ambigua, Ph. (D. Ap. ♄.) leaves lanceolate, acuminate, glabrous, both sides of the same colour, glandular-serrate: aments flower in leafing time: the pair of nectaries large; lobes lanceolate deformed, toothed at the apex, glabrous: the terminal florets have 3 stamens. Resembling the vitellina.

russeliana, W. (E. ♄.) leaves lanceolate, acuminate, serrate, glabrous: aments flower in leafing time; florets generally with 3 stamens: germs pedicelled, subulate, smooth: styles elongated. Tall tree.

petiolaris, W. (D. Ap. ♄.) leaves lanceolate, wholly serrate, smooth, glaucous-silky beneath, generally unequal at the base; stipules ternate, toothed, small: aments precede the leafing, loose, scales obovate, obtuse, having black hairs: germs long-peduncled, ovate, silky; stigmas sessile, 2-lobed. B.

5—2. Salsola. 12. 29.

†*kali* (saltwort. L. Ju. ☉.) herbaceous, decumbent: leaves channelled, spinose: calyx margined, axillary. Var. *caroliniana*, leaves dilated, shorter, terete, nerveless, spinose: stem smooth or hairy: calyx with a broader margin. Seed cochleate.

tragus (D. Ju. ☉.) erect: leaves subulate, spinose, smooth: calyx ovate. M.

soda (C. ☉.) spreading; leaves without prickles. M.

2—1. Salvia. 42. 39.

†*officinalis* (sage. E. b. J. 4. or ♄.) leaves lance-ovate, crenulate: whorls few-flowered: calyx mucronate.

sclarea (clarry. E. ♂.) leaves rugose, cordate, oblong, villose, serrate: floral bracts longer than the calyx, concave, acuminate.

†*lyrata* (wild sage. D. P. Can. b. M. 4.) radical leaves lyrate, toothed: upper lip of the corol very short: stem nearly leafless, reverse-hairy. Var. *obovata*, has the leaves obovate, repand.

verbenaca, P. (vervain sage. P. b-p. J. 4.) leaves serrate, sinuate, smoothish: corol narrower than the calyx.

urticifolia, Vahl. (nettle sage. D. b. J. 4.) villose-viscous: leaves ovate-oblong, toothed, decurrent along the petiole.

5—3. SAMBUCUS. 43. 58.

canadensis (black berried elder. O. w. J. ♄.) branchlets and petioles glabrous: leafets about in 4 pairs, oblong-oval, glabrous, shining, acuminate, midrib sub-pubescent, base sometimes appendaged: cyme lax, divided into about 5 parts.

pubescens, Mx. (red-berried elder. H. T. w. M. ♄.) bark warty: leafets in 2-pairs, lance-oval, pubescent beneath: flowers raceme-panicled, or in a crowded bunch.

5—1. SAMOLUS. 21. 34.

valerandi (brookweed. C. P. Y. N. w. Ju. 4.) leaves obovate: racemes elongated: pedicels bracted near the middle. Damp.

13—1. SANGUINARIA. 27. 62.

canadensis (bloodroot. O. w. Ap. 4.) leaves sub-reniform, sinuate-lobed: scape 1-flowered. A variety, *stenopetala*, has linear petals. Root highly efficacious in the influenza, hooping-cough, and the late epidemic. Ives. See Bigelow's Med. Bot. Also cathartic, emetic, and a secernant stimulant. B.

4—1. SANGUISORBA. 54. 92.

canadensis (burnet saxifrage. N. C. P. T. Saratoga. w. Ju. 4.) flowers in a long cylindric spike: stamens several times longer than the corols. The leaves resemble the burnet. Grows plentifully in Deerfield, Mass. and in Waterford, N. York.

media (Can ? P. r-w. Ju. 4.) spikes cylindric: stamens a little longer than the corol.

5—2. SANINCULA. 45. 60.

+ *marilandica* (sanicle. O. w. J. 4.) leaves digitate; leaflets oblong, gashed: part of the flowers are fertile, sessile and subternate; the others are barren, pedicelled, and the most numerous. The stem is upright and smooth, with pretty upright branches. The seeds are furnished with hooked bristles. After the unopened flowers appear, they are a long time in that state before they expand. About 2 or 3 feet high.

10—2. SAPONARIA. 22. 82.

+ *officinalis* (soapwort, bouncing bet. O. w. J. 4.) calyx cylindric: leaves lance-ovate. About 12 or 14 inches high. It may have been introduced from Europe.

vaccaria (field soapwort. W. r. Au. ☺.) calyx 5-cornered, cone-ovate: leaves ovate, acuminate, sessile. Probably introduced; but it now grows wild along the Hosick, near Williams College.

5—3. SAROTHRA. 20. 82.

+ *gentianoides*, L. (1) (nit-weed, false john's wort. T. Y. C. Hudson. p. y. J. ☺.) small, erect, setaceous-ramose: leaves minute, close-pressed: flowers on the branchlets alternate, solitary: stamens 5 to 10: capsule oblong, 1-celled. On the sandy plain west of Ball's spring, New-Haven; it grows about 5 or 6 inches high, has a leafless appearance, and always 10 stamens.

13—1. SARRACENIA. 54. 62.

purpurea (side-saddle. O. p. J. 4.) leaves radical, short, gibbose-inflated or cup-form, contracted at the mouth, having a broad arched lateral wing; the contracted part at the base hardly as long as the inflated part. Scape grows 1 to 2 feet high, with a single, large nodding flower. In marshes.

heterophylla (N. y. J. 4.) leaves radical, outer ones long-funnel-form, not contracted at the mouth, having a narrow strait lateral wing; the contracted part at the

(1) hypericoides, N. Hypericum sarothra, Mx.

base about twice as long as the inflated part; the inner leaves short, gibbose-inflated, contracted at the mouth, having an arched lateral wing, the contracted part at the base hardly as long as the inflated part: style longer than the filaments. The whole plant palish yellow, and very slender. Corol yellow. Dr. David Hunt, gave me specimens of this plant three years ago, (1818) which he collected in a swamp at Northampton, Mass. At first I was inclined to call it the flava. But it seems to embrace most of the characteristics of both the purpurea and flava. I have ventured to describe it here as a new species, though I had marked it in my herbarium, S. *purpurea*, Var. *variolaris*. P.

14—1. SATUREJA. 42. 39.

hortensis (summer savory. E. b-w. Ju. ☺.) peduncles axillary, somewhat in a cyme: leaves lanceolate, entire: stem brachiate.

+ *montana* (winter savory. E. ♄.) peduncles somewhat 1-sided: segments of the calyx acuminate, mucronate: leaves mucronate.

7—4. SAURURUS. 2. 6.

+ *cernuus* (lizard's tail. P. C. Can. Ju. 4.) stem leafy, many-spiked: leaves heart-sagittate. The stamens are so obscure, they can hardly be counted.

10—2. SAXIFRAGA. 13. 84.

+ *virginiensis*, Mx. (1) (rock saxifrage. O. w. M. 4.) minutely pubescent: leaves oval, obtuse, crenate, decurrent into the petiole: flowers sub-sessile on the dichotomous branches of an almost leafless scape. It may be found in flower from 1 to 15 inches high. On and near ledges of rocks, &c.

+ *pensylvanica* (water saxifrage. O g-w. J. 4.) pubescent: leaves lance-oblong, acute at both ends, obsoletely denticulate: scape leafless; panicle oblong, with fascicled branches at the top. One to four feet high. On wet ground.

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(1) nivalis, M. vernalis, Bw.

sarmentosa (beef-steak, creeping saxifrage. E. w. Au. 4.) leaves roundish, toothed, hairy : sending off creeping shoots : 2 petals in each flower elongated.

4—1. SCABIOSA. 47. 56.

stellata (star scabious, cat's eye. E. y-w. ☺.) corol 5-cleft, radiate : leaves cut and jagged : outer crown of the seeds orbicular, large, spreading, membranous, many-nerved. The heads of seeds are very ornamental for flowerpots in the winter, on account of their permanent shining crown.

atropurpurea (sweet scabious. E. r. 4.) corol 5-cleft, radiating : leaves pinnatifid and cut : receptacle cylindric : outer crown of the seed short, lobed and crenate.

Scandix, see Chaerophyllum and Uraspermum.

6—3. SCHEUCHZERIA. 5. 13.

+*palustris* (less flowering rush. P. T. V. Taghconnuk. g-y. J. 4.) stem glabrous : leaves semi-cylindric, sheathing at the base ; each having a lateral pore on the inner side, immediately below the cartilaginous tip. In ponds and marshes. Grows about a foot high.

22—1. SCHIZAEA. 55. 5.

pusilla, Ph. (one-sided fern. D. Ju. 4.) frond simple, linear-compressed : spikes conglomerate, inflexed, one-way. A party of botanists, consisting of Le Conte, Eddy, Pursh and Whitlow, found 3 specimens only of this species in 1805, all of which have been lost. This summer (1818) Dr. Torrey and Mr. Cooper have found great numbers of them. The only known locality is near Quaker bridge, New-Jersey, in a swamp. The specimen which Dr. T. sent to me, consists of 20 filamentous stems, proceeding from the same root.—Some of them have heads not unrolled. The tallest is 4 inches high, terminated by the one-sided fan-like aggregation of spikes, which is but one-eighth of an inch.

22—2. SCHISTIDIUM. 56. 4.

ciliatum, stem ramose : leaves lance-ovate, concave, diaphanous at the apex, denticulate : capsules ovate, sub-sessile : calyptre very long, mitre-form or bell-conic, split at the base into many small irregular divisions, beautifully reticulate.

3—1. SCHOENUS. 3. 9.

setaceus (bog-rush. D. P. 4.) peduncles axillary and terminal, about 3-flowered : culm 3-cornered ; culm and leaves setaceous. Most of the species of this genus are now removed to the genus Rhynchospora.

Schoenus, see Rhynchospora.

14—2. SCHWALBEA. 40. 40.

americana, W. (chaff-seed. D. p. J. 4.) simple, pubescent : leaves lanceolate : racemes terminal ; flowers alternate.

3—1. SCIRPUS. 3. 9.

1. *Culm with one terminal spike.*

tenuis, W. (club-rush. O. M. 4.) spike oval, acutish at both ends ; the 2 ovate, obtuse bracts are dark-coloured with whitish margins : culm 4-sided, leafless, a span high ; sheaths truncate, sub-mucronate : root creeping horizontally. In wet places, like most of the species of this genus.

palustris, L. (1) (P. C. M. 4.) spike oblong, erect : bracts obtuse : culm leafless, terete, purplish at the base, not hollow, somewhat jointed, enclosed at the base in a truncate sheath. About 2 feet high. Willdenow says, the sheaths and scales are lanceolate, acute. The root creeps horizontally. Seed roundish, rugose, bristles 3 or 4, hispid.

capitatus, L. (2) (O. Au.) spike globular-ovate, obtuse ; culm erect, leafless, compressed, cespitose, becoming slender under the spike : the sheath at the base retuse-

(1) Eleocharis, Br. (2) Eleocharis, Br.

mucronate, becoming white : seed shining, oval, glabrous, with 6 bristles, longer than the seed, placed under the style.

trichodes, M. (O. J.) spike ovate, acute, 1, 4 or 6-flowered, with a single obtuse bract : culm acicular, about an inch and an half high, cespitose, 4-sided, purplish at the base ; sheath truncate, obtuse : seed 3-sided, shorter than the bristles.

intermedius, M. (W. C. P. S.) spike ovate-oblong, acute, somewhat 2-cleft : culm greenish, 4-sided, cespitose, sulcate, a hand's breadth high ; sheath at the base acuminate : seed pear-form ; bristles 6, longer than the seeds.

planifolius, M. (P. W. N. V. M.) spike ovate, acute, 6-flowered : bract yellowish, ovate, cuspidate, longer than the spike : culm 3-sided, a span high, nearly leafless, cespitose : leaves sub-radical, alternate, linear, flat, keeled, scabrous ; lowest ones broad, abbreviated, nerves mucronate ; the rest 3-nerved, equalling the culm : seed 3-sided, with 3 bristles equalling the seeds.

obtusus, Bw. (Whitehills. Ju.) culm terete, naked : spike lanceolate, scales fleshy at the apex, obtuse. A new species discovered by Bigelow and Boot.

bracteatus, Bw. (Whitehills. Au.) culm terete : spike ovate, acute : involucre-like bracts : florets monandrous. A new species by Bigelow and Boot.

2. *Culm with several spikes.*

lacustris (great bull-rush, O. J. 4.) spikes sub-terminal, many, oblong-ovate, peduncled and sessile, with sooty-yellow bracts ; peduncles flat, 2-edged and terete ; scales glabrous mucronate : glumes ovate, obtuse, mucronate : pistil 2-cleft : culm 4 or 5 feet high, terete, leafless, becoming slender at the top : seeds obovate ; bristles 4, hispid, rather longer than the seed.

acutus, M. (common bull-rush. C. P. Ju. 4.) spikes with unequal compressed peduncles, oblong, sub-umbelled, lateral near the top : culm about 4-feet high, leafless, terete, having oblong sooty-yellow spots : glumes yellowish, keeled, mucronate, pubescent.

triqueter, M. (1) (O. Ju. 4.) spikes lateral, 1 to 5, ovate,

(1) Americanus, P.

conglomerate, sessile, sooty-yellow: culm perhaps somewhat leafless, sharply 3-cornered, 3 to 5 feet high, with an erect mucronate point, hollowed out on the sides: glumes ovate, mucronate, keeled: pistil 2-cleft; seed somewhat 3-sided, acuminate-crowned, flat and convex, becoming black, setose at the base. Var. ? *monotachius*, is about half a foot high, with a very short sub-radical leaf, sheath obtuse, bearing the leaf; spike simple, ovate, sessile; seed oval.

debilis, Ph. (P. C. Au.) spikes lateral, sessile, ovate, 1, 3, or 9, bractless, many-flowered, short: glumes ovate, obtuse and acuminate, margin white, keel green: culm leafless, erect, channelled, about one foot high, cespitose, sheathed at the base, apex strait: seed somewhat 3-sided or obovate, shining, dark-coloured, rugose or punctate, bristles 3 to 5, hispid, a little longer than the seed.

ferrugineus, M. (1) (P. D.) spikes sub-terminal, one in the middle sessile, the rest (3 or 4) peduncled, ovate acuminate; the terminal involucre 3-leaved, unequal, pubescent, one leafet strait: glumes ovate, acute, keeled, redish-brown, a little hairy: pistils fringed: culms cespitose, compressed, striate, glabrous: leaves radical and alternate, flat, striate, a little punctate, equalling the culm, at the base a broad sheath with a pubescent margin: seed obovate, striate, beardless. On dry land an inch or two in height, on wet land 1 or 2 feet.

spadiceus, M. (2) (P. C.) spikelets ovate-oblong; scales roundish, glabrous, chesnut-brown: spikelets in a terminal umbel; peduncles compressed, 1-spiked and divided into 3 or 4 spikes; involucres 3-leaved, unequal; style compressed, pubescent: culm compressed, about 3 feet high; radical leaves filiform, glabrous: seed compressed, striate, beardless.

capillaris, Vahl. (C. P. V. Y. Ju.) spikes 1 to 4, lateral, under the apex of the culm, one sessile, the rest peduncled; involucre 1 or 2-leaved: lower valve subulate, the rest obtuse, the keel green or white: culm setiform, an inch or two high, 3-sided, cespitose, nearly leafless: the leaves are sub-radical and alternate, setaceous, sheathing at the base with hairs at the top

(1) Puberulus, Mx. (2) Fimbristylis, Vahl.

of the sheath : seed somewhat 3-sided, beardless, subrugose, nerves transverse.

autumnalis, M. (1) (O. Ju.) spikes terminal, panicled, sub-umbelled, peduncled, proliferous, with a 2 or 3-leaved involucre, oblong, acute, sooty-yellow, alternately sessile : glumes ovate, mucronate, keeled : culms a span high, 2-edged, cespitose, with linear, flat, nerved leaves at the base : seed 3-sided, nerveless, beardless.

subsquarrosus, M. (P. Ju.) spikes 1 to 3, terminal, glomerate, ovate, sooty-yellow, sessile, many-flowered ; involucre 3-leaved, leafets unequal, linear, broader at the base, striate : glumes ovate, acute, purplish under the apex, at the apex mucronate and subsquarrose, keel green : culm from 2 to 5 inches high, 3-sided, almost leafless, purplish at the base, with 2 alternate, short sub-radical leaves ; sheaths of the leaves nerved, glabrous : seed 3-sided, beardless.

brunneus, M. (2) (P. C. S.) spikes panicled, terminal ; peduncles 5, unequal, alternately terete and flat, furnished at the base with a truncate sheath and a lanceolate leaf or involucre ; spikelets 3, 5 or 16, ovate, glomerate : glumes imbricate, ovate, keeled, sub-mucronate, brown : anthers red : culm 3-sided, striate, glabrous, leafy, about 2 feet high : leaves alternate, lancelinear, nerved, margin scabrous ; with a glabrous striate sheath : seed 3-sided, with bristles longer than the seed. The general involucre is 4-leaved, erect, longer than the panicle.

atrovirens, M. (O. J. 4.) spikes in a terminal panicle, proliferous ; involucre 3-leaved, with the margin and keel scabrous : branches of the panicle or peduncles unequal, 3 to 6, pedicels about 12 ; spikelets glomerate, about 12, ovate, acute : glumes imbricate, ovate, acute, keel hairy : stem 3-sided, striate ; glabrous, leafy, about 3 feet high : radical leaves lanceolate, keeled, long, those of the culm alternate, scabrous : sheaths striate, glabrous, pellucid : seed 3-sided, small, with 4 short bristles.

pendulus, M. (3) (P. Poughkeepsie, J. 4.) spikes in terminal and lateral panicles, nodding, all oblong-cylin-

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(1) Mucronulutus, Mx. Fimbristylis, Rs. (2) Exaltatus.
(3) Scirpus brizoides, W. Trichophorum pendulum.

dric, pedicelled; involucre 1-leaved: glumes imbricate, ovate, acuminate, white, with green keels: culm 3-sided, glabrous, leafy, about 3 feet high: leaves of the culm alternate, flat, striate, margin scabrous, sheaths striate: seed 3-sided, with many interwoven bristles longer than the seeds.

macrostachyos, M. (1) spikes sessile, peduncled, 6 to 12, ovate: involucre 3-leaved, unequal, elongated: scales of the spikes ovate, a little hairy, 3-cleft, the middle division awn-form: culm exactly 3-sided, glabrous, leafy at the base, more than a foot high: leaves lance-linear, nerved, keeled, glabrous, longer than the culm, sheathing at the base; seed with bristles, hispid backwards. Salt marshes.

10—2. SCLERANTHUS. 22. 86.

annuus (knawel, gravel chickweed. O. w-g. J. ☺.) calyx of the fruit spreading, acute: stem spreading subprostrate. In bunches 3 or 4 inches in extent, or more.

20—3. SCLERIA. 3. 9.

triglomerata (whip-grass. P. C. J. 4.) culm erect, simple 3-sided, scabrous: leaves scabrous at the margin; fascicles few-flowered, terminal: glumes ovate, mucronate, scabrous: nuts globose, acute, rugose.

pauciflora (P. C. Au. 4.) leaves narrow-linear, channelled, margin scabrous; fascicles very few-flowered, in pairs, terminal: nut small, white, transversely rugose. Stem erect, hardly a span high.

verticillata (P. Au. 4.) culm simple, 3-sided: culm and leaves glabrous: spike naked, with alternate distant glomerules: nut globose, mucronate, transversely rugose-warty.

22—6. SCLERODERMA. 58. 1.

citrinum, middle-size, roundish, sending off shoots, pale-yellow, scales thickish, obsolete. On the earth among oaks, or on trunks, in autumn.

22—6. SCLEROTIUM. 58. 1.

semen (barked puff-ball. P.) globular or pear-form,

(1) robustus, Ph. maritimus, Mx.

blackish, becoming rugged ; gregarious. On dead potato-stems in autumn.

durum, ovate, hard, sub-striate, obscure, black. On the dried stems of large herbs in autumn and winter.

22—1. SCOLOPENDRIUM. 55. 5.

officinarum, W. (1) (caterpillar fern. Onondaga. Ju. 4.) frond broad-lanceolate, cordate at the base : stipe chaffy.

18—1. SCOLYMUS. 49. 55.

hispanicus (golden thistle. E. 4.) flowers aggregated : leaves scabrous, rough-haired on the mid-rib beneath ; interruptedly decurrent.

18—1. SCORZONERA. 49. 55.

hispanica (viper's grass. E 4.) stem branching, leaves clasping, lanceolate, entire, subserrulate at the base.

14—2. SCROPHULARIA. 40. 40.

marilandica, L. (2) (figwort. O. g-p. Ju. 4.) leaves cordate, serrate, acute, roundish at the base ; petioles ciliate below : fascicles of the panicle lax, few-flowered. 3 to 7 feet high.

lanceolata, Ph. (P. T. g-y. Au. 4.) leaves lanceolate, unequally serrate, acuminate, acute at the base ; petioles naked : fascicles of the panicle corymbed.

14—1. SCUTELLARIA. 43. 39.

galericulata (scull-cap. O. b. J. 4.) branching : leaves sub-sessile, lance-ovate, sub-cordate at the base, crenate, a little white-downy beneath : flowers axillary, solitary. Flowers large. From 10 to 18 inches high. Damp.

lateriflora (mad dog scull-cap, hoodwort. O. b. Ju. 4.) branching, glabrous : leaves long-petioled, ovate, toothed ; cauline ones sub-cordate : racemes lateral, leafy. Damp.

Much has been said and published on the wonderful

(1) Asplenium Scolopendrium, L. (2) nodosa, Var. americana, Mx.

virtues of this plant. It is said to be an antidote to the hydrophobia, to the poison of serpents, &c. W. Coleman, Esq. editor of the New-York Ev. Post, has certainly merited public gratitude for his diligence in collecting and publishing so many well-attested facts in relation to this subject; even if it should finally appear, that the plant does not possess those virtues.

ovalifolia, P. (1) (C. P. b. J. ♃.) leaves sessile, ovate or sub-oval, serrate; upper ones lanceolate, sub-entire.

parvula, Mx. (P. w-b. J. ♃.) small, simple, densely pubescent: leaves sessile; ovate, entire: flowers axillary, solitary. About 2 inches high.

integrifolia (D. P. b. Ju. ♃.) somewhat simple, densely pubescent: leaves subsessile, oblong or linear, obtuse, entire, tapering to the base: racemes laxish, leafy. Var. *hyssopifolia*, has the leaves all linear.

cordifolia, M. (2) (P. b. w. Au. ♃.) leaves broad-cordate, obtusely toothed, petioles long: racemes ternate, terminal; bracts ovate: stem branching. Large and robust.

gracilis, N. (P. b-w. ♃.) stem sub-simple: leaves remote, broad-ovate, dentate, smooth, sessile, scabrous at the margin; upper ones entire, flowers axillary. Resembles the galericulata.

3—2. Secale. 4. 10.

cereale (rye. E. J. ☉.) glume scabrous-ciliate: scales of the calyx narrow: awns long and reverse-prickly: leaves rough near the point.

10—5. Sedum. 13. 83.

telephium (orpine, live-forever. E. r. w. Ju. ♃.) leaves flattish, tooth-serrate, thickly scattered: corymb leafy: stem erect.

ternatum, Mx. (false ice-plant. P. w. J. ♃.) small, creeping: leaves flat, round-spatulate, ternate: flowers somewhat 3-spiked. Varies into the eighth class. Cultivated.

anacampseros (stone crop. E. ♃.) leaves wedge form, entire, sub-sessile: stem decumbent: flowers corymbed.

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(1) pilosa, Mx. (2) versicolor, N.

5—2. SELINUM. 45 60.

canadense, Mx. (1) (milk-parsley P. V. Can. w. Ju. 4.) very glabrous, shining: leaves doubly pinnate; leaflets many-parted, divisions lanceolate: fruit ovate.

11—13. SEMPERVIVUM. 13. 83.

tectorum (house-leek E. Au. 4.) leaves ciliate: bulbs spreading: nectaries wedge-form, crenulate.

arboreum (tree houseleek. E.) stem woody, smooth, branching: leaves wedge-form, glabrous, with soft spreading hairs.

18—2. SENECIO. 49. 55.

1. *Florets tubular; rays none.*

Remark. The three first species vary from the character of the section, under which the genus is placed; being destitute of rays.

+ *vulgaris* (groundsel. T. P. y. J. 4.) leaves mostly clasping sinuate pinnatifid, toothed: flowers panicled: stem erect, branched, angular. Near the Patroon's in Albany it grows 18 to 20 inches high, and the leaves a very little clasping.

+ *hieracifolius* (fire weed. O. w. J. ☺.) stem wand-panicled: leaves clasping, oblong, acute; deeply, acutely and unequally toothed: calyx smooth. From 4 to 8 feet high. This plant springs up wherever land has been recently cleared of timber; and more particularly if it has been burned over. It is very strong scented, and is said to be useful in hemorhagy.

elongatus, Ph. (long-stem groundsel. P. Ju. 4.) glabrous: radical leaves spatulate, serrate, tapering into the petiole; cauline leaves pinnatifid, toothed very remotely: peduncles elongated, corymb-umbelled.

2. *Flowers with ray florets.*

+ *aureus*, W. (ragwort. O. y. J. 4.) radical leaves ovate, cordate, serrate, petioled; cauline ones pinnatifid, toothed, terminal division lanceolate: peduncles subumbelled, incrassate. 18 to 24 inches high.

balsamitae, W. (balsam groundsel. V. D. P. y. J. 4.) ra-

(1) Apium bipinnatum, Wr.

dical leaves oblong, serrate, petioled ; lower cauline ones lyrate-pinnatifid, serrate ; upper ones pinnatifid, toothed : flowers sub-umbelled : stem and peduncles villose at the base.

obovatus, W. (H. y. M. 4.) radical leaves obovate, crenate-serrate, petioled ; cauline ones pinnatifid, toothed : flowers sub-umbelled, long peduncled : stem somewhat glabrous.

gracilis, Ph. (P. M. 4.) radical leaves very long-petioled, orbicular, sub-cordate, crenate ; cauline ones few, very remote, linear-oblong, dilated at the base, gash-toothed : peduncles very short, hirsute, sub-umbelled : calyx hairless ; rays few, very short.

canadensis, W. (Can.) leaves doubly pinnate, linear, glabrous ; uppermost ones simply pinnate : flowers in compound, fastigiate corymbs.

20—4. SERPICULA. 15. 88.

occidentalis, Ph. (1) (ditch moss. O. w. Ju. 4.) perfect flowers triandrous : stigmas strap-like, reflexed, 2-cleft : leaves linear, acute, somewhat whorled, glabrous, denticulate. The pistillate corols are tubular.

20—16. SICYOS. 34. 97.

angulata (single-seed cucumber. O. w. Ju. ☺.) leaves cordate with obtuse hind lobes, 5-angled, scabrous, denticulate : fruit capitate, hispid. Cultivated every where ; also indigenous. River alluvion.

16—13. SIDA. 87. 74.

abutilon (indian mallows. O. y. Ju. ☺.) leaves round-cordate, acuminate, toothed, tomentose : peduncles solitary, shorter than the petioles : capsules 2 awned, truncate, 4 to 6 feet high ; about gardens, roads, &c.

spinosa, W. (P. D. y. Ju. ☺.) stem spreading ; axils subspinose : leaves long-petioled, lance-ovate, obsoletely cordate, toothed : peduncles solitary, axillary : stipules setaceous, longer than the peduncle : capsules 2-beaked.

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(1) verticillatus, M. Elodeacanadensis, Mx. Udora canadensis, N.

crispa. W. (P. w. Ju. ☺.) leaves oblong-cordate, acuminate crenate, top ones sessile : peduncles solitary, longer than the petioles, when they bear fruit they are deflected : capsules inflated, awnless, crisp-undulate. On the sea coast.

10—3. SILENE. 22. 82.

+ *antirrhina* (sleepy catchfly. O. w-p. J. ☺.) leaves lanceolate, subulate : peduncles 3-parted : petals emarginate : calyx ovate. Flowers small.

+ *pensylvanica,* Mx. (1) (pink catchfly. T. Y. N. C. P r. J. 2.) viscid-pubescent : lower leaves wedge-form ; upper leaves lanceolate : stems few-flowered at the summit : about 3 petals, obtuse, slightly emarginate, sub-crenate.

× *virginica,* Mx. (2) (P. T. r. J. 2.) decumbent : wholly viscid-pubescent : leaves oblong, a little rough at the margin : panicle dichotomous : petals 2-cleft : stamens and pistils exsert. Very handsome. Var *erecta,* has the stem erect ; flowers sub-fascicled. Sandusky bay.

nocturna, W (P. w. J. ☺.) flowers alternate, sessile, on a one-sided spike : petals 2-cleft.

+ *armeria* (garden catchfly. E. w-r. Au. ☺.) flowers fascicled, fastigiate : upper leaves cordate, glabrous : petals entire.

conica (cone-fruit catchfly. E. r. ☺.) calyx of the fruit conic, striate : (about 30 striate) leaves soft, lanceolate : petals bifid. Flowers small.

dichotoma (forked catchfly. E. w. Au. ♄.) calyx ovate, viscid-hairy, erect : petals 2-cleft : racemes in pairs, terminal, one-sided ; flowers intermediate, peduncled : leaves petioled, lance-ovate, ciliate at the base.

+ *noctiflora* (night flowered catchfly. E.) calyx 10-angled, veiny ; teeth of the tube equal : stem dichotomous : petals bifid.

18—4. SILPHIUM. 49. 55.

perfoliatum, W. (ragged cup. P. y. Au. 2.) stem 4-sided, smooth : leaves opposite, triangular ; connate, ovate, serrate, 5 or 6 feet high ; very strong.

+ *ternatum,* W. (P. Niagara. y. Ju. 2.) stem terete,

(1) virginica, W. caroliniana, Wr. (2) catesbaei, Wr.

smooth : leaves whorled in threes, petioled, lanceolate, sub-denticulate, a little scabrous, ciliate at the base ; the upper ones scattered, sessile ; panicle dichotomous : calyx ciliate.

integrifolium, W. (P. y. Au. 2.) stem 4-sided, rough : leaves opposite, sessile, oblong, entire, scabrous : flowers few, short-peduncled. About 4 feet high.

5—2. SINAPIS. 39. 63.

nigra (common mustard E. y. J. ☺) silique glabrous, 3-sided, somewhat smooth, close-pressed to the stem : leaves at the top lance-linear, entire, smooth. Naturalized.

† *alba* (yellow-seed mustard. E. y. ☺) silique bristly, rugged, shorter than the 2-edged beak : leaves pinnatifid ; upper ones sub-lyrate, all irregularly toothed. Seeds large, pale-yellow and sometimes become blackish.

Sison, see Myrrhis, in the additions and corrections.

22—6. SISTOTREMA. 58. 1.

cinereum, imbricate, sub-erose : pileus halved, hirsute, cinereous beneath. On trunks of trees, &c.

violaceum, halved, imbricate, tomentose, white, becoming purple-violet beneath. On trees.

quercinum, glabrous, pale, somewhat reddish-yellow : teeth thick, deformed, gashed, somewhat close pressed. On dry oak branches, &c.

cerasi, small, orbicular, gibbose, pale, downy at the margin : teeth various, thick, close-pressed. On branches and roots.

15—2. SISYMBRIUM. 39. 63.

† *amphibium* (water radish. O. y. J. 2.) silique (or rather silicle) oblong-ovate, declined : leaves lance-oblong, pinnatifid or serrate : petals longer than the calyx. 1 to 2 feet high. A student would be induced, from the shortness of the pod, to look for it in the first order. Wet.

† *nasturtium*, (english watercress. P. Boston. w. J. 2.) silique short, declined : leaves pinnate ; leafets roundish, somewhat repand-toothed.

palustre, L. (1) (O. y. Ju ☉.) silique declined, oblong-ovate : leaves pinnatifid, serrate : petals shorter than the calyx.

vulgare (creeping water-cress. P. D. y. J. ♃.) silique declinate : leaves pinnate, leafets lanceolate, gash-serrate.

+16—3. SISYRINCHIUM. 6. 18.

+*anceps*, Lk. (2) (blue-eyed grass. O. b. J. ♃.) scape [or culm] simple, 2-edged or 2-winged : glume-like spathe of 2 unequal valves, extending above the flower. Students generally puzzle themselves in examining this plant, by considering the 3 united filaments enclosing the style, as a single filament. 10 or 12 inches high.

+*mucronatam*, Mx. (P. b. J. ♃.) leaves and scape simple, sub-setaceous : spathe coloured, with one valve terminating in a long mucronate point.

5—2. SIUM. 45. 60.

+*latifolium* (water parsnep. O. w. Ju. ♃.) leaves pinnate ; leafets oblong-lanceolate, equally serrate : stem erect, angular, hollow, smooth. The leaves are alternate, and generally consist of about 3 pair of leafets, besides the terminal one. Whenever any of the leaves grow under water, they are sub-divided.

lineare, Mx. (P. C. Y. w. Ju. ♃.) leaves pinnate ; leafets elongated, linear, sub-lanceolate : serratures remotish : general involucre few-leaved ; partial ones numerous, linear : umbels with short peduncles. Wet.

Smilacina, see Convallaria.

Remark. Smith says, he cannot admit this name, notwithstanding all his respect for its excellent author, Desfontaines. But he thinks the line of distinction should be more accurately drawn between the Convallaria and some of its neighbors ; though he seems not inclined to adopt the modern divisions of this very natural genus. See Rees' Cyclopoedia.

(1) terrestre, S. (2) gramineum, C.

21—6. SMILAX. 11. 12.

1. *Stem woody; branches angled.*

sarsaparilla, L. (1) (C. P. J. ♄.) prickly: leaves unarmed, lance-ovate, cuspidate, sub-5-nerved, becoming glaucous beneath: the general peduncles longer than the petioles.

2. *Stem woody; branches terete.*

rotundifolia, L. (2) (green brier. O. w-g. J. ♄.) prickles scattered: leaves (when in maturity) round-ovate, acuminate, slightly cordate, 5-nerved: berry spherical. This singular bramble sometimes climbs to the height of an hundred feet, while the largest part of the stem does not exceed the fourth of an inch in diameter.

caduca (P. C. Can. J. ♄.) prickly: leaves ovate, mucronate, 5-nerved: general peduncles scarcely longer than the petioles.

pseudo-china (D. M. ♄.) unarmed in all parts: cauline leaves cordate, ramose ones oblong-ovate, 5-nerved: peduncles very long.

laurifolia (C. D. Ju. ♄.) prickly; branches unarmed: leaves oval or lance-oval, leathery, obtuse, recurve-prickly, 3-nerved: umbels short-peduncled.

pandurata, Ph. (D. Ju. ♄.) prickly: leaves ovate-guitar-form, acuminate, 3-nerved: general peduncles twice as long as the petioles.

3. *Stem herbaceous.*

†*peduncularis*, W. (jacob's ladder. O. w-g. M. 4.) stem terete, climbing or arching over: leaves round-ovate, cordate, acuminate, about 9-nerved (sometimes but 7) umbels long-peduncled. Damp.

†*herbacea* (O. g. J. 4.) stem angled, erect, simple: leaves long-petioled, oval, about 7-nerved: umbels with long compressed peduncles: berries depressed-globose.—Damp.

5—2. SMYRNIUM. 46. 60.

†*cordatum*, Wr. (3) (Alexanders, O. y. J. 4.) radical leaves round-cordate, crenate; cauline ones petioled, ternate; uppermost ones 3-parted: umbels with short petioles.

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(1) glauca, Mx. (2) quadrangularis, W. (3) trifoliatum, M. Thapsia, L.

†*integerrimum*, W. (O. y. 4.) very glabrous: leaves subglaucous; lower ones thrice ternate; upper ones doubly ternate; leafets oval, entire: umbels with a few setaceous, elongated peduncles.

barbinode, M. (1) (P. p. y. Ju. 4.) leaves all ternate; leafets ovate, acute, serrate.

Smyrnium, see Thaspium.

5—1. SOLANUM. 28. 41.

dulcamara (bittersweet. O. p-b. Ju. ♄.) stem unarmed, woody, climbing: lower leaves mostly cordate, glabrous; upper ones mostly guitar-hastate: few-flowered corymbs opposite to leaves. This is the true bittersweet; but the Celastrous scandens is wrongly called so by some. Useful in asthma and rheumatism. Cutler. Damp.

†*nigrum* (deadly nightshade. O. w. p. b. J. ☺.) stem unarmed, erectish or erect; branches angled, dentate: leaves ovate, repand, glabrous, racemes two-ranked, nodding.

†*carolinense*, W. (horse-nettle. P. b. J. ☺.) stem prickly: leaves angular-hastate covered with prickles both sides: racemes lax.

tuberosum (potatoe. South America. b. w. Ju. ♄.) stem wing-angled, unarmed: leaves interruptedly pinnate; leafets entire: flowers sub-corymbed; roots knobbed-tuberous. Cultivated.

†*lycopersicum* (love apple, tomatoes. E. y. S. ☺.) stem unarmed: leaves pinnatifid, gashed: racemes 2-parted, leafless, fruit glabrous, torulose.

melongena (egg-plant. E. J. ☺.) stem unarmed: leaves ovate, tomentose: peduncles pendant, incrassate: calyx unarmed.

pseudo-capsicum (jerusalem cherry. E. ♄.) stem woody: leaves lanceolate, repand: umbels sessile.

18—2. SOLIDAGO. 49. 55.

Remark. During the last summer month and autumn, the species of this extensive genus will occupy much of the time of the student in botany. Perhaps there is more difficulty in distinguishing the species of this genus than of any other; not excepting the Aster, Carex and Salix.

(1) as ropurpureum, Lk.

I shall therefore give most of the extensive and accurate descriptions of President J. E. Smith [vid. Rees' Cyclopoedia.] He took a review of Pursh and of all preceding writers, and then wrote, with specimens of almost every species before him. I shall vary the expressions no more than is necessary to make my language uniform.

1 *Flowers one-sided. Leaves with three combined nerves.*

canadensis (canadian golden-rod. O. y. Ju. 4.) stem downy: leaves lanceolate, serrrate, rough; racemes copious panicled, recurved: rays hardly longer than the disk. 18 inches to 5 feet high. Stem angular; leaves sessile, 3 inches long, sometimes nearly entire.

procera, A. (great golden-rod. O. y. Ju. 4.) stem villose, erect: leaves lanceolate, serrate, rough villose beneath: racemes spike-form, erect, drooping before flowering; rays short. 4 to 7 feet high.

serotina, W. (smooth golden-rod. O. y. S. 4.) stem erect, terete, smooth: leaves lance-liner, glabrous, serrate, rough-edged: racemes panicled: peduncles downy. The young leaves are edged with many little stiff white hairs.

+*gigantea*, (giant golden rod O. y. Au. 4.) stem erect, glabrous: leaves lanceolate, smooth, serrate, rough-edged, obscurely 3-nerved: racemes panicled: peduncles rough-haired: rays short. 4 to 7 feet high.

ciliaris, W. (fringed golden-rod. O. y. 4) stem erect, glabrous; leaves lanceolate, somewhat 3-nerved, glabrous, rough-edged, slightly serrate: racemes panicled; peduncles glabrous: bracts ciliate: rays short. The stem is angular; radical leaves petioled, oval, pointed, veiny, serrate, rough, near a foot long: branches of the panicle spreading; bracts minute.

reflexa, W. (hang-leaf golden-rod. D P. y. Au. 4.) stem erect, villose; leaves lanceolate, sub-serrate, scabrous, reflexed: racemes panicled, very little one-sided, reflexed.

lateriflora, A. (side-flowered golden-rod. P. Can. y. Au. 4.) stem erect, a little hairy: leaves lanceolate, slightly 3-nerved, glabrous, rough-edged, lower ones subserrate, racemes panicled, a little recurved. Flowers large, the rays being much longer than the calyx, stem 2 to 3 feet high, striated, often purplish, pinnatifid, with numerous lateral flowering branches.

2. *Racemes or flowers one-sided. Leaves veiny.*

aspera, A. (rough golden-rod. C. P. y. Au. 4.) stem erect, terete, hairy: leaves ovate, somewhat oval, very rough, rugose, serrate: racemes panicled. About 3 feet high; leaves 1 to 2 inches long, acute; racemes dense, somewhat conic: ray florets twice as long as the calyx.

altissima, W. (variable golden-rod. O. y. Au. 4.) stem erect, rough-haired: leaves lanceolate, lower ones deeply serrate, scabrous, rugose. The panicled racemes are very numerous and spread every way, so as to bring the one-sided flowers upwards; rays half as long again as the calyx. But this species is so variable, that students generally endeavor to make several species of it. It is 3 to 5 feet high. The serratures of the leaves are equal and unequal; it is hairy or villose; and sometimes the racemes diverge but little.

rugosa, W. (wrinkled golden-rod. O. y. Au. 4.) stem erect, rough-haired: leaves lanceolate, scabrous, rugose, lower ones with close-pressed serratures; racemes panicled, very spreading. Leaves shorter and broader than the last, and the flowers a little smaller.

scabra, W. (harsh golden-rod. O. y. Au. 4.) stem erect, rough-haired, furrowed: leaves oblong, tapering to both ends, acuminate, glabrous above, rugose and scabrous beneath, along the middle close-pressed-serrate.

nemoralis, A. (woolly golden-rod. T. Can. y. Au 4.) stem erect downy: cauline leaves lanceolate, hispid entire: radical ones somewhat wedge-form, serrate: racemes panicled. 1 to 2 feet high, of a grey aspect.

patula, M. (spread golden-rod. O y. S. 4.) stem erect, glabrous: leaves oval, serrate, glabrous, radical ones oblong-spatulate: racemes panicled, spreading: peduncles pubescent. Stem about 2 feet high, wand-like, angular and striate; stem-leaves sessile, about an inch long, pointed, the radical ones resemble those of the ox-eyed daisy; racemes about an inch long, flowers rather large.

ulmifolia, W. (elm golden-rod. O. y. Au. 4.) stem erect, glabrous, striate: leaves oval, deeply serrate, acuminate, villose beneath; radical ones obovate: racemes panicled: peduncles villose: rays short. Radical

leaves, resemble those of the last species and are hairy both sides, some of the rest are oblong-ovate and only villose near the veins beneath ; the petioles are bracted.

arguta, W. (sharp-notch golden-rod. O. y. S. 4.) stem erect, glabrous : leaves glabrous, sharply and unequally serrate, cauline ones oval, radical ones oblong-ovate : racemes panicled : rays elongated.

juncea, W. (rush-stalk golden-rod. W ? P. y. Au. 4.) stem erect, glabrous : leaves lanceolate, glabrous, rough-edged, lower ones serrate : racemes panicled. Stem brownish, somewhat angular and striate, leafy ; racemes a finger's length, dense, recurved-spreading, compound, pedicels roughish, bracted ; ray twice as long as the calyx.

elliptica, W. (1) (oval leaf golden-rod. P. C. y. Au. 4.) stem erect, glabrous : leaves oval, smooth, serrate : racemes panicled : rays of middling length.

recurvata, W. (curved golden-rod. P. y. S. 4.) stem erect, pubescent : leaves lanceolate, serrate, rough-edged : racemes elongated, recurved panicled.

sempervirens, W. (narrow-leaf golden-rod. C. D Can. y. S. 4.) stem erect, glabrous : leaves lanceolate, somewhat fleshy, smooth, entire, rough edged : racemes panicled ; peduncles hairy. Stem tall, purplish, a little glaucous ; leaves many, narrow, long ; ray florets long, narrow, rather numerous.

odora, W. (sweet-scented golden-rod. O. y. Au. 4.) stem erect, pubescent : leaves lance-linear, entire, glabrous, rough-edged : racemes panicled. The upper part of the stem is furrowed ; racemes 2 or 3 inches long, spreading horizontally, each generally accompanied by a leaf ; bracts oblong, smooth ; stalk angular and rough. This is the true golden-rod tea-plant. The flowers dried so as not to be musty make a pleasant tea, which is moderately astringent and promotes perspiration.

3. *Racemes erect.*

bicolor, W. (white golden-rod. O. w. Au. 4.) stem hairy : leaves oval, hairy, lower ones serrate ; those on the flower-branches entire, numerous, and small ; scales

(1) latissimifolia Miller.

of the calyx obtuse. Racemes are short and compact, rays white, somewhat numerous and shortish; disk florets rather numerous.

petiolaris, W. (late golden-rod. P. D. y. Oc. 2f.) stem erect, villose: leaves oval, roughish, petioled: rays twice as long as the calyx. Stem branching, terete, hoary; leaves hoary about the ribs, over an inch in length, those covering the flower-branches sub-entire; racemes numerous, short, with few and rather large flowers.

stricta, W. (willow-leaf golden-rod. P. D. y. Au. 2f.) stem erect, glabrous: cauline leaves lanceolate, entire, glabrous, rough-edged; radical leaves serrate: racemes panicled, erect; peduncles glabrous. The branches of the panicle are erect, simple, close.

squarrosa, N. (D. P.) robust, stem thick and hairy above: leaves smooth, lower ones very broad, spatulate-oval, serrate, acute, margin scabrous; the upper ones sessile, lance-oval, entire: racemes glomerate, rigid, pubescent: calyx squarrose, many-flowered: ray florets elongated, 10 or 12. Two or three feet high.

† *lanceolata*, A. (1) (grass-leaf golden-rod. O. y. S. 2f.) stem furrowed, smoothish (rough-haired, Willd.) very furrowed, smoothish: leaves almost linear (lance linear, Willd.) entire, roughish; nearly erect, with 3 or 5 rough nerves: corymbs terminal, level-topped: flowers in heads: rays not longer than the disk. Stem 4 or 5 feet high, leafy; leaves sessile, grass-green, about 2 inches long and a quarter of an inch wide; flowers smallish; calyx ovate, smooth, shining, with tumid green-tipped scales.

tenuifolia, Ph. (2) (pigmy golden-rod. P. D. y. S. 2f.) stem rough, angular, branched, corymbed: leaves spreading, linear, very narrow, slightly 3-nerved, scabrous, with axillary tufts of smaller ones: corymbs terminal, level-top: flowers in heads: rays scarcely exceeding the disk. About a foot high; leaves very small and narrow.

caesia, W. (blue-stem golden-rod. O. y. Au. 2f.) stem nearly erect, very smooth and even: leaves lanceolate, glabrous, with the margins and nerves roughish;

(1) graminifolia, N. Chrysocoma graminifolia, L.
(2) lanceolata, Var. minor, Mx.

rays rather longer than the disk. Stem upright, somewhat zigzag, branched, leafy ; leaves about 2 inches long, pointed, sub-entire, sub-glaucous, paler beneath : racemes numerous, short, rough-pedicelled ; bracts small, smooth, subulate.

livida, W. (purple-stem golden-rod. P. y. S. 4.) stem glabrous, panicled : leaves lanceolate, serrate, glabrous, rough-edged : branches racemed at the extremity : rays elongated. Stem branched, dark purple ; leaves tapering to both ends.

hispida, W. (O. y. Oc. 4.) stem erect, hispid, scabrous : leaves lanceolate, rough, entire : radical ones serrate : rays of middling length—Resembles the caesia.

puberula, N. (D. y.) stem simple, terete, sub-pubescent : leaves lanceolate, entire, slightly pubescent both sides, tapering to both ends ; radical ones sub-serrate : racemes spiked, axillary, erect and condensed ; peduncles pubescent : scales of the calyx lance-linear, acute ; ray florets about 10, elongated. Stem brownish, 1 to 2 feet high, simple, pubescent.

laevigata, W. (flesh-leaf golden-rod. P. C Boston. y. S. 4.) stem erect ; smooth : leaves lanceolate, fleshy, entire, smooth in every part : racemes panicled : peduncles scaly, villose : rays twice as long as the calyx. Tall, strong. Probably a variety of Maxicana. Grows in salt marshes.

viminea, W. (1) (twig golden-rod. P. Can. y. Au 4.) stem erect, sub-pubescent : leaves lance-linear, membranaceous, tapering to the base, glabrous, rough-edged, the lower ones subserrate, rays elongated Peduncles and branches angular and very rough ; bracts lanceolate, recurved, smooth ; flowers numerous.

macrophylla, Ph. (Can. T. 4.) lower leaves ovate, acuminate, tapering, unequally and sharply serrate, glabrous ; cauline leaves tapering to both ends, lanceolate, sub-sessile, serrate : racemes axillary, peduncled, leafy, of the length of the leaves : calyx oblong, turgid, many-flowered : rays somewhat elongated. About 3 feet high. Intermediate between this genus and the aster

flexicaulis, Ph. (zigzag golden-rod. O. y. Au. 4.) stem

(1) integerrima, Miller.

zigzag, glabrous, angled: leaves lanceolate acuminate, serrate, glabrous: racemes axillary: rays half as long again as the calyx. Stem slender, purplish, partly terete and partly angular; leaves numerous, on short broad petioles, hardly 2 inches long and half an inch wide, paler beneath, the upper less serrate; racemes much shorter than the leaves, the upper ones sub-capitate.

latifolia, M. (1) (broad leaf golden-rod. W. T. C. P. y. Au. 4) stem somewhat zigzag, angular smooth: leaves ovate acuminate, strongly serrate, smooth contracted into winged petioles: racemes axillary Leaves often 2 inches broad, and sometimes hairy on the under side of the mid-rib.

axillaris, Ph. (2) (axil golden-rod. O. Au. 4.) stem glabrous, terete, strait: leaves lanceolate, serrate, glabrous: racemes axillary, sub-globose, erect: ligulate florets elongated

rigida A. (hand-leaf golden-rod, P. D. Hudson. y. Au. 4) stem corymbed, hairy, scabrous: leaves ovate-oblong, rough, with minute rigid hairs; lower ones serrate, upper ones entire: racemes compact: rays twice the length of the obtuse calyx. Stem 4 or 5 feet high, terete, striate, leafy; leaves a little hoary, radical ones petioled 12 inches long, broad, acuminate, nerved, the rest 1 to 4 inches long; scales of the calyx round-obtuse, nerved, membranous at the edges.

noveboracensis (star golden-rod. N. C. y. Oc. 4.) radical leaves oval-oblong, long-petioled, rough: stem almost leafless, branched, furrowed, level-top corymbed: rays twice as long as the tapering calyx. Stem 2 or 3 feet high, strong, rough, furrowed, having leaves only at the origin of the flowering branches; radical leaves with shallow serratures: flowers large, resembling in form some asters: calyx scales narrow, purplish. Grows plentifully along the banks of Connecticut river at the Northampton meadows.

18—1. SONCHUS. 49. 53.

leucophaeus, W. (3) (sow thistle. O. b-w. Ju. ♄.) peduncles

(1) flexicaulis, Mx 1st variety. Var. latifolia, P. (2) flexicaulis, Mx. 3d variety. (3) spicatus, Lk.

scaly : flowers racemed : leaves runcinate, acuminate : stem wand-panicled.

oleraceus (O. y. Ju. ☺.) peduncles sub-tomentose, umbelled : calyx glabrous : leaves lance-oblong, clasping, denticulate, subsinuate. Var. *aspera*, prickly.

pallidus, W. (1) (O. y. Ju. 4.) flowers in a compound terminal raceme or panicle : leaves lance-ensiform, clasping, toothed.

arvensis (P. C. y. Au. 4.) calyx and peduncles hispid, sub-umbelled : leaves runcinate, denticulate, cordate at the base : root creeping.

floridanus, W. (P. C. b. Ju. ♂.) peduncles somewhat scaly : flowers panicled : leaves runcinate-lyrate : petioled, denticulate. Pursh says this is called *the gall of the earth*, and is used for curing the bite of the rattlesnake.

acuminatus, W. (P. C. b. Au. ♂.) peduncles somewhat scaly : flowers panicled : radical leaves sub-runcinate ; cauline ones ovate, acuminate, petioled, denticulate in the middle.

alpinus, W. (2) (mountain sowthistle, Can. b-w. Au. 4.) peduncles hirsute, naked : flowers racemed, bracted : leaves runcinate, sagittate at the base, glabrous, glaucous beneath.

12—5. SORBUS. 36. 92.

americana, W. (4) (mountain ash. H. w. M. ♄.) leaves pinnate ; leafets acute, gash-serrate, glabrous ; general petiole glabrous ; serratures mucronate, flowers corymbed. This shrub or tree grows in very great plenty on Saddle mountain, near Williams College ; particularly at the height of about two thousand feet above the level of the college. It is usually from 10 to 20 feet high. The taste and smell of the bark greatly resemble that of the wild cherry-tree. It is an excellent tonic. The bark is said to contain a little prussic acid.

3—2. SORGHUM. 4. 10.

saccharatum (broom corn. E. y-g. Au. ☺.) panicle some-

(1) Lactuca canadensis, L. (2) montanus, Lk. coeruleus, S. canadensis, L. (3) aucuparia, Mx.

what whorled, spreading: seeds oval, glumes covered with permanent softish hairs. Leaves linear; 6 to 8 feet high. From the East Indies.

vulgare (indian millet, coffee corn. E. ♃.) panicle compact, oval, nodding when mature: seed naked, subcompressed. Var. *bicolor*, glumes glabrous, black: seed globose.

20—3. SPARGANIUM. 3. 8.

+*ramosum*, Sw. (1) (bur-reed, O. w. Ju. ☉.) the three-sided bases of the leaves concave on the two outsides: the general fruit-stem branched: stigma linear. In water, generally. Flowers in round heads; the staminate heads above the pistillate ones, and considerably the smallest.

+*americanum*, N. (2) (lake bur-reed. T. C. P. w.) lower leaves about equalling the length of the stem, floral leaves concave at the base, erect: stigma simple, ovate-oblong, oblique, about half as long as the style. The stem is erect, nearly simple, about a foot high. Grows plentifully in a small lake in Troy, half a mile east of the Old Bank place.

angustifolium, Mx. (3) floating bur-reed. Catskill Mt. P. w. Au. ♃.) leaves flat, long-linear, very narrow, much longer than the stem, weak; the part above water floating on its surface. Grows in great abundance in the Little Lake on Catskill mountain, 12 miles west of the village.

18—1. SPARGANOPHORUS. 49. 55.

verticillatus, Mx. (water crown-cup. D. p. Au. ♃.) leaves setaceous-linear, whorled: stem generally 1-flowered: egret companulate, 5-toothed. Floating in water.

Spartina, see Limnetis.

17—10. SPARTIUM. 32. 73.

junceum (spanish broom. E. J. ♄.) branches opposite wand-like, bearing flowers at the end: leaves lanceolate, glabrous.

+*scoparium* (scotch broom. E. J. ♄.) leaves ternate and solitary, oblong: flowers axillary: legumes pilose at the margin: branches angular.

(1) erectum, L. (2) simplex. Ph. (3) natans, S. L.

22—6. SPATHULARIA. 58. 1.

flavida (spatula fungus. Catskill Mt. Au.) pileus vertical, adnate at the base, tapering down into the stipe. Light yellow; 1 to 3 inches high. Grows on the earth, among the evergreens on Catskill Mt. south of the lakes.

10—5. SPERGULA. 22. 82.

+ *arvensis* (spurry. O. w. J. ☺.) leaves filiform, whorled: panicle dichotomous; peduncles become reflexed as the fruit advances to maturity: seed reniform.

+ *saginoides*, S. (pearl spurry. New-Jersey. w. J. 4. or ☺.) leaves opposite, subulate, naked: peduncles solitary, very long, glabrous. Persoon asks, whether this is not a variety of the Sagina procumbens.

4—1. SPERMACOCE. 48. 57.

+ *diodina*, Mx. (button weed. D. w. Ju. ☺.) stem diffused, terete, hirsute: leaves lance-linear, sub-glabrous, margin and keel serrulate-glabrous: stipule long, many-bristled: flowers axillary.

22—6. SPHAERIA. 58. 1.

1. *Caulescent, or the receptacle elongated, clavate, corky, furnished with a trunk.*

bulbosa (globule fungus. S.) on the earth, sub-ramose, glabrous, dark-cinereous; root tuberous. On the earth in autumn in pine woods.

hypoxylon, gregarious, ramose, compressed, hirsute at the base. On decaying trunks of trees.

digitata, cespitose, black; stipes glabrous, connate at the base, clavate, terete: apex acuminate, sterile. In woods.

polymorpha, gregarious, forms various; clavules (little clubs) ventricose, surrounded every where with spherules. In beech woods. On trunks of trees.

2. *Receptacle without a stem, roundish and opening; tuberculate with bordering spherules.*

concentrica, obovate and somewhat roundish, large; in-

terrupted with concentric layers within. On trunks of the ash and willow.

rubiformis, large, wholly black ; spherules globose, a little prominent. On dry trunks.

fragiformis, gregarious, sub-confluent, rust-coloured, dark-shining within : spherules papillose. On beech trunks.

argillacea, scattered, sub-globose, clay-coloured or yellow-cinereous ; spherules a little prominent, papillose ; substance softish, becoming sooty-yellow. On trunks of ash trees.

rubiginosa, opening widely, rugose, yellow, becoming rust-coloured ; spherules somewhat concealed. On branches in shady places.

cohaerens, gregarious, confluent, flattish ; at first dirty-yellow, smooth ; at length dark-coloured and somewhat blistered. Adhering to the trunks of trees, particularly the beech.

melogramma, somewhat in rows, bursting, obconic, dark-sooty ; spherules somewhat prominent. Bursting from under the cuticle of branches of trees, particularly the beech.

ribesia, bursting, soft, oval, sub-depressed ; spherules dissected, growing white. Bursting from under the cuticle of the branches of the Ribes rubrum in the winter.

3. *Form various, opening, orbicular or round ; spherules scattered, horizontal, immersed in fleshy coverings ; little mouths scattered, mostly somewhat prominent, papillose or aculeate. Compound.*

deusta, opening widely, thick, undulate-rugose, blistered ; at first fleshy, white-cinereous, pulverulent ; at length black, rigid. On trunks in woods, frequent.

lenta, aggregated, sub-orbicular, black ; disk gibbose, margin repand. On the trunks and roots of fallen beech trees ; found in autumn.

insitiva, compound, cortical, flat, linear-acuminate, white, single-headed ; a veil connate with the substance of the fungus ; spherules papillose, black. In the fissures of the cuticle on decaying grape vines.

macula, compound, of various forms, very flat, black, single-headed ; spherules globose-acuminate, covered

with a fugaceous veil. On dry oaken branches after long storms.

serpens, open, unequal, naked, becoming dark-coloured ; spherules somewhat prominent. On oak and beech wood, sometimes on willow.

stigma, opening around, smooth, rimose ; little mouths immersed, flattish. In the fissures of thorn trees.

podoides, crowded together, hard, unequal ; little mouths spinose, mostly bursting at the sides. On trunks of oak.

ceratosperma, roundish, convex, scattered ; little mouths spinose, bursting from the middle. In the bark of the Rosa canina in July.

disciformis, scattered, orbicular, flattish, smooth ; little mouths immersed, resembling punctures. In the dry cracks of beech, resembling pimples of a dark shining colour, white-cinereous within.

4. *Opening, spherules horizontal, at first solitary at the margin, afterwards confluent, not joined with a fleshy substance or manifest layers ; some are distant, but in some way connected by the crust.*

nebulosa, grey ; spherules very minute, scattered, forming unequally linear interrupted, dark-grey spots ; little mouths prominent, sub-acute. On the stems of large herbaceous plants.

velata, covering very broad ; spherules scattered, immersed, covered with a sub-membranous crust ; little mouths sub-prominent. Under the cuticle of the Tilia.

spiculosa, somewhat opening, dark-stained ; little mouths long terete, very slender. Immersed in dark coloured branches.

5. *Spherules heaped together on the receptacle, which is crust-like, conic, in little cespitose bunches ; little mouths converging towards the middle.*

ciliata, roundish ; spherules nested in the prominent substance of the bark ; little mouths very long, divaricate, sub-flaccid. On the branches of elms.

fimbriata, upon leaves sub-circinal ; little mouths spinose, clavate, surrounded at the base by a white fringe. Frequent on the leaves of the Carpinus.

nivea, conic, with a white ferinaceous disk ; little mouths prominent, papillose. On the dry branches of poplars.

leucastoma, disk truncate, white, perforated with blackening pores. On the stems and dry branches of plum trees and cherry trees of our orchards.

pustulata, sublenticular, with short contracted necks ; disk sooty, perforated with one pore. On willow branches.

6. *Spherules arranged in a circle, decumbent, naked, nesting under the epidermis ; little mouths approximate, mostly bursting.*

pulchella, compassed about, naked ; little mouths very long, flexuose. Under the cuticle of the branches of the common garden cherry tree.

coronata, compassed about : little mouths thick, obtuse, smooth. On the branches of the thorn tree, rare.

faginea, compassed about ; little mouths hooked and rugged. On the branches of the beech.

convergens, compassed about, concealed, naked ; spherules ovate, erectish ; little mouths strait, somewhat bursting. Nesting in the substance of the bark of some branches.

tessella, compassed about, bound with a black line ; little mouths distant, or with 4 or 5 black punctures. On willow branches.

7. *Bursting, in a roundish cespitose bunch ; spherules free among themselves, papilla-like, setting on the receptacle.*

decolorans, cespitose, reddish cinnabar colour, becoming pale ; spherules globose, rugose tubercled. On the branches of maple and elder.

coccinea, cespitose, pale red ; spherules ovate, smooth. In the dry bark of beech and elder.

8. *Spherules solitary, free, destitute of receptacles.*

(Little mouths very large, mostly compressed, nearly equalling the breadth of the spherule.)

episphaeria, simple, gregarious, parasitic, red ; spherules very minute, sub-compressed, crested, flaccid. On the Sphaeria stigma.

(Little mouths terete, spinose, equal to the length of the spherules or exceeding them.)

rostrata, simple, naked ; spherules granulated ; little mouths very long, spinose. On decaying branches in July.

acuta, gregarious, naked ; spherules black, shining, subglobose ; little mouths spinose, thickish, cylindric. On the stem of the common nettle in the spring.

(Little mouths shorter than the spherules, conic or cylindric, mostly papillose.)

porphyrogona, simple, aggregated, black, phial-form, imbedded in a thin violet-coloured crust. Persoon considers this species of Tode, as a variety of *rubella*. On the Atropa belladonna.

araneosa, simple, opake, black ; spherules papillose, smooth, covered with a thin white veil. On dry branches.

bysiseda, largish ; spherules globe-papillose, surrounded with thick sooty yellow down. On dry branches and bark.

spermoides, heaped together, opake, rigid ; spherules globose, sub-terete downwards ; little mouths papillose, obsolete. On dry trunks of trees.

bombarda, simple, fascicled, becoming sooty yellow ; spherules elongated, sub-ventricose ; little mouths are acute papillae. Grow in heaps on decaying trunks of trees.

lingam, simple, scattered, sub-oval, depressed-concave, rugose with folds ; little mouths irregular, decumbent, or almost wanting. Grow densely on the dry stems of red cabbage.

herbarum, simple ; spherules scattered, smooth, mostly sub-depressed ; little mouths papillose. On the dry stems of herbaceous plants.

pertusa, scattered ; spherules immersed, ovate, hardish, sub-rugose ; perforated at length with little caducous obsolete mouths. In hard dry wood.

inquinans, simple, scattered, dark-stained ; spherules somewhat prominent with wood, perforated. On the Acer, Lonicera and Xylosteum.

(Spherules not furnished with visible mouths.)

pulvis-pyrius, simple, heaped together ; spherules ovate

and roundish, tubercled, rugose, furrowed in the middle. On trunks and dry wood.

moriformis, gregarious, simple ; spherules tuberculate, obovate. On dry trunks, particularly of pines.

maculiformis, on leaves simple ; spherules sub-immersed, minute, roundish, conglomerate in unequal black spots. On the dry leaves of beech, hazle, maple and elm.

22—4. SPHAEROCOCCUS. 57. 2.

membranifolius, stem filiform, ramose, spreading into a flat dichotomous frond ; divisions wedge-form : capsules pedicelled from the stem, ovate. Sea shore.

confervoides, frond filiform, very branching : branches elongated, somewhat simple, sending off scattered setaceous branchlets, tapering to both ends : capsules hemispheric, attached to all parts of the frond. In the sea.

22—2. SPHAGNUM. 56. 4.

latifolium (peat moss. O.) leaves ovate, sub-obtuse, concave, imbricate, converging at the apex : capsules spherical.

acutifolium, stem sub-ramose, branches filiform : leaves lance-ovate, revolute, erose at the truncate apex ; imbricated 5-ways.

cuspidatum, stem flaccid ; branchlets lax, bristle-form : leaves lanceolate, involute, truncate-erose, lax.

5—1. SPIGELIA. 47. 46.

marilandica, W. (pink-root. P. p. J. 4.) stem 4-sided : leaves all opposite. The most celebrated vermifuge.

22—5. SPILOMA. 57. 2.

melaleuca (efflorescent lichen) crust thin, sub-membranaceous, unequal, sub-pulverulent, white : receptacles deformed, a little convex, scabrous, dark. On bark of trees.

21—5. SPINACIA. 12. 29.

oleracea (spinach. E. J. ☺.) fruit sessile, prickly or unarmed : leaves hastate-sagittate : stem branched. In habit resembles the Chenopodium album.

12—5. SPIRAEA. 36. 92.

1. *Stem more or less woody.*

salicifolia A (1) (meadow-sweet, willow hard-hack. O. r. w. J. ♄.) leaves lance-ovate, or obovate, serrate, glabrous: flowers in panicled spreading racemes Var. *alba*, has white petals, and generally the twigs are redish. The small branches are generally killed by frost in the winter, as also of the next species

tomentosa (steeple-bush, purple hard-hack, meadow-sweet. O. r. Ju. ♄.) leaves lanceolate, unequally serrate, downy beneath: racemes in a crowded, sub-panicled spike. Prof. Ives considers a decoction of the leaves and branches of this plant, as one of the best tonics in use. Damp.

opulifolia (nine-bark, snowball hardhack. T. C. P. w. J. ♄.) leaves sub-ovate, lobed, doubly toothed or crenate, glabrous: corymbs terminal crowded: capsules inflated: flowers trigynious. Wet.

hypericifolia, W. (john's wort hardhack. P. Can. w. M. ♄.) leaves obovate, entire, or toothed at the apex; umbels sessile. Cultivated.

crenata, W (C. ♄.) leaves obovate, acute, tooth-crenate at the apex: corymbs peduncled, crowded.

2. *Stem herbaceous.*

ulmaria (queen of the meadow. E. w. Au. 4.) leaves pinnate, downy beneath; the terminal leafet larger, 3-lobed, the lateral ones undivided; flowers in a proliferous corymb.

aruncus, W. (steeple weed. P. Catskill. w. J. 4.) leaves pinnate, with 2 or 3 pair of leafets: flowers in a panicled spike: styles 3 to 5. Var. *americana*, has very long slender spikes. Grows from 4 to 6 feet high, north of Judge Benton's on the Catskill.

lobata (P. r. Ju. 4.) leaves pinnate, glabrous; the odd leafet large, 7-lobed, lateral ones 3-lobed: corymbs proliferous.

22—2. SPLACHNUM. 56. 4.

ampullaceum (umbrella moss.) leaves lance-ovate, acute: apophysis purplish-green, broad, inversely bladder-form.

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(1) alba, M.

setaceum, stems cohering: leaves lanceolate, gradually becoming setaceous-acuminate: apophysis clavate-turbinate. Marshes, &c.

14—1. STACHYS. 42. 39.

aspera, Mx. (hedge-nettle, clownheal. O. w-p. Ju. 4.) stem erect, hispid backwards: leaves sub-petioled, lanceolate, acutely serrate, very glabrous: whorls about 6-flowered: calyx with spreading spines. Var. *tenuifolia*, leaves very thin and slender.

5—3. STAPHYLEA. 22. 95.

trifolia (bladder-nut. O. y-w. M. ♄.) leaves in threes: racemes pendant: petals ciliate below. A handsome shrub about 10 or 12 feet high. When in flower if the germ be cut transversely and examined, it will appear 2 or 3-celled and will contain the rudiments of 15 to 20 seeds. But when the fruit is ripe, it consists of 2 or 3 inflated, adnate, sub-membranous capsules, each containing 1 to 3 hard small nuts.

6—5. STATICE. 48. 33.

limonium, L. (1) (marsh rosemary, sea lavender. L. b. Au. 4.) scape terete: panicle much branched: leaves lance-obovate, obtuse, mucronate, glabrous. Very efficacious in dysenteries. See Mott's dissertation. A decoction of the root is an excellent gargle in cankers and ulcerated sore throat. See Cutler's Botanical arrangement, page 432. Mem. Soc. Arts.

10—3. STELLARIA. 22. 82.

media, S. (2) (chickweed. O. w. M. 4.) leaves ovate and heart-ovate, glabrous: stem mostly procumbent, having alternate lines of hairs on opposite sides. Number of stamens variable.

longifolia, M. (3) (long-leaf starwort. O. w. J.) stem decumbent, (or sub-decumbent) leaves lance-linear, opposite, entire, smooth: panicle terminal: calyx 3-nerved, about equalling the petals. Dr Bigelow informed me, that the plant which he called S. graminea in the Boston Florula, is the S. longifolia.

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(1) caroliniana, Ph. (2) Alsine media, L.
(3) gracilis, R. Spergulastrum gramineum? Mx.

palustris, Retz. (1) (stitchwort, meadow starwort. W. w. J.) leaves lance linear, entire, glaucous: flowers panicled: petals 2-parted, larger than the 3-nerved calyx.

+ *uliginosa*, Sr. (2) (bog starwort. P. W w. J.) stem diffuse, procumbent, much-branched: leaves lanceolate, ciliate and narrow at the base: peduncles somewhat in pairs, single, or many-flowered: petals shorter than the calyx.

+ *pubera*, Mx. (P. w. M. 24.) pubescent: leaves sessile, ovate, ciliate: pedicels erect: petals longer than the calyx. Flowers large.

22—6. Stemonitis. 58. 1.

fascicularis (brittle bark buff-ball.) fascicled, steel-blue: head sub-turbinate: stem very short: hairs or fibres attenuated: bark wholly evanescent. On trunks in beech wood in autumn.

typhina, scattered, small; fibres cylindric, obtuse, sub-incurved; partly evanescent. On trunks.

leucostyla, gregarious, creeping; fruit ovate, violet-colour; stipe white. Springs up white and shining in autumn on branches and deciduous leaves.

22—5. Stereocaulon. 57. 2.

ramulosum, becoming pale white, ramose, scabrous, fibrous; branches scattered, elongated, sub-simple: receptacles terminal, at length sub-globose, dark-fuscous. On mountains.

paschale, frond cinereous-grey, branching, granulated, fibrous; branches crowded, very branching, short: receptacles scattered and terminal; at length convex, conglomerate, dark-fuscous. On rocks and sunny hills.

22—5. Sticta. 57. 2.

crocata, frond reddish-fuscous, sub-lacunose, broad, woolly beneath: fruit-dots minute, citron-yellow; divisions torn-lobed, margined, pulverulent, yellow: receptacles scattered; disk dark-fuscous, margin frond-like, entire. On rocks and trunks of trees.

anthraspis, frond pale-cinereous-fuscous, lacunose-retic

(1) glauca, S. (2) alsine, Hn.

ulate, very broad, sub-crenate in the round-lobed periphery : rugose, sub-villose beneath : fruit dots minute, white : receptacles scattered ; disk black, at length convex, and excluding the entire frond-like margin.

pulmonacea, frond light yellowish olive, lacunose-reticulate, villose beneath, having pale naked papillae ; divisions sinuate-lobed, retuse-truncate : receptacles sub-marginal ; disk flattish, rugose ; margin frond-like, sub-rugose. On trunks of trees in woods.

sylvatica, frond ample, brick-fuscous, nakedish, sub-orbiculate ; fuscous-villose beneath ; pits excavated, pale white ; divisions gashed, lobed, deformed, repand-crenate : receptacles marginal, disk fuscous. On mountains among mosses, and on the roots of trees.

22—6. STILBOSPORA. 58. 1.

asterosperma, capsules stellate.

macrosperma, capsules elongated, cylindric. On beech limbs, or white birch bark.

3—2. STIPA. 4. 10.

avenacea, L. (1) (feather grass. D. P. J. 4.) leaves striate, glabrous : panicle spreading, sub-unilateral : branches whorled with branchlets ; calyx acute, membranaceous, equalling the glabrous seed : awn naked, twisting.

6—1. STREPTOPUS. Mx. (2) 11. 14

roseus, Mx. (rose bellwort. H. r-w. M. 4.) glabrous, shining : leaves clasping, serrate-ciliate : anthers short, 2-horned. Woods.

distortus, Mx. (3) (P. S-y M. 4.) glabrous ; leaves clasping : pedicells solitary, twisted-geniculate in the middle. Woods.

lanuginosus, Mx. (P. g-y. J. 4.) whitish-woolly : leaves sessile, sub-cordate at the base, acuminate : pedicels in pairs on a short stipe. Flowers large. Berries red.

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(1) barbata, Mx. virginica, P.
(2) Uvularia, L.
(3) Uvularia amplexifolia, W.

17—10. STYLOSANTHUS. 39. 93.

hispida, Mx. (1) (pencil flower. D. P. y-Au. 4.) stem pubescent on one side : leaves lanceolate, glabrous : bracts lanceolate, ciliate : heads 2 or 3-flowered. Var. *procumbens*, stem procumbent.

5—2. SWERTIA. 20. 46.

pusilla, Ph. (false gentian. Whitehills. b. J. ☉.) corol wheel-form twice as long as the calyx : stem simple, 1-flowered : leaves oblong. About an inch high.

corniculata, W. (Can. Western states. g-y. Ju. ♂.) corol bell-form, with a deflected horn : leaves ovate : branches short. In swamps.

5—1. SYMPHITUM. 41. 42.

officinale (comfrey. E. y-w. J. 4.) leaves ovate-sub-lanceolate, decurrent, rugose. Naturalized. Dr. Cutler says, the leaves give a grateful flavor to cakes.

5—1. SYMPHORIA. 48. 58.

racemosa (Western Lakes. Au. ♄.) raceme terminal : corol bearded within. Resembles the Mitchella in some measure.

Symplocarpus, see Ictodes.

22—2. SYNTRICHIA. (2) 56. 4.

ruralis, stem ramose : leaves obtuse, recurved, bearing hairs at the apex : capsule cylindric ; lid conic. On walls, fields, &c.

2—1. SYRINGA. 48. 37.

vulgaris (lilac. E. b-p. w. M. ♄.) leaves cordate : flowers in a thyrse.

persica (persian lilac. E. b. M. ♄.) leaves lanceolate, entire and pinnatifid.

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(1) elatior, Sw. Trifolium biflorum, L.
(2) Tortula or Barbula.

T.

18—2. Tagetes. 49. 55.

erecta (african marygold. E. y. Ju. ☉.) leaves pinnate; leafets lanceolate, ciliate-serrate: peduncles 1-flowered, incrassate, sub-inflated: calyx angled.

patula (french marygold. E. y. Ju. ☉.) leaves pinnate; leafets lanceolate, ciliate-serrate: peduncles 1-flowered, sub-incrassate: calyx smooth: stem spreading.

11—1. Talinum.

teretifolium, Ph. (taliny. P. p. Ju. 4.) leaves cylindric, fleshy; corymbs terminal, peduncled.

18—2. Tanacetum. 49. 55.

vulgare (tansey. E. y. Ju. 4.) leaves doubly pinnate, gash-serrate. Naturalized. Var. *crispum* (doubly tansey) leaves crisped and dense.

22—16. Taxus. 51. 100.

canadensis, W. (1) (dwarf yew, shin-wood. O. Ap. ♄.) leaves linear, 2-ranked, margin revolute: receptacles of the staminate flowers globose. 2 to 6 feet high, with creeping roots. Appears like a small spreading hemlock bush.

Tephrosia, see Galega.

22—2. Tetraphis. 56. 4.

pellucida (four-tooth moss. P.) capsule cylindric: leaves which grow on the fruit bearing stem, ovate, acute, 1-nerved. Stem simple, 1 inch high; lid conic, reddish, thin, half as long as the capsule: teeth rigid, polished, brown: leaves oval, except those on the fructiferous stem.

14—1. Teucrium. 42. 39.

canadense (wood-sage, germander. O. r. Ju. 4.) whitish-hirsute: leaves lance-ovate, serrate, all petioled:

(1) Accbata minor, Mx.

stem erect; spikes whorled, crowded: bracts twice as long as the calyx.

virginicum (C.T.r.J.4.) pubescent; leaves ovate-oblong, serrate; upper ones sub-sessile: stem erect: spikes whorled, crowded: bracts of the length of the calyx.

13—13. THALICTRUM. 26. 61.

Remark. Our species are mostly dioecious or polygamous.

dioicum, L. (1) (meadow rue. O. w-r. M. 4.) leaves thrice ternate, leafets cordate, many lobed, very smooth: panicles axillary, filiform: flowers dioecious: petals not longer than the filaments or germs: stigmas almost capillary.—Leaves often 5 to 7-lobed: panicles solitary or in pairs, sub-umbelled, often the panicle is accompanied by a long peduncled solitary flower; seed ovate-oblong, striate. Whole plant smooth, little umbels few-flowered.

polygamum, M. (2) (O. W. Ju. or Au. 4.) pubescent with slender down: leafets ovate, sub-cordate and wedge-form, 3-lobed at the apex, sub-rugose above, sub-tomentose beneath: panicles terminal; pedicels sub-umbelled, divaricate: flowers polygamous. Late in autumn some individuals still remain in flower, and make a fine shew with the numerous long white stamens.

rugosum, Ph. (3) (C. P. T. w. J. 4.) stem striate: leafets ovate and lanceolate, rugose, veiny, obtuse-lobed: panicle large, terminal, corymbose; flowers erect. Tall. Panicles almost leafless.

purpurascens, W. (P. Can. p. J. 4.) stem twice as tall as the leaves: leaves compound; leafets roundish, 3-cleft, gashed: panicles nakedish; flowers nodding; stamens purple. Small.

5—2. THASPIUM. N. (4) 46. 60.

aureum (meadow parsnip, false alexanders. O. y. J. 4.) leaves biternate; leafets lance-oval, serrulate: umbels with short peduncles. Some of the leaves are often quinate. Grows in dry meadows and pastures.

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(1) laevigatum, MK.
(2) pubescens, Ph. revolutum, Dc. cornuti? W.
(3) carolinianum, Dc.
(4) Smyrnium aureum, L.

13—1. THEA. 54. 71.

bohea (bohea tea. E. M. ♄.) flowers 6 petalled: leaves oblong-oval, rugose. From China and Japan.

viridis (green tea. E. ♄.) flowers 9-petalled: leaves very long-oval. J. C. Lettson says, this is only a variety of the bohea.

22—6. THELEPHORA. 58. 1.

1. *Pileus entire, funnel-form.*

caryophyllea, various: pileus funnel-form, thin, becoming fuscous-purple, strigose-hirsute; margin mostly gashed, or somewhat crisped. Among pines, &c. on the earth.

2. *Pileus halved, at length horizontal.*

rubiginosa, imbricate, rigid, reddish-chesnut brown, glabrous both sides: papillae large, scattered. On trunks of oaks, mossy beeches, &c.

spadicea, imbricate, sub-rigid, zoned, sub-tomentose, fuscous; glabrous beneath, pale-fuscous.

ferruginea, effuse-reflexed, ferruginous: pileus thin, sub-tomentose, smoothish, pilose beneath. On fallen limbs of trees, &c.

hirsuta, cespitose, coriaceous, yellowish, strigose-hirsute; glabrous beneath. On trunks, rails, &c.

lilacina, sub-imbricate, soft, not zoned, tomentose, pale; at the margin and on the under side pale purple. On trunks of evergreens.

3. *Resupinate, effuse, papillose, substance various.*

(Pale or flesh-coloured.)

quercina, resupinate longitudinal, coriaceous, rugose, somewhat fleshy: almost destitute of a margin, and brown underneath. On oak branches, &c.

polygonia, fleshy; papillae largish, many-sided. On dry branches of poplar.

laevis, white-fleshy, broadly effuse, very smooth; margin byssus-like. On branches of poplar, &c.

rosea, somewhat wrinkled, rose-red; margin tomentose. On poplars, one or two inches long.

(Colour yellow or tan-colour.)

frustulata, very hard, smooth, rimose-parted, pale.

5—1. THESIUM. 31. 24.

umbellatum (false toad-flax, O. w-g. J. 4.) erect: leaves lance-oval: fascicles of flowers corymbed. 6 to 12 inches high.

15—1. THLASPI. 39. 63.

bursa-pastoris (shepherd's purse. O. w. M. ☺.) hirsute: silicles deltoid-obcordate: radical leaves pinnatifid.

campestris (yellow-seed, false-flax, mithridate mustard. O. J. ☺.) silicle obcordate, inflated, glandular-punctate: cauline leaves sagittate, toothed. Very troublesome in flax fields, and was probably introduced with flax-seed.

arvense (penny-cress. C. P. Detroit. J. ☺.) silicles sub-orbicular, compressed, smooth: leaves oblong, toothed, glabrous.

tuberosum (P. r. M.) silicle sub-orbicular, short, compressed: leaves rhomb-ovate, obsoletely toothed, smooth, sessile. radical ones long-petioled: stem-pubescent, very short and simple: root tuberous and fibrous.

20—16. THUJA. 51. 100.

occidentalis (arbor-vitae, false white-cedar. O. M. ♄.) branchlets 2-edged: leaves imbricate 4 ways, rhomb-ovate, close-pressed, naked, tubercled: strobiles obovate; inner scales truncate, gibbous below the apex. Vast quantities on Otter creek, Rutland county, Vt. and in Sharon, N. Y.

14—1. THYMUS. 42. 39.

serpyllum (mother of thyme. E. b-p. J. ♄.) flowers in heads: stem creeping: leaves flat, obtuse, ciliate at the base.

vulgaris (thyme, E. b-p. J. 4. ♄.) erect: leaves ovate, and linear, revolute: flowers in a whorled spike.

lanuginosus (lemon thyme. E. 4. ♄.) flowers in heads: stem creeping, hirsute: leaves obtuse, villose.

10—2. TIARELLA. 13. 84.

cordifolia (miter-wort, gem-fruit. O. w. M. 24.) leaves cordate, acute-lobed, toothed: teeth mucronate: scape racemed. Resembles the Mitella diphylla.

13—1. TILIA. 37. 79.

glabra, V. (1) (basswood, limetree. O. y-w. Ju. ♄.) leaves round-cordate, abruptly acuminate, sharply serrate, sub-coriaceous, glabrous: petals truncate at the apex, crenate: style about equalling the petals: nut ovate, sub-cordate. Large tree; wood soft and white. Leaves often truncate at the base.

pubescens, V. (crop-ear basswood. P. y-w. Ju. ♄.) leaves truncate at the base (one lobe cropped) oblique, acuminate, tooth-serrate, pubescent beneath: panicle dense-flowered: petals emarginate, about equal to the style: nut globose, smooth.

4—4. TILLAEA. 13. 83.

ascendens (pigmy weed. Y. w.) stem ascending, rooting at the lower joints: leaves connate, somewhat sheathing. Very minute. A new species. Discovered on the Housatonic by Prof. Ives, in the summer of 1816.

22—2. TIMMIA. 56. 4.

cucullata, leaves linear, narrow-acute, serrulate: peduncle shortish: capsule nodding, arched, obconic-turbinate, bursting from the side of the permanent calyptre; teeth of the outer peristome articulated. In damp and muddy places.

19—1. TIPULARIA, N. 7. 21.

discolor, N. (2) (D. w.) leaf solitary, plaited and longitudinally nerved: flowers racemed, nodding, bractless. Resembles the Corallorhiza.

6—3. TOFIELDA. 10. 13.

pusilla, Mx. (scotch asphodel. Can. g-w. J. 4.) glabrous:

(1) americana, W. canadensis Mx.
(2) Limodorum unifolium, M. Orchis discolor, Ph.

leaves short: scape filiform; spike few-flowered, globular: little calyxes adnate to the rachis: capsule globose. Mountain swamps.

glutinosa, Mx. (Can. 4.) scape and pedicels glutinous-scabrous: spike with a few alternate fascicles: capsule egg-form, twice as long as the calyx.

18—1. TOLPIS. 49. 55.

barbata (hawksbeard. E. S. ☺.) leaves oblong, toothed: peduncles 1-flowered.

6—1. TRADESCANTIA. 6. 13.

† *virginica*, M. (spiderwort. P. b. p. M. 4.) erect: leaves lanceolate, elongated, glabrous: flowers sessile; umbel compact, pubescent. Cultivated in gardens.

18—1. TRAGOPOGON. 49. 53.

† *porrifolium* (vegetable oyster, goat-beard, salsify. E. p. Ju. ♄.) calyx longer than the rays of the corol; the corollets very narrow, truncate: peduncles incrassate.

22—2. TREMATODON. 56. 4.

longicollis, stem short, simple: leaves subulate-setaceous: peduncles very long, twisted: capsule oblong, stiped, elongated; lid conic from the base, slenderly beaked.

22—6. TREMELLA. 58. 1.

mesenterica, roundish: sub-compact, undulate-plicate, orange-colour. On fallen limbs, &c.

fragiformis, roundish: sub-compact, round, red, plicate, thickset, sub-lobate. On pine bark, &c.

spiculosa, flattened, effuse, thickish, black, having conic papillae. 2 or 3 inches on trunks.

foliacea, large, cespitose, glabrous both sides, thin, undulate-plicate, concave, crisped at the base, flesh-cinnamon colour. On decaying trunks in autumn.

undulata, ascending, membranaceous, lobed, sinuate-undulate, purple. On putrid wood.

abietina, in groups, roundish, orange colour, sub-plicate. On wood.

dubia, cespitose, viscous, fastigiate, soft, fleshy. On decaying trunks late in autumn.

22—6. TRICHIA. 58. 1.

1. *Fruit turbinate or pear-form.*

botrytis, stiped, fascicled, opake, becoming dark red; stipes elongated, connate, sub-racemed. On decaying trunks in autumn.

rubiformis, stiped, fascicled, steel-colour, shining; stipes connate, sub-pedate, short. On trunks in woods at the close of summer.

fallax, simple, stiped, at first red, then slate-colour; fruit plicate beneath with a stipe. On trunks and soft decaying wood in autumn.

vulgaris, scattered; fruit from terete becoming sub-turbinate: hardly any stipe, becoming black. On beech trunks after a summer storm. A variety of *nigripes*. See Persoon's Fungi, p. 179, and Muhlenberg's Catalogue.

2. *Fruit round or reniform.*

nitens, crowded together, sessile, round, shining yellow or cinnamon colour. Among decaying beech and pine trunks in autumn.

varia, scattered, becoming yellow; fruit decumbent and reniform, sometimes round. On trunks.

3. *Fruit filiform and net-veined.*

reticulata, diffused, reticulate, ramose, yellow. On trunks and mossy bark in autumn.

22—6. TRICHODERMA. 58. 1.

nigrescens, somewhat opening, flattish; seminal dust becoming black and sooty. On cut trunks, mostly maple, in winter and early spring.

3—2. TRICHODIUM. 4. 10.

laxiflorum, Mx. (thin grass. O. M. 4.) culm erect, striate, purplish: leaves involute subulate; upper ones flat, nerved, margin scabrous; sheaths roughish: panicle capillary, lax, spreading; branches whorled about in threes: glumes lanceolate. 12 to 18 inches high: the panicle is very thin and delicate. Usually grows in dry fields.

scabrum, M. (1) (C. W. T. P. Ju. 4.) culm glabrous, geniculate at the base, with erect branches: leaves lance-linear, striate, flat, margin scabrous; stipule 2-cleft, acute; sheaths striate, glabrous: panicle very branching, spread, with whorled, zigzag branchlets.

3—1. TRICOPHORUM. 3. 9.

cyperinum, P. (2) (light hair, clump-head grass. O. Ju. 4.) culm 3-sided, leafy, hollow: panicle terminal, more than decompound, proliferous, peduncles and pedicels scabrous; spikes glomerate, 3 or 4 in a head, or more, ovate, obtuse. 3 to 5 feet high. Very common in wet meadows and swampy ground.

14—1. TRICHOSTEMA. 42. 39.

dichotoma (blue curls. T. V. C. Y. N. P. b. Au. ☺.) leaves rhomb-lanceolate: branches flower-bearing, 2-forked: stamens very long, blue, curved. 6 to 8 inches high. Gives out a scent, precisely resembling that of the spikenard. Var. *linearis*, has linear leaves.

22—2. TRICHOSTOMUM. 56. 4.

pallidum (hair-mouth moss. P.) stem simple very short: leaves capillary, sheathing: capsule ovate, with a slight apophysis, cylindric: lid conic; calyptre halved.

7—1. TRIENTALIS. 20. 34.

europaea L. (3) (chick-wintergreen. O. w. Ju. 4.) leaves oval; stem naked below, with a tuft of oval leaves at the top. Var. *americana*, has lanceolate leaves, tapering to both ends. About 3 to 5 inches high.

17—10. TRIFOLIUM. 32. 93.

pratense (common red clover. O. r. M. 4.) ascending, smoothish; leafets ovate, subentire: stipules awned: spikes dense, ovate: lower tooth of the calyx shorter than the tube of the corol, and longer than the other teeth.

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(1) Agrostis scabra, W.
(2) Eriophorum cyperinum, L. Scirpus eriophorum, Mx.
(3) americana, Ph.

repens (white clover O. w. M. 4.) creeping: leafets ovate-oblong, emarginate, serrulate: flowers in umbelled heads: teeth of the calyx subequal: legumes 4-seeded. Foreign botanists otten call these two species introduced plants; but I know not on what authority. I have never seen a place of a few miles extent where they do not grow, however wild the country.

arvense (rabbit-foot, field clover. O. w. Ju. ☺.) erect, branching, villose; leaves lance-linear, serrulate at the apex: stipules connate, subulate at the apex: spikes villose, oval-cylindric: teeth of the calyx setaceous, longer than the corol. Grows in dry pastures or barren fields.

stoloniferum, M. (buffalo clover. Western part of the state of New-York. w. J. 4.) sending off suckers from the base of the stem: leaves obovate, unequally serrate on the sides, and toothed at the end: teeth of the calyx narrow-lanceolate or subulate, longer than the tube: florets large, in a head-form spike. This description I drew from a dried specimen in the herbarium of Dr. T. R. Beck; being unable to procure any other.

pensylvanicum, W. (P. r. J. 4.) ascending: stem very branching, zigzag; leafets oval-ovate, obtuse, entire: stipules awned: spikes ovate-cylindric, dense, solitary: lower tooth of the calyx shorter than the tube of the corol.

reflexum, W. (P. r. J. 4.) procumbent, pubescent: leaves obovate: stipules oblique, cordate: heads many-flowered; flowers pedicelled, at length all reflexed: legumes about 3-seeded. Near the great lakes.

procumbens, W. (hop clover. P. y. J. ☺.) procumbent: stem hairy: leafets obovate, sub-marginate, glabrous: stipules short, lanceolate, acute: spikes oval, imbricate: banner deflexed, furrowed, permanent.

campestre, Sr. (1) (P. y. ☺.) spike ovate, imbricate: banner deflected, permanent; leafets lance-ovate, middle one petioled: stem sub-diffuse; branches decumbent.

agrarium, W. (2) (P. y. J. ☺.) erect, sub-pubescent; leafets lance-wedge-form, obtuse, middle one sessile: stipules lanceolate, acute: spikes oval, imbricate: banner deflexed, permanent: teeth of the calyx subulate, glabrous, unequal.

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(1) procumbens, S. agrarium, C. (2) aureum, Pollich.

Trifolium, see Melilotus.

6—3. TRIGLOCHIN. 5. 13.

maritimum (arrow-grass. L. g. Ju. 4.) capsules short, ovate, furrowed, 6-celled, rounded at the base: leaves semi-cylindric: root tuberous. Grows plentifully about 12 or 14 inches high, in the salt meadows about New-Haven.

palustre (Onondaga salt springs. g. Ju. 4.) triandrous: capsules linear, tapering to the base, 3-celled, smooth; stigmas erect: leaves radical, 2-ranked, sheathing, linear, channelled, smooth: roots fibrous. About 6 inches high.

triandrum, Mx. (Can. P.) triandrous: flowers 3-cleft, short-pedicelled: capsules roundish-triangular: leaves sub-setaceous, almost as tall as the spike or scape.

elatum, N. (New-York.) styles and capsules 6, styles permanent, capsules linear, angular, depressed on the backs, having acute margins: scape much longer than the leaves. In marshes.

17—10. TRIGONELLA. 32. 93.

foenum-graecum (funegreek. E. ☺.) legumes sessile, solitary, strait, erectish, sub-falcate, acuminate: stem erect: leaves wedge-oblong.

6—3. TRILLIUM. 11. 12.

erectum, W. (1) (false wake-robin. O. p-w. M. 4.) peduncles erect or erectish, with the flowers a little nodding: petals ovate, acuminate, spreading, equalling the calyx: leaves rhomboid, acuminate, sessile: peduncle about 3 inches long. Var. *atropurpureum*, petals large, dark purple. Var. *album*, petals smaller, white: germ red. 12 to 18 inches high. Leaves often 3 or 4 inches broad.

cernuum, W. (nodding wake-robin. Y. C. P. Boston g. & w. M. 4.) peduncles recurved, shortish: petals lanceolate, reflexed, the size and form of the calyx-leaves: leaves rhomboid, abruptly acuminate, very short petioled. About half the size of the last species. Petals dull brownish white, striped with green.

(1) rhomboideum, Mx.

pictum, Ph. (1) (smiling wake-robin. H. w. & r. M. 4.) peduncles erectish: petals lance-ovate, acuminate, recurved, almost twice as long as the narrow leaf calyx: leaves ovate, acuminate, rounded at the base, abruptly petioled. Very abundant in moderately dry woods north of Williams College. An elegant species.

pendulum, W. (P. w. M. 4.) peduncles erect, with the flower a little nodding: petals ovate, acuminate, spreading, longer than the calyx: leaves rhomboid-acuminate, sessile. Smaller than the erectum. germ reddish, anthers and styles yellow, flower dull white. I took this description from Smith. He says Pursh has given the characters of the erectum for this species. But I never saw the pendulum.

grandiflorum, C (2) (P V. Lake Erie. w. M. 4.) peduncles a little curved, and the flowers a little nodding: petals lance-spatulate, erect at the base, limb spreading, much larger than the calyx: leaves broad, rhomb-ovate. Berries dark purple.

sessile, W. (P. p. M. 4.) flowers sessile, erect: petals lanceolate, erect, twice as long the calyx: leaves sessile, broad-ovate, acute.

pumilum, Mx. (dwarf wake-robin. P. r. M. 4.) peduncles erect; petals scarcely longer than the calyx: leaves oval-oblong, obtuse, sessile.

5—1. TRIOSTEUM. 48. 53.

perfoliatum, L. (3) (fever root, horse-ginseng. O. p. J. 4.) leaves oval, acuminate, connate: flowers sessile, whorled. 2 to 4 feet high; berries purple or yellow. Very valuable as a mild cathartic and emetic. B. & Bw.

19—1. TRIPHORA. N. (4) 7. 21.

pendula, M. (5) (three-bird orchis. V. C. P. Westfield, Mass. w-p. Au. 4.) root tuberous: stem leafy, about 3-flowered at the top: leaves ovate, alternate: lip entire. 3 to 5 inches high. I found it growing plentifully on the Serpentine Hill four miles west of Westfield academy.

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(1) erythrocarpum, Mx. Undulatum, W.
(2) rhomboideum, Var. grandiflorum; Mx.
(3) majus, Mx. (4) Arethusa, L.
(5) trianthophorus, Sw. parviflora, Mx. nutans, Le Conte

3—2. Triticum. 4. 10.

hybernum (winter wheat. E. J. ♁.) calyx-glume 4-flowered, tumid, even, imbricate, abrupt, with a short compressed point: stipule jagged: corols of the upper florets somewhat bearded. There are several varieties of this species which are induced by culture.

aestivum (summer wheat. E. J. ☉.) calyx 4-flowered, tumid, smooth, imbricated, awned.—Smith says this may be a variety of the last.

compositum (egyptian wheat. E.) spike compound; spikelets crowded, awned.

repens (wheat-grass, couch-grass, quack-grass. O. J. 4.) calyx acuminate, many-nerved, 5-flowered; flowers pointed: leaves flat: root creeping. Very troublesome in fertile soil, and useful in barren sand.

13—13. Trollius. 36. 61.

laxus, Sy. (1) (globe-flower. P. y. M. 4.) petals 5, obtuse, spreading: nectaries shorter than the stamens. Petals always, perhaps, 5, obovate: capsules short, abrupt, crowned with the elongated style.

18—1. Tropaeolum. 23. 73.

majus (nasturtion, indian cress. E. y. & r. Ju. ☉. & 4.) leaves peltate, sub-repand: petals obtuse, some of them fringed.

18—1. Troximon. 49. 53.

virginicum, P. (2) (false goat's beard. P. y. Ju. 4.) radical leaves lyrate, roundish; cauline ones clasping, undivided: whole plant glabrous.

22—6. Tuber. 58. 1.

cibarium, becoming black, roughened with warts. Globose, solid, destitute of root. On the earth. Often collected for food in Europe and Asia.

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(1) americanus, Donn.

(2) Tragopogon virginicum, L. Hyoseris prenanthoides, W. amplexicaule, Mx.

22—6. TUBERCULARIA. 58. 1.

vulgaris (tubercle fungus.) gregarious, bright red, ridgy or wrinkled, with a thick pale stipe-form receptacle. Mostly on dead branches of the common red currant.

rosea (P.) scattered, loose, irregularly globose, rose-coloured. Bright pink little masses, which dissolve in rainy weather. This Smith gives as its best distinction from some lichens. Adhering to lichens on trees.

22—6. TUBULINA. 58. 1.

fragiformis, sub-orbicular; at first red, then rust-colour; tubular fruit thick, distinct at the apex. On trunks in the summer after a storm.

6—1. TULIPA. 10. 14.

suaveolens (sweet tulip. E. M. 2.) small: stem 1-flowered, pubescent: flower erect: petals obtuse, glabrous: leaves lance-ovate.

gesneriana (common tulip. E. M. 2.) stem 1-flowered, glabrous: flower various-coloured, erect: petals obtuse, glabrous: leaves lance-ovate.

22—6. TULOSTOMA.

brumale, stipe smoothish; fruit globose, with a flat mouth. On walls, sometimes in meadows.

15—2. TURRITIS. 39. 63.

hirsuta, S. (tower mustard. O. w. M. ☺. or 2.) leaves all hispid; cauline ones clasping: silique 4-angled.—Robert Brown says, this is an Arabis. If so, this genus may be struck off from the list of American genera, since *laevigata* has been removed to Arabis by Torrey.

ovata, Ph. (P. w. M. ♄.) pubescent: radical leaves petioled, ovate, toothed, obtuse; cauline leaves clasping, oblong, serrate, acute. Resembles the hirsuta; perhaps a variety of it, which ought to follow it to the genus Arabis.

18—2. TUSSILAGO. 49. 55.

farfara, W. (colt's foot. W. T. P. N. y. Ap. 2.) scape single-flowered, scaly: leaves cordate, angular, tooth-

ed, downy beneath. The flower appears long before the leaves. River alluvion.

frigida (mountain colt's foot. New-Hampshire, Vt. y. M. 4.) scape many-flowered, corymbed, bracted: leaves triangular, cordate, with deep triangular teeth, downy beneath.

20—3. TYPHA. S. 8.

latifolia (cat-tail, reed-mace. O. Ju. 4.) leaves linear, flat, slightly convex beneath: staminate and pistillate aments close together. Wet.

angustifolia (P. Ju. 4.) leaves linear, channelled, semicylindric below and flattish above: staminate and pistillate aments a little separated. Not so large as the last species. Wet.

U.

17—10. ULEX. 32. 93.

europeus (furze. E. M. ♄.) leaves lance-linear, villose: bracts ovate lax; branchlets erect.

5—2. ULMUS. 53. 99.

americana, Mx. (elm, white-elm. O. g-p. Ap. ♄.) branches smooth: leaves oblique at the base, having acuminate serratures a little hooking: flowers pedicelled: fruit fringed with dense down. A very large durable tree, with the branches gradually spreading, when it grows in open fields, so as to form a fan-form top. Var. *pendula*, has hanging branches and smoothish leaves. Rafinesque says this is a distinct species. See Florula Ludoviciana, page 115.

fulva, Mx. (1) (slippery-elm, red-elm. O. Ap. ♄.) branches scabrous, whitish: leaves ovate-oblong, acuminate, nearly equal at the base, unequally serrate, pubescent both sides, very scabrous: buds tomentose with very dense yellowish wool; flowers sessile. May always be known by chewing the bark, which is very mucilaginous.

nemoralis (river-elm, grove-elm. New-England. Ap. ♄.) leaves oblong, smoothish, equally serrate, nearly equal at the base: flowers sessile.

(1) aspera, M. rubra, Mx. younger.

22—2. Ulota. 56. 4.

crispa, stem ramose : leaves lance-linear, recurved-undulate when dry : pedicels elongated. On trunks of trees.

22—4. Ulva. 57. 2.

1. *Spread.*

lactuca, fronds aggregate, oblong, flat, undulate-bullate, attenuate below, gradually dilated, laciniate-crisped. Pale-green, thin, weak and flaccid. Seas and bays.

latissima, frond solitary, oblong, very broad, flat, margin undulated. Root contracted. Front attached in a peltate-form, yellowish-green, coriaceous-membranaceous. Abundant along within the margin of the sea.

purpurea, fronds oblong, purple, undulate-crisped. Root contracted. Frond attached in a peltate form, aggregated, sub-sessile, 1 to 3 inches broad, very thin, with dense oblong angled or nearly trapezoidal granulations. On rocks in seas and bays.

linza, frond lance-linear, margin undulate-crisped. About an inch broad, tapering to the base, green. Sea shore.

crispa, frond bullate, plicate-crispid, rugose, aggregated into an expanded layer. Not adhering to paper on drying. On the earth in shades.

2. *Tubular.*

lubrica, frond sub-ramose, compressed, undulate-sinuate, gelatinous. Very narrow, about the twelfth of an inch, variously inflexed and curved, pellucid, green. Seed deposited in a quadrangular position. Adheres closely to paper on drying. In ditches.

intestinalis, frond tubulose, simple. Variable in size; nery narrow. Obscurely green.

compressa, frond tubulose, simple or branched, filiform-compressed. Varying in size. Sometimes compressed and sometimes terete, obscurely green. In seas and bays.

3—2. Uniola. 4. 10.

gracilis, Mx. (spike-grass. D. Au. 2/.) sheaths and culm compressed : leaves flattish : panicle sub-spiked, long and slender, with short close-pressed branches ; spike-

lets small, sub-sessile ; glume calyx 3-valved : flowers monandrous. In shady woods.

latifolia. Mx (P. J. 4.) panicle lax : spikelets all long-pedicelled : calyx 3-valved : flowers monandrous, sub-falcate, hairy on the keel : leaves broad, flat.

spicata, L. (1) (C. Ju. 4.) flowers in a thyrse : spikelets approximate, close-pressed, about 6-flowered, awnless : leaves convolute-subulate, rigid, alternate, pointing 2-ways : culm erect, glabrous.

3—2. URALEPSIS. N. 4. 10.

purpurea, Wr. (2) (purple hair-grass. C. P. A.) culm terete, erect : panicle diffuse, purple ; the racemes shorter than the internodes, with few sub-sessile florets : leaves flat, narrow, sub-filiform above.

5—2. URASPERMUM. N. 45. 60.

claytoni (3) (sweet cicily. O. J. 4.) leaves compound, hairy ; leafets pinnatifid-lobed, terminal one rhomboidal, acute : umbels axillary and terminal, about 5-rayed : style as long as the villose germ.

22—5. URCEOLARIA. 57. 2.

panyrga (pitcher-shield lichen. P.) effuse, granular-warty, pure white : warts clustered, bearing shields which are glaucous-mealy, with convex entire frond-like margins.

22—6. UREDO. 58. 1.

1. *Seminal dust rusty-yellow.*

rosae-centifoliae (rose rust) crowded, yellow, flat, opening ; little heaps orbicular. On the leaves of the centfoil rose.

linearis (yellow grain-rust. J. ☉.) linear, very long ; stained yellow, at length but obscurely coloured. On the culms and leaves of barley, oats, rye, wheat, &c.

2. *Seminal dust white.*

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(1) distichophylla, Rs. Festuca distichophylla, Mx.

(2) Aira purpurea, Wr.

(3) Myrrhis dulcis, 2d ed. Scandix dulcis, M. Scandix claytoni, Mx. (see N.) Chaerophyllum claytoni, Ph.

candida (white rust) white, opening. On shepherd's purse, &c.

3. *Seminal dust black or sooty-yellow; on the fructification of plants.*

segetum (smut. J.) dust black, very copious; growing in the spikes or glumes of grain. Is smut a plant?

caricis, dust black, naked, surrounding the capsules. On carexes.

20—4. URTICA. 53. 98.

dioica (common nettle. O. J. 4.) leaves opposite, cordate, lance-ovate, coarsely serrate, flowers dioecious; spikes panicled, glomerate, in pairs, longer than the petioles.

procera, W. (1) (O. Ju. 4.) leaves opposite, cordate, lance-ovate, serrate; petioles ciliate: flowers dioecious: spikes somewhat branched, glomerate in pairs, equalling the petiole. Not so common as the last; which if examined before full maturity, may be mistaken for this.

gracilis (N. Can. Au. 4.) leaves opposite, lance-ovate, nakedish; leaves and petioles hispid: racemes in pairs. Pursh says this and the last species are the same. Perhaps they are; but if so, the gracilis at Northampton, is a very slender and delicate variety.

pumila, W. (2) (stingless nettle, richweed. O. Ju. ☺.) leaves opposite, ovate, acuminate, 3-nerved, serrate: lower petioles as long as the leaves: flowers monoecious, triandrous; in corymbed heads, shorter than the petioles. Stem smooth and shining; when in deep shades the stem is pellucid.

urens (dwarf stinger. N. P. T. Y. Boston. J. ☺.) leaves opposite, oval, about 5-nerved, sharply serrate: spikes glomerate, in pairs.

capitata, W. (P. Can. J. 4.) leaves alternate, heart-ovate, acuminate, serrate, 3-nerved, twice as long as the petiole: glomerules spiked; the spikes are solitary, shorter than the leaves, leafy above: stem naked.

canadensis (canada nettle. O. Ju. 4.) leaves alternate, heart-ovate, acuminate, serrate, hispid both sides:

(1) gracilis? A. (2) Adesia trinerva, R.

panicles axillary, mostly in pairs, spread-branched; the lower staminate ones longer than the petioles, upper pistillate one elongated: stem covered with stings. 5 to 6 feet high. Var. *divaricata*, has smoothish leaves, and sometimes very spreading solitary panicles.

whitlowi, M. (1) (albany hemp. T. Au. 24.) stem simple, terete, and sub-glabrous at the base; towards the top it is 5 to 8-grooved, and covered with reversed stings: leaves serrate, punctate (with deep green specks or spots) acuminate, long-petioled, alternate; lower ones broad-oval, with the base wedge-form; uppermost ones nearly opposite, heart-ovate: "panicles peduncled; staminate ones axillary diehotomous, longer than the petioles; pistillate ones terminal: capsules orbicular-compressed, mucronate": root tuberous-fusiform, often with tuberous branches nearly at right angles. Stem 5 or 6 feet high. See Professor Green's Catalogue.

Dr. Muhlenberg examined this plant and named it in honor of its discoverer, Mr. Charles Whitlow; whose opinion, that it may be advantageously cultivated as a substitute for hemp, seems to be confirmed by the observations of M'Kinzie. Dr. Withering also observed, long ago, that he had no doubt some species of the nettle might be used as a substitute for flax.

Several botanists consider the whitlowi as a variety of the canadensis. I have therefore been particular to give a full description; which I took from several living specimens on an island near Albany, and compared it with those cultivated in Mr. G. Webster's garden. That part of the description relating to the fructification, I translated from Dr. Muhlenberg's description.

Whether it is a distinct species or only a variety, will not affect the question of its usefulness. And it is to be hoped, that agriculturalists will make more extensive experiments.

22—5. USNEA. 57. 2.

florida, frond erectish, scabrous, pale-cinereous: fibres thick, horizontal: branches spreading, expanded, sub-simple: receptacles flat, very broad, becoming

(1) canadensis, Ph. in a letter to Professor Ives,

white, ciliate--ciliae long, radiating. On trees. This and the following species of lichen are usually called tree moss.

strigosa, frond effuse, ramose, dirty-cinereous, scabrous: branches longish, flexuose, dichotomous, lax, every where bearing strigose fibres : receptacles fleshy, broad, sub-lobate, tooth-radiate. Perhaps a variety of the florida.

plicata, frond pendulous, smooth, pale ; branches lax, very branching, sub-fibrous, the extreme ones capillary ; receptacles flat, broad, ciliate ; the ciliae very slender and long. On trunks and branches of trees. Most common on the dry dead limbs of evergreens ; from which it often hangs in long cinereous-green locks.

barbata, frond pendulous, smooth, terete, thickish, pale-green and sub-cinereous : branches diverging with scattered fibres, capillary at the apex, jointed beneath. On branches of old trees.

angulata, frond pendulous, flexuose, sub-simple, angled, pale-cinereous--angles acute, scabrous : fibres horizontal, approximate, simple, short, slenderly terete. On trees.

trichodea, frond prostrate, smooth, pale-white, filiform, tender, sub-ramose : fibres horizontal, somewhat one-sided, scattered : receptacles uniform-coloured ; the periphery elevated, thin, naked, entire.

2--1. UTRICULARIA. 24. 40.

vulgaris, Ph. (1) (bladder-wort. O. y. J. 4.) spur-nectary conic, upper lip of the length of the palate, reflexed to the sides : scape strait, few-flowered. Scape generally proceeding from the junction of several horizontal branches, which lie in the mud or float on the surface of water. The leaves are capillary, generally bearing small bladders.

cornuta, Mx. (leafless bladder-wort. H. & T. y. Ju. 4.) spur-nectary subulate, lengthened out longer than the corol, nearly vertical, acute : lower lip of the corol broad, 3-lobed : scape with 2 nearly sessile flowers at the top ; no leaves at the base, but having dense al-

(1) macrorhiza, Le Conte. Torrey says, this is not the vulgaris, of L.

ternate tufts of radical leaves. In the marsh on Crooked lake, Plainfield, (Mass.) it grows so plentifully as to give the lake the appearance of being bordered with yellow. I saw thousands there still in flower in September.

saccata, Le Conte. (C. P. p. Au. ☉.) scape 1 to 3-flowered : lower lip of the corol 3-lobed, lateral lobes cowled on the under side ; palate large and prominent : spur-nectary compressed, keeled, sub-acuminate, close-pressed to the corol, which is upside down and covers the spur with its reflexed margins ; uppper lip almost round. Nuttall says it is the *purpurea* of Walter.

gibba, W. (T. D. Pittsfield. y. Ju.) spur-nectary gibbous : divisions of the corol rounded : scape generally 1-flowered. Very small. Grows in great plenty in the ponds near the Cantonment at Greenbush.

subulata, Ph. (1) (Can. P. D. y Ju. ☉.) spur-nectary obtuse, shorter than the under lip : scape about 2-flowered. Flowers small.

setacea, Le Conte. (C. D. P. y J.) leafless ; scape minute, terete, slenderly setaceous, 2 or 3-flowered, rooting ; flowers on longish peduncles : spur-nectary longish. It appears that Mr. Le Conte sometimes found 6 or 7 flowers on a scape : and Mr. Elliott says the lower lip of the calyx is sub-emarginate. Pursh says this is the subulata ; but Nuttall says it cannot possibly be that.

minor (D. y. Au. 4.) spur-nectary gibbous, keeled : throat of the corol open. Flowers small.

ceratophylla, Mx. (2) (C. D. P. y. Ju.) leaves at the base of the scape cylindric, capillary, divided, branched at the extremities : scape producing 6 to 10-flowered racemes : lower lip of the corol with 3 retuse lobes : spur compressed. The largest of the species.

striata, Le Conte. (C. y. J. 4.) scape 2 or 3-flowered ; nectary (or spur) strait, obtuse ; upper lip round-ovate, sub-emarginate, margin undulated, palate 2-lobed ; under lip 3-lobed, lateral lobes reflexed, longer than the spur : corol red-striate. About a foot high—bladders few.

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(1) Setacea ? Mx.
(2) inflata, Wr.

6—1. UVULARIA. 11. 14.

1. *Capsules 3-cornered; stigmas reflexed.*

perfoliata (bellwort. O. y. M. 4.) leaves perfoliate, oval, obtuse (lance-linear or oval-oblong, in the young state) corol bell-liliaceous, scabrous or granular within: anthers cuspidate.

sessilifolia (O. y. M. 4.) leaves sessile, lance-oval, becoming glaucous beneath: petals flat, smooth within: capsule stiped (raised above the receptacle on a little stem:) stem glabrous.

lanceolata, W. (1) (H. y. J. 4.) leaves perfoliate, oblong, acute; petals smooth within: anthers obtusish: nectaries roundish. Flowers large.

flava, S. (2) (D. y. M. 4.) leaves perfoliate, oval-oblong, obtuse, undulate at the base: corol tapering to the base, scabrous within: anthers cuspidate.

2. *Capsules sub-globose; stigmas very short.*

[These species are removed to Streptopus.]

V

10—1. VACCINIUM. 18. 51.

Remark. President Smith remarks upon the removing of this genus to the 10th class, in a way which strongly implies his disapprobation. He says Pursh removed it; not recollecting at the moment that Persoon removed it about ten years before Pursh wrote. There are about 25 species in North America, not one of them octandrous; and barely three octandrous species in Europe. Ought we therefore to make our 25 species into anomalies, on account of the European species? I presume Dr. Smith would not object to taking off the Oxycoccus genus, should he become acquainted with all our species of the old genus Vaccinium, growing in their native wilds. See Rees' Cyclopedia.

stamineum (squaw whortleberry. O. w. M. ½.) leaves oval, acute, entire, glaucous beneath: pedicels solitary, axillary, filiform: corol spreading, bell-form; di-

(1) grandiflora, S. perfoliata major, Mx.
(2) Anonymous pudica, Wr.

visions oblong, acute : anthers exsert, awned on the back : berry pear-form. About 2 or 3 feet high. Var. *album*, has the nerves and veins of the leaves hairy and the berry globose. Pursh makes this variety a distinct species ; but Smith says it can hardly be called a variety. Berries of this species are large and light green, when ripe ; very soft and juicy within, with a tough stem.

dumosum, C. (1) (bush whortleberry. O. w. J. ♄.) branchlets, leaves and racemes a little hispid, bedewed with resinous specks ; the leaves oblong-obovate, acute at the base, mucronate, entire, both sides coloured alike : racemes bracted, pedicels short, axillary, sub-solitary, 2-bracted near the middle : corol bell-form, divisions roundish, including the anthers.

frondosum, L. (2) blue whortleberry. O. w. M. ♄.) leaves oblong-ovate, obtusish, entire, glabrous, glaucous beneath, bedewed with many resinous dots : racemes lax, bracted ; pedicels long, filiform, bracted ; the linear : corol ovate-bell-form, with acute divisions, and enclosing the anthers. Var. *lanceolatum*, having lanceolate leaves acute at both ends. About 3 feet high, berries large and blue.

resinosum, L. (3) (black whortleberry. O. p. M. ♄.) leaves slender, petioled, oblong-oval, mostly obtuse, entire, bedewed with resinous specks beneath : racemes lateral, one-sided : pedicels short, somewhat bracted : corol ovate-conic, 5-cornered. 1 to 4 feet high : berries black. Much taller in woods than in open fields.

corymbosum, L. (4) (giant whortleberry. O. w. M. ♄.) flower-bearing branchlets almost leafless : leaves oblong-oval, acute at both ends, mucronate, sub-entire ; sub-tomentose beneath and hairy both sides when young, but glabrous above and a little hairy at the veins beneath when mature ; racemes short, sessile, with scaly bracts : corols cylindric-ovate : calyx erect ; style somewhat exsert. In wet ground it grows very large ; near Albany it grows 12 feet high and 2 or 3 inches in diameter. Berries black. Var. *amœnum*, has the style not exsert, and the racemes are crowded,

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(1) frondosum, Mx. hirtilleum, A. (2) glaucum, Mx.
(3) Andromeda baccata, Wm.
(4) disomorphum, Mx. Album, Lk. Amoenum, W.

corol cylindric and the calyx reflexed. The twigs are reddish, flowers large with a reddish tinge. Var. *fuscatum*, has the leaves a little serrulate, glabrous, corymbed racemes terminal, pedicels long and nodding, corol cylindric with short direct divisions, style hardly exsert. Flowers striped with red, calyx brown.

pensylvanicum, Mx. (1) (black-blue whortleberry. O. r-g. M. ♄.) branches angled, bark green: leaves sessile, lance-oval, mucronate, serrulate, both sides shining: fascicles of flowers crowded, sub-terminal: corol ovate, 5-toothed. Very branching, leaves flat, membranaceous, calyx green.

tenellum, W. (2) (dwarf whortleberry. W. P. Whitehills. r-w. M. ♄.) branches angled, green: leaves sessile, lance-ovate, mucronate, serrulate, shining both sides; flowers in crowded, mostly sessile fascicles: corols ovate.

gaultherioides, Bw. (wintergreen whortleberry, Whitehills. Ju. ♄.) prostrate; leaves obovate, entire: flowers subsolitary: berries oblong, crowned with the style. Very small. A new species by Bigelow and Boot.

vitis-idaea (bilberry. Can. New-England. w-r. M. ♄.) low; stem creeping, branchlets erect: leaves obovate, emarginate, revolute, sub-serrulate, shining above, punctate beneath: racemes terminal, nodding: corol bell-cylindric. Sometimes tetandrous.

Vaccinium, see Oxycoccus.

3—1. VALERIANA. 48. 56.

phu (valerian. E. 4.) cauline leaves pinnate, radical ones undivided: stem smooth.

Valeriana, see Fedia.

21—2. VALLISNERIA. 1. 22.

spiralis (tape grass. Y. T. P. w. Au. 4.) leaves floating, linear, obtuse, serrulate at the summit, tapering at the base: peduncle of the pistillate flower long and spiral; of the staminate short and erect. In the river Hudson from Waterford to the Highlands.

(1) virgatum, W. Tenellum? Ph.
(2) pensylvanicum? Lk.

22—5. Variolaria. 57. 2.

communis, crust cartilaginous, smooth, becoming white, at length unequal, cinereous, sprinkled over with white fruit-dots destitute of margins; warts of the receptacles spheroid, pulverulent; with a sub-membranaceous flattish pale nucleus, which is at length naked. On trunks of trees in the wood when stripped of bark, &c.

amara, crust rugose-rimose, unequal, sub-pulverulent, white becoming sub-cinereous: warts of the receptacles close-pressed, plano-concave, bearing the fruit, uniform-coloured. On bark of trees.

22—4. Vaucheria. 57. 2.

bursata, threads laxly ramose: vesicles solitary, globose; peduncles perpendicular. In stagnant water. Very abundant in Rutland pond, Vermont.

dillwynii, threads flexuose: vesicles sessile, lateral, globose. Grows on naked earth in shades, either in spring or autumn.

6—3. Veratrum. 10. 13.

† *viride*, W. (1) (itch-weed, indian poke, white hellebore. O. g. J. ♃.) flowers in terminal racemed panicles; bracts of the branches lance-oblong, the bract of the flowers longer than the sub-pubescent peduncles: leaves broad-ovate, plaited, many-nerved. Useful in rheumatisms and many cutaneous eruptions. Doct. Cutler says, crows may be destroyed by boiling indian corn in a decoction of this plant, and strewing it in corn-fields. Damp.

Veratrum, see Helonias.

5—1. Verbascum. 28. 41.

thapsus (mullein. O. y. J. ☿.) leaves decurrent, downy both sides: stem generally simple, though sometimes branched above: flowers in a cylindric spike. When botanists are so infatuated with wild theory, as to tell us the mullein was introduced, they give our youngest pupils occasion to sneer at their teachers.

† *blattaria* (moth mullein, sleek mullein. T. N. C. P. w-y.

(1) album Mx.

J. ♄.) leaves glabrous, tooth-serrate; lower ones oblong-obovate, upper ones heart-ovate, clasping: pedicels 1-flowered in a terminal panicle-raceme. This plant, which grows about Albany and Troy in such abundance, differs so widely from the descriptions given of this species by Smith and Willdenow, that I am inclined to believe it a different species, or a very distinct variety.

lychnitis (P-r. w. J. ♄.) leaves ovate, acute, crenate, white-downy beneath: spikes lax, lateral and terminal.

14—1. VERBENA. 42. 38.

hastata (vervain, simpler's joy. O. p.w. Ju. ♃.) erect, tall: leaves lanceolate, acuminate, gash-serrate, lower ones sometimes gash-hastate: spikes linear, panicled, subimbricate. Var. *pinnatifidia*, has the leaves gash-pinnatifid, coarsely toothed.

urticifolia (nettle-leaf vervain. O. w. Ju. ♃.) erect, sub-pubescent: leaves ovate, acute, serrate, petioled: spikes filiform, with flowers a little separate, axillary and terminal. Both of these species grow from 3 to 5 feet high. Generally about garden fences and old fields.

angustifolia, Mx (1) (pigmy vervain. Y. C. P. Hudson. b. J. ♃.) low, erect: leaves lance-linear, tapering to the base, thinly serrate, with channelled veins: spikes filiform, solitary, terminal or axillary. About a foot high in the dry fields about New-Haven.

spuria (C. Y. P. b. Ju. ♃. ♄.) stem decumbent, with spreading branches: leaves in many-cleft divisions: spikes filiform: bracts exceeding the calyx. Very abundant 7 or 8 miles about New-Haven.

18—2. VERBESINA. 49. 55.

sigesbeckia, W. (2) (crown-beard. P. y. Ju. ♃.) stem winged: leaves opposite, lance-ovate, acuminate at both ends, sharply serrate: panicle brachiate: flowers in fascicles on the ends of the branches.

virginica, W. (P. w. Ju. ♃.) stem narrow-winged: leaves alternate, broad-lanceolate, sub-serrate: corymb compound: calyx oblong, pubescent, ray florets 3 or 4.

(1) rugosa, W. (2) Sigesbeckia occidentalis, L.

18—1. VERNONIA. 49. 55.

+ *noveboracensis*, L. (1) (flat top. O. p. Au. 4.) tall : leaves thick-set, lanceolate, serrate, rough : corymb fastigiate : scales of the calyx filiform at the apex. 4 or 5 feet high.

+ *praealta*, W. (2) (New-England. P. r. Au. 4.) stem tall, angled, thickly pubescent : leaves thick-set, lanceolate, acutely serrate, pubescent beneath : corymb fastigiate : scales of the calyx ovate, acute, awnless.

2—1. VERONICA. 40. 35.

+ *officinalis* (speedwell. T. Y. C. P. b. M. 4.) spikes lateral, peduncled : leaves opposite, obovate, hairy : stem procumbent, rough haired,

serpyllifolia (Paul's betony-smoothe, speedwell. O. b. M. 4.) racemes terminal, sub-spiked : leaves ovate, glabrous, crenate. Stem 4 to 6 inches long.

+ *beccabunga* (brookline. O. b. J. 4.) racemes lateral : leaves ovate, flat : stem creeping. Stem 8 to 15 inches long. Flowers large. Wet.

+ *anagallis* (brook pimpernel. C. T. Can. P. b. J. 4.) racemes lateral : leaves lanceolate, serrate : stem erect.

scutellata (scull-cap speedwell. O. b. J. 4.) racemes lateral, alternate ; pedicels pendant : leaves lance-linear.

+ *arvensis* (wall speedwell. O. w-b. M. ☺.) flowers solitary, nearly sessile : leaves ovate, serrate ; floral ones lanceolate, entire : stem erect, seeds flat. 4 to 6 inches high.

+ *perigrina*, S. (3) (purslane-speedwell. O. w. M. ☺.) flowers sessile, leaves glabrous, lance-linear, toothed and entire, obtuse, lower ones opposite : stem erect.

agrestis (field speedwell. C. P. b. M. ☺.) flowers solitary : leaves ovate, serrate, shorter than the petioles : stem procumbent : segments of the calyx ovate. The stem is terete, hairy. 5 to 10 inches long.

hederifolia (ivy speedwell. C. w-b. M. ☺.) flowers solita-

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(1) Chrysocoma gigantea, Wr.
(2) Serrulata, L. Chrysocoma tomentosa, Wr.
(3) marylandica, Mx. caroliniana, Wr.

ry : leaves cordate, flat, 5-lobed : segments of the calyx cordate, acute : seeds wrinkled.

Veronica, see Callistachia.

25—5. VERRUCARIA. 57. 2.

schraderi (mite-lichen. P.) crust tartarous, hard, whitish, smooth : receptacles minute, crowded, nearly globular, navelled, sunk, semi-transparent within. Often on limestone, or other wrought stones in burying grounds, &c. scarcely visible.

stigmatella, (P.) very thin, membranous, smooth, rather polished, greyish : tubercles minute, convex, warty, crowded, sub-confluent ; nucleus globose, becoming cinereous. On the smooth bark of trees and fruit

pulla, crust thin, contiguous, membranaceous, smooth, dark-fuscous : receptacles minute, hemispheric, glabrous, sub-papillate, black within. On the bark of leather-wood, &c.

17—10. VEXILLARIA. 32. 93.

virginiana (butterfly-weed. P. b. Ju. 4.) leaves ternate, ovate : calyx 5-parted, longer than the bracts ; its divisions subulate, incurved, diverging : legumes subensiform.

mariana (P. w-b. Ju. 4.) leaves ternate : calyx much larger than the lance-linear bracts, oblong-tubular, 5-cleft : legume torulose on the convex sides : seeds glutinous.

5—3. VIBURNUM. 43. 58.

+*opulus* (guelder-rose, snow ball. E. w. J. ♄.) leaves 3-lobed, sharp-toothed ; petioles glandular, smooth : flowers in compact cymes, surrounded with radiating florets. Var *roseum*, has the whole cyme made up of radiating florets.

linus (laurestine. E. r-w. ♄.) leaves ovate, entire, with tufts of hair in the axils of the veins beneath : flowers in smooth cymes.

+*oxycoccus*, Ph. (1) (high cranberry. W. Y. T. V. P. r-w. J. ♄.) leaves 3-lobed, acute at the base, axils of the

(1) Opuloides, M, opulus pinnna, Mx. americanum, A.

veins hairy beneath, 3-nerved ; lobes long-acuminate, with a few-scattering teeth ; petioles glandular, grooved above : cymes rayed. 5 to 8 feet high. Fruit resembles the low cranberry, red and very acid. Grows plentifully in various parts of Columbia county, N. Y. Wet.

lentago (sheep-berry. O. w. J. ♄.) glabrous : leaves broad-ovate, acuminate, hook-serrate : petioles margined, undulate : cymes sessile. 8 to 15 feet high.—The branches when full grown often form a fastigiate top. Berries black, oval and sweetish, pleasant tasted ; somewhat mucilaginous.

lantanoides, Mx. (hobble-bush, tangle-legs. O. w. M. ♄.) leaves broad, round-cordate, abruptly acuminate, unequally serrate ; petioles and nerves furnished with powdery rusty down ; cymes sessile : fruit ovate.—Stem very flexible and crooked, about 5 to 7 feet long ; sometimes much longer.

† *acerifolium*, W. (maple gueldèr-rose, dockmackie. O. w. J. ♄.) leaves heart-ovate, or 3-lobed, acuminate, sharp-serrate, pubescent beneath : cymes long-peduncled. Stem very flexible, leaves broad and sub-membranous. The oldest Dutch settlers in Columbia county, New-York, inform us, that the Indians in that vicinity considered the external application of the leaves of the dockmackie as a sovereign remedy in every kind of inflammatory tumour, and that they have ever since adopted this practice with success.

dentatum, W. (arrow-wood. T. V. N. C. w. M. ♄.) smoothish : leaves roundish and ovate, acute, tooth-serrate, furrow-plaited, glabrous both sides : cyme peduncled : fruit sub-globular. Berries blue. About 4 to 6 feet high.

pyrifolium (W. T. N. P. w. Ju. ♄.) glabrous : leaves ovate, acutish, sub-serrate : petioles smooth : fruit oblong-ovate : cymes sub-peduncled. Berries dark-coloured.

prunifolium, Lk. (N C. P. w. J. ♄.) glabrous : branches spreading : leaves roundish, crenate-serrate ; petioles smooth : cymes sessile : fruit round.

nudum, W. (C. P. W. Litchfield Can. w. M. ♄.) very glabrous : leaves oval, sub-entire, margin revolute ; petioles smooth : cymes peduncled and without bracts. Berries black.

pubescens, Ph. (1) (C. T. V. w. J. ♄.) pubescent: leaves round-oval, acuminate, tooth-serrate, furrow-plaited, downy-villose beneath: cymes peduncled: fruit oblong. Small bush.

edule, Ph. (2) (Can. P. w. Ju. ♄.) leaves 3-lobed, obtusish at the base, 3-nerved; lobes very short, tooth-serrate, with acuminate serratures; petioles glandular: cymes radiate. Small and upright. Resembles oxycoccus.

17—10. VICIA. 32. 93.

faba (garden bean, windsor bean. E. w. & black. J. ☺.) stem many-flowered, erect, strong: legumes ascending, tumid, coriaceous: leafets oval, acute, entire; stipules sagittate, toothed at the base. From Persia. This is very different from the beans most commonly cultivated in our gardens, under the names pole bean and bush-bean. They belong to the genus Phaseolus.

pusilla, M. (creeping vetch. Y. C. Hudson. b-w. J.) peduncles solitary, 1-flowered, capillary: stipules semi-sagittate (that is arrow-form on one side) entire: leafets somewhat in sixes, lance-linear, obtusish: legumes small, oblong, glabrous.

americana, W. (C. P. p. M. 4.) peduncles somewhat many-flowered, shorter than the leaves: stipules semi-sagittate, toothed: leafets 8 to 12, lance-oval, obtuse, glabrous.

sativa, Wr. (tare. O. b-p. Ju. ☺.) flowers in pairs, subsessile: stipules toothed, marked with dots: leafets oblong-ovate, retuse, mucronate: legumes erect, linear-terete, glabrous. Perhaps it may have been introduced; but it is now very common in all parts of Berkshire county, Mass.

† *cracca* (Can. P. N. b. S. 4.) spikes many-flowered, imbricate backwards, larger than the leaves: stipules semi-sagittate, linear-subulate, entire: leafets numerous, lance-oblong, pubescent.

caroliniana, Wr. (3) (P. C. w. M. 4.) peduncles many-flowered; flowers distant: stipules lance-ovate, entire: leafets 8 to 10, lance-oval, smoothish: stem glabrous. The banner of the flower is tipped with black.

---

(1) dentatum pubescens, A. dentatum tomentosum, Mx.
(2) opulus edule, Mx. (3) parviflora, Mx.

5—1. Villarsia. 21. 46.

lacunosa, V. (1) (spur-stem, floating heart. T. Plainfield, Mass. D. P. w. Ju. 4.) leaves heart-reniform (or shortish heart form) sub-peltate, lacunose beneath, floating: petioles bearing the flowers: corol glabrous. Grows in Crooked Lake, in Plainfield, which is about three thousand feet higher than the tide waters at Albany. It is very plenty also in Sandlake, 10 miles from Troy.

5—1. Vinca. 30. 47.

+ *minor* (periwinkle. P ? E ? b. Ap. ♄.) stem procumbent: leaves lance-oval, smooth at the edges: flowers peduncled: teeth of the calyx lanceolate.

5—1. Viola. 29. 80.

1. *Stemless; leaves all radical and the flowers on scapes*

odorata (sweet violet. E. b. M. 4.) scyons creeping: leaves cordate, crenate, smoothish: calyx obtuse: two lateral petals with a bearded or hairy line. Cultivated in gardens.

+ *pedata* (birdfoot violet. T. Y. C. P. b. M. 4.) leaves many-parted-pedate; divisions lance-linear, sub entire: divisions of the calyx linear, acute.

+ *palmata* (hand violet. Y. C. P. W. T. V. b. M. 4.) pubescent: leaves cordate, hastate lobed, or palmate; divisions toothed: divisions of the calyx lanceolate, glabrous: 2 opposite petals bearded at the base. Var. *asarifolia*, leaves sub-reniform. Muhlenbergh makes this a distinct species; but Nuttall calls it a variety.

sagittata, A. (arrow violet P. C. Boston, Hudson. b. Ap. 4.) pubescent: leaves oblong, acute, heart-sagittate, sub-serrate, gashed at the base: scapes longer than the leaves: divisions of the calyx linear, glabrous: three lower petals bearded at the base. Lower petal white towards the bottom with purple veins: the rest longer, narrower, and whiter towards the base.

dentata, Ph. (toothed violet. P. b. M. 4.) glabrous: leaves oblong, acute, truncate at the base, serrate, coarsely toothed or hastate below: scapes shorter than

---

(1) tachysperma, E. Menyanthes trachysperma, Mx.

the leaves : divisions of the calyx linear : three lower petals bearded at the base.

lanceolata (spear violet. W. Y. C. P. w. Ap. 4.) glabrous : leaves lanceolate, sub-serrate, attenuate at the base ; scape scarcely longer than the leaves : petals beardless ; 2 upper ones roundish and painted with purple veins. Grows in wet places, as on the margin of Beaver Pond, New-Haven, also in a wet pasture on the side of Taghconnuk Mt. In the latter place I found it 6 inches high ; which is more than twice as high as it grows at N. Haven.

blanda, W. (smooth violet. O. y-w. M. 4.) glabrous : leaves cordate, acutish, flattish, remotely serrate : scapes of the length of the leaves : petals beardless, the 2 lateral ones shorter, the lower one lanceolate and longer than the rest. Lower petal marked with blue stripes.

obliqua, W. (twisted-wing violet. P. w-p. M. 4.) glabrous : leaves cordate, acute, crenate-serrate, flattish : flower erect ; scapes of the length of the leaves : petals twisted a little into an oblique position, lateral ones narrower and longer, bearded below the middle.—Flowers with purple and yellow veins.

ovata, N. (1) (T. C. b. M. 4.) leaves ovate, sub-cordate, acutish, often torn-toothed at the base, more or less pubescent both sides ; petioles margined : scape shorter than the leaves : segments of the calyx sub-ciliate ; petals obovate, lateral ones bearded. On dry hills.

+*primulifolia*, L. not Ph. (primrose violet. O. w. M. 4.) leaves oblong, sub-cordate, crenate, obtuse, base abruptly decurrent into the petiole : veins pinnate, midrib thinly pubescent above, petiole and veins hairy beneath : scape hairy : segments of the calyx, obtuse : lateral petals a little bearded.

+*cucullata* (common blue violet. O. b. M. 4.) glabrous : leaves cordate, glabrous, serrate, cowled (or rolled in at the base) scapes of the length of the petioles : petals bent obliquely, lateral ones bearded. Petals all whitish at the base. Var. *papilionacea*, leaves smoothish, heart-triangular : scape as long as the leaves : 3 lower petals bearded.

sororia, W. (bearded violet. W. T. P. b. M. 4.) leaves cordate, crenate-serrate, obtuse, pubescent : scapes

(1) primulifolia, Ph.

shorter than the leaves : petals oblong, the lower one bearded at the base, and veined.

rotundifolia, Mx. (1) (ground violet. H. y. Ap. 4.) smoothish : leaves round-cordate (when mature) obtusish, crenate-serrate—the sinus at the base closed and serratures glandular : [scions flower-bearing, Pursh] petals linear, scarcely longer than the calyx. The leaves lie very close to the ground.

2. *Having a stem ; more or less of the leaves cauline.*

† *tricolor* (garden violet, hearts-ease, pansy. E. p. y. b-p. M. 4.) stem angular, diffuse, divided. leaves oblong, deeply crenate : stipules lyrate-pinnatifid.

† *candensis* (woods violet. O. b. & w. J. 4.) smoothish : leaves sub-cordate, acuminate, serrate : peduncles of the length of the leaves : stipules short, entire. Sometimes 6 to 8 inches high, in damp woods.

striata, W. (2) (striped violet. W. P. Catskill Mt. w-p. M. 4.) glabrous : leaves cordate, acuminate, serrate, flattish : peduncles very long : stipules lanceolate, serrate-ciliate.

debilis Mx. (3) (weak stem violet. T. P. b. M. 4.) glabrous : leaves heart-reniform, short-acuminate, crenate, cowled at the base : peduncles twice as long as the leaves : stipules serrate-ciliate. Flowers small.

rostrata, Ph. (beaked violet. H. b. M. 4.) glabrous : leaves cordate, acute, serrate : peduncles twice as long as the leaves : stipules lanceolate, serrate-ciliate : spur longer than the corol, extending into a beak. Is this the striata ?

pubescens, A. (4) (yellow woods violet. O. y. M. 4.) villose-pubescent : stem erect, leafy towards and at the top : leaves broad-cordate : stipules oblong, serrate at the apex. Varies much in its height. Usually 6 or 8 inches high ; but I have seen it 20 inches high. Dr. Solon Smith showed me a specimen about 4 feet high, which he found in New-Hampshire.

hastata, Mx. (halbert violet. P. y. M. 4.) glabrous : stem simple, leafy above : leaves hastate, short petioled ; stipules minute, denticulate.

concolor (green violet. P. w-g. J. 4.) strait, erect : leaves

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(1) cland stina, Ph.
(2) uliginosa ? M.
(3) canina, Wr.
(4) pensylvanica, Mx.

broad-lanceolate, entire : stipules lance-linear, entire : peduncles axillary, in pairs, short. About 20 inches high, flowers small.

+*bicolor*, Ph. (1) (two coloured violet. P. C. w. p. M. ☺.) sub-pubescent : stem angled, simple : lower leaves round spatulate ; sub-dentate ; upper ones lanceolate, entire ; stipules comb-tooth pinnatifid : calyx acute, about half as long as the corol.

arvensis (field violet. P. w. Ap. ☺.) stem angled, grooved ; leaves lance-ovate, serrate ; stipules gashed at the base : calyx hairy, a little longer than the corol. Petals white, the lower one spotted with yellow.—Smith sets this down under V. tricolor, as one of its varieties.

Remark. Nuttall says, that all the North American species of violet (excepting V. concolor) after their blooming season is over, still continue to produce flowers without petals, through the rest of the summer.

21—4. Viscum.

album, Wr. (2) (misseltoe. P. g-w. J. ♄.) leaves lanceolate, obtuse : stem dichotomous : flowers 5 together, in terminal sessile heads. On the branches of old trees. Leaves an inch long, thick and leathery. This, Smith says, is the golden bough of Virgil, and the sacred plant of the Druids.

5—1. Vitis. 46. 72.

+*vinifera* (wine grape. E. J. ♄.) leaves sinuate-lobed, naked or downy.

Remark. All the North American species of grape are polygamous or dioecious.

+*labrusca* (plum grape. Y. C. P. T. Catskill. w-g. J. ♄.) leaves broad-cordate, lobe angled, white downy beneath : fertile racemes small : berries (blue, flesh-colour and green) large. Var. *labruscoides* (fox grape) has smaller fruit, approaching a tart taste.

+*aestivalis*, Mx. (3) (summer grape. C. P. Catskill. w-g. J. ½.) leaves broad-cordate, 3 to 5-lobed ; in the young state rust downy beneath ; fertile racemes oblong :

---

(1) tenella, M. arvensis, E. (2) flavescens, W.
(3) intermedia, M.

berry small, intermediate between the frost grape and plum grape.

cordifolia, Mx. (1) (frost grape. O. w-g. J. ½.) leaves cordate, acuminate, gash-toothed, glabrous both sides: racemes lax, many-flowered: berries small. Var. *vulpina*, leaves very variable; but the uppermost mature leaves will agree with the description.

riparia, Mx. (2) (odoriferous grape. C. P. w-g. M. ½.) leaves unequally gash-toothed, shortly 3-cleft, pubescent on the petioles, nerves and margins.

Vitis, see Ampelopsis.

W.

22—2. Weissia. 56. 4.

microdonta, small: leaves lanceolate, long-acuminate, crisped and twisted when dry, having a fascicle of ducts or tubes; peduncle pale; capsule oblong-ovate: lid beaked; teeth of the peristome narrow.

curvirostra, leaves lanceolate twisted, imbricate, spreading: capsules slender, ovate-cylindric; lid beaked, recurved.

capillacea, leaves lance-subulate, serrulate, somewhat rigid, nerves thick: stem simple, slender: germs oblong-ovate, erect, smooth; lid subulate-beaked, obtusish at the apex.

3—2. Windsoria. 4. 10.

poaeformis, N. (3) (giant meadow-grass. O. J. 4.) panicle erect; lower branches naked beneath: spikelets oblong, alternate, sub-sessile, 6-flowered: outer valve of the florets villose at the margin and 5-cleft at the apex: neck of the sheath and axils of the panicle pilose; leaves and the erect culm glabrous. Three or four feet high, in wet meadows.

pallida, Torrey. (C. Ju. 4.) very glabrous: culm erect: leaves lance-linear, flat: panicle lax, somewhat spreading; branches wand-like, capillary; spikes lanceolate, pedicelled: calyx unequal, 5-flowered; flowers

(1) vulpina, L. (2) odoratissima Donn.
(3) Poa quinquefida, Ph. sesleroides, Mx. flava, L. Tridens, Rs.

glabrous : corol with equal valves ; outer valve 5-toothed at the apex, inner valve bifid. In swamps.

22—1. Woodsia. Br. (1) 55. 5.

hyperborea (flower-cup fern. Can. P. Ju. 4.) frond pinnate ; leafets 3-parted, or gash pinnatifid, wedge-form, obtuse, toothed, rough-haired beneath : fruit-dots solitary, at length confluent. Small, in tuffts.

ilvensis (N ? Can. P. Ju. 4.) frond bipinnatifid ; divisions oblong, obtuse, lower ones repand, upper ones entire, rough-haired beneath : fruit-dots sub-marginal, at length confluent : stipe villose above. Small.

22—1. Woodwardia. 55. 5.

angustifolia, S. (2) (kidney-fern. O. Au. 4.) barren frond pinnatifid ; divisions lanceolate, repand slenderly serrulate : fruit-bearing frond pinnate ; leafets entire, acute, linear. About a foot high. W. onocleoides.

virginica, W. (3) (C. Ju. 4.) frond very glabrous, pinnate ; leafets sessile, lanceolate, pinnatifid ; divisions oblong, obtuse, cranulate, fertile ones elongated : stipe glabrous, terete. About a foot high.

X.

20—4. Xanthium. 54. 98.

strumarium (clott-burr. N. Y. C. T. V. Boston. Au. ☺.) stem unarmed, branching : leaves cordate, lobed, serrate, scabrous, 3-nerved at the base : fruit oval, pubescent, with stiff hooked bristles. Has a little the habit of a burdock.

orientale, M. (4) (C. ☺.) stem unarmed : leaves wedge-ovate : fruit in strobiles. Pursh removed this genus to the class Syngenesia.

6—3. Xerophyllum. 10. 13.

asphodeloides (5) (D. w. J. 4.) filaments dilated towards

(1) Polypodium, W. Acrostichum. Bolton.
(2) onocleoides, W.
(3) banisteriana, Mx. Blechnum, L.
(4) maculatum, R. (5) sotifolium, Mx. Helonias, L.

the base and equalling the corol : racemes oblong, crowded : bracts setaceous : scape leafy : leaves setaceous-subulate.

22—6. XYLOMA. 58. 1.

acerinum, resembling spots, slender, contiguous, sub-rugose, many capsules connate in one body.

5—1. XYLOSTEUM. 48. 58.

ciliatum, Ph. (1) (fly-honeysuckle, twin-berry. O. w-y. M. ♄.) berries distinct : leaves ovate and sub-cordate, margin ciliate, in the young state villose beneath : corol a little gibbous or calcarate at the base, tube ventricose above, divisions short, acute : style exsert.

solonis (2) (swamp twin-berry. W. New-Hampshire, Pittsfield. y. M. ♄.) berries united in one, not distinct : two flowers situated on one germ : leaves oblong-ovate, villose. Berries dark purple.—Found first by Dr. Solon Smith (1815) at the foot of Whitehills. It is a small shrub, not exceeding 2 feet high.

Xylostroma, see Racodium.

3—1. XYRIS. 6. 13.

caroliniana, W. (3) (yellow-eyed grass. Y. T. D. P. Boston. y. Au. 4.) leaves linear, grass-like : stem or scape 2-edged : head ovate-acute : scales obtuse.

brevifolia, Mx. (C. P. y. Au. 4.) leaves sword-subulate : scape teretish : head globose.

Z.

20—1. ZANICHELLIA. 2. 13.

intermedia, Torrey. (false pondweed. C. D.) anther 2-celled : stigmas dentate-crenate : seed smooth, entire on the back. In salt marshes.

5—13. ZANTHORHIZA. 26. 61.

apiifolia (parsley yellowroot. P. p. Ap. ♄.) flowers pani-

(1) tartaricum, Mx.
(2) villosum ? Mx.
(3) jupicai, Mx.

cled: leaves compound, sub-pinnate, a little sheathing at the base. Pure tonic bitter. B.

21—5. ZANTHOXYLUM. 46. 94.

fraxineum, W. (1) prickly ash, tooth-ache bush. O. g-w. M. ♄.) prickly: leaves pinnate; leafets lance-oval, sub-entire, sessile, equal at the base; common petiole unarmed: umbels axillary. Taste very pungent.

14—2. ZAPANIA. 40. 40.

nodiflora, Lk. (2) (fog-fruit. P. w. Ju. 4.) leaves wedge-obovate, serrate above: spikes head-conic, solitary, long-peduncled: stem creeping.

lanceolata (P. w. Ju. 4.) leaves lance-linear, sharply serrate: spikes head-conic, solitary, long-peduncled: stem creeping.

20—3. ZEA. 4. 10.

mays (indian corn. O. y-g. Ju. ☉.) leaves lance-linear, entire, keeled. Var. *precox* (dwarf corn) stem low: seeds mostly 8-rowed.

6—3. ZIGADENUS.

glaberrimus, Mx. (zigadene. P. w. J. 4.) scape leafy: bracts ovate, acuminate: petals acuminate: leaves long, recurved, channelled.

18—2. ZINNIA. 49. 55.

multiflora (P. r. S. ☉.) leaves opposite, lance-ovate, sub-petioled: flowers peduncled. Perhaps not a native of North America. Nuttall.

20—6. ZIZANIA. 4. 10.

+ *clavulosa*, Mx. (3) (water-oats, wild-rice. C. P. Hudson. Au. ☉.) panicle pyramid-form; staminate flowers below, spreading, pistillate flowers above, spiked: appendages to the flowers clavate, awned, long; seed long, cylindric, becoming black.

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(1) ramiflorum, Mx. Clava herculis, L.
(2) Verbena W. Lippia, Mx. Blairia, Gaertner.
(3) aquatica, Ph.

fluitans, Mx. (Lake Champlain. Pursh. Ju. 4.) small; culm slender, branching: leaves linear, flat: spikes solitary, axillary, setaceous, about 4-flowered: glumes awnless.

miliacea, Mx. (1) (P. Au.) panicle effuse: glumes short-awned: staminate and pistillate flowers intermixed: seed ovate, smooth.

20—1. ZOSTERA. 2. 7.

mariana, Vahl. (grasswrack, sea eel-grass. Y. C. Au. 4.) leaves entire, somewhat 3-nerved: stem teretish.—Leaves long, flowers minute. In bays and salt marshes.

22—4. ZYGNEMA. 57. 2.

nitidum, joints about equalling the diameter: the spiral lines crossed, slender, arched: seeds oval. Frequent in ditches. Hardly adheres to paper on drying.

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(1) aquatica, W.

END OF PART II.

ADDITIONS AND CORRECTIONS.

None but those who have passed through the trial, will be prepared to make due allowance for the difficulties attending the publication of a work, wherein the errors cannot be detected by the sense. I will not, however, trouble the reader with any corrections, excepting those which might mislead the student.

The generic names are repeated three times—in the natural orders, in the generic descriptions, and in the specific descriptions. They are generally most correct in the part describing the species; therefore they may be corrected in the two foregoing parts by this part. The genus Berberis contains one r too much every where in the book, and an o is left out of Baeomyces every where. Callitriche is spelled wrong at page 215. Torrey is wrongly spelled Torry in some places.

Page 107. Under Galega, in the parenthesis, "glabrous," should be glaucous.

P. 136. In the 11th line, strike out the words "Fruit or receptacle," and insert, The floating vesicles.

P. 143. Under Rhizomorpha. "Rope-like" should be tow-like.

P. 155. Under Acnida. "*rursocarpa*" should be "*ruscocarpa*.

P. 168. Under Alyssum. "*sexatile*" should be *saxatile*.

P. 176. Anthopogon. Add in the margin—Andropogon *ambiguus*, Mx. Same page, under Antirrhinum. "*triornithoporum*" should be *triornithophorum*.

P. 210. Under Borrera. "*crysophthalma*" should be *chrysophthalma*.

P. 226. Under Cassia. "*fasiculata*" should be *fasciculata*.

P. 227. Catharinaea. Add in the margin Polytrichum, L.

P. 236. In the note, 3 lines from the bottom, strike out "Miss J." and insert, the Hon. J. D.

P. 245. Commelina *longifolia*. Add in the margin, *hirtella*, Vahl.

P. 259. Under Cyperus. "*bricolor*" should be *bicolor*.

P. 267. DIPLOCOMIUM. Add in the margin MEESIA, Hedwig.

P. 269. Under DRACAENA. "*orealis*" should be *borealis*.

P. 281. Under FISSIDENS. "*hyoides*" should be *bryoides*, and "*laxifolius*," *taxifolius*.

P. 284. Under FUIRENA. "*squamosa*" should be *squarrosa*.

P. 525. At the top of the page this was left out through mistake:

21—16. JUNIPERUS. 51. 100.

sabina (savin. Can. ♄.) leaves opposite, obtuse, glandular in the middle, imbricate 4-ways, delicate, acute. A low shrub in the clefts of rocks. Cultivated.

P. 369. Over MYRTUS, the following ought to have been inserted:

5—2. MYRRHIS. 45. 60.

canadensis (honewort, mock sanicle. O. w. J ♃.) leaves ternate: general involucre wanting: seeds oval-oblong. Stem 1 to 2 feet high, branched, terete, smooth: umbels slender and few-rayed. Syn. Sison canadensis.

P. 354 and 370. MILIUM *racemosum*, S. (clustered millet-grass. W.) flowers in a simple upright raceme: calyx glume oval, acute, ribbed; corol long-awned, hairy: leaves lanceolate, with smooth sheaths. Sent to Dr. Smith of London by the Rev. Dr. Muhlenburg. It was collected by him in Lancaster, Penn. It has recently been collected by Prof. Dewey near Williams college, Mass. It greatly resembles the Oryzopsis asperifolia. Described by Smith in Rees' Cyclopoedia.

P. 431. RICCIA *crystallina*. This is the LEMNA *trisulca*.

Remark. Some of my reflections upon the innovations of botanists appear, on reviewing them, to be rather illnatured. I now wish I had expressed those opinions in a manner less savoring of censoriousness. I am however decidedly of the opinion, that some of our leading botanists introduce changes, which are not required; or at least, which could be dispensed with conveniently.

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NOTICES.

TO TEACHERS OF ACADEMIES AND POPULAR LECTURERS.

In order to accommodate your classes, the Manual of Botany and Chemical Instructor will be sent to the principal booksellers in New-York, Philadelphia, N Haven, Hartford, New-London, Providence, Boston, Portsmouth, Portland, Troy, Utica and Albany. Liberal discounts will be made, when a considerable number is purchased at once.

Teachers of Botany frequently complain of this difficulty in giving their courses of instruction: That although parents are willing to purchase one Manual of Botany and one Botanical Dictionary, they are often unwilling to pay two or three dollars for each of several children. Of course two or three young persons are obliged to look into the same book during the exercises of the class. To obviate this difficulty, Websters and Skinners have published a small book, price 50 cents, entitled Botanical Exercises, which will accompany the Manual. It was selected from that work, and is arranged upon the same plan. It contains descriptions of the most common plants, with which the teacher would naturally exercise his class; with a concise grammar of botany, and a vocabulary of all the terms used in it.—Though this little book will not subserve the purpose of the analysis of plants; when a family has one Manual, and one of the Dictionaries published at New-Haven [see note to preface] the Botanical Exercises will an-

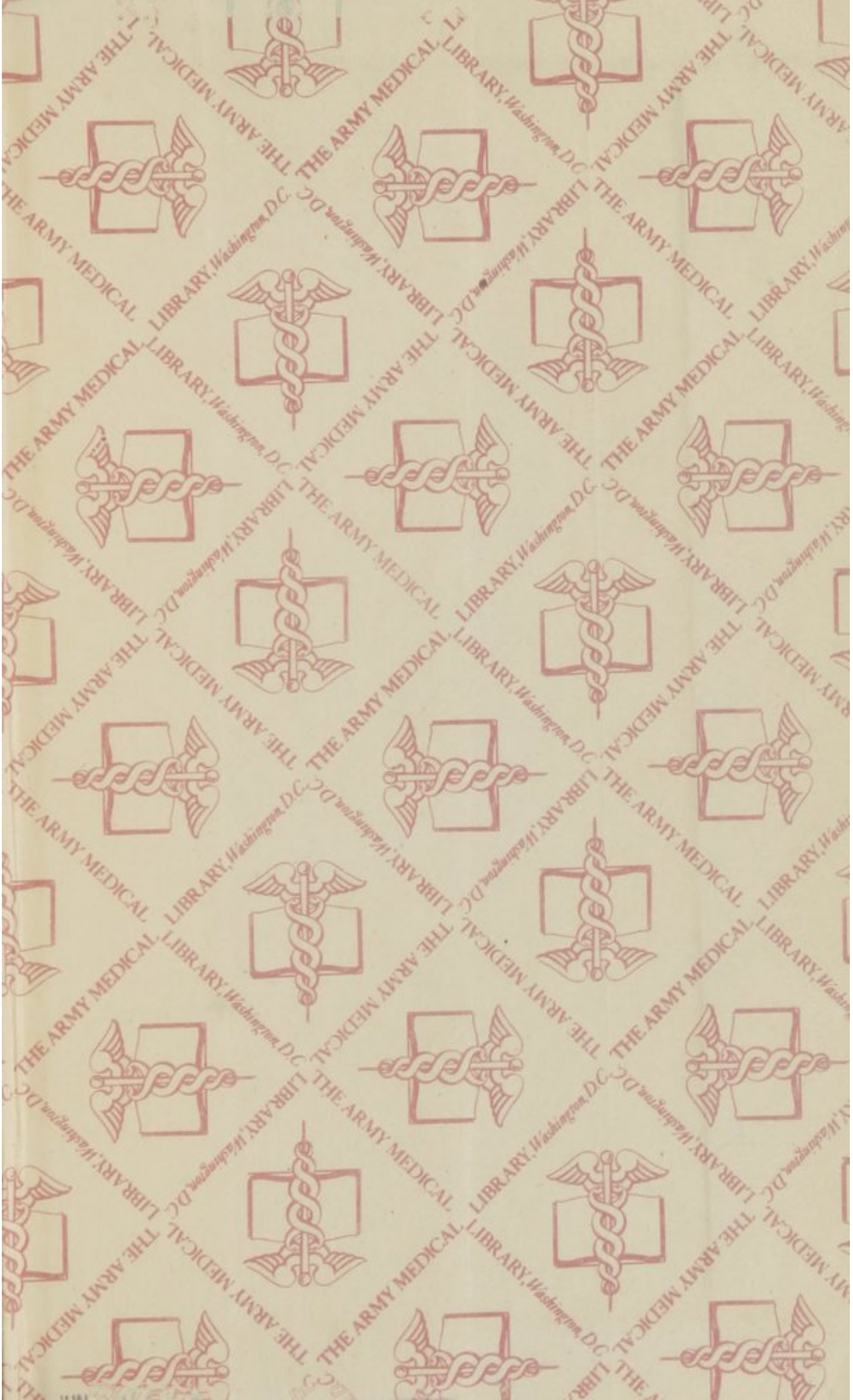
swer very well as a substitute for more, during the exercises before the teacher.

The number of genera described in this edition is as follows: Of Indigenous Phenogamous plants 582—of Exotic Phenogamous plants 109—total number of Phenogamous genera 691—of Cryptogamous plants 173—total number of genera 864. The whole number of species described amounts to 3065.

It is probable that the number of Indigenous Phenogamous genera in the Northern and Middle States will never deviate much from 582. But more exotics may hereafter become common, and more Cryptogamous genera may be discovered.

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