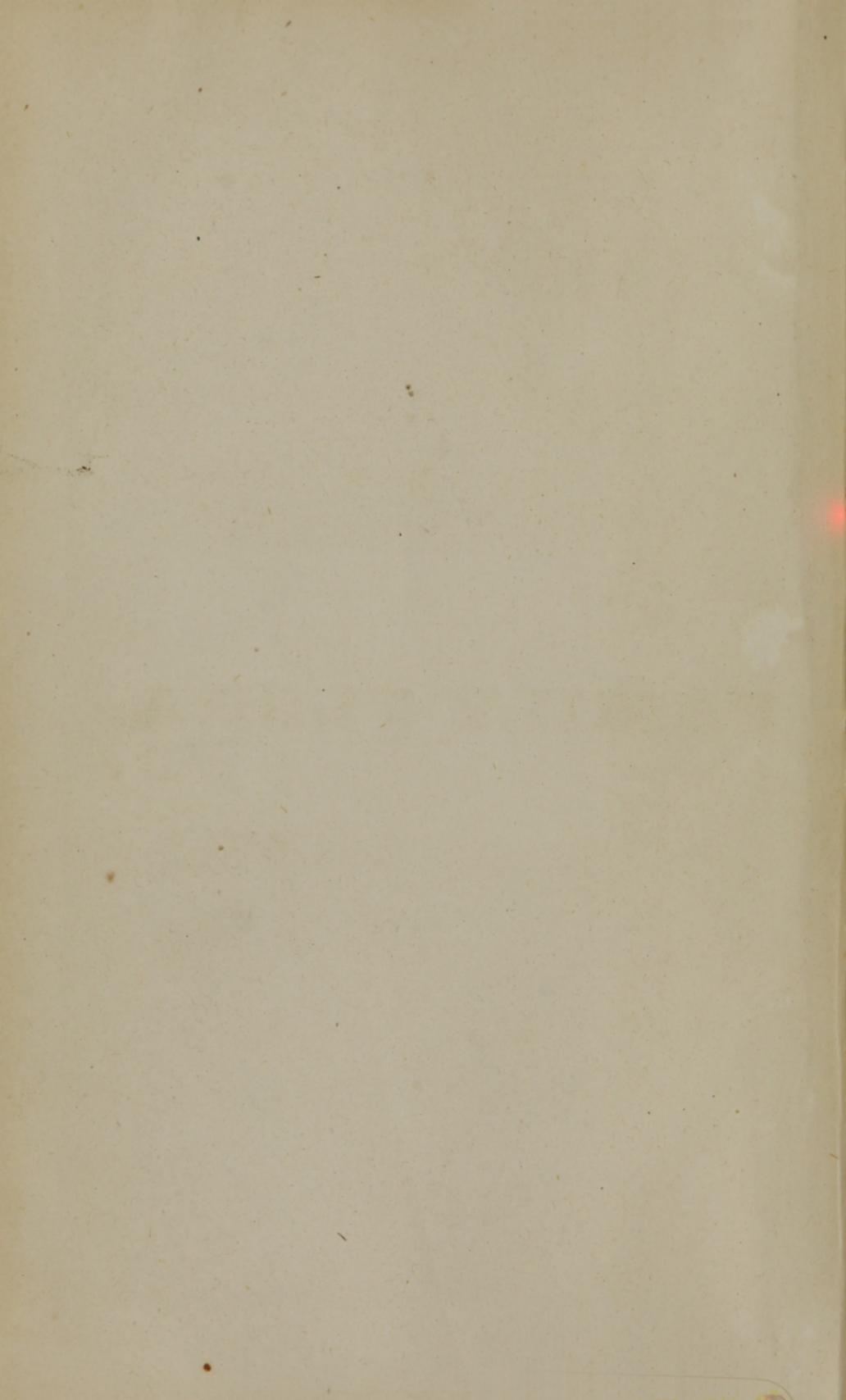


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FAMILY FLORA.

G O O D ' S

FAMILY FLORA.



THE
FAMILY FLORA
AND
MATERIA MEDICA BOTANICA,
CONTAINING THE
BOTANICAL ANALYSIS, NATURAL HISTORY,
AND
Chemical and Medical Properties
OF
PLANTS:

ILLUSTRATED BY COLORED ENGRAVINGS

OF ORIGINAL DRAWINGS, COPIED FROM NATURE.

BY

PETER P. GOOD, A. M.

EDITOR OF AN IMPROVED EDITION OF THE "MEMOIRS OF THE LATE JOHN M.
GOOD, M. D., F. R. S., F. R. S. L., MEM. AM. PHIL. SOC., AND F. L. S.
OF PHILADELPHIA, & C. & C.

VOLUME I.

Surgeon Genl's Office
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W. 35030
Washington, D. C.

ELIZABETHTOWN, N. J.:

PUBLISHED BY THE AUTHOR

1847

FAMILY FLORA

MATERIA MEDICA BOTANICA

1847

BOTANICAL ANALYSIS NATURAL HISTORY

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Alm no. 6564, no. 1

Entered according to Act of Congress, in the Year of our Lord, 1845, by
PETER P. GOOD,

In the Clerk's office of the District Court of the United States, for the District of
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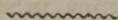
PETER P. GOOD & CO.

PRINTED BY THE CLERK OF DISTRICT COURT

NEW HAVEN, CT.

PUBLISHED BY THE AUTHOR

P R E F A C E .



IN preparing the Work now given to the public, the earnest endeavor of the Writer has been to produce a book, which would be both read and studied, not only by those devoted to the medical profession, but by those also who, without the stimulus of professional predilections, have simply the desire of attaining the knowledge of medical plants, in order to the safe and effectual administration of them. He wished to make it what its title indicates, *A Botanical Materia Medica*. He designed it not so much for those who devote their lives to its study and practice, as for all others, who would make its general acquaintance an interesting object of study, which, on account of its extensive bearings upon the social and family interests, is so important and necessary.

With these objects in view, the writer has sought to relieve it of its dryness, not by shunning its technical language, but by both using and defining it in such connexions as shall enable general readers to understand it. Any attempt to treat upon the science of Botany, without using its well defined and time-sanctioned terms, would be to divorce it from the instruments universally employed in its analysis, its description, its study and its use.

The Botanical description of each plant embraces those characteristics which Botanists have fixed on, as the only means by which, a plant that is not familiar to the reader of an account of it, can with certainty be known, and these descriptions are given in the language employed by modern Botanical writers. This method of discovering a plant by comparisons derived from a few particulars, and these of the most striking kind, is certainly an agreeable and noble exercise of the understanding.

The Natural History of each plant introduced in this Publication, embraces only a general and familiar account of whatever does not properly come under the Botanical analysis; and as this division of the subject is more particularly calculated for the general reader, it is hoped, with the colored engraving, there will be no difficulty to identify the several plants described. This study of Plants possesses one very eminent advantage,—it doubles the pleasure of every

walk and journey, and calls forth to healthy exercise the bodily as well as mental powers.

For the chemical and medical department, recourse has been made to every work of reputation to which access could be had ; and as much useful information regarding each of the plants treated of, has been brought together, as could be conveniently crowded into a small space. We are often placed in situations, in which it may be highly important to be able to recognize the vegetable which yields a particular medicine, and we are so constantly liable to imposition from the collectors of herbs, that the necessity of possessing the means of distinguishing, by infallible marks, the various vegetable products of the earth, will be readily recognized.

The labor of preparing this work has not consisted so much in elaborate research for *material* as in selecting and condensing the essential parts of widely extended and minutely ramified subjects, and giving to them consecutive arrangement and obvious connection. How far this object of the Writer has been accomplished in the present undertaking, a candid public must determine. So far as the subjects, when selected and arranged, are capable of simplification, it is to be sought in definition, analysis, and synthesis. The definitions should be exact in their parts, and full in their comprehensions ; the analysis should be complete in its general and its elementary divisions ; and the synthesis in its combinations, its generalizations, and its rules.

So far as style of composition tends to render the subject of this publication accessible, it is accomplished by divesting it of its useless verbiage, reducing its involved periods, and reaching entire precision in the selection and use of language. Distinctness of conception is best aided by slightness of drapery, and exposure of well defined forms to strong lights and deep shades.

The work has been rendered as general in its character as the peculiarly complicated design of its subject would admit. The topics embraced are those that immediately concern us as individuals in our social and domestic relations. The various descriptions are sufficiently extended and minute for the complete recognition of the different plants, and for imparting a knowledge of whatever is peculiar or important in their character, habits, culture, or use.

The limits allowed each separate subject forbid any indulgence in either critical or historical ornament.

The Writer cheerfully acknowledges the assistance he has derived from several large and important works written exclusively for professional readers. But his favorite source has been a collection of

books and manuscripts of his Uncle, the late John Mason Good, M. D., &c., &c., who contemplated a work of this nature more than thirty years ago, and from whose loose and desultory mass of scraps collected for this purpose, a very considerable part of this publication has been culled.

The brief Glossary appended, the Writer believes will be especially convenient to the general reader ; in the compilation of which, he has made too free use of the most valuable writings of others to give credit in every instance.

Plants appear to have been profusely scattered over the earth as the stars in the firmament, to invite man by the attractions of curiosity and pleasure to their contemplation. They grow under our very feet, and seem to invite and provoke instruction and delight.

If the public shall find no appropriate use for the work now presented, either as a first book for the professional student,—as a class book for our seats of learning,—as an important addition to school libraries,—as a companion of the intelligent man of leisure,—or above all, as a guide to enable families, as well as individuals, to make prompt use of suitable remedies in sudden attacks of illness ; the Writer will be disappointed, but he cheerfully leaves it with a discerning public to shape its destination.

P. P. G.

September, 1845.

The first thing I noticed when I stepped out of the train was the cold. It was a sharp contrast to the warm, humid air of the South. I had heard that the weather in the North was harsh, but I didn't realize how much it would affect me. The people here were different, too. They seemed more reserved and less friendly than the folks back home. I was a bit of an outsider, and it took some time to get used to the new surroundings.

I had heard that the North was a land of opportunity, but I wasn't sure if that was true. I had come here with a few dollars and a lot of hope. I wanted to make something of myself, but I didn't know where to start. I had to find a job, a place to live, and a way to support myself. It wasn't easy, but I was determined to succeed.

I found a job at a factory, and I was able to get a room in a boarding house. It wasn't the best, but it was a start. I had to work long hours, but I was able to save some money. I was starting to feel like I was making progress. I was getting used to the new life, and I was beginning to see the possibilities of the North.

I had heard that the North was a land of freedom, but I wasn't sure if that was true. I had come here with a lot of hope, but I was starting to feel like I was being let down. The people here were different, and they didn't seem to care about the same things that I did. I was starting to feel like I was an outsider, and I was beginning to miss the South.

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PROSPECTUS
OF THE
FAMILY FLORA
AND
MATERIA MEDICA BOTANICA:
A PERIODICAL.

*Two Plants form a part, monthly. One Dollar and Fifty Cents a year,
in advance, with COLORED Plates.*

To gratify the prevailing taste for Works of Art, which is fully and universally approved and acknowledged by the enlightened population of this country, it has been conceived that it would not be unacceptable to produce in a superior style of excellence a series of colored engravings of Plants; and still more to enhance the value of the Work, to add a full description and history of those introduced, including a chemical and medical analysis of their properties. The whole especially intended to turn the attention towards Medical Botany, which has been so unaccountably neglected.

Fully convinced that nothing of an inferior character can ensure the patronage of the public, when the national taste is so refined as it is at the present period, it is intended that the superiority of the embellishments, the accuracy of the descriptions, and the general style of the whole, shall command success, and render the Work such as may challenge criticism.

In pursuance of these objects, and in describing the plants illustrated in this Work, the following plan has been adopted.—

The Botanic name of each plant, in large capitals, appears first, then the common or vulgar name in italics; next follows its place or habitation and some of its most prominent qualities, in smaller type, and after, a very short epitome of its power and application. The whole of this division is intended to be terse and concise; exhibiting an appropriate head to the body of the matter.

The Botanical description of each plant embraces those characteristics, (essential and secondary, as well as specific characters,) which Botanists have fixed on, as the only means by which a plant, that is not familiar to the reader of an account of it, can with certainty be known, and these descriptions are given in the language employed by modern Botanical writers. This method of discovering a plant by comparisons derived from a few particulars and these of the most striking kind, is certainly an agreeable and noble exercise of the understanding.

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The Family Flora and Materia Medica Botanica is published monthly. Each publication contains two accurate engravings of plants from original drawings copied from nature, to

PROSPECTUS.

gether with their Botanical description, natural history, and chemical and medical properties. It is issued in large octavo form on new type, at 6 1-4 cents each single plant. Two plants in one, making a monthly part, and twelve monthly parts a volume, at \$1 50, invariably in advance.

The second volume of the Work will also be published in monthly parts.—Plants No. 25 and No. 26 forming Part 1, Vol. 2, commencing January, 1847. Each part will contain two plates of Plants with the usual letter-press matter, as in those already published. Price (each monthly publication) 12 ½ cents, or \$1 50 per year, in advance.

A remittance of one dollar will pay for any 16 Plants, (eight parts) selected, complete, and independent which may be forwarded by mail to any address.

The accurate Engraving of each Plant, (beautifully colored according to nature,) may be had separately, at 3 cents each.

The following Plants are ready for delivery—and twenty-four, with the Title, Preface, and Glossary, form an acceptable volume. VOLUME 1. Price, bound, \$2.

No. 1. <i>Rosa Centifolia</i> . <i>Hundred Leaved or Provens Rose</i>	} Part 1, Vol. 1.
2. <i>Sanguinaria Canadensis</i> . <i>Bloodroot, Red Puccoon</i>	
3. <i>Statice Limonium</i> . <i>Thrift, Marsh Rosemary</i>	
4. <i>Nasturtium Officinale</i> . <i>Water Cress</i>	
5. <i>Dianthus Caryophyllus</i> . <i>Pink, Carnation</i>	
6. <i>Juniperus Sabina</i> . <i>Savin</i>	
7. <i>Rubus Idaeus</i> . <i>Raspberry, Hindberry</i>	
8. <i>Viola Odorata</i> . <i>Sweet Violet</i>	
9. <i>Helleborus Niger</i> . <i>Black Hellebore, Christmas Rose</i>	
10. <i>Chimaphila Umbellata</i> . <i>Winter Green, Prince's Pine</i>	
11. <i>Lappa Major</i> . <i>Burdock</i>	
12. <i>Liriodendron Tulipifera</i> . <i>Tulip Tree, Poplar</i>	
13. <i>Maruta Cotula</i> . <i>Mayweed, Wild Chamomile</i>	
14. <i>Prinos Verticillatus</i> . <i>Winterberry, Black Alder</i>	
15. <i>Erigeron Philadelphicus</i> . <i>Scabious, Philadelphia Fleabane</i>	
16. <i>Sabatia Angularis</i> . <i>American Centaury</i>	
17. <i>Cornus Florida</i> . <i>Flowering Dogwood</i>	
18. <i>Magnolia Glauca</i> . <i>White Bay, Small Magnolia</i>	
19. <i>Cornus Sericea</i> . <i>Red Osier, Swamp Dogwood</i>	
20. <i>Symplocarpus Fœtidus</i> . <i>Skunk Cabbage</i>	
21. <i>Cassia Marilandica</i> . <i>American Senna</i>	
22. <i>Geranium Maculatum</i> . <i>Spotted Geranium, Cranes' Bill</i>	
23. <i>Comptonia Asplenifolia</i> . <i>Sweet Fern</i>	
24. <i>Convolvulus Panduratus</i> . <i>Wild Potatoe, Fiddle-leaved Bindweed</i>	

The Title, Preface, and Glossary, &c., (making more than 20 pages separate,) price 25 cents.

These are printed expressly to form part of the volume, and to be bound with it.

The remainder of the "Family Flora, and Materia Medica Botanica" will be published in monthly parts,—Plants 25 and 26 forming Part 1, Vol. II. commencing January 1847.

No. 25. <i>Phytolacca Decandria</i> . <i>Poke, Garget</i>	} Part 1, Vol. 2.
26. <i>Hamamelis Virginiana</i> . <i>Witch Hazel</i>	
27. <i>Lobelia Inflata</i> . <i>Indian Tobacco</i>	
28. <i>Rhus Glabra</i> . <i>Smooth Sumach</i>	
29. <i>Taraxacum Dens-Leonis</i> . <i>Dandelion</i>	
30. <i>Asclepias Tuberosa</i> . <i>Tuberous-Rooted Asclepias, Butterfly Weed</i>	
31. <i>Quercus Rubra</i> . <i>Red Oak</i>	
32. <i>Capsicum Annuum</i> . <i>Red Pepper, Cayenne Pepper</i>	
33. <i>Atropa Belladonna</i> . <i>Deadly Night Shade</i>	
34. <i>Myrica Cerifera</i> . <i>Bayberry, Wax Myrtle</i>	
35. <i>Borago Officinalis</i> . <i>Common Borage</i>	
36. <i>Euphorbia Ipecacuanha</i> . <i>American Ipecacuanha</i>	

All communications should be addressed (postage free) to

PETER P. GOOD, *New York.*

OFFICE.—On account of the frequent absence of the Author, there is at present no office for the publication of the Family Flora in the City of New York; and therefore the patrons and friends are respectfully requested to address as above (postage free), and their communications shall be immediately and fully answered.

P. P. G.

COMMENDATIONS
OF GOOD'S
FAMILY FLORA.

It is by no means the intention of the Author, in this advertisement, merely to puff or extol his Work—but simply to call public attention to it. He only asks that persons examine the several numbers, or semi-monthly publications of the FAMILY FLORA as they come from the press; and then if they do not acknowledge, and are not convinced, that it contains the choicest and most valuable matter as a “TEXT BOOK”—notwithstanding it is also a most acceptable and appropriate “PARLOR OR LADY’S BOOK”—and withal the cheapest PERIODICAL extant, not being affected by Age or Fashion, but always new, popular and interesting—he does not ask subscription or patronage; for he maintains that all claims to public favor or support must rest solely upon the real merits of the Work, and unless the Work in this respect maintains itself, and commands success, he would prefer abandoning it altogether. As evidence, however, of the opinions of some of our most eminent Professors, *who are best able to judge on the subject*, he submits the following communications taken at random from several correspondents, who have favored him with their kind commendations.

He avails himself also of this opportunity, to tender his most hearty welcome to the new subscribers who are continually coming in, and whose letters contain such flattering notices of the FAMILY FLORA. There is room for them and their friends, and no effort shall be spared to make the FAMILY FLORA more and more worthy of their high encomiums.

From Ed. E. Phelps, M. D., Lecturer on Medical Botany in Dartmouth College, Hanover, N. H.

TO WHOM IT MAY CONCERN. The bearer, Mr. P. P. Good, is the Editor of an excellent work on Medical Botany, with which I have for some months past been acquainted.

He is now wishing to obtain subscribers for it, and I would take this opportunity to say to those Physicians who would like to acquire a more perfect knowledge of our own medical plants, that in my opinion they will never be able to do so on any better terms than those offered by Mr. Good.

To those with whom I have had some conversation on Medical Botany I would add, that nothing better than the present work (even if it could be obtained) is needed to facilitate the study of Medical Botany.

ED. E. PHELPS, M. D.

Lecturer on Medical Botany in Dartmouth College.

*From A. Young, jun., M. D., (appointed by the Legislature) Botanist to the State of
Maine.*

PETER P. GOOD, A. M.

Dear Sir—Please accept my thanks for the numbers of the “Family Flora and Materia Medica Botanica,” which you had the goodness to leave with me, and also those you have mailed to me subsequently.

I have examined them with much pleasure and satisfaction, and indeed I know not how your work can be improved to answer the end for which it is designed. As a cheap, popular and instructive “Flora” it cannot be excelled.

The engravings are good and correct. The typography neat and agreeable to the eye; and the subject matter, relating to the *uses of plants*, sound and judicious.

I think the work finely adapted as a botanical guide for the Physician and the student who seeks to obtain knowledge which he has not yet acquired; in a word, it merits my warmest and most decided praise.

I hope you will receive sufficient support to enable you to complete such an agreeable publication.

Very respectfully, your obedient servant,

A. YOUNG, Jr., Botanist to the State of Maine.

*From S. Pearl Lathrop, M. D., Principal of the Middlebury Female Seminary, and In-
structor in Botany Middlebury College, Middlebury, Vt.*

PETER P. GOOD, A. M.

Dear Sir—Permit me to express to you my unqualified approbation of your very worthy and happy effort to introduce the heads of families, and thus the rising generation, to a familiar acquaintance with the properties and uses of particular individuals of the several orders of the vegetable kingdom. Your work, illustrated as it is with beautiful plates drawn from nature, will not only enable them to discover the plants described, but awaken a taste for one of the most agreeable and useful branches of natural science. The chemical and medical properties and uses of plants, brought to view in your work are invaluable, and are peculiarly adapted for the general as well as the scientific reader.

Very truly, &c.

S. PEARL LATHROP, M. D.

Principal of the Middlebury Female Seminary.

*From Joseph D. Friend, M. D., (Author of a Theory and Practice of Medicine) Mid-
dletown, N. Y.*

TO MY BOTANIC FRIENDS THROUGHOUT THE COUNTRY. From a careful examination of Mr. Good's “Family Flora” already published, and the design of its publication in future, I do most cheerfully recommend it to the patronage of my Botanic friends throughout the country. This work will fill a void which has always existed in this department of science; and will enable the Physician and student to command in a concise form a thorough knowledge of the genus, history, and medical and chemical properties of the entire vegetable kingdom.

Mr. Good has long been known as a most successful teacher, a ripe scholar, and a gentleman in whose integrity the public may place the most implicit confidence.

JOSEPH D. FRIEND.

*From J. Brown, M. D., Professor of Chemistry and Scientific and Medical Botany,
Botanical Medical College, Ohio.*

P. P. GOOD, A. M.

Dear Sir—Having examined the Family Flora and Materia Medica Botanica, I am happy to say the scientific arrangement of the work is admirable; giving both the natural and artificial modes of classification.

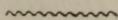
The mechanical arrangement and execution is neat and attractive. No family should fail to possess the work.

Very respectfully,

Walnut Hills, Hamilton Co., Ohio.

J. BROWN.

CONTENTS.



	Page.
PREFACE,	III
GLOSSARY,	VII
	Number.
ROSA CENTIFOLIA. <i>Hundred-leaved or Provens Rose,</i>	1
SANGUINARIA CANADENSIS. <i>Bloodroot, Red Puccoon,</i>	2
STATICE LIMONIUM. <i>Thrift, Marsh Rosemary,</i>	3
NASTURTIUM OFFICINALE. <i>Water Cress,</i>	4
DIANTHUS CARYOPHYLLUS. <i>Pink, Carnation,</i>	5
JUNIPERUS SABINA. <i>Savin,</i>	6
RUBUS IDEUS. <i>Raspberry, Hindberry,</i>	7
VIOLA ODORATA. <i>Sweet Violet,</i>	8
HELLEBORUS NIGER. <i>Black Hellebore, Christmas Rose,</i>	9
CHIMAPHILA UMBELLATA. <i>Winter Green, Prince's Pine,</i>	10
LAPPA MAJOR. <i>Burdock,</i>	11
LIRIODENDRON TULIPIFERA. <i>Tulip Tree, Poplar,</i>	12
MARUTA COTULA. <i>May-weed, Wild Chamomile,</i>	13
PRINOS VERTICILLATUS. <i>Winter Berry, Black Alder,</i>	14
ERIGERON PHILADELPHICUM. <i>Scabious, Philadelphia Fleabane,</i>	15
SABBATIA ANGULARIS. <i>American Centaury,</i>	16
CORNUS FLORIDA. <i>Flowering Dogwood,</i>	17
MAGNOLIA GLAUCA. <i>White Bay, Small Magnolia,</i>	18
CORNUS SERIACEA. <i>Red Osier, Swamp Dogwood,</i>	19
SYMPLOCARPUS FÆTIDUS. <i>Skunk Cabbage,</i>	20
CASSIA MARILANDICA. <i>American Senna,</i>	21
GERANIUM MACULATUM. <i>Spotted Geranium, Cranes' bill,</i>	22
COMPTONIA ASPLENIFOLIA. <i>Sweet Fern,</i>	23
CONVOLVULUS PANDURATUS. <i>Wild Potatoe, Fiddle-leaved</i> <i>Bindweed,</i>	24

CONTENTS—Continued.

SECOND YEAR.

	Number.
PHYTOLACCA DECANDRIA. <i>Poke, Garget,</i>	25
HAMAMELIS VIRGINIANA. <i>Witch Hazel,</i>	26
LOBELIA INFLATA. <i>Indian Tobacco,</i>	27
RHUS GLABRA. <i>Smooth Sumach,</i>	28
TARAXACUM DENS-LEONIS. <i>Dandelion,</i>	29
ASCLEPIAS TUBEROSA. <i>Tuberous-Rooted Asclepias, Butterfly</i> <i>Weed,</i>	30
QUERCUS RUBRA. <i>Red Oak,</i>	31
CAPSICUM ANNUM. <i>Red Pepper, Cayenne Pepper,</i>	32
ATROPA BELLADONNA. <i>Deadly Night-Shade,</i>	33
MYRICA CERIFERA. <i>Bayberry, Wax Myrtle,</i>	34
BORAGO OFFICINALIS. <i>Common Borage,</i>	35
EUPHORBIA IPECACUANHA. <i>American Ipecacuanha,</i>	36
SOLANUM DULCAMARA. <i>Bittersweet, Woody Night-Shade,</i>	37
ULMUS FULVA. <i>Slippery Elm, Red Elm,</i>	38
SAMBUCUS CANADENSIS. <i>Common Elder,</i>	39
MALVA SILVESTRIS. <i>High Mallow,</i>	40
INULA HELENIUM. <i>Elecampane,</i>	41
POLYGALA SENEGA. <i>Seneca Snakeroot,</i>	42
RIBES RUBRUM. <i>Common Red Currant,</i>	43
CYPRIPEDIUM PUBESCENS. <i>Lady's Slipper, Nerve Root,</i>	44
NYPHÆA ODORATA. <i>Water Lily,</i>	45
DIGITALIS PURPUREA. <i>Foxglove,</i>	46
GAULTHERIA PROCUMBENS. <i>Checkerberry, Mountain Tea,</i>	47
ZANTHOXYLIUM AMERICANUM. <i>Prickly Ash,</i>	48

☞ SUBSCRIPTION. \$1 50 per annum in advance, or \$2 00 at the end of the year; unless two years are ordered, taken together, and paid in advance.

Delivered per mail, periodically, every alternate month, in advance.

All communications should be addressed (*postage free*) to

PETER P. GOOD, *Elizabethtown, Essex County, N. J.*

The FAMILY FLORA can only be obtained by application as above, (post paid,) with remittance; which will secure immediate and punctual attention.

GLOSSARY.



- Abortion*, an imperfect development of any organ.
- Absorption*, drawing from the soil, the food and moisture, the growth the plant absolutely requires.
- Acaulescent*, the absence of the caulis or aerial stem.
- Accretion*, the growing of one thing to another.
- Accumbent*, lying upon.
- Acerose*, needle-shaped.
- Achenium*, a small, dry, hard, one-celled pericarp, inseparable from the seed which it encloses.
- Achlamydeous*, plants with no floral envelopes, are naked or achlamydeous.
- Acicular*, small, needle-shaped.
- Acine*, a separate grain or carpel of a collective fruit.
- Acotyledonous*, plants having no cotyledons.
- Acrogens*, plants having a regular stem, growing at the extension of the point only, and without increasing in diameter.
- Aculeate*, armed with prickles.
- Acuminate*, a leaf ending with a long tapering point.
- Acute*, ending with an acute angle.
- Adherent*, not distinct from the ovary.
- Adnate*, growing to or upon.
- Æstivation*, the relative arrangement of the several organs of the flowers while yet undeveloped in the bud.
- Aggregate*, assembled closely together.
- Agumaceous*, plants of the endogenous structure, with flowers regularly constructed.
- Alæ*, wings.
- Alburmum*, the incompletely formed external layers of plants.
- Albumen*, the white substance between the integuments and the embryo of plants.
- Alternative*, branches, leaves, flowers, &c., are alternate when the pieces being in two rows, the inner is covered by the outer in such a way that each of the exterior rows overlaps half of two of the interior.
- Alveolate*, with partitions like a honey-comb.
- Ament*, a spike, whole flowers, each covered with a scaly bract, instead of a calyx and corolla, and fall off together, all remaining still connected with the rachis.
- Amplexicaul*, embracing the stem.
- Anastomosing*, the uniting of vessels, in-osculating.
- Anatropous*, when the hilum of the seed does not correspond with the chalaza of the ovule. The ovule is anatropous.
- Ancipital*, two-edged.
- Andræcium*, the organs (collectively) situated just within the perianth and around the pistils.
- Androgynous*, with both stamens and pistils.
- Angiosperms*, a subdivision of the vegetable kingdom.
- Anthelmintic*, expelling or killing worms.
- Animal*, an organized body, endowed with vitality and composed of distinct parts, no one of which is complete in itself; but they are raised above either plants or minerals by the power of perception.
- Antiseptic*, efficacious against putrefaction.
- Anther*, a modification of the lamina, and the filament of the petiole: as the limb of a petal is analogous to the lamina of a leaf, and the unguis is analogous to the petiole of a leaf.
- Apetalæ*, apetalous, without petals.
- Appressed*, pressed closely upon something else.

- Apterous*, without wings or (margins).
Aquatics, growing in or belonging to the water.
Arachnoid, covered with interwoven hairs, so as to resemble a spider's web.
Arboreous, tree-like.
Arborescent, belonging to a tree.
Areola, having the surface divided into little spaces or areas.
Aridity, dryness.
Aril, an expansion, proceeding from the summit of the funiculus or seed-stalk, either partially or wholly investing the seed.
Aristate, bearded, as in the glumes of barley.
Armed, when the veins project far beyond the tissue in sharp spires or prickles.
Aroma, the spicy quality of a thing.
Articulation, a joint, the place where one thing is joined to another.
Artificial classes, the different conditions of the stamens.
Artificial orders, the different conditions of the styles or stigmas.
Ascidia, when the petioles become dilated and hollowed out at the upper end, the lamina being articulated with and closing up the orifice.
Ascending, arising obliquely.
Assurgent, arising in an oblique direction.
Attenuate, rendered slender or thin.
Auriculate, having ear-shaped lobes at the base.
Awn, a short slender process or stiff beard, from the top or back of glumes or chaff.
Axil, the angle between the petiole and branch on the upper side.
Axillary, growing out of the axils.
Axis ascending, the trunk.
Axis descending, the root.
- Baccate*, berry-like, covered with pulp.
Banner, the upper petal in a papilionaceous flower.
Bark, the external covering of the stem.
Beak, a hard, short point, like the beak of a bird.
Bearded, with long awns or hairs.
Berry, a pulpy pericarp enclosing seeds without capsules.
Bicuspidate, with two points
Bidentate, with two teeth.
- Biennial*, of two year's duration.
Bifid, two-cleft.
Bifoliate, with two leaves.
Bilabiate, two-lipped.
Bifurcate, two-forked.
Binate, growing two together.
Bipinnate, twice pinnate.
Bipinnatifid, twice pinnatifid.
Bisaccate, with two tumors or sacks.
Eternate, doubly ternate.
Bivalved, two-valved.
Bole, the naked trunk of a tree.
Botany, the science which treats of the vegetable kingdom.
Brachiate, with opposite spreading branches or arms.
Bracteate, having bracts.
Bracteola, little bracts.
Bracts, leaf-like appendages, intermediate between leaves and the floral organs.
Branchlets, small branches
Branch, a division of the main stem or root.
Bristles, rigid hairs.
Bud, the winter residence of leaves and flowers.
Bulb, a leaf bud.
Bulbiferous, producing bulbs above ground.
Bullelets, small lateral bulbs shooting from larger ones.
Bulbous, having bulbs.
- Caducous*, any part of a plant which falls off earlier, compared with other parts of the same plant, than is usual for similar parts in most plants.
Caspirose, turfy, growing in tufts.
Calycine, of a calyx.
Calyculated, having bracteoles resembling an external or additional calyx.
Calyptra (an extinguisher), applied to the cover of the theca of some mosses.
Calyx, the external envelope, the cup of the flower, consisting of a whorl of leaves, with their edges distinct or united.
Cambium, beneath the bark and above the wood is interposed in the spring a mucous viscid layer, and appears to be excluded both by the bark and wood.
Campanulate, bell-shaped, having the tube wide and swelling abruptly at the base.

- Campylotropous*, denotes that the ovule is curved upon itself.
- Canaliculate*, channelled or furrowed.
- Canescent*, hoary, approaching to white.
- Capillary*, very slender, hair-like.
- Capitate*, growing in a head.
- Capsule*, that kind of pericarp which opens by valves and becomes dry when ripe: not including siliques nor legumes.
- Carina*, carinate, keel-shaped.
- Caryopsis*, a small one-celled, indehiscent pericarp, adhering to the seed which it encloses.
- Carpels*, the small parts out of which compound fruit is formed.
- Carpophore*, the axis of the fruit in the umbelliferæ.
- Cartilaginous*, gristly.
- Caryophyllaceous*, like the pink.
- Cathartic*, purgative.
- Catkin*, or ament, an assemblage of small flower-bearing scales, which serve as lateral calyces.
- Caudate*, with a tale-like appendage.
- Caudex*, the main body of the root.
- Cauliscent*, denoting the presence of the caulis or aerial stem.
- Cauline*, leaves growing from the stem.
- Caulis*, the main herbage-bearing stem of plants that are annual in duration and destitute of woody tissue.
- Cellular*, composed of cells.
- Cellular tissue*, composed of separate cells, or vesicles adhering together.
- Cellulares*, flowerless plants.
- Cernuous*, nodding.
- Chaffy*, with chaff-like processes.
- Chalaza*, the point of attachment of the stalk to the nucleus of the ovule.
- Chemical basis of vegetable tissue*, oxygen, hydrogen, and carbon, with an occasional addition of nitrogen.
- Chlorophyll*, the minute globules or grains to which the color of the leaf is due.
- Chromulæ*, green coloring-matter or particles.
- Cilia*, hairs like those of the eyelash.
- Ciliate*, edged with parallel hairs or bristles resembling eyelashes.
- Circinate*, rolled downwards from the apex.
- Circumscissile*, an irregular dehiscence, where the top of the pericarp falls off like a lid.
- Cirrhose*, terminating in a tendril or odd leaflet.
- Clavate*, club-shaped.
- Claw*, the lower narrow part of a petal, by which it is fixed in the calyx or receptacle.
- Climbers*, plants which support themselves on other objects or plants by means of tendrils.
- Cochleate*, resembling the shell of a snail.
- Cohering*, connected.
- Collum*, that part of the root which connects it to the ascending axis.
- Columella*, the central pillar or substance formed by the united placentæ.
- Colored*, not green.
- Columnar*, formed like columns.
- Column*, the consolidated stamens and pistils of Orchidaceæ.
- Coma*, a tuft of bracts on the top of a spike of flowers.
- Commissure*, the inner face of the carpels of Umbelliferæ.
- Compound leaves*, consisting of several leaflets.
- Comose*, a kind of inflorescence, having a tuft of sessile bracts on the top of it.
- Compressed*, flattened in a vertical direction.
- Concave*, hollow.
- Concentric*, points or lines at equal distance from a common centre.
- Concrete*, hardened or formed into one mass.
- Confluent*, running into one another.
- Conjugate*, joined in pairs.
- Connate*, joined together at the base.
- Connectile*, usually a mere prolongation of the filament terminating not at the base, but at the summit of the anthers.
- Connivent*, converging.
- Conoid*, like a cone.
- Contorted*, twisted.
- Convolute*, wholly rolled in another.
- Convex*, rising spherically.
- Coral Islands*, arrest the floating germs of vegetation and clothe themselves in verdure.
- Cordate*, heart-form.

- Coriaceous*, leathery, thick and tough.
- Corm*, the dilated, subterranean base of a stem.
- Cornute*, horned.
- Corolla*, the interior envelope of the flower.
- Corona*, a crown, the expanded cup-like disk of the Narcissus, &c.
- Corymb*, the same as the raceme, having the lower pedicles so lengthened as to elevate all the flowers to nearly or quite the same level.
- Corymbose*, arranged like a corymb.
- Costate*, ribbed.
- Cotyledon*, the bulky porous and farinaceous part of seeds.
- Cotyledonous plants*, producing seeds composed of determinate parts.
- Creeper*, consisting of slender branches, exceedingly tenacious of life, extending horizontally, and sending out roots and branches.
- Crenate*, notched on the rim or edge.
- Crenulate*, notched very small.
- Crisped*, margin much expanded and curled by a superabundance of tissue.
- Cruciform*, consisting of four petals spreading at right angles to each other.
- Cryptogamia*, flowerless plants.
- Cucullate*, hooded, cowl'd.
- Culm*, the stem of grain and grass when dry, usually called straw.
- Cultivation*, effects of improvement of plants in every desirable quality.
- Cuneate*, wedge-shaped.
- Cupule*, the cup or involucre of the amentaceous plants.
- Cuspidate*, like the point of a spear. A leaf is cuspidate when suddenly contracted to a point.
- Cuticle*, the epidermis or scarfskin.
- Cyathiform*, cup-shaped, concave.
- Cylindrical*, like a cylinder in form.
- Cyme*, flowers umbel-like in their general external appearance.
- Cymose*, arranged like a cyme.
- Decandrous*, with ten stamens.
- Deciduous*, falling off as the flower decays.
- Declinate*, turned towards one side.
- Decomposed*, more than once compounded, as bipinnate, &c.
- Decumbent*, lying down or leaning on the ground.
- Decurrent*, when the base lobes of the leaf grow to the stem below the point of insertion, so that the leaf seems to run downwards.
- Decussate*, crossing each other at right angles.
- Deflexed*, bent downwards.
- Defoliation*, the separation of the leaf from the stem.
- Dehiscence*, the longitudinal fissure which usually opens each cell of the anther.
- Deltoid*, shaped like the Greek letter Δ.
- Dentate*, toothed.
- Denticulate*, having very small teeth.
- Depressed*, pressed inward, or flattened from above.
- Diandrous*, with two stamens.
- Diadelphous*, having the stamens united in two sets.
- Diaphanous*, transparent.
- Dichotomous*, branching by two equal divisions, forked.
- Diclinous* (stamens and pistils), in separate flowers.
- Dicotyledonous plants*, such as bear seeds with two cotyledons.
- Didymous*, two united.
- Didynamous*, having two long stamens and two short ones in one and the same flower.
- Diffuse*, wide-spread, scattered.
- Digestion*, the changes effected by the leaves in rendering the crude sap fit for the purposes of nutrition.
- Digitate*, finger-shaped.
- Digynous*, with two pistils.
- Diacious*, bearing staminate flowers on one individual, and pistillate on another.
- Discoid*, in the Compositæ, when the flowers are all tubular in the same head.
- Disk*, the whole surface of a leaf, or of the top of a compound flower, as opposed to its edge or periphery; also, the centre of the head in the Compositæ.
- Dissected*, cut into two parts.
- Dissepiment*, the partitions by which the cells of the pericarp are separated.
- Dissemination of seeds*, spreading of seeds for growth and permanence, a subject highly curious and interesting.

- Distichous*, leaves or flowers in two opposite rows.
- Distinct*, separate, opposed to connate and confluent.
- Divaricate*, spreading in a straggling manner.
- Dodecandrous*, having twelve stamens.
- Dorsal*, the outer edges of the carpel formed by the midrib (on the back).
- Drupe* (stone-fruit), that kind of pericarp which consists of a thick, fleshy, succulent or cartilaginous coat, enclosing a nut or stone.
- Ducts*, membranous tubes, with conical or rounded extremities, their sides being marked with transverse bars, rings, or coils, incapable of being unrolled without breaking.
- Duramen*, heartwood, the texture of which is firm and durable.
- Echinate*, beset with prickles.
- Elementary organs*, cellular tissue, vascular tissue and fibre.
- Elliptical*, oval.
- Elongated*, exceeding the common length.
- Emarginate*, having a small notch at the end.
- Embryo*, an organized body, the rudiments of the young plant, situated within the integuments.
- Emollient*, softening,
- Endocarp*, putamen or shell, the inner coat of the seeds.
- Endogenous structure*, accretions of the stem being made within the portions already formed.
- Endogens*, plants growing by internal accretions.
- Endopleura*, the third membrane of plants, corresponding with the primine, &c., of the ovule
- Endosmose*, flowing inwards.
- Endostome*, inner-mouth or perforation.
- Ensiform*, sword-shaped, two-edged.
- Entire*, the margin of the leaf even-edged, continued without interruption.
- Epicarp*, the outer integument or skin of the seeds.
- Epidermis*, the skin, a form of cellular tissue externally enveloping the plant.
- Epigynous*, growing upon the summit of the ovarium or germ.
- Epiphytes*, plants fixed upon the trunks and branches of other species, and derive their nourishment chiefly from the air.
- Equitant*, overlapping in a parallel manner, without any involution.
- Erose*, gnawed, unequally sinuated, as if the sinuses had been eaten by insects.
- Esculent*, eatable.
- Etiolated*, blanched or whitened.
- Exhalation*, the process by which the superabundant water of the sap is given off to the atmosphere.
- Exogenous structure*, additions to the diameter of the stem, made externally to the part already formed.
- Exogens*, plants whose stems increase by external accretions.
- Exosmose*, falling outwards.
- Exotic*, foreign, not native.
- Exserted*, projecting or extending out of the flower or sheath.
- Exsiccated*, dried up.
- Exstipulate*, without stipules.
- Extrorse*, outwardly, turned outwards or from its axis.
- Facula*, the nutritious part of wheat and other fruits.
- Falcate*, sickle-shaped, linear and curved.
- Farinaceous*, mealy.
- Fascicle*, a bundle, flowers umbel-like in the general external appearance.
- Fasciculated*, branchlets bundled unnaturally.
- Fastigiate*, having a flat or level top.
- Favose*, deeply pitted.
- Feather-veined*, that in which the venation consists of a midrib giving off at intervals lateral veins with branching veinlets.
- Febrifuge*, efficacious against fever.
- Fecundation*, the act of making fruitful.
- Ferruginous*, iron-colored, rusty.
- Fibrils*, the finer branches of the root sent off from the caudex.
- Fibro-vascular tissue*, spiral vessels accompanied by woody fibre.
- Fibrous*, composed of fibres.
- Filament*, the stem supporting the anther at or near its top, and is analogous to

- the stem of a leaf or to the claw of a petal.
- Filiform*, shaped like a thread.
- Fimbriate*, fringed.
- Fistular or fistulous*, tubular.
- Flabelliform*, fan-shaped.
- Flexuous*, bent in an undulating manner.
- Floating root*, peculiar to plants which float loosely upon the surface of the water.
- Floral envelopes or perianth*, one or more circles or whorls of leaves, surrounding the stamens.
- Florets*, little flowers.
- Flosculous*, consisting of many tubular monopetalous flowers or florets.
- Flower, origin of*, instead of a leafy branch, the ordinary progeny of a bud, a flower is the result.
- Flower, consists of*, the perianth, the stamens, the pistils, and the receptacle.
- Flower, physiological structure of*, the floral envelopes agree with or are similar to the leaves, of which they are only modifications.
- Flower, normal structure of*, consists of four concentric whorls of organs, the organs of each whorl being equal in number and alternate in position with those of the other whorls.
- Flower-bud*, the elements of a leaf-bud transformed into the organs of a flower.
- Foliaceous*, having the form of leaves.
- Follicle*, a pericarp with one valve which opens lengthwise on one side only.
- Foot-stalks*, the stalks of either flowers or leaves.
- Foramen*, the passage left through the two sacks or integuments of the ovule.
- Fork-veined*, veins divided and sub-divided by forked divisions which do not again unite.
- Free*, disconnected, disunited, not adnate.
- Free central placenta*, when the placentæ are found in the common centre and there are no dissepiments.
- Fringed*, having a border like a fringe.
- Frond*, the leaves of the ferns, palms, &c.
- Fruit*, the ovary brought to perfection.
- Fruit, growth of*, the absorption of sap from the parts below.
- Fruit, ripening of*, certain chemical changes effected by the combined action of heat, light and air.
- Fruit consists of*, the pericarp and the seed.
- Frutescent*, shrubby.
- Fugacious*, falling off early, before the end of summer.
- Fungous*, of the substance of the fungi.
- Funiculus*, the stalk by which the ovule is connected to the placenta.
- Furcate*, forked.
- Fusiform*, spindle-shaped, a thick, fleshy caudex, tapering downwards.
- Galea*, the arched upper lip of a labiate flower.
- Geminate*, doubled.
- Genus*, a number of plants which agree with one another in the structure of the flower and fruit.
- Germ*, the old name of the ovary.
- Germination*, the first stages of vital action in the seed.
- Gibbous*, swelled out, protuberant.
- Glabrous*, smooth, without hairs or bristles.
- Glands*, minute bodies of cellular tissue, situated in various parts of the plant.
- Glandular fibre or tissue*, little glandular points arranged along the walls of the woody tubes.
- Glaucous*, sea green, pale bluish green with a powder or bloom.
- Globose*, round or spherical.
- Glossology*, the explanation and application of botanical terms.
- Glumacea*, classes founded upon the presence and absence of glumes or husks.
- Glume*, the bracts situated at the base of a spikelet of flowers.
- Granular*, formed of or covered with grains.
- Gregarious*, herding together.
- Grooved*, furrowed or channelled.
- Groups*, orders are associated on natural principles into groups, alliances, &c.
- Gymnosperous*, with seeds naked or growing without pericarps.
- Gynandrous*, having the stamens and styles combined in one body.
- Gynæcium*, the pistils, destined to bear the seed and occupy the centre of the flower.

- Hairs*, minute expansions of the epidermis.
- Hastate*, halbert-shaped, hollowed out at the base and sides.
- Habit*, the general aspect or external features of a plant, by which it is known at sight.
- Head*, similar to an umbel, but the flowers are sessile or nearly so upon the summit of the peduncle.
- Helmet or Galea*, upper lip of a labiate corol.
- Herb*, a plant without a woody stem.
- Herbarium*, a collection of dried plants, *hortus siccus*.
- Heterogamous*, flowers not all perfect, some being neutral or pistillate.
- Hexandrous*, having six stamens.
- Hilum*, the scar or mark left on the coats of the seed by its separation from the stalk.
- Hirsute*, rough haired.
- Hispid*, rough, with stiff hairs.
- Hoary*, white, with very short, dense hairs.
- Homogamous*, flowers all tubular, similar and perfect.
- Homogenous*, having a uniform nature or composition.
- Hooded*, curved or hollowed at the end into the form of a hood.
- Hot springs*, not always fatal to vegetation.
- Hyaline*, crystalline, transparent.
- Hybrid*, partaking of the nature of two species.
- Hypocrateriform*, salver-form, the tube ending abruptly in a border spreading horizontally.
- Hypogynous*, a raised rim, either entire or variously lobed, surrounding the base of the ovary.
- Imbricate*, placed over one another like shingles upon a roof.
- Incised*, the margin divided by deep incisions.
- Incrossated*, becoming thicker by degrees.
- Indehiscent*, the pericarp at maturity remaining permanently closed.
- Indigenous*, native of.
- Induplicate*, conduplicate, a leaf in the bud, having two sides shut like the leaves of a book.
- Incumbent*, lying against or across. In the Cruciferae it denotes that the radicle is applied to the back of one of the cotyledons.
- Indusium*, the membrane that encloses the theca of ferns.
- Inferior*, below, a calyx or corol is inferior when it comes out below the germ.
- Inflated*, tumid and hollow, blown up like a bladder.
- Inflexed*, bending inward.
- Inflorescence*, the arrangement of the flowers upon a stem or branch.
- Inflorescence, centripetal*, the blossoming of the flowers commencing with those of the circumference and proceeding towards the centre.
- Inflorescence, centrifugal*, the blossoming of the flowers commencing with the central flower and proceeding towards those of the circumference.
- Infundibuliform*, funnel-form, tubular at the base, but gradually enlarging towards the border.
- Innate*, attached to the filament by the base of the connectile.
- Inserted into*, growing out of.
- Integument*, covering of the seed immediately exterior to all its other parts.
- Intercellular passage*, the spaces between the cells of the tissue.
- Internode*, the space between joints or knots.
- Introrse*, inwardly, turned inwards.
- Involucre*, a partial involucre.
- Involucre*, a leaf-like calyx, coming out some distance below the flower and never embracing it closely.
- Involute*, having the edges rolled inwards.
- Irregular*, unequal in size or figure
- Keel*, the lower petal of a papilionaceous corol.
- Kidney-shaped*, reniform.
- Knot*, a swelling joint.
- Labellum*, lip, the nectary of the Linnean school.
- Labiate*, having lips, the calyx or corol divided at the top into two general parts.

- Laciniate*, gashed, the nerves and veins all separate.
- Lactescent*, milky or juicy.
- Lamina*, the expanded upper part of the petal supported by the claw.
- Lanate*, woolly.
- Lanceolate*, lance-shaped, narrow and tapering at each end.
- Lateral*, relating to the side.
- Laticiferous*, the means to elaborate and convey the nutritious sap.
- Laticiferous tissue*, branched anastomosing tubes lying chiefly in the back and the under side of leaves.
- Leaf consists of*, a foot-stalk composing a framework of veins, a fleshy substance filling up the interstices and a cuticle covering the whole.
- Leaf, form of*, depends upon the direction of the veins and the vigor of their action.
- Leaf, color of*, almost universally green.
- Leaf, margin of*, modified chiefly by the same causes which affect the form.
- Leaf, surface of*, depends upon the mode of veining.
- Leaf, functions of*, exhalation, absorption, respiration, and digestion.
- Leaf, duration of*, temporary appendages.
- Leaf-bud*, the rudiments of young tender branches, and consists of scales surrounding a minute axis.
- Leaflets*, divisions of a compound leaf.
- Leaves, arrangement of*, nearly or quite circular and modified in various ways.
- Legume*, a pod, consisting of two valves without dissepiments.
- Leguminous*, having legumes.
- Lenticular*, lens-shaped.
- Liber*, the innermost layer of the bark, or the last year's deposit.
- Ligneous*, woody.
- Ligula*, or *ligule*, the membrane at the top of the sheath of grasses, &c.
- Ligulate*, strap-shaped.
- Liliaceous*, like the lily.
- Limb*, the broad spreading part of the petal of a monopetalous corol.
- Linear*, when the veins (or nerves) are straight.
- Linnean Classes*, the five different conditions of the stamens upon which the twenty-four artificial classes of Linnæus are founded.
- Linnean Orders*, the number of distinct styles (or stigmas) constitutes the basis of the artificial orders of Linnæus.
- Loculicidal*, when the natural opening takes place by the dorsal suture of each carpel directly into the cell.
- Liment*, a jointed legume.
- Lunate*, crescent-shaped.
- Lyrate*, lyre-shaped.
- Marescent*, withering on the plant.
- Marginal*, on the margin.
- Medulla*, pith.
- Medullary rays*, radiating plates, extending from the centre of the trees to the periphery.
- Medullary sheath*, surrounds the pith.
- Membranous or membranaceous*, with the texture of membrane.
- Mericarp*, half-fruit.
- Mesosperm*, the second covering of the seed immediately exterior to all its other parts.
- Midrib*, the principal prolongation of the petiole running from the stem to the apex.
- Mineral*, an inorganic mass of matter that is without distinction of parts or organs.
- Monadelphous*, stamens all united.
- Monandrous*, with one stamen.
- Moniliform*, globular joints of antennæ.
- Monocotyledonous*, plants whose seeds have but one cotyledon, or if two, then the cotyledons alternate with each other.
- Monœcious*, stamens and pistils apart, in separate flowers on the same plant.
- Monopetalæ*, flowers with united petals.
- Monopetalous*, the whole corol in one piece.
- Monosepalous*, when the sepals are united, or only one division of the calyx.
- Mucronate*, abruptly terminated.
- Multifid*, many-cleft.
- Muricate*, with hard short points.
- Naked ovules or seeds*, without the tegument.
- Napiform*, turnip-shaped, very oblate spheroid.
- Narcotic*, producing sleep or torpor.
- Natural System*, the arrangement of plants

- which have the greatest general resemblance to each other, not only in aspect and structure, but also in properties.
- Nectariferous*, producing honey.
- Nectary*, an apparatus for the secretion of honey.
- Nerves*, midrib-like fibres running from the base to the apex.
- Net-veined*, having veins crossing each other like net-work.
- Nodding*, in a drooping position.
- Node*, the point in the stem where the leaf with its axillary bud is produced.
- Normal*, regular, according to rule.
- Normal structure of plants*, complete and regular organs arranged in concentric order.
- Nucleus*, the central pulpy mass, the inner seed or kernel.
- Nut*, a hard, dry, indehiscent shell.
- Ob*, in composition implies inversion as obovate, inversely ovate.
- Oblong*, narrow-oval.
- Obovate*, inversely egg-shaped.
- Obvolute*, one of the margins of each leaf interior, and the other exterior to the margin of the leaf opposite.
- Obsolete*, indistinct as if worn out.
- Obtuse*, blunt.
- Oclandrous*, with eight stamens.
- Octogynous*, with eight styles.
- Official*, used in or belonging to stores or shops.
- Offset*, a short lateral branch terminated by a cluster of leaves and capable of taking root when separated from the parent plant.
- Oleaginous*, oily.
- Operculum*, the lid to a pyxis, &c.
- Opposite*, two against each other, at the same node.
- Orbicular*, roundish.
- Orders*, the most important of all the natural associations.
- Orders, names of*, Latin adjectives, usually derived from the name of the most prominent genus in each.
- Ordinal*, relating to orders.
- Organic bases*, membranes or fibres, of which all the tissues are constructed.
- Organography*, investigates the organic structure of vegetables
- Orthotropus*, when the hilum or scar corresponds with the chalaza of the ovule.
- Oval*, the length exceeding the breadth
- Ovary*, the tumid and hollow part of the pistil.
- Ovate*, egg-shaped.
- Ovoid*, egg-formed.
- Ovules*, little globular bodies produced in the cells of the ovary, destined to become seeds.
- Paleaceous*, chaffy.
- Palæa*, the bracts situated at the base of each separate flower.
- Palmate*, hand-shaped, divided deeply and spreading so as to resemble the hand with spread fingers.
- Panduriform*, fiddle-shaped, rounded at the ends, narrow in the middle.
- Panicle*, a compound inflorescence, formed by an irregular branching of the pedicels of the raceme.
- Papilionaceous*, butterfly-shaped.
- Papillose*, producing small glandular excrescences.
- Pappus*, seed down, of thistles, &c.
- Parasitic*, growing upon or nourished by another.
- Parallel-veined*, veins all parallel, whether from the base of the leaf to the apex or from the midrib.
- Parenchyma*, a succulent vegetable substance.
- Parietal placenta*, two placenta to each carpel, one to the right and the other to the left of the dorsal suture and style.
- Pectinate*, comb-like, with long, narrow segment.
- Pedate*, when the palmate leaf has the two lateral lobes cut into two or more segments.
- Pedicel*, a partial peduncle of an aggregate.
- Pedicellate*, furnished with a pedicel.
- Peduncle*, flower stem, not radical.
- Pellucid*, transparent.
- Peltate*, shield like the nerves radiating in all directions, and all connected by intervening tissue.
- Pendulous*, drooping, hanging down.
- Pentagonal*, with five sides and five angles.
- Pentandrous*, with five stamens.

- Pepo*, gourd, an indehiscent, fleshy fruit.
- Perennial*, enduring three years or more.
- Perfoliate*, when the base lobes of an amplexicaul leaf are united together, so that the stem appears to pass through the leaf.
- Perianth*, floral envelopes consisting of one or more circles or whorls of leaves surrounding the stamens.
- Pericarp*, the covering or envelope of the seeds.
- Perigynous*, inserted into the calyx.
- Peristome*, the rim or border surrounding the orifice of the theca of a moss.
- Permanent*, same as persistent.
- Persistent*, not falling off, but remaining green or growing until that which bears it is wholly matured.
- Personate*, muffled-lipped flower.
- Petal*, the divisions of the corolla.
- Petaloïd*, resembling petals.
- Petiolate*, having a petiole.
- Petiole*, the footstalk of a leaf, or a part which connects the lamina with the stem.
- Phanogamia*, flowering plants.
- Pilose*, hairy, having distinct straightish hairs.
- Pinnæ*, wings, the segments of a pinnate leaf.
- Pinnate*, winged or feathered, where the petiole bears a row of leaflets on each side, generally equal in number and opposite.
- Pinnatifid*, feather-cleft, with deep sinuses between all the veins, separating each margin of the leaf into oblong parallel segments.
- Pistil*, the central organ of most flowers.
- Pistillate*, bearing pistils.
- Pith*, the spongy substance in the central part of the stem.
- Placenta*, fleshy receptacle or moss developed at each of the two edges of the carpillary leaf.
- Plaited*, the leaf folded like a fan.
- Plant*, an organized body endowed with vitality but not with sensation.
- Plicate*, folded like a fan.
- Plumose*, feather like down, when a hair has other hairs arranged on opposite sides of it.
- Plumule*, the rudiment of the ascending axis of the future plant.
- Pod*, legumes, siliques, &c.
- Pollen*, a small yellow dust contained in the cells of the anther.
- Polyandrous*, with many stamens.
- Polyadelphous*, stamens united in several sets.
- Polygamous*, having staminate or pistillate and perfect flowers on the same tree.
- Polygynous*, with many pistils.
- Polypetalæ*, flowers with distinct petals.
- Polypetalous*, many-petalled.
- Polysepalous*, many-sepals.
- Polyspermous*, many-seeded.
- Pome*, apple, a fleshy, indehiscent pericarp, without valves and containing a capsule.
- Pores*, apertures of perspiration in the cuticle.
- Premorse*, bitten off, terminating bluntly.
- Prickles*, expansions of the epidermis consisting of hardened cellular tissue.
- Primine*, the outer integument of the ovule.
- Prismatic*, formed like a prism, with three or more angles.
- Procumbent*, trailing on the ground.
- Proliferous*, forming young plants about the roots.
- Prostrate*, trailing flat on the ground.
- Pubescent*, clothed with soft short hairs.
- Pulp*, the soft, juicy, cellular substance found in berries and other fruits.
- Pulverulent*, powdery.
- Punctate*, dotted with pellucid glands.
- Pungent*, stinging or pricking.
- Putamen*, nut-shell, the inner coat of the envelope of the seed.
- Pyriiform*, pear-shaped.
- Pyxis*, a box, a capsule which opens by a circumscissile dehiscence.
- Quinate*, five leaflets radiating from the same point of the petiole.
- Quincuncial*, when the pieces are five in number, of which two are exterior and the fifth covers the interior with one margin, and has its other margin covered by the exterior.
- Raceme*, having the flowers raised on pedicels, and being axillary to a bract,

- blossoming in succession from the base upwards.
- Racemose*, resembling a raceme.
- Rachis*, the axis of the inflorescence.
- Radiate*, when the outer flowers of an inflorescence are largest or furnished with rays.
- Radiate-veined*, several nerves of nearly equal size, radiating from the base towards the circumference, each with its own system of veins and veinlets.
- Radical*, proceeding from the root without the intervention of a stalk.
- Radicle*, the descending part of the embryo.
- Ramial*, when the leaves grow from the branches.
- Ramose*, branching, ramifications of the root.
- Raphe*, that part of the funiculus which intervenes between the hilum and the chalaza.
- Raphides*, little bundles of crystals formed in the cells.
- Receptacle*, the summit of the flower stalk.
- Recurved*, bent or curved backwards.
- Reflexed*, curved backwards and downwards.
- Reniform*, kidney-shaped, broad, rounded at the apex and hollowed at the base.
- Repand*, having the margin slightly concave between the projecting veins.
- Respiration*, in plants is analogous to breathing in animals.
- Resupinate*, inverted.
- Reticulate*, netted, having veins crossing each other like net-work.
- Retorse*, bent backwards.
- Retuse*, terminating with a round end, having the centre depressed.
- Revolute*, the margins rolled outwards or backwards.
- Rhizoma*, rootstalk, a kind of rooting stem, under ground, nearly horizontal, and sends up new plants yearly.
- Rhomboid*, oval and angular in the middle.
- Rib*, costa, ridge caused by projecting veins, &c.
- Ringent*, grinning, the lips of the corolla widely separate.
- Root*, the basis of the plant, and the principal source of its nourishment.
- Root, growth of*, takes place simply by the addition of new matter at the extremities, and by the formation of new layers upon the surface.
- Root, forms of*, much diversified in different plants.
- Root, use of*, fixing the plant in the earth and maintaining its posture.
- Root, physiological structure of*, similar to that of the stem.
- Rosaceous*, like the rose, a corol formed of roundish spreading petals without claws or with extremely short ones.
- Rostrate*, with a beak.
- Rosulate*, arranged in a radiant manner, like the petals of a double rose.
- Rotate*, wheel-form, border, and scarcely a tube.
- Rugose*, the tissue between the reticulated veins, convex from its superabundance.
- Runcinate*, pinnatifid, with the divisions pointing backwards.
- Runner*, a shoot producing roots and leaves at the end only, and from that place giving rise to another plant.
- Sacrate*, with a bag or sack.
- Sagittate*, arrow-shaped, with pointed descending lobes at base.
- Samara*, winged fruit, a dry indehiscent one-seeded pericarp, with a wing-like appendage.
- Sap*, water holding in solution minute quantities of various kinds of solid and gaseous matter derived from the soil.
- Sapwood*, the outer and more recent portion of the layers.
- Sarcocarp*, the fleshy substance between the epicarp and the endocarp.
- Scabrous*, rough.
- Scale*, the bracts of the Compositæ.
- Scape*, the stem from the summit of the footstalk which bears the inflorescence of the plant, but not of its foliage.
- Scarious*, dry, colorless, membranaceous.
- Scarpoid*, when racemes are revolute before expansion.
- Scattered*, irregular.
- Secund*, turned to one side.
- Secundine*, the inner integument of the ovule.
- Scrobiculate*, pitted or furrowed.

- Seed*, the matured part of fructification, destined for the reproduction of the species.
- Seed, vitality of*, have the power of retaining their vitality for many years.
- Segments*, parts or divisions.
- Seminal*, of the seed.
- Sepals*, the divisions of a calyx or segments.
- Septicidal*, when dehiscence takes place through the dissepiments.
- Septifragal*, when the valves of the pericarp separate from the dissepiments which remain still united in the axis.
- Septinate*, when there are seven leaves from the same point in the petiole.
- Septum*, a partition.
- Sericeous*, silky, covered with soft close-pressed hairs.
- Serrate*, having sharp teeth pointing forward like the teeth of a saw.
- Serrulate*, very small serratures.
- Sessile*, setting down, when a leaf, flower, seed-down, pileus of a fungus, receptacle of a lichen, &c., are destitute of a petiole, peduncle, stipe, &c.
- Setaceous, or setose*, bristly.
- Setose*, bearing bristles.
- Sheath*, the lower part of the leaf or leaf-stalk which surrounds the stem.
- Shrub*, a small vegetable with a woody stem.
- Silicle*, differs from the silique by being shorter and more nearly oval.
- Silique*, a pod, a long, narrow pericarp of two valves, divided into two cells by a false dissepiment formed by the extended placenta.
- Sinnate*, having deep, rounded openings between the veins.
- Sinus*, the recesses formed by the lobes of leaves, &c.
- Soporific*, inducing sleep.
- Sori*, the patches of fructification in the back of the fronds of ferns.
- Spadix*, a spike with a fleshy rachis enveloped in a large bract, called spathe.
- Spathe*, the sheath surrounding a spadix or a single flower.
- Spathulate*, obovate, with the lower end much narrowed and tapering.
- Species*, the lowest division of vegetables, embracing all originating from a common stock.
- Specific names*, Latin adjectives of the genus to which they belong.
- Spermoderm*, skin of a seed.
- Spike*, an inflorescence consisting of several sessile flowers arranged along a common peduncle.
- Spines*, thorns, leafless, hardened, pointed, woody process, with which some plants are armed.
- Spinous*, when the veins project far beyond the tissue in sharp spines.
- Spiral vessels*, resemble the woody fibre in form, being a long slender tube, tapering each way, but thinner and weaker.
- Spongioles*, the tender and delicate extremities of the fibrils.
- Spores*, bodies analogous to the pollen grains of flowering plants.
- Sporogens*, ovaries filled with spores instead of seeds.
- Sporules*, or spores.
- Spur*, a prolongation of the petal
- Stamens*, thread-like organs, situated just within the perianth and around the pistils.
- Stamens, consists of*, the filament, the anther, and the pollen.
- Stamens and pistils, use of*, the fertilization of the seed.
- Staminate*, with stamens only barren.
- Standard*, same as vexillum or banner.
- Stellate*, verticillate or whorled, when several leaves are arranged around the stem at the same node.
- Stem*, that part of the plant which originates with the plumule and arises above the surface, expanding itself to the influence of the air and light.
- Stem, functions of*, serves to convey the sap from the roots to the opposite extremities of the plant.
- Sterile*, barren, unfruitful.
- Sternutatory*, exciting to sneezing.
- Stigma*, the upper portion or extremity of the style.
- Stings*, tubular and acute hairs fixed upon minute glands in the cuticle which secrete an acrid fluid.
- Stipe*, the stalk of a pod, of a fungus, &c.

- Stipels*, stipules which are situated at the base of leaflets.
- Stipitate*, borne on a stipe.
- Stipules*, leaf-like expansions situated on each side of the petiole at its base.
- Stipulate*, leaves furnished with stipules.
- Stolon*, a branch proceeding from the stem and descending to the earth, taking root, sending up new shoots, finally becomes a new plant.
- Stoloniferous*, bearing stolons.
- Stomata*, apertures or pores of the epidermis.
- Straight-veined*, where the principal veins pass direct to the margin.
- Striæ*, small streaks, channels or furrows.
- Striate*, with striæ, slightly furrowed, &c.
- Strigose*, clothed with short, stiff and appressed hairs.
- Strobile*, cone, an ament with woody scales.
- Style*, the prolonged columnar part of the ovary, or rather of each carpel, which bears the stigma at its top.
- Stylopodium*, a kind of disk which is epigynous and confluent with the style.
- Sub*, in composition, it denotes a lower degree of the quality, as sub-sessile, nearly sessile.
- Submersed*, under water.
- Subulate*, awl-shaped.
- Succulent*, thick, juicy, and fleshy.
- Suffrutescent*, somewhat shrubby.
- Suffruticose*, same as suffrutescent.
- Sulcate*, furrowed or grooved.
- Superior*, when the calyx or corol proceeds from the upper part of the germ.
- Suture*, a seam-like appearance at the meeting of two parts.
- Symmetrical*, divested of all irregularities.
- Syncarpous*, when the fruit consists of united carpels.
- Syngenesious*, when the anthers are united into a tube.
- Systematic botany*, the arrangement of plants into groups and families, according to their characters.
- Tap-root*, when the fusiform root tapers from the collum downwards its whole length.
- Tendrils*, that kind of appendage which is filiform and reaches out to grasp bodies to climb by.
- Terete*, rounded or cylindrical.
- Terminal*, borne at the summit.
- Ternate*, three-fold, in threes, where three leaflets proceed from the end of one petiole.
- Testa*, the first or outer membrane of the integument.
- Tetradynamous*, with two short and four long stamens.
- Tetragnynous*, with four pistils.
- Tetrandrous*, with four stamens.
- Thullogeous*, a class of Cryptogamia.
- Thallus*, that part of Lichens which bears the fructification.
- Theca*, the vessels which contain the sporules of the Cryptogamia.
- Thorn*, a leafless, hardened, pointed, woody process with which some plants are armed.
- Throat*, the orifice of the tube of the corolla.
- Thyrsa*, a condensed panicle.
- Tomentose*, hairs entangled and matted.
- Toothed*, dentate.
- Terose*, uneven or undulating on the surface.
- Torus*, receptacle.
- Trailing*, creeping or lying on the ground.
- Transverse*, cross-wise.
- Tree*, a large woody plant, with a bole.
- Triandrous*, with three stamens.
- Tricuspidate*, having three points.
- Tridentate*, three-toothed.
- Trifid*, three-cleft.
- Tripinnate*, thrice-pinnate, when the leaflets of a bipinnate leaf become pinnate.
- Triternate*, when the leaflets of a biternate leaf become again ternate.
- Truncate*, blunt as if cut square off.
- Trunk*, the central collum or axis, which supports the branching tops of trees.
- Tube*, the hollow cylinder of a monopetalous corol.
- Tuber*, an annual thickened portion of a subterranean stem, provided with latent buds, from which new plants arise the succeeding year.
- Tuberiferous*, bearing tubers.
- Tuberous*, roots which are thick and fleshy but not of any regularly globular form.
- Tubular*, having a tube, or being in the form of a tube.
- Tunicated*, bulbs that consist of concentric

- layers, each entire, and enclosing all within it.
- Turbinate*, shaped like a top.
- Turgid*, swollen.
- Umbel*, like the corymb, but the pedicels are of nearly equal length, and all arise from the same point in the common peduncle.
- Umbellet*, secondary umbel.
- Umbilicate*, depressed in the centre.
- Unarmed*, having no thorns nor prickles.
- Uncinate*, hooked at the end.
- Undulate*, wavy.
- Unguis*, the claw as of a petal.
- Unilateral*, one-sided.
- Utricle*, a little bag-like reservoir for sap, air, &c.
- Valvate*, applied to each other by the margins only.
- Valves*, the several pieces of a pericarp, which separate naturally in ripening.
- Varieties*, changes produced among plants of the same species.
- Vascular tissue*, spiral vessels with their modifications.
- Vasculares*, flowering plants.
- Vasiform tissue*, large tubes called dotted ducts, having numerous little pits sunk in the thickness of its lining.
- Vegetable physiology*, that part of Botany which relates to the phenomena of the vital functions of plants.
- Vegetable Kingdom, variety of*, equally remarkable for its rich and boundless variety as for its wide diffusion.
- Vegetation, its diffusion*, caused by the quickening energy of the Creator.
- Veins*, the primary divisions sent off from the midrib or nerves.
- Veinlets*, branches of the veins.
- Velvety*, clothed with a dense soft pubescence.
- Venation*, the manner in which the vines are divided and distributed.
- Ventral*, the inner edges of the carpel, formed by the united margins.
- Vernation*, the particular manner in which the young leaves are folded in the bud.
- Verticillaster*, reduced cymes occupying the opposite axils of each pair of leaves.
- Verticillate*, whorled, more than two in a circle at each node.
- Vesicular*, bladdery.
- Vexillary*, when the banner of a papilionaceous corol greatly exceeds the wings in size.
- Vexillum*, the upper and largest petal of papilionaceous corolla.
- Villose*, villous, clothed with long hairs.
- Vine*, stems which being too weak to stand erect, creep along the ground or otherwise, and do not throw out roots like the runner.
- Viscid*, clammy, sticky.
- Vitta*, receptacles of secretion in the seed of Umbelliferæ.
- Whorled*, when three or more leaves arise at each node and are disposed in a circle, they are verticillate or whorled.
- Winged*, margined, flattened or expanded laterally into a border.
- Wood*, the most solid part of trunks and roots of trees and shrubs.
- Woody tissue or fibre*, slender transparent membranous tubes, tapering to a point each way and adhering together by their sides, the end of one tube extending beyond that of another so as to form continuous threads.
- Zig-zag*, flexuous, bending alternately in opposite directions.
- Zoophytes*, animal plants.



N^o 1.

ROSA CENTIFOLIA.

Hundred-leaved or Provenc. Rose.

MATERIA MEDICA BOTANICA.

ROSACEÆ,
The Rose Tribe.

NO. 1.

ROSA CENTIFOLIA.

*Hundred-leaved, or Provens Rose.**Place.*—Europe.*Quality.*—Fragrant.*Power.*—Astringent, tonic.*Use.*—Ophthalmia, debility.

BOTANICAL ANALYSIS.

Natural Order. Rosaceæ—J. Senticosæ—L.CLASS XII. *Icosandria.* ORDER *Polygynia.*Rosaceæ, Juss. Gen., 334, in part (1789); Dec. Prodr., 2, 525, in part (1825);
Dec. and Duby Botan. Gall., in part (1828); Lyndl. Synops., p. 88 (1829).

GENUS. ROSA.

From Lat. *Ros*, dew, dewflower, from the drops of dew found on its leaves and flowers, early in the morning; or from *Celtic Rhos* or *Rhudd*, red, alluding to the prevailing color of the flower.SYNONYMES. La Rose (*F.*), Blumen der Blassen Rose (*G.*), Rosa de Alexandria (*S.*), Rozen (*Dutch*), Rosa (*Russ.*), Wurd (*Arab.*), Gooläbupoo (*Tam.*), Tu Miuhoa (*Chin.*), Gul (*Pers.*), Mawar (*Malay*), Sewooanda mull (*Cyng.*), Goolat (*H.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* five, rarely fewer, united, often reinforced by as many bracts.COROLLA. *Petals* five, regular, rarely wanting, inserted on the disk which lines the orifice of the calyx.

ROSA CENTIFOLIA.

STAMENS. Indefinite, usually numerous, arising from the calyx, distinct.

OVARY. Superior, one or several, distinct, one-celled; often coherent to the sides of the calyx and each other. *Styles* distinct or united.

FRUIT. A drupe, pome, achenia, or follicle.

SEEDS. Suspended, rarely ascending.

THE SECONDARY CHARACTERS.

ROSA. *Calyx* urceolate, fleshy, contracted at the orifice, five-cleft; *Petals* five. *Achenia* numerous, bristly, fixed to the inner side of the calyx.

Calyx inferior, with a pitcher-shaped tube, permanent, deeply divided into five lanceolate segments, either all simple or two of them only, the other three being appendaged. *Petals* obovate, five, but greatly increased by culture. *Filaments* filiform. *Ovary* numerous, with silky hairs. *Fruit* round or ovate, formed of the matured and colored calyx, tube closed and containing the achenia.

THE SPECIFIC CHARACTERS.

ROSA CENTIFOLIA. *Arms* unequal, the large ones falcate. *Leaflets* glandular-ciliate. *Flowers* nodding. *Calyx* viscid. *Fruit* oblong.

THE ARTIFICIAL CHARACTERS.

CLASS ICOSANDRIA. *Stamens* twenty or more, arising from the calyx (perigynous). **ORDER POLYGYNIA.** *Leaves* alternate. *Styles* one—many. *Ovary* free or adherent.

*Germ*s ovate. *Germ*s and *Peduncles* hispid. *Stem* hispid, prickly. *Leaves* pubescent beneath. *Petioles* unarmed.

NATURAL HISTORY.

The ROSE is known by every one at first sight, and has been the choice and favorite flower—the queen of flowers—from time immemorial, among the civilized nations of the earth. No flower, however, is more difficult to define than the ROSE, and the difficulty arises in consequence of several curious facts in its natural history. The ROSE is the only flower that is beautiful in all its stages, from the instant the calyx bursts and shows a streak of the corolla, until it is full blown. Again, there is no other flower that is really rich in its confusion, or that is not the less elegant for the total absence of all uniformity and order. These facts naturally give rise to various opinions as to the actual state in which the ROSE is most splendid, and multiply the difficulties for estimating the properties which should constitute perfec-

tion. The very fact of the ROSE being beautiful from the time its calyx bursts, makes the single and semi-double roses, up to a certain stage, as good as are the perfectly double roses; and yet, there is in the construction of some varieties, a circumstance which makes them lose their beauty when they are full blown. The moss rose, for instance, is a magnificent object as long as the calyx is seen, but as soon as the flower fully expands, all the distinctions between a moss rose and a common rose have departed or are concealed.

The rose bush varies in size in different species, from one foot to six or eight, and the colors are red, white, yellow, purple, black, striped, simple, and in almost numberless shades and mixtures. It is native chiefly of the temperate or cold climates of the northern hemisphere.

Botanists are not agreed as to the native country of the rose; nor have they determined the precise number of original species of this genus: some regard all the European species as originated from one source; others, particularly the moderns, divide them into species, subspecies, and varieties. The ROSE, however, is of an extensive family, and far from being distinctly characterized. Those denominated varieties are extremely numerous, and often permanently uniform; and the specific differences, as hitherto pointed out, are, in many respects, so inadequate for satisfactory discrimination, that it becomes difficult to say which are species and which are varieties only.

CHEMICAL AND MEDICAL PROPERTIES.

From the result of the chemical analysis of the ROSE, by several eminent chemists, it appears to contain tannin, sugar, myricine, resin, fat oil, volatile oil, acids, salts, &c. It results also from the same experiments, that the roots, stems, buds, and fruit of all the species, are found to be astringent, sweetish, corroborant and indiscriminately used.

It may be remarked, however, that in some instances they have, under certain circumstances, produced alarming symptoms,—as sneezing, inflammation of the eyes, faintings, hysterical affections, abortion, &c. Many other instances are related by Schenckius. Persons confined in a close room, with a large quantity of roses, have been in danger of immediate extinction of life. From the experiments of Priestly and Ingenhousz, this effect seems owing to the mephitic air, which these and most other odoriferous flowers exhale.

The blossoms of the red rose, ROSA GALICA, are less fragrant than those of some other species, but they improve by drying; the taste is pleasantly bitter and austere. Water at 212° extracts both the odor and the taste; and the infusion strikes a black, with sulphate of iron, and also forms a precipitate of a dark color, with sulphate of zinc.

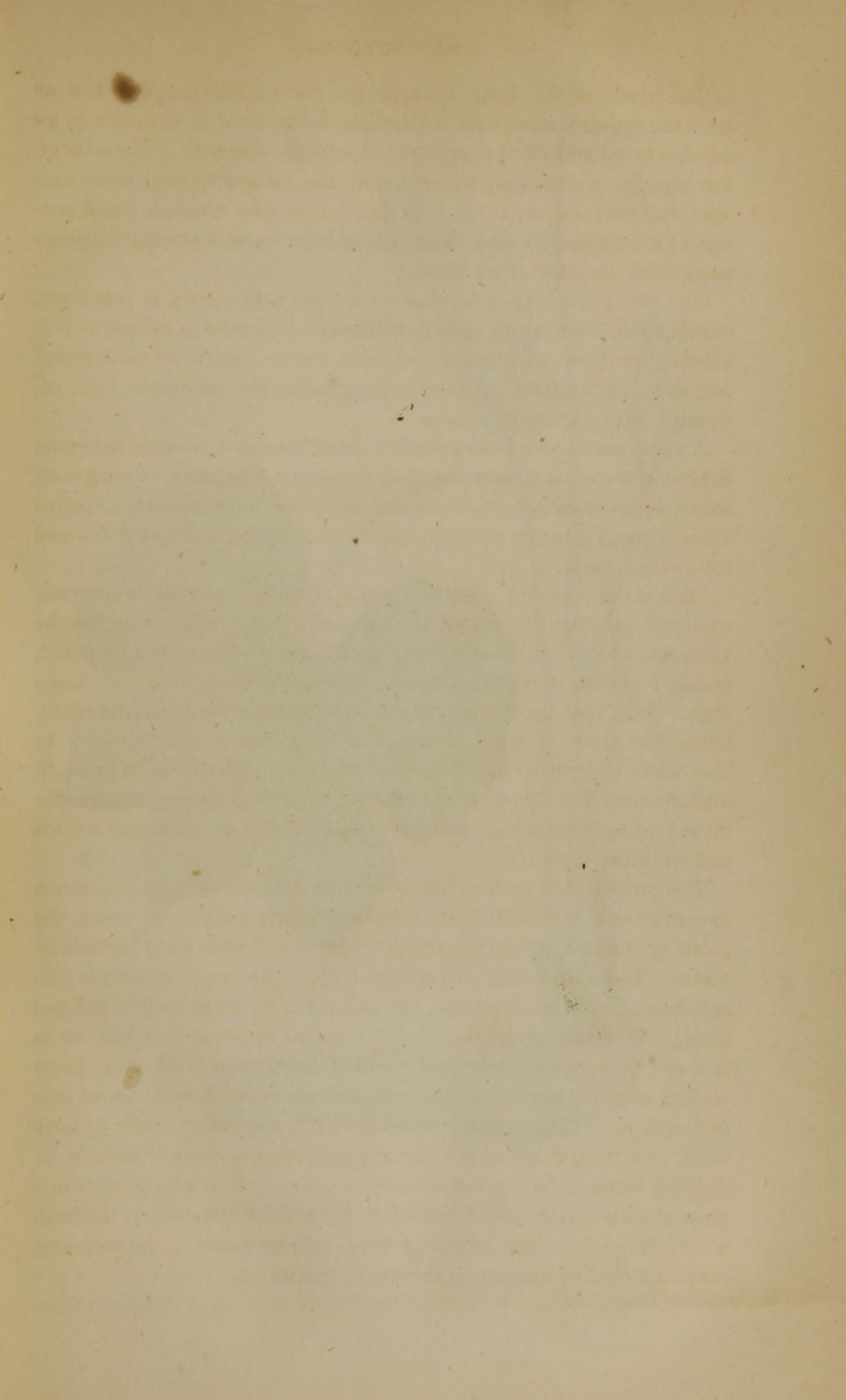
The petals of the *ROSA CENTIFOLIA* are slightly laxative, and as such are ordered, combined with sugar, in the form of a syrup, as an adjunct to oil and other purgatives in infantile diseases. The odor of this species is extremely fragrant, and the taste sweetish, subacidulous, and very slightly bitter. In distillation with water, a small portion of a butyraceous oil is obtained, and the water is strongly impregnated with the odor of the *ROSE*.

The infusion of roses is indebted for any astringency it possesses, chiefly to the acid it contains, particularly as a gargle in cynanche tonsillar; but it is chiefly employed as an elegant vehicle for more active remedies, particularly sulphate of magnesia, the nauseous taste of which it very effectually covers.

A syrup made by infusing the flowers of the *ROSE* twenty-four hours in boiling water, and after straining the liquor, add twice its weight of sugar, is an excellent purge for children; and for adults of a costive habit, a small quantity taken at night will keep the bowels soluble and constantly open.

Rose water was first made in Persia, and the Persian rose water was long the most celebrated for its excellence. This water has the agreeable odor of the *ROSE* in great perfection, when properly prepared, which, however, is seldom the case, except when it is made on a large scale. It is very apt to spoil, unless it be rectified by a second distillation, but spirits of wine ought not to be added to rose water. As rose water is perfectly free from any acrimony, and, except in point of odor, does not differ from simple distilled water, it is very generally employed in collyria with acetate and superacetate of lead, and acetate and sulphate of zinc.

The process for making Attar, or essential oil of roses, so much esteemed as a perfume, is as follows:—Forty pounds of roses, the petals of *ROSA DAMASCENA*, are put into a still with sixty pounds of water. The mass being well mixed, a gentle fire is put under the still, and when fumes begin to rise, the cap and pipe are properly fixed and luted. When the impregnated water begins to come over, the fire is lessened by gentle degrees, and the distillation continued until thirty pounds of water are come over, which is generally done in about four or five hours. This water is to be poured upon forty pounds of fresh roses, and thence are to be drawn from fifteen to twenty pounds of distilled water, by the same process as before. It is then poured into pans of earthenware, or of tinned metal, and left exposed to the fresh air for the night. The attar or essence will be found in the morning, congealed and swimming at the top of the water.





N^o 2.

SANGUINARIA CANADENSIS.

Blood Root, Red Puccoon.

PAPAVERACEÆ.
The Poppy Tribe.

NO. 2.

SANGUINARIA CANADENSIS.

BLOODROOT. *Red Puccoon.*

Place.—Mountains, woods.

Quality.—Bitter.

Power.—Deobstruent, acrid.

Use.—Cleansing the blood.

BOTANICAL ANALYSIS.

Natural Order. Papaveraceæ—J. Rhœadeæ—L.

CLASS XIII. *Polyandria.* ORDER *Monogynia.*

Papaveraceæ, Juss. Gen., 236 (1789); in part. Dec. Syst., 2, 67 (1818). Prodr. 1, 117 (1824). Lyndl. Synops., 16 (1829).

GENUS. SANGUINARIA.

From Lat. *Sanguis-inis*, blood, the color of its juice.

SYNONYMES.

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* two, rarely three, deciduous, imbricated in æstivation.

COROLLA. *Petals* four, rarely five or six, hypogynous.

STAMENS. Often numerous, but some multiple of four, rarely polyadelphous. *Anthers* innate.

OVARY. Solitary. *Style* short or none. *Stigmas* two, or if more, stellate upon the flat apex of ovary.

FRUIT. Either pod-shaped with two parietal placentæ, or capsular with several.

SEEDS. Very numerous, minute.

THE SECONDARY CHARACTERS.

SANGUINARIA. *Calyx* two-sepaled, caducous. *Corolla* eight-petal-

SANGUINARIA CANADENSIS.

ed. *Stamens* numerous. *Stigma* one, two-lobed, sessile. *Capsule* pod-like, one-celled, two-valved, many-seeded.

Sepals concave, falling as soon as the corolla expands. *Petals* generally eight, in two series, the four outer ones longer, giving the flower a quadrangular outline. *Anthers* oblong, yellow. *Style* none. *Pod* oblong, ovate, acute at each end.

THE SPECIFIC CHARACTERS.

SANGUINARIA CANADENSIS. *Leaves* solitary, radical, reniform. *Scape* naked, one-flowered, sheathed at base. *Petals* spreading, regular.

THE ARTIFICIAL CHARACTERS.

CLASS POLYANDRIA. *Stamens* twenty or more, arising from the receptacle (hypogynous). ORDER MONOGYNIA. *Ovaries* compound. *Placentæ* parietal. *Sepals* two (or three). *Juice* colored.

Leaves sub-uniform, sinuate, lobed. *Scape* one-flowered. *Petals* oblong, obtuse.

NATURAL HISTORY.

The SANGUINARIA CANADENSIS is a herbaceous perennial plant, and one of the earliest and most beautiful and delicate vegetables of our country. It is particularly interesting from its flowering at a season when there is little or no general verdure, and scarcely anything in bloom except trees, the inconspicuous florescence of which does not render them in general very attractive. The flower appears very early in the spring, while the weather is still cold and frosts not uncommon. Accordingly, on its first appearance above the ground, and for some time after, it is beautifully enclosed in one of the leaves, which forms, as it were, a kind of involucre to it.

The plant is also one of the most abundant in the United States, growing plentifully from Canada to Florida. It appears in the spring, flowers throughout March and April, during which the seed becomes ripe. It grows exuberantly in a light loose rich soil, on the declivities of hills, and on the exposed borders of shady woods; and may be propagated by parting the roots in the spring and autumn.

The Petals of the SANGUINARIA CANADENSIS connive every evening, for several evenings successively, even after impregnation, and from the tendency of this plant to multiply its petals in favorable situations, it is rendered likely that culture would readily produce a double variety.

The root stalk is fleshy, tuberous, and when broken or bruised, as well as every other part of the plant, exudes a blood-colored fluid. From each bud of the root stalk there springs a single large glaucous

SANGUINARIA CANADENSIS.

leaf, and a scape about six inches high, with a single flower. The whole plant is smooth. The leaf is kidney-shaped with roundish lobes, separated by roundish sinuses. The flower is white, square, and on a round scape. It is scentless and of very short duration.

When the plant is in blossom the leaves are small; they, however, continue to grow larger; and after the fall of the flower, by the middle of summer, the leaves become so large as to give the plant an entirely different aspect.

Among the Indians this plant was always held in high estimation; they called it Puccoon, and made use of the red juice to paint themselves, and dye or stain their skins, ornaments, baskets, etc.

CHEMICAL AND MEDICAL QUALITIES.

From the result of the chemical analysis of *SANGUINARIA CANADENSIS*, by several eminent Chemists, it appears that a gum, a resin, and a saponaceous or extractive matter are detected in the root, and that the gum is in the greatest abundance. It results also from the same experiments, that the active principle of the plant resides chiefly in the gum and extractive matter, but especially in the former. Alcohol dissolves the color of the root better than water; paper and cloth dipped in the solution are dyed of a salmon color.

From experiments, made with a view to find a suitable mordant to fix the dye, it appears that the color of flannel and silk stained with the juice of the *SANGUINARIA CANADENSIS*, could never be entirely washed out; and that the sulphate of alumine, or alumine alone, and the murio-sulphate of tin, are tolerably good mordants for flannel, cotton, silk, and linen. Murio-sulphate of tin was the only mordant that fixed the color on cotton and linen. If success is obtained in fixing the color permanently, there can be no doubt that the dye obtained from this plant may become a highly important article in our domestic manufactures.

This plant is one of the most valuable medical articles of our country, and is already very generally introduced into practice. Few medical plants unite so many useful properties; but it requires to be administered with great care and skill, without which it may prove dangerous.

The root of the *SANGUINARIA CANADENSIS* possesses an alkali, to the presence of which the efficacy of the plant is wholly attributable. This may be obtained as follows,—Digest the bruised root in three parts of cold diluted sulphuric acid (*water 10, acid 1*); after twenty-four hours, decant the fluid and repeat the operation twice, using water but slightly acidulated; mix the liquors, and filter, and to the clear

red liquor which passes, add a solution of ammonia, so long as it occasions precipitation. Decant the fluid after subsidence, and wash the brown precipitate in cold water: it is sanguinaria, combined with extractive and coloring matter, and mixed with some earths. Dissolve the soluble part in warm alcohol, and wash with the same. Distil the clear fluid from a glass retort. When the solution becomes turbid by concentration, it must be decanted, while hot, into cylindrical vessels, one half filled with pure cold water. The alkali is precipitated in the form of a yellowish-white bulky powder, mingled with a substance insoluble in diluted acids, and resembling resin: by dissolving the soluble part in muriatic acid, with ten of water, precipitating by ammonia, and treating as above, the alkali is obtained pure. It is a soft white powder, destitute of odor, but having a bitter acid taste. It renders blue vegetable-colors green: when heated, it melts into a brown, transparent, and brittle substance. It dissolves in most acids, and forms, along with them, neutral salts of a pure scarlet-red color. The salts are soluble in water, to which they communicate their red color: they are inodorous, but their powder produces great irritation in the nostrils: they are all precipitated by infusion of galls, and are decomposed by alkalis and alkaline earths.

Some chemists have investigated the properties of this plant very carefully, and affirm that it unites all the beneficial qualities of Squills, Seneca-root, Digitalis, Guaiacum, and Ammoniacum, without their bad effects.

Although the root is the officinal part, yet the leaves have some of the same properties, and are powerful deleterious stimulants. Farmers apply them in the diseases of horses, to make them sweat, shed their coats, etc.

The seeds are violent narcotics; producing fever, delirium, dilated pupil, etc. They are sometimes used as incitants, diaphoretics, and diuretics, but are dangerous and deleterious.

The seeds are seldom gathered, although the roots are collected in summer, when the seeds are ripe.

The virtues of the root are rapidly deteriorated by time.

In small doses, SANGUINARIA CANADENSIS excites the stomach, and accelerates the circulation; more largely given, it produces mania, and consequent depression of the pulse; and in the full dose, occasions active vomiting.

The dose with a view to its emetic operation, is from ten to twenty grains, in the form of pills. For other purposes, the dose is from one to five grains, repeated more or less frequently, according to the effects desired.



Nº 3.

STATICE LIMONIUM.

Thrift. Marsh Rosemary.

PLUMBAGINACEÆ.

The Leadwort Tribe.

NO. 3.

STATICE LIMONIUM.

THRIFT. *Marsh Rosemary.*

Place. Sea coast Arabia.

Quality. Bitter.

Power. Astringent, antiseptic.

Use. Debility, hæmorrhage.

BOTANICAL ANALYSIS.

Natural Order. Plumbaginaceæ.—J. Aggregatæ.—L.

CLASS V. *Pentandria.* ORDER *Pentagynia.*

Plumbagines, Juss. Gen. 92 (1789). Plumbagineæ, R. Brown, Prodr. 425 (1810).

GENUS. STATICE.

From the Greek, $\Sigma\tau\alpha\tau\iota\zeta\omega$, to stop; being supposed to stop the flux. Plin. Lib. 25, cap. 8. The English name Thrift, from to thrive; being an abundant grower, and of close texture; and as such, employed as borders in gardens.

SYNONYMES. *Statice d'Amerique (F.)*, *Das seegras (Ger.)*, *Zeegras (Dutch)*, *Statice (I.)*, *Statice (S.)*, *Strandblomster (Swed.)*

THE ESSENTIAL CHARACTERS.

CALYX. Tubular, five-toothed, plaited, persistent.

COROLLA. Regular, hypocrateriform, of five petals united at the base, or sometimes almost distinct.

STAMENS. Five, hypogynous and opposite the petals, or inserted on their claws.

OVARY. One-celled, free from the calyx. *Styles* five (seldom three or four).

FRUIT. An utricle, or dehiscent by valves.

SEED. Inverted.

STATICE LIMONIUM.

THE SECONDARY CHARACTERS.

STATICE. *Calyx* infundibuliform, the limb entire, plaited, scarious. *Petals* five. *Stamens* five, inserted on the claws of the petals. *Styles* five. *Fruit* indehiscent, invested with the persistent calyx.

Leaves simple, entire, alternate or radical. *Flowers* in spikes or heads. *Corolla* of five petals, contracted and united at base, dilated upwards, longer than the stamens. *Ovary* globose, minute. *Utricle* one-celled, one-valved, with five points and a solitary seed.

THE SPECIFIC CHARACTERS.

STATICE LIMONIUM. *Scape* terete, paniculate. *Leaves* all radical, ovate-lanceolate, undulate, smooth, obtuse, mucronate below the tip.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. **ORDER PENTAGYNIA.** *Calyx* inferior. *Leaves* radical; smooth. *Ovary* one-seeded.

Leaves lance-obovate, obtuse, mucronate, glabrous. *Scape* terete. *Panicle* much branched.

NATURAL HISTORY.

The **STATICE LIMONIUM** is a maritime, indigenous, perennial plant, and grows in the salt marshes, along the whole extent of the North American sea coast. It rises about a foot in height, and blossoms in August and September; its flowers are blue and very conspicuous, on long spikes. *Scape* about a foot high, with several lanceolate clasping bracts, and supporting at the top a broad branching panicle, composed of close secund spikes of sessile blue flowers. *Petals* obovate, unguiculate, bearing the stamens on their claws. *Leaves* lanceolate, broader in the upper half, smooth, veinless, on long petioles.

This plant is sometimes called Sea Lavender; though it has scarcely any resemblance, and none of its aromatic quality. It has a strong perennial woody root, large and ligneous, of a reddish color, and an astringent taste; sending out many strong fibres, which strike deep into the ground: from the upper part of this come out several smooth stiff leaves of a pretty thick consistence, and a dark or glaucous green, from four to five inches long and more than two inches broad in the middle.

The stalk is naked, dividing into many branches, which are subdivided into others, smaller towards the top; the latter are terminated by slender spikes of pale blue flowers, ranged on one side the stalk, above each other, coming out of numerous covers like sheaths: these

STATICE LIMONIUM.

appear in summer, and are succeeded by oblong seeds, inclosed in the calyx.

The common name given to this Plant, throughout the United States, that of *Rosemary*, belongs to a different shrub, the *Rosmarinus officinalis*, and should be particularly remembered.

The true English name is Thrift.

The *STATICE LIMONIUM* appears to great advantage in a pot. It is much disposed to throw up new flowering stems; hence, by having several pots of it, some plants will be in flower throughout the summer. On this account especially, and for the singularity of its large blue calyx, it is a plant that merits attention.

Though in a manner a biennial, it may be often increased by parting its roots. Both the root and plant are inodorous. The plant varies much as to its luxuriance; being sometimes found with leaves scarcely an inch long, and not more than six or eight flowers in a panicle, and at other times much larger, with the flowers far more abundant. The light blue color distinguishes it at a distance; and that color is tolerably permanent. On the whole, though not so magnificent as some of its foreign species, it is nevertheless a beautiful plant.

The tender kinds of *STATICE LIMONIUM* grow in sandy loam and peat; the others in light soil, and all are increased by dividing the root or by seeds.

Some Botanists consider the *STATICE LIMONIUM* of Europe, a mere variety of the *STATICE CAROLINIANA*, of America. The leaves of the former are, however, undulated, while those of the latter are perfectly flat in the margin.

CHEMICAL AND MEDICAL PROPERTIES.

From the result of the chemical analysis of *STATICE LIMONIUM*, by several eminent Chemists, it appears to contain tannin, gallic acid, gum, extractive, albumen, volatile oil, resin, caoutchouc, coloring matter, lignin, and various salts, among which are common salt, and the sulphate of soda and magnesia. It results, also, from the same experiments, that it possesses properties similar to galls; since a like quantity of both makes ink equally black. Water and alcohol are both solvents of it; but the last is even stronger, and the cold infusion more powerful than the hot.

One of the most important and valuable uses to which the root of *STATICE LIMONIUM* is applied, is not very generally known. The plant grows exuberantly, on the shores and in the neighborhood of the Caspian sea; and the Calmuc Tartars, availing themselves of its abundance, apply the root in the process of tanning hides and skins, and

STATICE LIMONIUM.

which, on account of its powerful astringent qualities, produces the celebrated Russian leather.

The Root is the officinal part; it is a most powerful vegetable styptic and astringent. In some parts of the United States, and particularly in New England generally, this plant is held in very high estimation, and much used for medical purposes. It is used in severe dysenteries, and the putrid sore throat accompanying scarlet fever; and for these objects, it should be taken in decoction, and also used as a gargle.

The decoction may be prepared by boiling four ounces of the root in four quarts of water down to two; strain the liquor and sweeten it with loaf sugar: dose, a tea cup full to be taken four times a day, for the cure of diarrhœa, dysentery, and gleans. It is necessary to give a dose of rhubarb or castor oil in cases of dysentery, etc., previous to using the decoction.

The root of this plant is already very generally introduced into practice; and it is particularly popular among the inhabitants along the sea coast. It is especially beneficial in aphthæ, ulcers of the mouth and throat, debility, hemorrhage, cynanche maligna, relaxed bowels, cholera infantum, chronic dysentery, etc.; and the good effects, in these cases, are very sensibly advanced, the root being also antiseptic. It has often availed, when other astringents and tonics have been tried and failed.

An infusion of the root of this plant is much esteemed, and even supposed to be a kind of specific, as a gargle in ulcerous sore throat or scarlatina anginosa. It has also been found highly useful as a wash or injection, in gonorrhœa, gleans, and immoderate flow of the menses. In dysentery, it should be used only after purgatives, and it will prove as near a specific in this complaint as any medicine can be. The best manner of giving this medicine, in this instance, is to boil it in milk (an ounce of the dried root to a pint of milk), a table-spoon full may be given every hour, in bad cases; and if blood is passing from the bowels, it may be given oftener.

The powder of the dried root may be sprinkled on any ill-conditioned sore, with good effect.

The tops and flowers are used as a tea for nervous headaches, sinkings, and vertigoes.

An essential oil is procured from this plant, by distillation, possessing all the beneficial properties of the plant. The dose is from 10 grs. to half a drachm.

The *STATICE LIMONIUM* is, hence, a very valuable article in the *Materia Medica*; the taste is very styptic and rather bitter; it may, however, be made palatable by aromatics.



No. 4.
NASTURTIUM OFFICINALE.
Water Cress.

CRUCIFERÆ.

The Cruciferous Tribe.

NO. 4.

NASTURTIUM OFFICINALE.

Water Cress.

Place.—Europe, rivers and springs.

Quality.—Acrid.

Power.—Diuretic, antiscorbutic.

Use.—Scurvy, obstipation of the bowels.

BOTANICAL ANALYSIS.

Natural Order. Cruciferæ—J. Siliquosæ—L.

CLASS XV. *Tetradynamia.* ORDER *Siliquosa.*

Cruciferæ, Juss. Gen., 237 (1789). Dec. Mémoire sur les Crucifères (no date). Syst. 2, 139 (1821). Prodr. 131 (1824). Lindl. Synops., 20 (1829).

GENUS. NASTURTIUM.

From the Lat., which, according to Pliny, comes from *nasus tortus*, from the effect which the acrimony of these plants has upon the nose. The English, from its growing in water, and cress from the Lat. *creescere*, to increase.

SYNONYMES. Cresen de fontaine (*F.*). Brunnen Kresse (*Ger.*). Cressione Sergente (*I.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* four, deciduous.

COROLLA. Of four regular *petals*, their claws inserted into the receptacle, and their limbs spreading in the form of a cross.

STAMENS. Six, two of them upon opposite sides, shorter than the other four.

Ovary. Composed of two united carpels, with two parietal placentæ, united by a membranous false dissepiment. *Stigmas* two.

FRUIT. A silique or silicle, usually two-celled.

SEEDS. Attached in a single row to each side of the placentæ. *Albumen* wanting.

NASTURTIUM OFFICINALE.

THE SECONDARY CHARACTERS.

NASTURTIUM. *Siliqua* subterete, shortish or declinate. *Valves* nerveless. *Calyx* equal, spreading. *Seeds* in a double series.

THE SPECIFIC CHARACTERS.

NASTURTIUM OFFICINALE. *Leaves* pinnate. *Leaflets* ovate, subcordate, repand. *Stems* decumbent, thick. *Branches* axillary.

Leaves alternate, of three—seven leaflets. *Leaflets* broad, often cordate at the base, and somewhat acute at the ends, very obtusely toothed, the terminal one the largest. *Flowers* white. *Siliques* erect, about half an inch in length.

THE ARTIFICIAL CHARACTERS.

CLASS TETRADYNAMIA. *Stamens* six, four of them longer than the other two. ORDER SILIQUOSA. *Petals* four, equal, cruciate. *Pod* two-celled by a false partition.

NATURAL HISTORY.

This class of Plants is of much importance to man. It is found principally in the temperate zones, and furnishes several of the alimentary articles which are very nutritious, and others that are used as condiments.

WATER CRESS is a creeping amphibious perennial, growing in ponds and slow running streams. The stems are spreading, declining, or floating, if in water. The leaves are alternate pinnate, and somewhat lyre-shaped. The flowers are white in a corymb, soon lengthened out into a spike, and appear in June and July. The plant, when growing in a rapid current, has its leaves lengthened, and in this state is sometimes mistaken for the Water Parsnip (*Sium latifolium*), which commonly grows with it, and is deleterious.

Horticulturists consider that there are three varieties of this plant: the green leaved, the small brown leaved and the large brown leaved. The green leaved is the easiest cultivated, the small brown leaved the hardiest, and the large brown leaved the best for cultivation in deep water, and universally preferred.

The most suitable description of water is a clear stream, and not more than an inch and a half deep, running over sand, gravel, or chalk. Newly risen spring water is highly advantageous, as the plants not only thrive better, but in consequence of its being rarely frozen, they generally continue in vegetation, and sometimes throughout the whole

winter. When the plants begin to grow, they soon check the current so as to raise the water two or three inches about the plants, which is considered the most favorable circumstance in which they can be placed. The CRESS will not grow freely in a muddy bottom, nor will it taste well when there is mud about the roots. It is absolutely necessary there should be a constant current, as where there is any obstruction to the stream or flow of water, the plants cease to thrive. After the plants have been cut about three times, they begin to stock, and then the oftener they are cut the better; in summer it is necessary to keep them very close cut. In winter the water should be rather deeper, to obtain which, the plants are left with more head than the water may thus be impeded.

CHEMICAL AND MEDICAL PROPERTIES.

WATER CRESSES have always been esteemed valuable for their antiscorbutic qualities, and these properties are the uniform and universal character of the order of Cruciferæ. NASTURTIUM OFFICINALE forms an excellent spring salad, either alone or with brook lime or scurvy grass. It is a popular favorite in spring in most places, generally eaten fasting, and proves a good remedy to cleanse the blood of gross humors. It is also said to enliven the spirits.

The fresh herb has a quick penetrating odor, especially when rubbed, and a bitterish pungent taste, but loses both when dried, and the infusion also in the dried state is perfectly inert. The plant is undoubtedly an excellent stomachic, and perhaps there is no better method of using it than as a salad.

WATER CRESSES open obstructions, increase the urinary discharge, promote the menses, and are a powerful remedy against the scurvy; they are also considerably diuretic and emmenagogue.

The juice of WATER CRESSES decocted with that of Scurvy grass and Seville oranges, forms a very popular remedy in scorbutic affections and visceral obstructions. The decoction alone is an admirable cleansing wash for ulcers, sores, &c., &c., and it is also frequently employed for attenuating viscid humors.

Prince Maximilian, of Wied Neuwied, relates that the Brazilian Indians use a kind of Cress, which, in taste, resembles the plant under consideration, as a good remedy for asthma. In sensible and medical qualities, NASTURTIUM OFFICINALE bears some resemblance to COCHLEARIA, though perhaps milder, and on this account is preferred (as a salad) for the table.

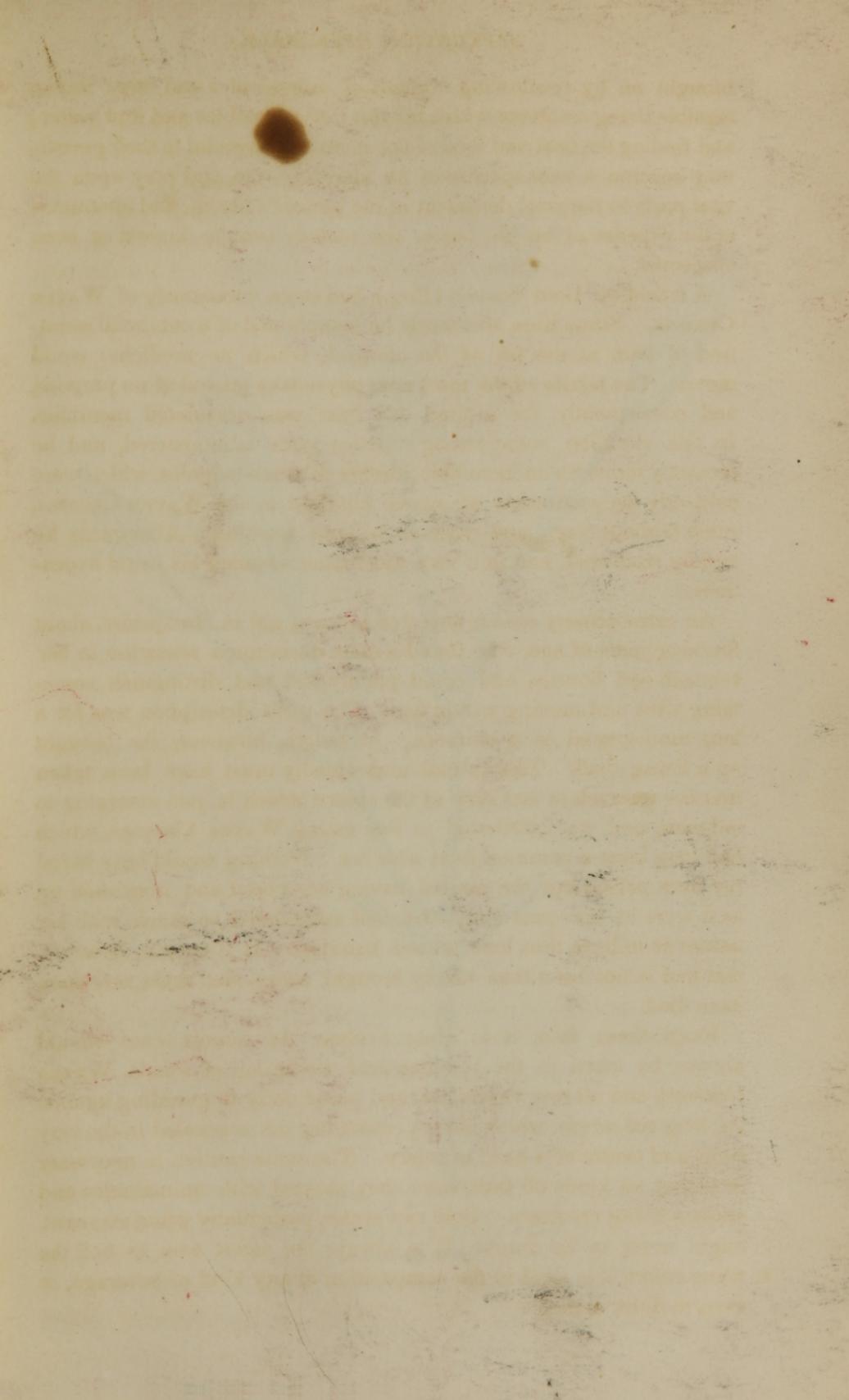
Animalcules are the cause of various disorders. A variety of internal complaints in the stomach, lungs, liver, and intestines, is

brought on by swallowing myriads of animalcules and other imperceptible living creatures which inhabit raw vegetables and foul water; and finding the heat and food of the stomach congenial to their growth, they become a new species of an alarming size, and prey upon the vital parts to the great detriment of the patient's health, and oftentimes at the expense of his life before the malady can be known or even suspected.

A friend of Lord Stawell (Eng.) had eaten voraciously of WATER CRESSES. Some time afterwards he complained of a continual sensation of pain at the pit of the stomach, which no medicine could move. The advice of the most able physicians proved of no purpose, and consequently, for a time, his case was considered incurable. In this situation some strong emetics were administered, and he presently threw up an incredible number of small tadpoles, which were evidently the production of spawn attached to the WATER CRESSES, eaten without care, and perhaps without washing. Afterwards he rapidly recovered, and in a very short time resumed his usual avocations.

An extraordinary case is stated of a young girl in Hampshire, about fourteen years of age, who found a most uncommon sensation in her stomach and bowels, and could plainly feel and distinguish something alive and moving within her. The girl's description was for a long time treated as a chimera. At length, however, she brought up a living toad. This animal undoubtedly must have been taken into her stomach in that state of the spawn which is just emerging to tadpoles, and was attributed to her eating WATER CRESSES, which had long been a common food with her. Nothing would have saved her from poison but the animal having been bred and nourished up as it were in her own body, and had assimilated so much with her nature as to have thus long proved harmless. It is certain, however, that had it not been thus timely brought away, she must very soon have died.

From these facts it is quite evident the utmost care should always be taken in the washing and cleansing of salads, WATER CRESSES, and all raw vegetables, and particularly in guarding against the long red worm, which almost constantly lies concealed in the very heart and centre of a head of celery. The same caution is necessary in eating all kinds of fruit, since they abound with animalcules and various living creatures. Cold raw water, particularly when stagnant, ought never to be drunk. It is always the safest way to boil the water before it is used in the composition of any kind of beverage, or even to drink alone.





Leavitt

No. 5.

DIANTHUS CARYOPHYLLUS.

Pink Carnation.

CARYOPHYLLACEÆ.

The Pink Tribe.

NO. 5.

DIANTHUS CARYOPHYLLUS.

PINK. *Carnation.*

Place. The Alps, Italy.

Quality. Fragrant.

Power. Cordial, sudorific.

Use. Eruptive fevers, contagions, &c.

BOTANICAL ANALYSIS.

Natural Order. Caryophyllaceæ.—J. L.

CLASS X. *Decandria.* ORDER *Digynia.*

Caryophyllæ, Juss. Gen. 229 (1789). Dec. Prodr. 1, 351 (1824). Lindl. nops., p. 43 (1829).

GENUS. DIANTHUS.

From the Greek, $\Delta\iota\omicron\varsigma\ \alpha\upsilon\theta\omicron\varsigma$, Jupiter's flower, or the divine flower, so named on account of its extreme beauty and fragrance. The English, from its pink color.

SYNONYMES. Giroflée musquée (*F.*), Gewürzhaft riechende Gartennelke (*G.*), Garofano (*I.*), Clavel (*S.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* four—five, distinct, or cohering in a tube, persistent.

COROLLA. *Petals* four—five (sometimes none), either unguiculate and inserted upon the pedicle of the ovary, or without claws and inserted on the outside of a fleshy disk.

STAMENS. Twice as many as the petals, rarely equal or fewer. *Anthers* introrse.

OVARY. Often stipitate. *Styles* stigmatose the whole length of their inner surface.

FRUIT. A one-celled capsule, or imperfectly two—five-celled, opening at the apex by twice as many teeth as there are stigmas.

SEEDS. Numerous.

DIANTHUS CARYOPHYLLUS.

THE SECONDARY CHARACTERS.

DIANTHUS. *Calyx* cylindrical, tubular, with scales at base. *Petals* five, with long claws. *Stamens* ten. *Styles* two. *Capsule* cylindrical, one-celled.

Calyx inferior, striate, five-toothed, with two or more pairs of opposite, imbricate scales at base. *Claws* as long as calyx. *Limb* flat, dilated outwards, unequally notched. *Filaments* as long as calyx. *Ovary* oval. *Styles* longer than stamens, with revolute tapering stigmas.

THE SPECIFIC CHARACTERS.

DIANTHUS CARYOPHYLLUS. *Flowers* solitary. *Scales* very short, ovate. *Petals* very broad, crenate, beardless. *Leaves* linear-subulate, channelled, glaucous. *Stem* two—three feet high, branched. By rich culture the stamens mostly change to petals.

THE ARTIFICIAL CHARACTERS.

CLASS DECANDRIA. *Stamens* ten. **ORDER DIGYNIA.** (Polypetalous). *Seeds* numerous. *Petals* with long claws. *Calyx* tube cylindrical.

NATURAL HISTORY.

The **DIANTHUS CARYOPHYLLUS**, or clove pink, is a flower too generally known to require minute description. It has long been deservedly esteemed both for its superior beauty and rich spicy odor, and has been cultivated time immemorial in Europe on account of its pre-eminent beauty and fragrance. The plant in its cultivated improvement must have been unknown to the ancients, or otherwise it would have been described by naturalists, and sung by poets, as well as its rival the rose. It is supposed to be the *Iphium* of Theophrastus.—*Lib. 6, cap. 6 and 7.*

The name **CARYOPHYLLUS** indicates its odor, which resembles that of the clove. The **DIANTHUS** is indigenous in Italy and among the Alps of Southern Europe. It, however, grows wild in several parts of England, especially in old walls, in the crevices of rocks, and in dry soils. Ray and Hudson, notwithstanding, suppose it to be an outcast of gardens, and not a native in England. It is mentioned by Chaucer under the name of “*Cloue gilofre,*”

. to put in ale,
Whether it be moist or stale.

The **CARNATION** or clove pink is a perennial herbaceous plant, with

DIANTHUS CARYOPHYLLUS.

a firm and fibrous root. The stalks which rise from among tufts of channelled linear glaucous leaves, that are finely toothed above the base, but entire and smooth, towards the apex are erect branched and panicled, bearing many solitary flowers. The calyx is of a pale green color, the petals vary in color from a pale fresh red to the deepest carnation. The whole herb is glaucous. This fine plant is considered the parent or stock from which, by the arts of culture, all those beautiful varieties are raised, which have become extremely luxuriant, and are now everywhere cultivated in gardens for the beauty of the flowers, of which numerous kinds have been produced by horticulturists, and are highly esteemed under the name of CARNATIONS. Over four hundred sorts are now enumerated by florists, distinguished mostly by some peculiarity in colors, which are crimson, white, red, purple, scarlet, yellow, and arranged in every possible order of stripes, dots, flakes, angles, &c.

The *DIANTHUS CARYOPHYLLUS* is a hardy plant, and in full flower in July. It has a pleasant aromatic smell, somewhat allied to the clove spice, hence it is not unfrequently called the clove pink. It is propagated by layers, cuttings, and seeds. It thrives best in rich loam, rather sandy, and should be protected from all extremes of heat or cold, dryness or moisture.

Of all the flowers that adorn the garden, whether they charm the eye by their beauty, or regale the sense of smell by their fragrance, the pink may be justly considered pre-eminent; the stateliness of its growth, the brilliancy, diversity and beauty of its colors, and the sweetness of its perfume, never fail to attract our regard and admiration.

CHEMICAL AND MEDICAL PROPERTIES.

The sensible qualities of *DIANTHUS CARYOPHYLLUS* are extracted both by water and alcohol, and an essential oil is obtained by distillation with water. Various experiments prove that the infusion strikes a black color with sulphate of iron; that acids redden its color, and alkalies change it to green. Rectified spirits digested in the flowers receive a much paler tincture than watery liquors, but extract the whole of their virtues and active matter. In distillation, or evaporation, spirit elevates much less than water; the spirituous extract retaining a considerable share of the fine smell of the flowers, as well as their taste; its color is purplish and brilliant, like that of the watery extract.

The testimony of our forefathers is abundant in favor of the efficacy of these flowers in nervous affections, and they were therefore formerly

DIANTHUS CARYOPHYLLUS.

strongly recommended in headaches, faintings, palpitations of the heart, convulsions, tremors, &c., and S. Pauli says that he found them an excellent medicine, and of great use in malignant fevers. They powerfully promote perspiration and the urinary discharge without the least irritation, and at the same time raise the spirits and quench thirst.

This plant was also formerly considered a valuable remedy in many complaints, as a cleansing anti-poisonous medicine. It has been advantageously used as a remedy against the plague and other pestilential fevers, the whole plant being boiled in wine and drank till perspiration was created.

The roots, leaves, and flowers of this plant are astringent, sudorific, traumatic, cordial, neurotic, alterative, and alexipharmic. Gerard confidently asserts that when they are made into a conserve, they are "exceedingly cordial and wonderfully above measure comfort the heart," and that they are "of considerable efficacy in dejection of spirits, faintings, headaches, and other nervous complaints." Old authors very generally agree in their commendations of this plant; they say "it comforts the stomach much, cheers the heart, helps digestion, stops vomiting, is good against spitting of blood, and strengthens the retentive faculty; it cuts tough phlegm, corrects the heat and malignity of cholor, helps expectoration, and quenches and allays thirst in burning fevers." It is also an excellent medicine to be given in the cure of the plague, and in all manner of malignant and pestilential diseases.

Modern practitioners, however, pay little respect to these opinions of their predecessors, and use the *DIANTHUS CARYOPHYLLUS* only to give an agreeable flavor and fine color to a syrup, which is a pleasant vehicle for the exhibition of more active medicines. The *syrupus caryophylli*, which is the only officinal preparation of the flowers of this plant, is to be considered in this light: its pleasant flavor and fine color rendering it a useful vehicle for other medicincs. "Take of recent petals of the clove July flower, freed from their claws, *one part*, boiling water *four parts*, refined sugar *seven parts*. Macerate the petals in the water for twelve hours, then add the sugar to the strained liquor, and dissolve it with a gentle heat." This syrup is valued for the rich color and the agreeable flavor of the flowers, which it possesses in perfection when well prepared. Alkalies change the color to green, and form the test of the genuineness of the syrup: for they do not produce this effect on a counterfeit syrup made of an infusion of cloves and colored with cochineal, which is sometimes used for it. **For medical use, however, the one is as good as the other.**



N^o 6.

JUNIPERUS SABINA.

Savin.

CONIFERÆ.

The Fir Tribe.

NO. 6.

JUNIPERUS SABINA.

Savin.

Place.—Europe, North America.

Quality.—Goaty.

Power.—Acrid, deobstruent.

Use.—Toothache, gangrene.

BOTANICAL ANALYSIS.

Natural Order. Coniferæ.

CLASS XXII. *Diœcia.* ORDER *Monadelphica.*

Coniferæ, Juss. Gen., 411 (1789). Mirbel Elémens, 2, 906 (1815). Brown in King's voyage, Appendix (1825). Rich. Monogr. (1826). Dec. and Duby, 431 (1828). Lindl. Synops., 240 (1829).

GENUS. JUNIPERUS.

From Lat., *juvenis*, young, and *pario*, to bring forth, because it produces young fruit while the old ones are ripening; or from the Celtic word *juneprus*, signifying rough, rude.

SYNONYMES. Savinier (*F.*), Sadebaum (*G.*), Sevenboom (*Dutch*), Svebom (*Dan.*), Sabina (*I.*), Sabina (*S.*)

THE ESSENTIAL CHARACTERS.

FLOWERS. Monœcious or diœcious, destitute of calyx or corolla.

STERILE. Monandrous or monadelphous, collected in a kind of loose ament.

ANTHERS. Two, or many lobed, often tipped with a crest. *Pollen* large, usually compound.

FERTILE. In aments composed of open, scale-like carpels, or solitary and without a carpel.

JUNIPERUS SABINA.

OVARY. *Style* and *Stigma* wanting. *Ovules* one—two, or many, erect or inverted.

FRUIT. A strobile (cone), or a solitary seed.

SEEDS. *Integuments*, hard and crustaceous. *Embryo* in the axis of oily albumen.

THE SECONDARY CHARACTERS.

JUNIPERUS. *Flowers* diœcious, rarely monœcious. (Sterile.) *Ament* ovate. *Scales* verticillate, peltate. *Anthers* four—eight, one-celled. (Fertile.) *Ament* globose. *Scales* few, united at base, concave. *Ovules* one at the base of each scale. *Berry* formed of the enlarged fleshy scales, containing two—three bony seeds. *Cotyledons* two.

THE SPECIFIC CHARACTERS.

JUNIPERUS SABINA. *Upper leaves* imbricate, in four rows, ovate-lanceolate, pungently acute, appressed, older ones acerose, cuspidate, spreading. *Trunk* arboreous.

THE ARTIFICIAL CHARACTERS.

CLASS DIœCIA. *Stamens* apart from the pistils in different flowers upon different plants. ORDER MONADELPHIA. *Trees* or *shrubs* gymnospermous, exogens. *Flowers* monœcious, usually in a cone, or diœcious. *Leaves* squamiform, opposite or verticillate, scale-like or acerose. *Fruit* an imperfect drupe or berry.

NATURAL HISTORY.

No order can be named of more universal and important use to mankind than that of CONIFERÆ, whether considered with reference to its timber or its secretions. Gigantic in size, rapid in growth, noble in aspect, robust in constitution, the trees of this order form a very considerable proportion of every wood where nature remains in its undisturbed and original state. They are found principally in the cold and temperate climates of both hemispheres; though they are natives of various parts of the world, from the perpetual snows and inclement climate of arctic America, to the hottest regions of the Indian archipelago. In the northern and temperate climates they have, however, an aspect or appearance very different from that of the southern hemisphere.

The JUNIPERUS SABINA is found throughout the United States, but chiefly in the maritime parts, growing in dry rocky situations. It is a shrub of middle size that rises but a few feet in height, sending out

numerous horizontal branches, which are subdivided into many branchlets. It is covered with a reddish brown bark, and has rather small dark green prickly leaves, and produces blue berries only after it has arrived at a considerable age. It flowers early in the summer, and notwithstanding they are inconspicuous, the shrub has long been cultivated in the gardens of Europe as an ornamental evergreen. The stem is apt to grow in a reclining posture, and the wood is of a beautiful reddish shade, somewhat resembling mahogany. On account of the shrub producing male and female flowers on separate plants it was formerly distinguished into the barren and berry bearing Savin, the latter of these is represented in the engraving.

In the cultivation of the more delicate species of this order, peat and soil are usually preferred, but the Cedars and Savin grow in common garden earth; they are best managed by seeds, but cuttings may be rooted under a hand glass.

CHEMICAL AND MEDICAL PROPERTIES.

The leaves and tops of JUNIPERUS SABINA have a moderately strong smell of the disagreeable kind, and a hot, bitterish, acrid taste; they give out a great part of their active matter to watery liquors, and the whole to rectified spirits. Distilled with water, they yield a large quantity of essential oil; from thirty-two ounces, there have been obtained five ounces of the essential oil, in which the whole virtue of the plant appears to reside. Decoctions of the leaves, freed from the volatile principle by inspissation to the consistence of an extract, retain a considerable share of their pungency and warmth along with their bitterness, and have some degree of smell, but not resembling that of the plant itself. On inspissating the spirituous tincture, there remains an extract consisting of two distinct substances, of which one is yellow, unctuous, or oily, bitterish, and very pungent; the other black, resinous, tenacious, less pungent and subastringent.

SAVIN is a powerful and active medicine, and has been long reputed the most efficacious in the MATERIA MEDICA, for producing a determination to the uterus, and thereby proving emmenagogue; it heats and stimulates the whole system very considerably, and is said to promote the fluid secretions.

The power which this plant possesses in opening uterine obstructions is considered so great that it has been frequently employed, and with considerable success, for purposes the most infamous and unnatural. It seems probable, however, that its effects in this way have been somewhat overrated, as it is found very frequently to fail as an

JUNIPERUS SABINA.

emmenagogue, though this, in some measure, may be ascribed to the smallness of the dose in which it has been usually prescribed by physicians.

Dr. Cullen observes "that SAVIN is a very acrid and heating substance, and often upon account of these qualities, a quantity perhaps necessary to render it emmenagogue was prevented from being employed." He states, however, "that it shows a more powerful determination to the uterus than any other plant within his knowledge, and that he had been frequently disappointed in this and its heating qualities, which always require considerable caution."

JUNIPERUS SABINA has been used with great success in cases of amenorrhœa. Instances of cure are very numerous with this medicine; it is administered in powder from a scruple to a drachm a day. The medicine is well suited to the debile, but improper in plethoric habits, and therefore recourse should be had to repeated bleedings before its exhibition.

The leaves of the Cedars are not unfrequently used in the United States as an equivalent, and under the name of SAVIN; but they are weaker than the European Savin, and often fail as emmenagogue, because the doses are regulated upon the European prescriptions, or are given in too small quantities. The leaves of the SAVIN have all the properties of the Junipers in a higher and more violent degree; they increase all the secretions, but may produce hæmorrhage and abortion, acting chiefly on the uterus. Women enceinte ought never to use them; but they are very useful in dropsical complaints, menstrual suppressions; also in rheumatism, gout, &c., &c.

In several places in the country, mothers give the juice of this shrub, mixed with milk, to their children, in order to destroy worms; it generally operates by stool, and brings them away with it.

As an external local stimulant or escharotic, the dried leaves of JUNIPERUS SABINA, in powder, are applied to warts, flabby ulcers and carious bones; and the expressed juice diluted, or an infusion of the leaves, as a lotion to gangrenous sores, scabies, and tinea capitis; or mixed with lard and wax as an issue-ointment.

Farriers use this shrub frequently in the disease of horses. The leaves cut small and mingled with their corn given to horses, destroy those troublesome vermin called bots.

The JUNIPERUS SABINA is one of the most valuable, important, and universal medical articles of the MATERIA MEDICA, and is already very generally introduced into practice. Few medical plants require to be administered with greater care or skill. None but experienced physicians should prescribe them, or they may prove dangerous.



N^o 7.
RUBUS IDAEUS.
Raspberry.

ROSACEÆ.

The Rose Tribe.

NO. 7.

RUBUS IDÆUS.

RASPBERRY. *Hindberry.*

Place. Woods, rocky and moist situations.

Quality. Agreeable.

Power. Acidulous, cooling.

Use. The fruit to allay thirst in fevers, calculus.

BOTANICAL ANALYSIS.

Natural Order. Rosaceæ.—J. Senticosæ.—L.

CLASS XII. *Icosandria.* ORDER *Polygynia.*

Rosaceæ, Juss. Gen. 334, in part (1789). Dec. Prodr. 2, 525, in part (1825).
Dec. and Duby Botan. Gall., in part (1828). Lindl. Synops., p. 88 (1829).

GENUS. RUBUS.

From Lat. *Ruber*, red, from producing a red fruit; the English name from the Celtic, *Rub*, red.

SYNONYMES. Framboisier (*F.*), Hinbeerstrauch (*Ger.*), Rovoideo (*I.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* five, rarely fewer, united, often reinforced by as many bracts.

COROLLA. *Petals* five, regular, rarely wanting, inserted in the disk which lines the orifice of the calyx.

STAMENS. Indefinite, usually numerous, arising from the calyx, distinct.

OVARY. Superior, one or several, distinct, one-celled, often coherent to the sides of the calyx and each other. *Styles* distinct or united.

FRUIT. A drupe, pome, achenia or follicle.

SEEDS. Suspended, rarely ascending.

RUBUS IDÆUS.

THE SECONDARY CHARACTERS.

RUBUS. *Calyx* spreading, five-parted. *Petals* five, deciduous. *Stamens* numerous, inserted into the border of the disk. *Ovaries* many, two-ovuled, one of them abortive. *Achenia* pulpy, drupaceous, aggregated with a compound berry.

THE SPECIFIC CHARACTERS.

RUBUS IDÆUS. *Leaves* five-pinnate and ternate. *Leaflets* rhomb-ovate, downy beneath. *Petioles* channelled. *Stem* prickly, hispid. *Flowers* somewhat paniced.

Stem usually covered with bristly thorns, but sometimes quite smooth. *Leaflets* nearly smooth above, covered with a dense, cotton-like down beneath. *Flowers* in lax, terminal clusters, white. *Fruit* dark red, compound berries. In the variety AMERICANUS. The leaves are all ternate.

THE ARTIFICIAL CHARACTERS.

CLASS ICOSANDRIA. *Stamens* twenty or more arising from the calyx. (Perigynous.) ORDER POLYGYNIA. *Leaves* alternate. *Styles* one—many. *Ovary* free or adherent.

Leaves quinate-pinnate and ternate. *Leaflets* rhomb-ovate, acuminate, downy beneath. *Petiolets* channelled. *Stem* prickly, hispid. *Flowers* sub-paniced.

NATURAL HISTORY.

The RASPBERRY was anciently called *Raspis* or *Raspiberry*, and belongs to an extensive genus, many of which are indigenous in the United States. Many of them are shrubby or suffruticose briars, with astringent roots and edible berries; and some have annual stems with out prickles. The plant is native in many parts of Europe, and found growing luxuriantly in rocky and moist situations. It flowers in May and June, and is generally very plentiful in the gardens of our country. It has stems which are suffruticose, upright, rise about five feet high, and are biennial in duration; but the root is perennial. The leaves are quinate-pinnate, the flowers come in panicles from the extremity of the present year's shoots; they are white, and the fruit ripens about a fortnight afterwards.

The fruit is richly flavored, and pleasant and grateful to most palates, just as nature presents it; notwithstanding, the flavor is very materially improved with sugar; accordingly it is much esteemed when made into a sweetmeat.

The plant produces two descriptions of fruit—the one red and the

other white berries—but the difference is only in the color of the fruit, and in the taste, that of the white Raspberry being more pleasant and palatable than the red. The ripe fruit possesses a peculiar flavor of its own, and is deliciously fragrant.

The qualities of the Raspberry leaf tea are so good and agreeable, and, at the same time, so strongly resemble the Chinese, that, if it were not known here, and should be supposed to be imported from some foreign country and sold at a good price, it would undoubtedly meet with a very warm reception.

CHEMICAL AND MEDICAL PROPERTIES.

Notwithstanding the RUBUS IDÆUS or Raspberry is so common and well known, yet its virtues as a remedy and medicine are but little understood. The virtues of this plant are extracted by boiling water, and by diluted alcohol, and depend chiefly, if not exclusively, upon tannin, which various experiments have proved to be an abundant constituent.

The Raspberry leaf tea is a moderate tonic, and good for a cold, nausea, feverish habits, and inflammation of the bowels. It is particularly mild and agreeable to the taste, and may be used with safety. This tea is also excellent to remove canker from the mouth, throat, and other parts of the body. In the dysentery, also, the tea is very useful, and particularly if resorted to in the first stages of that disease: instances of perfect cure are very numerous. When a canker poultice is needed, the Raspberry leaf tea is particularly recommended for the purpose; and for a burn, the tea thickened with pounded elm is found to be very useful and effectual. For all sores, also, where canker appears, this tea proves an excellent wash. Children who have sore mouths, or are otherwise troubled with canker humors, should drink this tea very freely and for a considerable time.

The Cherokee Indians chew the root for cough, and obtain considerable relief.

A distilled water from the branches, leaves, flowers, or fruit, is cooling, agreeable to the taste, and very beneficial in fevers and hot distempers of the body, head, eyes, and other parts.

The ripe fruit is fragrant, subacid, and cooling; allays heat and thirst, and promotes the natural excretions in common with other summer fruits. It is also beneficial in gravel, hemoptysis, phthisis, putrid and malignant fevers, scurvy, &c.

A grateful syrup prepared from the juice is directed for officinal use by the London Pharmacopœia. In the preparation of Raspberry syrup, which, as ordinarily made, is apt to gelatinize, M. Blondeau

recommends, that the strained juice be allowed to stand from eight to fifteen hours, according to the temperature, in order to ferment. The juice separates into two portions; the upper thick, the lower clear. The latter is to be separated by straining, and made into a syrup with the usual proportion of sugar. This syrup is employed to flavor drinks, and is much used as a grateful addition to carbonic acid water; it is also frequently used as an agreeable acid instead of lemons. It likewise dissolves the tartar of the teeth, but for this purpose it is inferior to that of the Strawberry; like that fruit, however, it does not undergo acetous fermentation in the stomach, and it is therefore recommended to gouty and rheumatic patients.

In all cases of inflammation, the application of the Raspberry leaf is found to be very healing and effectual. A man who had his fingers smashed, and the ends taken off by a stone, suffered for a long period, and the inflammation was very great, and many applications were made without any good effect; on the application of these leaves, however, improvement became evident; the inflammation abated, and healing commenced.

The leaves of the Raspberry, boiled in ley, make an effectual wash for the head; cure the ring-worm, heal the itch, and any running sores, but turn the hair black.

The juice of the root, leaves, and stalks, is excellent in the cure of catarrh. The juice of the green fruit, however, possesses more powerful and effectual virtues, and should be preferred.

The decoction of the root, leaves, stalks, flowers, and green fruit, has all the virtues of the former liquid, and makes an agreeable and healing gargle for a sore mouth or throat.

A conserve of the flowers is a styptic, and singularly beneficial in all sorts of fluxes of the bowels. A conserve of the green fruit is very cooling and grateful, and assists in vomiting. A conserve of the ripe fruit is not so great an astringent as the former, but assists to strengthen the stomach, resists the scurvy, and causes a good appetite.

The wine of the ripe fruit is made of the juice by fomentation, and supports the spirits in fainting, swooning, and similar accidents of the vitals.

A syrup of the juice of the ripe fruit is pleasant and grateful to the taste, and quickens and refreshes, in cases of sickness at heart and faintings.

The *RUBUS IDÆUS* is thus a far more valuable article in the *Materia Medica* than is generally known, and should be appreciated accordingly.



SWEET VIOLET.

VIOLACEÆ.
The Violet Tribe.

NO. 8.

VIOLA ODORATA.

Sweet Violet.

Place.—Europe, America.

Quality.—Fragrant.

Power.—Sudorific, tonic.

Use.—Calculus, cough, eruptions.

BOTANICAL ANALYSIS.

Natural Order. Violaceæ—J. Campanaceæ—L.

CLASS V. *Pentandria.* ORDER *Monogynia.*

Violariæ, Dec. Fl. Fr. 4, 801 (1805). Juss. Ann. Mus. 18 (1811). Dec. Prodr. 1, 287 (1824). Violaceæ, Lindl. Synops., 34 (1829).

GENUS. VIOLA.

The Greek name of this beautiful genus is *Ιω* from *Ιω*, the name of a certain cow, which, according to a ridiculous fable, fed upon the *Violet*.

SYNONYMES. *Violette odorante* (*F.*), *Blaue veilchen* (*G.*), *Tamme Viool* (*Dutch*), *Marts fioler* (*Dan.*), *Akta-fioler* (*Swed.*), *Viola Mammola* (*I.*), *Violeta* (*S.*), *Violetta* (*Port.*), *Pachutschaja fialko* (*Russ.*), *Kiet tuong hoa* (*Chinese*).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* five, persistent, slightly united, elongated at base, the two lateral inferior.

COROLLA. *Petals* five, commonly unequal, the inferior usually spurred at base.

STAMENS. Five, inserted on the hypogynous disk. *Filaments* dilated, prolonged beyond the *Anthers*.

OVARY. Of three united carpels, with three parietal placentæ. *Style* one, declinate. *Stigma* cucullate.

FRUIT. A three-valved capsule.

SEEDS. Many, with a crustaceous testa, and distinct chalaza.

VIOLA ODORATA.

THE SECONDARY CHARACTERS.

VIOLA. *Sepals* five, unequal, auricular at base. *Corolla* of five *Petals*, irregular, the upper one spurred at base. *Anthers* connate, the lobes diverging at base. *Capsule* one-celled, three-valved.

Calyx of five oblong, acute, equal, erect *Sepals*, produced downwards, beyond their insertion, two of them under the uppermost petal, one under each lateral petal, and one under the two lower. *Corolla* irregular, the upper petal broadest, slightly cleft, ending at base in a curved spur projecting between the leaves of the calyx, two lateral petals opposite, equal, obtuse. *Peduncles* angular, solitary, one-flowered, recurved at the summit so as to bear the flower in a resupinate position. *Seeds* several in each cell, attached to the valves.

THE SPECIFIC CHARACTERS.

VIOLA ODORATA. Stemless. *Scions* creeping. *Leaves* cordate, crenate, nearly smooth. *Calyx* obtuse. *Lateral petals* with a hairy line. *Flowers* large, of the true violet color, fragrant.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. **ORDER MONOGYNIA.** (Poly-petalous.) *Flowers* inferior, irregular. *Herbs.* *Sepals* nearly equal, green. *Stipulate.*

Calyx five-leaved, or deeply five-cleft. *Corolla* irregular, with a horn behind (sometimes the horn is wanting, or a mere prominence). *Anthers* attached by a membranous tip, or slightly cohering. *Capsule* one-celled, three-valved.

NATURAL HISTORY.

The order Violaceæ includes numerous species, and of these the **VIOLÆ** are mostly inhabitants of the northern temperate zone. They are, however, abundant in South America, but their forms there are materially different from those of the more temperate parts of the world, most of them being shrubs, while the northern Violets are uniformly herbaceous, or nearly so.

The **VIOLA ODORATA** is evidently the *Ιον μέλαν* of Theophrastus, and the *Ιον πορφυρεον* of Dioscorides; it was also well known to the Arabian physicians, as its use is highly commended in various inflammatory diseases. **VIOLA** is frequently mentioned by Latin poets, who allude to its affects as a vulnerary.

It is a small, low, herbaceous, creeping, perennial plant, with a short subterraneous stem, and interesting on account of its beauty. The runners are furnished with fibrous roots, and send up annually tufts of leaves and flowers. It is a native of Europe, and grows exuber-

VIOLA ODORATA.

antly in woods, hedges, and other shady places. The plant is in this country an exotic, though it has long been introduced and very generally cultivated in gardens, both for its beauty and fragrance.

The root is knobbed, whitish, and furnished with long fibres; the leaves are heart-shaped, veined, slightly scalloped at the edges, on the upper side smooth, and of a shining green color, underneath paler, somewhat hairy, and stand upon long smooth footstalks; the peduncles are usually about four inches long, and somewhat above the middle furnished with two pointed bractæ, below which, the peduncle is quadrangular, but above, it is grooved in the back, bent downwards at the top, and supports a single flower; the calyx is tinged with a dark purplish color, the anthers are slightly joined together, yellowish, and terminated by an oval membrane of an orange color; from behind two of the anthers there arises a flat greenish appendage, which is inserted in the nectarium; the germen is orbicular; the style twisted and supplied with a hooked stigma; the capsule is roundish compressed, and contains several light colored seeds.

There are several varieties of the *VIOLA ODORATA* distinguished by the form and color of the flowers, which appear in April and May, and are extremely fragrant. The plant flourishes in a light soil, and is well adapted for pots; it is readily increased by seeds or by parting the root.

CHEMICAL AND MEDICAL PROPERTIES.

The virtues of *VIOLA ODORATA* are extracted by boiling water, and the infusion is found useful in many chemical inquiries. It affords a very delicate test for acids and alkalies, being reddened by the former and rendered green by the latter; the infusion is not liable to change if it be kept in a tin flask well stopped.

The flowers of this species of the *VIOLET* possess a peculiar agreeable sweet odor and a very slightly bitter taste, and when chewed they tinge the saliva blue, and yield their color and flavor to boiling water. Their delightful and pleasant odor is destroyed by desiccation, and the degree to which they retain their fine color depends upon the care used in collecting and drying them. The flowers should be gathered before full blown, deprived of their calyx and rapidly dried, either in a heated room or by exposing them to a current of very dry air.

The recent flowers are cooling, emollient, and greatly purgative, but without great care they are liable to lose most of their virtues in drying, and consequently, as they can only be had fresh in the spring, the best method of using them is perhaps in the form of syrup. The syrup, when carefully made, is very pleasant, and contains all the

VIOLA ODORATA.

virtues of the flower. It is peculiarly excellent, when mixed with a small quantity of oil, as a purgative to keep the bowels of children gently open, and it may likewise be given with great success in habitual costiveness of grown people. It is also very good in coughs, hoarseness, and other disorders of the chest.

The flowers and seeds are mild laxatives, and possess an anodyne and pectoral quality; and the root taken in powder in doses of a drachm or two, purges and vomits. MM. Corte and Willement, who employed the powdered roots of the *VIOLA ODORATA* to produce vomiting, found that that was fully effected by doses of two scruples.

The seeds dried and powdered are diuretic, and they are also gently purgative; they increase the urinary discharge, and are excellent in the gravel and all complaints of the kidneys and bladder.

The herbaceous parts of the different species of the *VIOLA* are mucilaginous, emollient, and slightly laxative, and have been much used in pectoral, nephritic, and cutaneous affections. A decoction is frequently an ingredient in clyster for softening and lubricating the bowels.

In the root, leaves, flowers and seeds of the *VIOLA ODORATA*, is found a peculiar alkaline principle, bearing some resemblance to emetine, but possessing distinct properties. It is white, soluble in alcohol; scarcely soluble in water, and forms salts with acids. It exists in the plant, combined with malic acid, and may be obtained by treating with distilled water the alcoholic extract of the dried root, decomposing by means of magnesia the malate of *VIOLA* contained in the solution, and extracting the alkali from the precipitated matters by alcohol, which yields it in evaporation. To obtain it entirely pure, however, a more complicated process is necessary. This alkaline principle is ascertained to be exceedingly active, and even poisonous; and it is probably contained in most, if not all, the many species of the *VIOLA*.

The Turks make a violet sugar of the flowers of the *VIOLET*, which, dissolved in water, makes their favorite liquor, called *SHERBET*.

The Caledonian ladies formerly used the *VIOLET* as a cosmetic, as appears from the advice given in the following Gaelic lines :

Sail-chuach as bianne ghabhar
Suadh re t aghaidh,
'Scha 'n'eil mac ri'air an dqmhan
Nach bi air do dheadhai'.

TRANSLATION.—Anoint thy face with goats' milk in which violets have been infused, and there is not a young prince upon earth who would not be charmed with thy beauty.



Nº 9.

HELLEBORUS NIGER.

Black Hellebore Christmas Rose.

RANUNCULACEÆ.

The Crow-foot Tribe.

NO. 9.

HELEBORUS NIGER.

BLACK HELLEBORE. *Christmas Rose.*

Place.—Europe, Alps.

Quality.—Acrid, bitter.

Power.—Purging, emmenagogue.

Use.—Hypochondriasis, melancholy.

BOTANICAL ANALYSIS.

Natural Order. Ranunculaceæ—J. Multisiliquæ—L.

CLASS XIII. *Polyandria.* ORDER *Polygynia.*

Ranunculi, Juss. Gen. (1789). Ranunculaceæ, Dec. Syst., 1, 127 (1818). Prodr. 2, (1824). Lindl. Synops., p. 7 (1829).

GENUS HELLEBORUS.

From the Greek, *ελεειν*, to cause death, and *βοφα*, food, on account of its poisonous qualities.

SYNONYMES. Hellebore (*F.*), Schwartze Niesswurzal (*G.*), Swart Prustrot (*Swed.*), Ellebro negro (*I.*), Helleboro negro (*S.*), Kadugaroganic (*Tam.*), Kherbeksiza (*Pers.*), Kâli Koothie (*H.*), Kherbec usivud (*Arab.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* usually five, sometimes three—four, or six, mostly deciduous, and imbricate in æstivation.

COROLLA. *Petals* three—fifteen, sometimes none, hypogynous.

STAMENS. Indefinite, numerous, distinct, hypogynous. *Anthers* adnate or innate.

OVARY. Numerous, rarely solitary or few, seated on the torus.

FRUIT. Achenia, baccate, or follicular.

SEEDS. Albuminous when solitary, either erect or pendulous.

HELLEBORUS NIGER.

THE SECONDARY CHARACTERS.

HELLEBORUS. *Calyx* none. *Petals* five, or more. *Nectaries* two-lipped, tubular. *Capsules* many seeded, nearly erect.

THE SPECIFIC CHARACTERS.

HELLEBORUS NIGER. *Stem* almost naked, with one or two flowers. *Leaves* pedate.

THE ARTIFICIAL CHARACTERS.

CLASS POLYANDRIA. *Stamens* twenty or more arising from the receptacle. (Hypogynous.) **ORDER POLYGYNIA.** *Leaves* never peltate. *Herb* with acrid colorless juice.

NATURAL HISTORY.

The largest proportion of this order of plants is found in Europe. They characterize a cold damp climate, and are, when met with in the tropics, found inhabiting the sides and summits of lofty mountains; in the low lands of hot countries they are almost unknown.

The **HELLEBORUS NIGER** is a native of the Alps, Austria, and Italy, and was unknown to the gardens in Europe till cultivated in 1596. Under favorable circumstances and in mild seasons, the flowers appear from December to March, and hence the plant is sometimes called Christmas Rose. Black Hellebore is so named from the dark color of the root, which is perennial, transverse, rough, knotted, externally black, internally whitish, and sends off many descending fibres. The leaves, which are deep green, spring directly from the root, on long maculated petioles, and are composed generally of five leaflets, pedate, two being supported on one partial petiole on each side, and one terminal; the leaflets are ovate-lanceolate, smooth, shining, and coriaceous, with the upper half of each sparsely serrated. The flower stalks are scapes, six or eight inches long, erect, round, somewhat tapering, sheathed, variegated with red, and bearing one or two flowers. The floral leaves supply the place of a calyx, are oval and indented at the apex. The corolla consists of five large, roundish, concave, spreading petals, at first white, with a tint of red, deepened by age, but finally changing to green, after the pollen is shed and the seed impregnated. The nectaries are greenish yellow, tubular, two-lipped, the upper lip longer and slightly emarginate, the lower finely notched. The filaments are numerous and thread-like, with yellow

HELLEBORUS NIGER.

anthers. The germens, which vary in number from four to eight, become beaked pods, containing many oval, black, shining seeds.

HELLEBORUS NIGER has long been supposed to be the *ἑλλέβορος μέλας* of Hippocrates; but there is every reason for agreeing with Willdenhow, that his fifth species, *Helleborus orientalis*, the officialis of Dr. Sibthorp, is the drug of the ancients. It was found by Bellonius and Tournefort, growing in plenty about Mount Olympus and the island Anticyra, which was formerly celebrated for its production. Sometimes the roots of *Helleborus viridis*, *Adonis vernalis*, and several others, are either ignorantly or fraudulently substituted for those of Black Hellebore; a mistake or fraud of the utmost importance to detect, as they possess properties widely different, and some of them are so very active, that mischievous consequences have been the result of exhibiting them. They are, however, distinguished chiefly by their color being paler than the roots of the Black Hellebore. If any arguments were required to evince the necessity of botanical accuracy in discriminating medicinal plants, the HELLEBORE NIGER would furnish many facts from which such arguments might be deduced. Many instances are recorded of the effects of this plant, by which it since appears that other plants were mistaken for it and actually employed. It is not to be surprised, therefore, that the medical history of this root is not only confused and contradictory, but it is calculated to produce very mischievous and even fatal consequences.

HELLEBORUS NIGER, like most Alpine plants, loves a pure air, a situation moderately moist, and a soil unmanured. The plant is of common culture, and requires no extraordinary care or nicety. The flowers are sometimes injured by frost, but in order to possess them in beauty, the plants should be covered during winter with hand glasses, or preserved in pots in a common hot-bed frame.

CHEMICAL AND MEDICAL PROPERTIES.

The fibres of the roots of HELLEBORUS NIGER are the parts principally used in medicine. They are about the thickness of a straw, from four to five inches in length, corrugated, of a deep brown black color on the outside, and internally white or yellowish. They have an unpleasant odor, and a nauseous, bitterish, acid taste, benumbing the tongue, causing a sensation of heat, and leaving upon it an impression "as when it hath been a little burnt with eating or supping anything a little too hot." The acrimony is much impaired by keeping, and appears to depend on a volatile matter, as water distilled from the root has an acrid taste. Both alcohol and water extract its

HELLEBORUS NIGER.

medicinal properties, and as the spirituous preparation is the most active, these appear to depend on its resinous part. By coction with water it yields a very considerable portion of gummy matter and some resin. The effects of this extract are those of a drastic purgative, and the emmenagogue power which has been attributed to it, seems to depend on its action as a purgative. It has been advantageously given in chronic diseases of the skin. To prepare this extract, take of the bruised root of Black Hellebore, *a pound*; boiling water, *a gallon*; macerate for twenty-four hours, then boil down to *four pints*; strain the liquor while it is hot, and evaporate to a proper consistence.

From the result of the chemical analysis of HELLEBORUS NIGER, by some eminent chemists, it appears to contain a volatile oil, an acrid principle and gum.

When Black Hellebore is taken into the stomach in large doses, or applied externally to wounds, its effects are very sudden and violent, but in the latter case the symptoms are most distressing. It occasions violent vomiting and purging attended with griping and cold sweats, considerable derangement of the nervous system, and if it continue long in the alimentary canal, it becomes inflamed. These symptoms may, in a great measure, be prevented by giving diluent emetics and laxatives at the commencement, but if any inflammation should succeed, the treatment must be antiphlogistic. In smaller doses it is supposed to act as an alterative, and in this light is frequently employed for attenuating viscid humors, promoting the uterine and urinary discharges, and opening inveterate obstructions of the remoter glands.

This medicine has been much celebrated in dropsy, scabies and worms, but it does not appear to possess any particular advantage over other resinous purgatives, and which act with less violence. It was formerly also in high repute as a cure for mania, melancholia, &c., but it was probably from its purgative qualities that they attributed this power to it.

In some parts of Europe, the country people use an infusion or decoction of the leaves or root of this plant to destroy worms in children, but cloves, or some other warm spice should be always joined with it to correct its ill qualities, and render the use of it more safe.

If Black Hellebore is employed at all, it must be with great caution, as it is difficult to know the exact strength of it. It is, under any circumstances, very drastic in its operation; therefore, whilst there are in our possession remedies of equal efficacy, greater safety, and such as can be depended on, this medicine should only be employed in extreme cases.



Nº 10.

CHIMAPHILA UMBELLATA.

Winter Green Pipsissiwa.

ERICACEÆ.

The Heath Tribe.

NO. 10.

CHIMAPHILA UMBELLATA.

WINTER GREEN. *Prince's Pine.*

Place.—Woods.

Quality.—Anodyne.

Power.—Diuretic, stimulant.

Use.—Scrofula, dropsy, debility.

BOTANICAL ANALYSIS.

Natural Order. Ericaceæ—J. Bicornes—L.

CLASS X. *Decandria.* ORDER *Monogynia.*

Ericæ, Juss. Gen. 150 (1789). Ericææ, R. Brown, Prodr. 557 (1810). Lindl. Synops., 172 (1829). Rhododendra, Juss. Gen. 158 (1789). Ericineæ, Desv. Journ. Bot. 28 (1813). Rhodoraceæ and Ericaceæ, Dec. Fl. Fr. 3, 671 and 675 (1815).

GENUS. CHIMAPHILA.

From the Greek, *χιμα*, winter, and *φίλος*, a friend; founded upon the vulgar name of the plant, or its sempervivent character.

SYNONYMES. Verdure d'hiver (*F.*), Wintergrün (*G.*), Das Wintergrün (*Dutch*), Wintergroen (*Dan.*), Vintergrön (*Swed.*), Pirola (*I.*), Pippissewa, Herbe de paigné (*Amer. Indians*), Rheumatism Weed, l'herbe à pisser (*Canadian*).

THE ESSENTIAL CHARACTERS.

CALYX. Inferior or superior, five (seldom four—six) leaved or cleft, rarely entire.

COROLLA. Regular or somewhat irregular, four—five (rarely six) cleft, the *Petals* rarely almost distinct.

STAMENS. Generally distinct and inserted with the corolla. *Anthers* as many or twice as many as the lobes of the corolla, two-celled, generally opening by pores, often appendaged.

CHIMAPHILA UMBELLATA.

OVARY. Free, or rarely coherent with the calyx, two—several-celled.

Styles and Stigmas united into one.

FRUIT. Capsular or baccate.

SEEDS. (Usually) indefinite and minute.

THE SECONDARY CHARACTERS.

CHIMAPHILA. *Calyx* five-parted. *Petals* five. *Stamens* ten, erect. *Anthers* fixed by the middle. *Style* very short and thick. *Capsule* five-celled, opening from the summit.

Stem branching. *Leaves* cauline, serrate, evergreen, opposite or somewhat verticillate. *Flowers* terminal. *Filaments* bearing a roundish, hairy disk in the middle. *Anthers* two-beaked, and opening by two pores at base.

THE SPECIFIC CHARACTERS.

CHIMAPHILA UMBELLATA. *Leaves* cuneate-lanceolate, serrate, in fours—sixes. *Flowers* corymbose. *Bracts* liner-subulate. *Style* immersed in the ovary.

THE ARTIFICIAL CHARACTERS.

CLASS DECANDRIA. *Stamens* ten. ORDER MONOGYNIA. *Fruit* not a legume. *Leaves* not sensitive. *Petals* present, or if not, the plants have no green herbage.

Leaves serrate, uniformly green, wedge-lanceolate, with an acute base. *Scape* corymbd. *Filaments* glabrous.

NATURAL HISTORY.

The CHIMAPHILA UMBELLATA is an humble and beautiful evergreen, and a native of the northern latitudes of Europe, Asia, and America. It is found in all parts of the United States, and extends even to the Pacific ocean. It grows under the shade of woods, and thrives luxuriantly in a loose sandy soil, enriched by decaying leaves. It is in full flower in June, and has very fragrant blossoms, which, with the shining leaves, render it one of the prettiest plants of the season.

The root, which is perennial, is long, creeping, and of a yellowish color, sending off radicals. When chewed, it imparts to the taste a degree of aromatic pungency not disagreeable. When the root is bruised, it has a strong unpleasant smell.

The stems arise, often several together, from the root, which they nearly resemble in color at the lower ends; the middle and upper portions are reddish or dingy rose-colored. They vary in height from

four to eight inches, and are ligneous at their base. Though generally erect, they are not unfrequently found semi-procumbent.

The leaves have the appearance of being whorled, and in general there are two of these whorls on each stem. Sometimes the leaves are alternate and irregularly situated; they are lanceolate and somewhat wedge-shaped, narrowed towards the base, deeply sawed on their edges, of a thick coriaceous texture, and of a very shining sap-green color.

The corolla consists of petals, which are white, tinged with rose color; they exhale an odor remarkably agreeable and spicy. The anthers are purple. The germ is of a green color, and always covered with a viscid matter. The seed vessel is persistent throughout the winter, and is often found on the new plant while it is in flower.

The genus CHIMAPHILA was separated from that of PYROLA by Pursh, and this classification is now admitted by most botanical writers.

NOTE.—“The Chimaphila was long united to the Pyrola. Though 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 of Ericaceæ. 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.” EATON.

CHEMICAL AND MEDICAL PROPERTIES.

From the result of the chemical analysis of CHIMAPHILA UMBELLATA, it appears that its constituents are bitter extractive, resin, tannin, gum, lignin, fibrine, and saline matters. The resin is brown, adhesive, and odoriferous.

Boiling water and alcohol extract the active properties, particularly the alcohol. The properties are sudorific, stimulant, tonic and diuretic; the former had long been appreciated before the latter were ascertained. The active principle, however, has not yet been isolated, though it probably exists in the substance called bitter extractive. It results, also, from actual experiments, that the decoction strikes a black color with the sulphate of iron, and that there is little or no difference in the quantity of astringency in the leaves and in the stalks.

The proportions of gum and resin contained in the plant are as follows: 1st. Upon adding alcohol to half an ounce of the dried leaves, and suffering the mixture to stand for twenty-four hours, exposed to a moderate temperature, then filtering and evaporating to dryness, a residuum weighing eighty-six grains was obtained. By the addition of water to this residuum, nineteen grains of gum were procured. 2nd. Upon adding water to half an ounce of the powdered leaves,

CHIMAPHILA UMBELLATA.

and letting the mixture remain quiescent twenty-four hours, exposed to the same degree of heat as in the first experiment, and then filtering the infusion and evaporating it to dryness, a residuum was obtained weighing forty-eight grains. By the addition of alcohol, twenty-two grains of resin were procured from the remaining powder.

The *CHIMAPHILA UMBELLATA* is entitled to the attention of physicians principally for its diuretic quality. All parts of the plant are, however, endowed with very active properties.

In a case of ascites, having tried *digitalis*, crystals of tartar, and other diuretics, without any success, the diuretic effect of the infusion of this plant was manifest and considerable. It has also proved serviceable in acute rheumatism, intermittents, and other diseases assuming an intermittent type.

The valuable properties of this plant have been investigated and confirmed by physicians of eminence, both of the old and new world.

It has been used in dropsy. Sir J. Craig, the governor of Canada, who labored under this disease, and whose system was cachectic, used a strong infusion of the whole plant, in the quantity of a pint in twenty-four hours; its diuretic property upon the kidneys was perceptible in two days, and the medicine also produced a beneficial effect on the stomach, increasing the appetite. The infusion possesses the decided advantage of being grateful to the stomach, and produces an agreeable sensation soon after it is swallowed, while almost all other diuretics disagree with it. It invigorates the appetite, and strengthens the body; acts powerfully on the kidneys; increases the flow of urine and all secretions. The urine seems to imbibe the color of the infusion of the herb, which is that of an infusion of common green tea.

The use of this plant is very popular in the United States as a remedy for rheumatism and scrofula. The decoction is most generally used, and often in large doses, but the extract is equally good: dose about fifteen grains.

A cataplasm and the decoction may be used externally, and they will be found decidedly useful in tumors, malignant ulcers, and chronic indurated swellings; they act as a topical stimulant, and they sometimes vesicate.

The Indian tribes very highly esteem this plant; they use it chiefly for gravel and retention of urine, inflammatory diseases, rheumatism, and fevers.

The external application commonly produces redness, vesication, and desquamation of the skin.

Farmers apply the leaves in the diseases of horses, particularly when the animal is unable to stale.



LAPPA MAJOR.

(Burdock)

Drawn expressly for J. K. Williams.

COMPOSITÆ.

The Aster Tribe.

NO. 11.

LAPPA MAJOR.

BURDOCK.

Place.—Europe, America.

Quality.—Sweet, sub-austere.

Power.—Diuretic, cleansing,

Use.—In nephritis, gout, œdema, syphilis.

BOTANICAL ANALYSIS.

Natural Order. Compositæ *Cinarocephalæ*—J. Compositæ *Capitatæ*—L.

CLASS XIX. *Syngenesia.* ORDER *Polygamia Æqualis.*

Compositæ, Adans. Fam. 2, 103 (1763). Kunth in Humb. N. G. et Sp. vol. 4 (1820). Lindl. Synops., 140 (1829). Synanthereæ, Rich. Anal. (1808). Cassini Dict. Sc. N., 10, 131 (1818), *ibid.*, 60, 563 (1830). Corymbifereæ, Cynarocephalæ, and Cichoraceæ, Juss. Gen. (1789).

GENUS. LAPPA.

From Lat. *Lappa*, a burr, or from Greek, λαβειν, to lay hold of, a term well characterizing the Burdock.

CASPAR BAHNIN, and after him most writers on Botany, have named this Genus, *Lappa*; but LINNÆUS adhered to the old name of Dioscorides *Arctium*, from the Greek αρκτος, a bear, from the rough bristly fruit.

SYNONYMS. *Bardane* (F.), *Bardana* (I.), *Bardána* (S.)

THE ESSENTIAL CHARACTERS.

CALYX. Closely adherent to the ovary, the limb wanting, or membranaceous and divided into palæ, bristly hairs, &c., called *pappus*.

COROLLA. Superior, consisting of five united *petals*, either ligulate or tubular.

LAPPA MAJOR.

STAMENS. Five, alternate with the lobes of the corolla. *Anthers* cohering into a cylinder.

OVARY. Inferior, one-celled, one-ovuled. *Style* two-cleft, the inner margins of the branches occupied by the stigmas.

FRUIT. An achenium, dry, indehiscent, crowned with the pappus.

SEEDS. Solitary, quadrangular.

Flowers collected in a dense head (capitum) upon a common receptacle, surrounded by an involucre of many bracts (scales).

THE SECONDARY CHARACTERS.

LAPPA. *Heads* discoid, homogamous. *Involucre* globose, the scales imbricated and hooked at the extremity. *Receptacle* bristly. *Pappus* bristly, scabrous, caducous.

Coarse *Herbs.* *Root* biennial. *Leaves* alternate, large.

THE SPECIFIC CHARACTERS.

LAPPA MAJOR. *Leaves* cordate, unarmed, petioled.

Calyx globose, with scales hooked at the apex. *Pappus*, chaff-bristly. *Receptacle* chaffy. *Cauline leaves* heart-form, petioled, toothed. *Flowers* paniced, globose.

THE ARTIFICIAL CHARACTERS.

CLASS SYNGENESIA. *Stamens* five, cohering by the tops of their anthers. **ORDER POLYGAMIA ÆQUALIS.** Herbaceous plants. *Flowers* or *florets* collected into dense heads (compound flowers). *Corollas* monopetalous of various forms.

NATURAL HISTORY.

Every one must naturally be well acquainted with the BURDOCK. It intrudes itself on every one's acquaintance by the sharp firm hooks at the end of the calyx scales, which attach themselves to the clothes, and serve as a remarkable mechanism for dispersing the seeds. It thus manifests an instance of design for this purpose which cannot be mistaken. Men and animals are made the unwilling agents of scattering widely the seeds of this unsightly plant.

The LAPPA MAJOR is a large, conical, ill-scented and coarse looking European mass of vegetation, surmounted by a branching irregular panicle of ovate heads with tubular corollas of an exceedingly delicate pink color, and covers the ground for some extent around it. The plant is indigenous in Europe, and has become naturalized in the United States. It is biennial, and very common in uncultivated grounds, on the sides of roads and in waste places by the side of old

buildings; it flowers in July and August, and the seeds become ripe in September. The root is spindle-shaped, simple, externally of a brown color, and internally white; the stem succulent, rising three or four feet in height, with spreading branches, and very large cordate leaves of a dark green color above and whitish beneath, supported on long footstalks. The flowers are in terminal panicles; the calyx is composed of imbricated scales, with hooked extremities, the corolla is compound, with purple uniform florets, tubular, five-cleft, and all fertile. The receptacle is punctured: the seed-downs are rough and prickly, and the seeds resemble a pyramid with the wrong end uppermost, crowned with a simple feather.

BURDOCK is usually considered no better than a weed; it is not allowed to grow in gardens, or in any state of improved cultivation. For this reason no observations are necessary for its culture, but should the plant prove troublesome as a weed, it may perhaps not be amiss to mention that the root lasts but two years, and consequently it may be destroyed with less trouble than those weeds which have abiding roots. If the plants are cut down before they seed, in two or three years they will be entirely rooted out, for the plants which grow from seeds do not flower till the second year, and when the seeds are perfected the roots decay.

CHEMICAL AND MEDICAL PROPERTIES.

Water dissolves the active principles of the LAPPA MAJOR. The root contains a large quantity of *inulin*, a bitter extractive matter, some salts with base of potassa. The leaves contain considerable sub-carbonate of potassa, some nitrate of potassa, and some other salts. The root is nearly inodorous, the taste sweetish, with a slight degree of bitterness and astringency. The seeds are aromatic, bitterish, and sub-acid.

The virtues of this plant, according to Birgins, are cleansing, diuretic, and sudorific. Many instances are upon record in which BURDOCK has been successfully employed in a great variety of chronic diseases, scurvy, rheumatism, gout, lues venerea, and pulmonic complaints. Although the plant possesses a bitter taste, it has but slight tonic properties. Though it seems to act as a tonic on the animal economy, yet its effects are generally not very decided. It is, however, more commonly recommended as a diaphoretic and a diuretic, for when properly administered, it often acts in both these capacities.

This plant, as a diuretic, is known to have succeeded in dropsical cases where other powerful medicines had been ineffectually used,

and as it neither excites nausea nor increases irritation, it may certainly deserve a trial where more active remedies are improper. The seeds also possess a diuretic property, and have been given with advantage, in the dose of a drachm, in calculous and nephritic complaints, and in the form of emulsion as a pectoral.

The root of this plant is generally used in decoction, which may be made by boiling two ounces of the fresh root in three pints of water to two, which, when intended as a diuretic, should be taken in the course of two days, but, if possible, in twenty-four hours. This decoction is a great sweetener of the blood and juices, and is esteemed by some physicians as being equal if not greatly superior to sarsaparilla for this purpose. Perseverance and close application, however, are necessary in order that the system may feel effectually the benefit of this antiscorbutic remedy. The bruised leaves applied to atonic ulcers, to crusta lactea, &c., excite the skin powerfully, and very often produce good effects. The leaves may also be used to great advantage as drafts on the feet. They may likewise be taken green, rolled and saturated with vinegar, and applied to any part of the body suffering with pain. They should, however, always be used hot, with a bandage of woollen cloth or flannel, to excite perspiration. In gouty affections, where the feet are swelled, the same application will be found equally beneficial.

The properties of the BURDOCK, in general, are mild, since the root, stem and leaves, boiled, and the former stripped of their rind, are eaten, in some parts of Europe, like asparagus. When raw, they are eaten like radishes, but they are considered a greater delicacy with oil and vinegar. Their use, however, makes the urine milky, and also produces flatulence.

For medicinal purposes, the root of the BURDOCK should be dug in the spring, before the leaves sprout, or in the fall, after the leaves are dead, as then it possesses the full strength of the entire plant.

Three pounds of the ashes of LAPPA MAJOR, procured by burning the leaves and stems between the time of flowering and seeding, will yield sixteen ounces of white alkaline salt, equal to the best potash.

For scorbutic patients, *the burdock antiscorbutic syrup* is an invaluable article. Take of yellowdock and burdock roots each one pound; burdock seeds and American senna of each half a pound; pulverize and mix them well together, and then boil in ten quarts of water for half an hour; strain off and add half a gallon of good brandy, and the same quantity of molasses. Keep it bottled close for use. Dose from a quarter to half a glass three times a day, or less or more, as circumstances require.



N° 12

LIRIODENDRON TULIPIFERA

Tulip Tree, Poplar.

MAGNOLIACEÆ.

The Magnolia Tribe.

NO. 12.

LIRIODENDRON TULIPIFERA.

TULIP TREE. *Poplar.*

Place. United States.

Quality. Bitter.

Power. Tonic, stimulating.

Use. Intermittent fevers.

BOTANICAL ANALYSIS.

Natural Order. Magnoliaceæ.—J. Coadunatæ.—L.

CLASS XIII. *Polyandria.* ORDER *Polygynia.*

Magnoliæ, Juss. Gen. 280 (1780). Magnoliaceæ, Dec. Syst. 1, 439 (1818). Prodr. 1, 77 (1824).

GENUS. LIRIODENDRON.

From Greek, *λειριον*, a lily, *δενδρον*, a tree. The flowers, which may be likened to lilies or tulips, grow upon one of the loftiest trees of the forest.

SYNONYMES. Le tulipier; L'arbre aux tulipes (*F.*), Virginisher Tulpenbaum (*G.*), Kanæträäd, Kunträäd (*S.*), Der Tulpenbaum (*Dutch*), Tulipero (*P.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* three—six, deciduous, colored like the petals.

COROLLA. *Petals* six—twelve, hypogynous, in several rows, imbricate, in æstivation.

STAMENS. Indefinite, hypogynous, distinct, with short filaments and adnate anthers.

OVARY. Several in many rows upon an elongated torus.

FRUIT. Follicular or baccate, one—two-seeded.

SEEDS. Attached to the inner suture of the carpels, from which (in *Magnolia*), they are suspended by a long delicate funiculus.

LIRIODENDRON TULIPIFERA.

THE SECONDARY CHARACTERS.

LIRIODENDRON. *Calyx* three-leaved. *Petals* six. *Seeds* ending in a scale. *Carpels* imbricate in a cone.

THE SPECIFIC CHARACTERS.

LIRIODENDRON TULIPIFERA. *Leaves* truncate at the end, with two lateral lobes.

THE ARTIFICIAL CHARACTERS.

CLASS POLYANDRIA. *Stamens* twenty or more arising from the receptacle. (Hypogynous.) ORDER POLYGYNIA. *Leaves* never peltate. *Trees* with large showy flowers.

NATURAL HISTORY.

The LIRIODENDRON TULIPIFERA is a magnificent tree, and may be considered not only as the pride and ornament of the American forest, but as the most superb vegetable of the temperate zones. It is equally remarkable for its great height, its beautiful foliage, its superb flowers, and its handsome wood.

In the Atlantic States, at some distance from the sea, this tree not unfrequently attains the height of eighty or one hundred feet, and not uncommonly from eighteen inches to three feet in circumference. It is confessedly the largest and thickest tree of North America, with deciduous leaves, except the *Platanus occidentalis* or plane tree. It rises with a straight or upright trunk, in general, to the height of more than forty feet. The branches are not very numerous. Those of one summer's growth are of a shining blue color, and are pithy; those two seasons old, have a smooth brown bark. When broken, they emit a strong but rather agreeable odor. The bark of the young trees is tolerably smooth, but in old ones it is broken into deep furrows. When the leaves have attained their full growth, in the spring, they are generally from six to eight inches in length, frequently, however, only from four to five long and as many broad. They are supported by foot-stalks of a finger's length, and are dispersed alternately on the stems. They are a little fleshy, of a glossy dark yellowish green and singularly formed, being somewhat heart-shaped at their base, horizontally truncated at the top, and notched in the middle down to the middle rib. They are divided into three lobes, those of the sides being rounded off or pointed. This remarkable shape of the leaves,

LIRIODENDRON TULIPIFERA.

to which there is no exact resemblance in any other vegetable, always distinguishes the tree from all others at first sight. Their upper surface is of a darker color than the lower, and smooth underneath, the veins are prominent and conspicuous. The leaves fall early in autumn. The buds of the ensuing year's shoots begin soon after to dilate, and they increase so rapidly, that by the end of December they are an inch long and half an inch broad. The young leaves are enfolded in elliptical, obtuse, deciduous stipules.

The flowers are singularly beautiful, being variegated with yellow orange and lake green, and are fully expanded in common seasons about the end of May. They are exceedingly numerous on a single tree, and are supported by peduncles, which grow from the extremities of the branches. They are sometimes compared to the flowers of the *Fritillaria imperialis* or Crown imperial, but they have a more palpable resemblance to those of the tulip. This likeness indeed has given rise to the specific name. Though destitute of odor, their extreme beauty, together with the singular foliage, renders them, like the small *Magnolia*, general favorites.

CHEMICAL AND MEDICAL PROPERTIES.

Distilled water produced from the bark of the Tulip tree, though not altogether insipid, possesses faintly the peculiar flavor of the bark. It is somewhat acid in the fauces, and its odor is exceedingly agreeable, being considerably impregnated with the aroma of the vegetable. It neither precipitates iron from its solutions, nor affects in the slightest manner the blue color of vegetable substances. Upon the application of a higher degree of heat to this distilled water the liquor which comes over has an acid and very astringent taste. It changes blue vegetable substances red, and precipitates iron black, consequently the result is an essential oil, with aroma in great abundance, and an acrid astringent acid.

The bark of the *LIRIODENDRON TULIPIFERA* is considerably stimulant, yet its properties scarcely entitle it to a place under the head of stimulants. It is more properly considered a tonic. It sometimes acts as a sudorific, and hence its usefulness in chronic rheumatism. Its powerful diaphoretic effects are certainly produced by its stimulant power, and therefore it is absolutely inadmissible as a medicine in acute rheumatism. The bark of the root is simply tonic in its effects. It is a strong bitter, containing a small portion of a warm aromatic property, and an essential oil. It has been employed by Physicians in the United States as a tonic, and united with *Cornus Florida* or

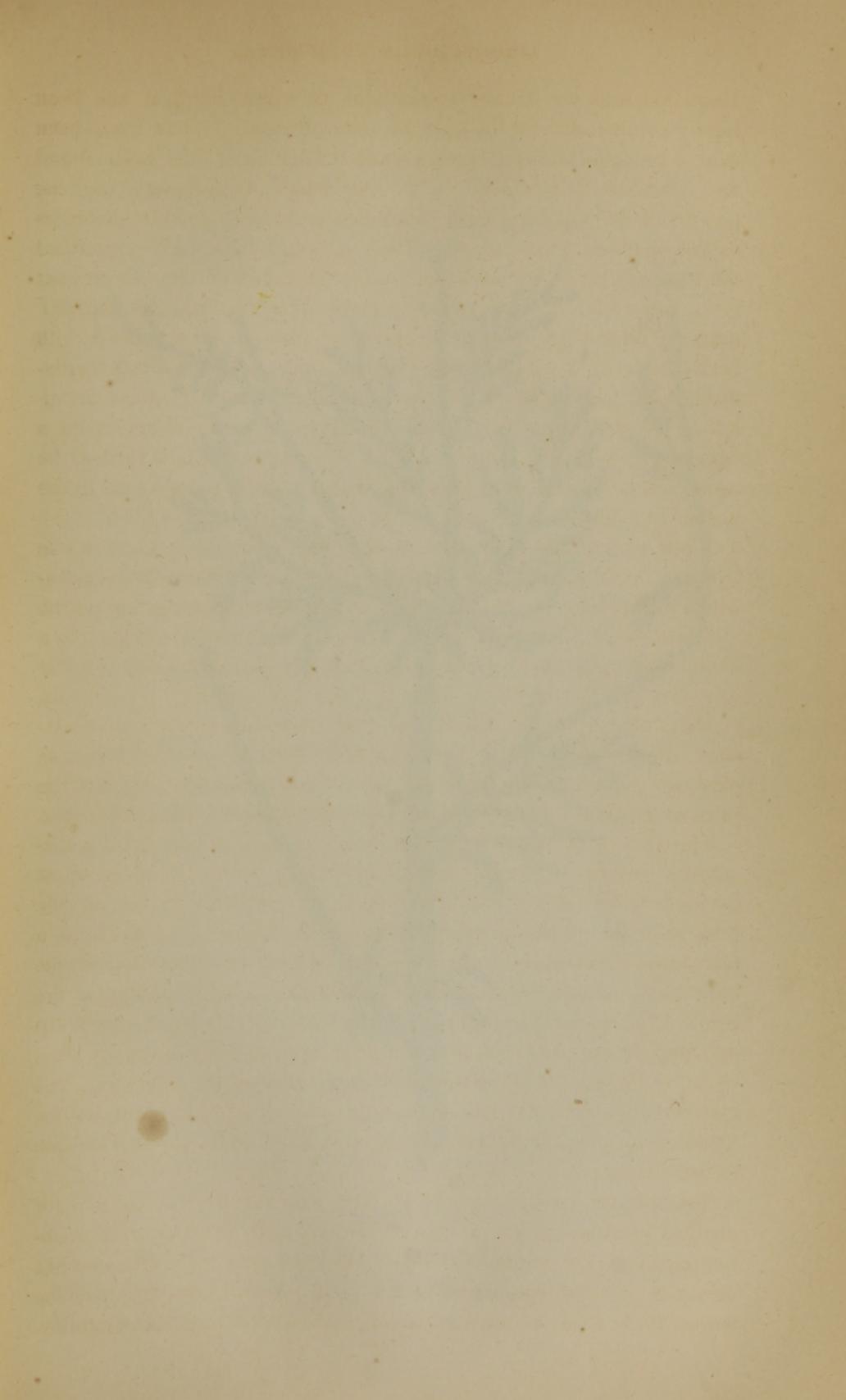
Dogwood, and the *Prinos verticillatus* or winter berry, it has been highly commended for the cure of intermittents. It has even been said to be equal to the Peruvian bark. This bitter has been found also particularly beneficial in the last stage of dysentery, and the powdered root has been used, combined with steel dust, in disorders of the stomach with success. Eminent physicians have prescribed the bark of the Tulip tree in a variety of cases of the intermittent fever, and declare it is equally efficacious with the Peruvian bark, if properly administered. In the phthisis pulmonalis, attended with hectic fever, night sweats, and diarrhœa, when combined with laudanum, it has frequently abated these alarming and troublesome symptoms. A gentleman, fifty years of age, who was afflicted with a catarrh and dyspeptic symptoms for five years, and which baffled the most celebrated remedies, was effectually cured by persevering in the use of this bark for two weeks.

There is not a more certain, speedy and effectual remedy in the hysteria than the bark of the Tulip tree, combined with a small quantity of laudanum. In the cholera infantum, after cleansing the primæ viæ, there is no better remedy. It is also an excellent vermifuge. In a child, when convulsions had taken place, after having taken a few doses, several hundred dead ascarides were discharged with the stools.

Mr. Lawson, in his History of North Carolina, speaks of a disease allied to syphilis, which occasionally destroys the nose, as existing among the aborigines of that country, and he states that the juice of the Tulip tree is used as the proper remedy of this distemper.

The bark of the root of the Tulip tree can be given in extract, dissolved in water, in infusion and in decoction; but its virtues are most decided when administered in substance. Should it act on the bowels, or should the stomach be too weak to bear it in this form, a few drops of laudanum may be combined with it. The dose of the bark for an adult is from a scruple to two drachms. In Virginia, the country people infuse equal parts of the bark of the roots of the Tulip tree, and that of the trunk and stems of the *Cornus Florida* or Dogwood, in brandy; they suffer the infusion to digest for eight days, and give the tincture in the dose of two wine glasses a day, in intermittents. The dose of the powder of the Tulip tree to an adult is from a scruple to two drachms.

The proper time for collecting the bark of the Tulip tree for medical purposes, is the months of January and February. It is observed that in the course of the first ten years after the Tulip tree has begun to produce fruit, many of the seeds are infertile, and that the largest trees, with the highest branches, are the best and most prolific.





N^o 13.

MARUTA COTULA.

May Weed Wild Flower.

COMPOSITÆ.

The Aster Tribe.

NO. 13.

MARUTA COTULA.

MAY-WEED. *Wild Chamomile.*

Place.—Europe.

Quality.—Bitter, foetid.

Power.—Anodyne, expelling.

Use.—Hysteria, epilepsy, dropsy.

BOTANICAL ANALYSIS.

Natural Order. Compositæ *Corymbiferæ*—J. Compositæ
Discoideæ—L.

CLASS XIX. *Syngenesia.* ORDER *Polygamia Superflua.*

Compositæ, Adans. Fam. 2, 103 (1763). Kunth in Humb. N. G. et Sp. vol. 4 (1820). Lindl. Synops., 140 (1829). Synanthereæ, Rich. Anal. (1808). Cassini Dict. Sc. N., 10, 131 (1818), *ibid.*, 60, 563 (1830). *Corymbiferæ*, *Cynarocephalæ*, and *Cichoraceæ*, Juss. Gen. (1789).

GENUS. MARUTA.

The *Anthemis* of Linnæus, supposed to be derived from the Greek, *ανθος*, a flower, having an abundance of flowers.

SYNONYMES. *La camomile puante* (*F.*), *Die stinkende Kamille* (*G.*), *Stinkende Kamille* (*D.*), *Koedild hundker amecblomst* (*Dan.*), *Surkuller* (*Swed.*), *Camomilla fetida* (*I.*), *Manzanilla fetida* (*Sp.*), *Solotucha* (*trava*) (*Russ.*)

THE ESSENTIAL CHARACTERS.

CALYX. Closely adherent to the ovary, the limb wanting, or membranaceous and divided into palæ, bristles, hairs, &c., called *pappus*.

COROLLA. Superior, consisting of five united *petals*, either ligulate or tubular.

STAMENS. Five, alternate with the lobes of the corolla. *Anthers* cohering into cylinder.

MARUTA COTULA.

OVARY. Inferior, one-celled, one-ovuled. *Style* two-cleft, the inner margins of the branches occupied by the stigmas.

FRUIT. An achenium, dry, indehiscent, crowned with the pappus.

SEEDS. Solitary, quadrangular.

Flowers collected in a dense head (capitum) upon a common receptacle, surrounded by an involucre of many bracts (scales).

THE SECONDARY CHARACTERS.

MARUTA. *Involucre* hemispherical, imbricated. *Rays* neutral. *Disk* perfect. *Receptacle* conical, chaffy (at least at the summit). *Pappus* wanting. *Achenia* smooth.

European herbs, naturalized. *Leaves* alternate, much divided.

THE SPECIFIC CHARACTERS.

MARUTA COTULA. *Receptacle* conic. *Chaff* bristly. *Achenia* naked. *Leaves* doubly pinnatifid, smoothish.

THE ARTIFICIAL CHARACTERS.

CLASS SYNGENESIA. *Stamens* cohering by the tips of their anthers. **ORDER POLYGAMIA SUPERFLUA.** Herbaceous plants. *Flowers* or *florets* collected into dense heads (compound flowers). *Corollas* monopetalous of various forms.

Calyx hemispherical scales, with scarious margins nearly equal. *Egret* wanting, or a membranous margin. *Florets* of the ray more than five. *Receptacle* chaffs, flat, with a rigid, acuminate apex. *Seeds* crowned with a membranous border or egret.

NATURAL HISTORY.

The **MARUTA COTULA** designates a family of plants of the chamomile kind, all the species of which are strikingly alike. The species now under consideration, commonly known as May-weed or wild chamomile, is indigenous on this continent, though naturalized in all waste places, in hard dry soils, especially by road sides, in patches of great extent, presenting almost a uniform whitish surface when in blossom, rather repulsive, however, from its peculiar and disagreeable smell. The whole plant is slightly covered with adpressed woolly hairs or down, perceptible to the naked eye, but very conspicuous under a lens. The root is annual, simple, or sometimes contorted, fibrous. Stalk from one to two feet high, irregularly angular, finely furrowed, or sometimes only striated, erect, and very much branched, down to the bottom. The leaves are alternate, sessile, nearly smooth, divided and sub-divided into linear segments. Flower-stalks solitary

MARUTA COTULA.

striated. Calyx common to all the florets, hemispherical, imbricated, hairy, scariosus or rough, the scales narrow, slightly margined, of a pale green color. Florets of the ray white, spreading, a dozen or more in number. Disk yellow, and of a bright golden color.

The ray florets are female, lanceolate, inclining to ovate, two-ribbed, and toothed (more or less deeply) at the apex. They are reflexed from sun-set till morning, but spreading horizontally during the day. They are pure white, slightly tinged with greenish yellow at the base. The tubular part of the floret, as well as the germen, is garnished with transparent glands, visible without a glass, but more conspicuously apparent and beautiful under one. Stigma bifid, with segments reflexed. Receptacle conical, or nearly cylindrical, surmounted by rigid bristle-shaped paleæ or chaff. Seeds, obovate bluntly, four-cornered, sulcated, sometimes roughly tuberculated, and of a brownish color.

The plant ranges extensively over every part of the United States, and is well known. It flowers from midsummer till late in the fall, and sometimes it may be seen luxuriantly blooming as late as December. It is cultivated on account of the flower, which is a safe bitter, and stomachic. The double-flowering variety, though more beautiful, is less useful, the aromatic principle not residing in the floscules of the ray, the multiplication of which constitutes the variety, which, notwithstanding, is most cultivated on account of its greater bulk and weight.

The plant delights in a poor sandy soil, and is propagated by parting the roots, or by slips of the rooted offsets, or of the runners.

CHEMICAL AND MEDICAL PROPERTIES.

The virtues of the May-weed or wild chamomile, have long been acknowledged, but still are imperfectly known. Few of our common plants have been more extensively used in domestic medicine, and yet popular sentiments alone have too slight a foundation on truth to secure their permanence.

By distillation with water the *MARUTA COTULA* yields a small quantity of essential oil, on which the odor and stimulant power of the plant seem to depend. The active principles are supposed to be extractive, resin and essential oil, the same as those of *ANTHEMIS NOBILIS*, but weaker and less pleasant to the taste, and consequently not generally used.

The smell of the plant resides in a volatile oil, possessed of a strong or graveolent aroma, and diffused throughout the plant, although concentrated principally in the flowers. It is similar to the smell of

MARUTA COTULA.

Chamomile, but more pungent and less balsamic. The oil is bitter, and communicates a bitterish acrid taste to the whole plant.

The plant is an active tonic, sudorific, stimulant, anodyne, emetic and repellant, extensively employed throughout the country in hysterics, epilepsy, dropsy, scrofula, and asthma, both internally and externally. The external use in warm baths or fermentations is serviceable in rheumatism, suffocations, hemorrhoidal swellings, pains and contusions. When given in substance, united with opium and astringents, if the bowels be easily affected, the flowers of this plant have been successfully used for the cure of intermittents; and the infusion, in combination with ginger or other aromatics, and the alkalies, is an excellent stomachic in dyspepsia, gout, flatulent colic and chronic debility of the intestinal canal. The decoction and infusion are given for colds, fevers, rheumatism, &c., but a small quantity, if too strong, may produce vomiting, and even if weak, it sometimes nauseates the stomach.

MARUTA COTULA always acts as a sudorific, promoting copious sweatings, and it is often beneficial as an auxiliary to an emetic; in this respect it is undoubtedly extremely beneficial, uniformly encouraging, and promoting the action of the emetic, and obviously in a more powerful manner than warm water operates.

An infusion of the leaves is good in hysteric disorders, and promotes the menses. The herb boiled till it becomes soft, and then applied in the manner of a poultice, is an excellent cure for that troublesome and vexatious complaint, the piles.

May-weed is usually employed in the form of a tea, which should be prepared by steeping the herb in hot water. Drank freely, on going to bed, it is an excellent, safe, and harmless remedy in sudden colds and slight attacks of disease.

Pour a quart of boiling water on a handful of the dry leaves and flowers, and from a tea cup full to half a pint may be taken every two hours in case of fevers; and in colds, the patient may take half a pint or more on going to bed. It produces a copious perspiration, requiring caution and care, and in some instances is followed by vomiting.

The flowers of this plant are a mild and grateful tonic, and well adapted to cold, relaxed and weak conditions of the digestive organs. With this view, the flowers are generally directed in cold infusion, which should be made in a close vessel.

The flowers should be gathered in their prime, just when full blown; they should be spread to dry in a shady place, and put into paper bags and housed for use.



Nº 14 .

PRINOS VERTICILLATUS .

Winter Berry Black Alder .

AQUIFOLIACEÆ.

The Holly Tribe.

NO. 14.

PRINOS VERTICILLATUS.

WINTER BERRY. *Black Alder.*

Place. Europe.

Quality. Bitter.

Power. Purging.

Use. Dropsy, scabies, humid asthma.

BOTANICAL ANALYSIS.

Natural Order. Aquifoliaceæ. *Rhamnii Ilicineæ—J.*
Dumosæ.—L.

CLASS VI. *Hexandria.* ORDER *Monogynia.*

Ilicineæ, Ad. Brongniart Mémoire sur les Rhamnées, p. 16 (1826). Lindl. Synops. p. 73 (1829). Aquifoliaceæ, Dec. Théoric. ed. 1, 217 (1813), a sect of Celastrineæ, Ib. Prodr. 2. 11 (1825). Martius H. R. Mon (1829).

GENUS. PRINOS.

Πρινος, Greek name for the scarlet oak (saw-leaved oak), applied on account of its scarlet berries in winter.

SYNONYMES. *Apalanche* à feuilles de prunier (*F.*), Die Wortelförmige Winterbeer (*G.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* four—six, imbricate in æstivation.

COROLLA. Regular, four—six-cleft or parted, hypogynous, imbricate in æstivation.

STAMENS. Inserted into the tube of the corolla, and alternate with its segments. *Anthers* adnate.

OVARY. Free from the calyx, two—six-celled, with a solitary suspended ovule in each cell.

PRINOS VERTICILLATUS.

FRUIT. Drupaceous, with two—six stones or nucules. *Albumen* large, fleshy.

SEEDS. Solitary and roundish.

THE SECONDARY CHARACTERS.

PRINOS. *Heads* often diœcious or polygamous. *Calyx* mostly six-cleft. *Corolla* six-parted, rotate. *Stamens* four—six. *Berry* six-seeded.

Corolla rotate. *Limb* divided into four—six oval segments. *Stamens* shorter than the *Corolla*. *Berry* roundish, much larger than the *Calyx*. *Seeds* bony, convex on one side, angular on the other.

THE SPECIFIC CHARACTERS.

PRINOS VERTICILLATUS. *Leaves* deciduous, oval, serrate, acuminate, pubescent beneath. *Flowers* axillary, the fertile ones aggregate, the barren subumbellate.

Fascicles of staminate flowers axillary, umbelliferous, the pistillate flowers are aggregated, both six-parted.

THE ARTIFICIAL CHARACTERS.

CLASS HEXANDRIA. *Stamens* six. ORDER MONOGYNIA. OXOgens monopetalous.

Calyx inferior, six-cleft, small. *Corolla* wheel-form, six-cleft or six-parted. *Berry* six-seeded. *Seeds* nut-like.

The chief difference between this Genus and ILEX consists in its being hexandrous, but the parts of fructification, according to Jussieu, agree occasionally with that genus in number. PRINOS is sometimes diœcious.

NATURAL HISTORY.

One of the most beautiful ornaments of the swamps of our country, in the autumn and winter, is the PRINOS VERTICILLATUS or Winter Berry. The elegant color of the berries, aggregated in numbers of two and three on the small branches of the shrub, together with their multitude, afford a pleasing contrast to the fading vegetation.

The generic name, PRINOS, is of very ancient origin, having been used by Theophrastus and Dioscorides, and it is supposed to be derived from the Greek verb *πρωω*, to saw, and to have been applied to this genus by Linnæus, on account of the strong serratures of the leaves in some of the species.

Winter Berry or Black Alder, is a shrub from eight to ten feet high, readily discovered, growing in and near swamps, on the borders

PRINOS VERTICILLATUS.

of rivulets, and in woods everywhere, from Canada to Georgia. It flowers in the months of June and July, and at first has a very ordinary appearance, but when the berries are full ripe, about the last of October or beginning of November, the plant is strikingly beautiful. At these periods the leaves remain on, but even after they have fallen off, the appearance of the shrub, with its multitude of rich crimson and sometimes scarlet berries, is quite attractive and exceedingly handsome.

The stem is shrubby, and branched all the way up. The branches are alternate, horizontal, spreading, and of a bluish grey or ash color; the extremities or new shoots are somewhat greenish. The leaves are oval, narrowed at their base into a short petiole, ending in a long point, and sawed on their edges, uncinately serrate, with prominent pubescent veins beneath. They are of a dark or somewhat olive-green color, and smooth above, but downy on the nerves and veins beneath. They are alternately arranged along the branches, and are supported by short foot-stalks. The flowers are often dicæcious, small and white, in imperfect umbels or heads, and sometimes monæcious. They grow together in axillary and lateral groups of from three to four in number, rarely solitary. The corolla is monopetalous, rotate, and six, sometimes seven-cleft. The stamens are generally six in number. The berries vary a little in size, but they are generally of the magnitude of a marrow-fat pea. They grow in little bunches (apparently verticillate), roundish, six-celled and six-ovuled, permanent, and of a bright scarlet hue, but as winter advances, they become of a more purplish color.

The shrub grows well in a light soil, but it prefers peat; it is increased by layers or seeds. When sought for medical purposes, it should be gathered in flower and fruit.

CHEMICAL AND MEDICAL PROPERTIES.

PRINOS VERTICILLATUS is, perhaps, as well known among country people and farmers (who usually call it Black Alder), as any indigenous medicinal plant of the United States. It is universally and justly celebrated as a valuable remedy in a variety of cases requiring medical aid.

The bark is astringent, bitter, pungent, and not very disagreeable. The first of these virtues has probably led to its use in diarrhœa, which it has effectually cured in a great variety of cases. It has been advantageously used as a substitute for Peruvian bark in intermittent fevers and other complaints, both in substance and decoction. It

PRINOS VERTICILLATUS.

is much used, and efficaciously as a tonic and corroborant in cases of great debility, unattended by fever, and has been highly extolled. Both the sensible properties and well known effects of the bark of this plant render it very probable that its reputation in such cases is well merited. It has also been used and praised in anasarca and general dropsy, and as an antiseptic and tonic in cases of incipient gangrene. In these cases the bark is generally given internally, and employed at the same time externally as a wash.

The berries of the plant likewise participate in all the virtues already enumerated, as appertaining to the bark, and infusions or tinctures made of them are in general use, and efficacious throughout the country where bitter tinctures are indicated. Country practitioners very commonly combine the bark with the root of sassafras (*Laurus sassafras*), with white-oak bark and other things, and make a decoction of the mixture, which is used to great advantage, and much commended by them as a wash in foul ulcers and gangrene.

The outer bark of the WINTER BERRY is of a blackish color, but the inner is yellow, and being chewed, has the effect of turning the saliva saffron color. Half an ounce of the inner yellow bark, boiled in beer, is an effectual purge, and a larger quantity has often proved serviceable against constipations in the bowels of cattle.

The bark may be used either in substance or in decoction. The latter is perhaps to be preferred, because to it the bark more readily yields its virtues; as it also does to vinous or spirituous menstruums. From one drachm to three, of the powdered bark, may be administered in the course of twenty-four hours. An ounce of the bark added to a pint and a half of water, and boiled down to a pint, will make a useful decoction, which may be taken in the dose of a gill every two hours. A saturated tincture is a convenient and useful way of extracting the virtues of the plant, and this tincture may be made by mixing the bark and berries together, and letting them digest for a few days. This is an excellent bitter and preservative against worms in children, and in adults, drank continually, is a valuable remedy for the bleeding piles.

The unripe berries dye wool green, and the bark yellow. Thus the PRINOS VERTICILLATUS may be confidently recommended as a plant possessing in an eminent degree, the properties of vegetable astringent and tonic medicines. And if to these are added its antiseptic powers, it will certainly be found deserving no ordinary commendation. The use of the bark and berries is universal and popular, and consequently the plant claims attention for those commendations bestowed upon it for its other virtues.



Nº 15.

FRIGERON PHILADELPHICUM.

Scabious Philadelphia Flea-bane.

COMPOSITE.

Tribe Aster Tribe.

NO. 19.

ERIGERON PHILADELPHICUM.

SCABIOUS. *Philadelphia Flabens.*

Loc.—Europe, North America.

Quality.—Pungent, bitter.

Uses.—Diuretic, cathartic.

Medicinal, never used.

DETAILED ANALYSIS.

Water 100.000
Insoluble in water 0.000
Soluble in water 99.999
Insoluble in alcohol 0.000
Soluble in alcohol 99.999
Insoluble in ether 0.000
Soluble in ether 99.999
Insoluble in chloroform 0.000
Soluble in chloroform 99.999
Insoluble in carbon disulfide 0.000
Soluble in carbon disulfide 99.999
Insoluble in benzene 0.000
Soluble in benzene 99.999
Insoluble in carbon tetrachloride 0.000
Soluble in carbon tetrachloride 99.999
Insoluble in carbon tetrachloride 0.000
Soluble in carbon tetrachloride 99.999

tubular.

STAMENS. Five, alternate with the lobes of the corolla. *Anthers* cohering into a cylinder.

W. & A. G. B.



N^o 13.

FRIGERON PHILADELPHICUM.

Scabious Philadelphia Flea-bane.

COMPOSITÆ.

The Aster Tribe.

NO. 15.

ERIGERON PHILADELPHICUM.

SCABIOUS. *Philadelphia Fleabane.*

Place.—Europe, North America.

Quality.—Pungent, bitter.

Power.—Diuretic, sudorific.

Use.—Gout, gravel, diarrhœa.

BOTANICAL ANALYSIS.

Natural Order. Compositæ *Corymbifera*—J. Compositæ
Discoideæ—L.

CLASS XIX. *Syngenesia.* ORDER *Polygamia Superflua.*

Compositæ, Adans. Fam. 2, 103 (1763). Kunth in Humb. N. G. et Sp. vol. 4 (1820). Lindl. Synops., 140 (1829). Synanthereæ, Rich. Anal. (1808). Cassini Dict. Sc. N., 10, 131 (1818), *ibid.*, 60, 563 (1830). *Corymbifera*, *Cynarocephalæ*, and *Cichoraceæ*, Juss. Gen. (1789).

GENUS. ERIGERON.

From the Greek, *ηρ*, the spring, *γερων*, an old man, because it becomes old early in the season.

SYNONYMES. *Verschiedenblättriges Bernsungskraut (G.)*

THE ESSENTIAL CHARACTERS.

CALYX. Closely adherent to the ovary, the limb wanting, or membranaceous and divided into palæ, bristles, hairs, &c., called *pappus*.

COROLLA. Superior, consisting of five united *petals*, either ligulate or tubular.

STAMENS. Five, alternate with the lobes of the corolla. *Anthers* cohering into a cylinder.

ERIGERON PHILADELPHICUM.

OVARY. Inferior, one-celled, one-ovuled. *Style* two-cleft, the inner margins of the branches occupied by the stigmas.

FRUIT. An achenium, dry, indehiscent, crowned with the pappus.

SEEDS. Solitary, quadrangular.

Flowers collected in a dense head (capitum) upon a common receptacle, surrounded by an involucre of many bracts (scales).

THE SECONDARY CHARACTERS.

ERIGERON. *Heads* many flowered, sub-hemispherical. *Ray flowers* very numerous (forty—one hundred and fifty), narrow and pistillate. *Flowers of the disk* perfect. *Receptacle* flat, naked. *Involucre* nearly in one row. *Pappus* generally simple.

Calyx imbricate, sub-hemispherical. *Pappus* pilose, double. *Outer Pappus* minute and chaffy. *Florets of the ray* linear, very narrow, numerous.

THE SPECIFIC CHARACTERS.

ERIGERON PHILADELPHICUM. Pubescent. *Leaves* sub-serrate, oblong-cuneate, those of the stem half-clasping. *Rays* capillary, the length of the disk. *Stem* branched above, many flowered.

Leaves wedge-oblong, rarely gash-toothed, cauline ones half-clasping. *Stem* weak, simple, corymbed above. *Peduncles* elongated, one-flowered. *Rays* capillary, twice as long as the hemispherical calyx.

THE ARTIFICIAL CHARACTERS.

CLASS SYNGENESIA. *Stamens* cohering by the tips of their anthers. ORDER POLYGAMIA SUPERFLUA. Herbaceous plants. *Flowers* or *florets* collected into dense heads (compound flowers). *Corollas* monopetalous of various forms.

Receptacle naked. *Down* simple. *Florets* of the radius linear, very narrow, numerous. *Calyx* imbricated.

NATURAL HISTORY.

The genus, of which two species are indiscriminately combined, is the *ηριγέρων* of the ancient Greeks, and common to Europe and North America. The two plants are usually distinguished by the names Scabious and Sweet-scabious, but for what reason cannot be satisfactorily ascertained. The vulgar epithets, Skevish, Cocash, &c., are also frequently applied to the species under consideration, as well as to the ERIGERON HETEROPHYLLUM.

Sweet-scabious is a plant as common in the United States as its companion, Scabious, and they are always found growing together,

and both of easy culture in common light soil. The whole plant, Sweet-scabious, is of a dark or deep-green color, in which particular it strikingly differs from the other species.

The ERIGERON PHILADELPHICUM is an herbaceous perennial plant, two or three feet in height, much branched at the top, and pretty common in fields and pastures. The root is also branched, somewhat fibrous, and of a yellowish cast. The stem is slender. The branches are pubescent. Leaves radical, ovate-lanceolate, on long petioles, and occasionally having one or two serratures. The upper leaves are lanceolate, entire sessile, and somewhat amplexicaule. Flowers numerous, erect, situated on a large diffuse pannicle. Florets of the ray capillary, whitish or blue, sometimes purplish. The plant begins to flower in July, and continues blooming through the month of August. It ranges extensively throughout the United States, particularly in fields and pastures, and is seldom seen in woods and mountains. It should be collected for medical use while in flower, and carefully dried in wrapping paper. Farmers generally consider the plant a pernicious and troublesome weed, but it is easily extirpated.

CHEMICAL AND MEDICAL PROPERTIES,

From the result of the chemical analysis of ERIGERON PHILADELPHICUM, and its congener, they appear to contain tannin, amarine, extractive, gallic acid and an essential oil. This oil is very singular, being as fluid as water, of a pale-yellow color and peculiar smell, stronger than that of lemon, and of a very acrid taste. The smell of the plants is best unfolded by rubbing them, and is not unpleasant. Their taste is astringent, acrimonious and bitter.

These plants deserve the attention of physicians on account of their valuable medical properties. They possess very active powers; they are astringent, diuretic, emmenagogue, pectoral, styptic, sudorific and tonic. They act in a manner peculiarly their own, in consequence of their acrid quality. Their oil is so peculiar and powerful that only two or three drops dissolved in alcohol have suddenly arrested uterine hæmorrhage.

The diuretic qualities of these plants have been long known, and are much used in gravelly and gouty affections. On the commencement of an attack of gout, much relief of its pains may be obtained from the use of this medicine. It has also been much praised for its remediate virtues in calculus and dysury; in cases of the latter kind, attended with great pain and irritability of the bladder, the patient found great relief and advantage from its use. Scabious has also been

prescribed in ascites, anasarca, chronic diarrhœa, cutaneous eruptions, nephritis, suppressed menstruation, hydrothorax, dry coughs, dimness, rash, cold hands and feet.

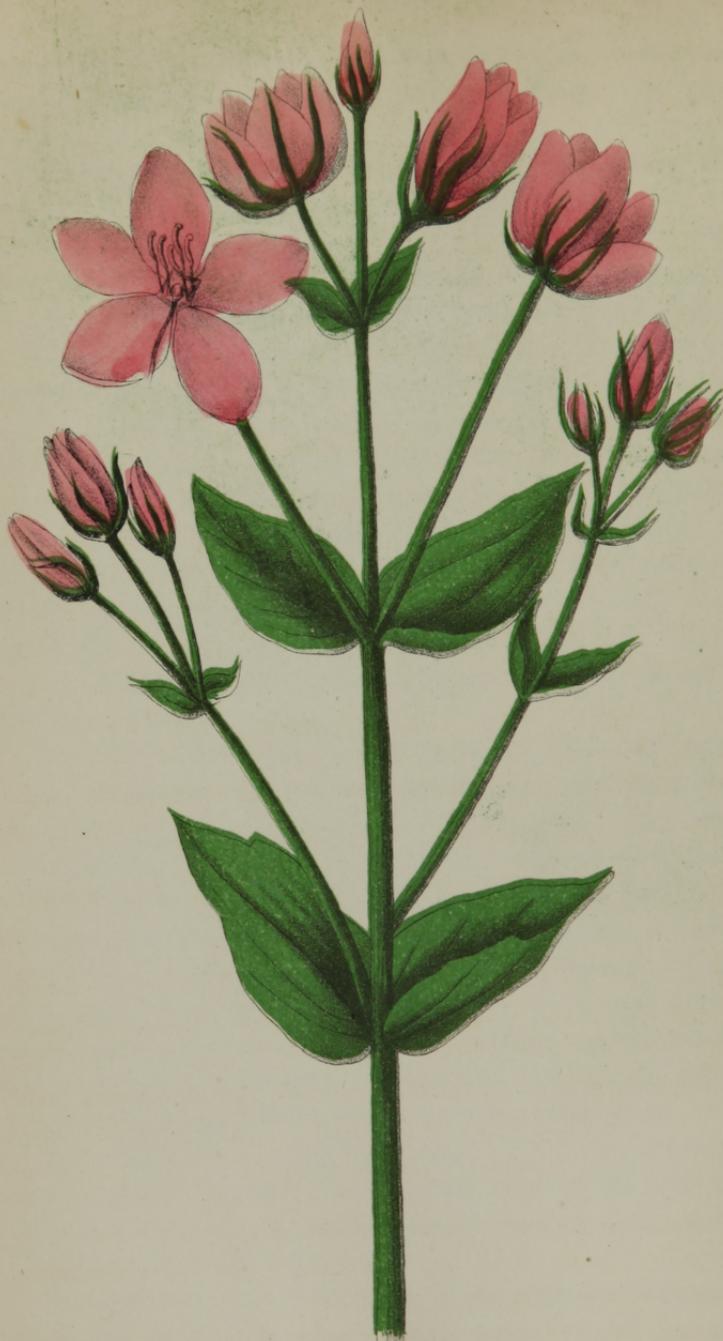
The whole plants are used fresh or dried, in infusion, decoction or tincture. The decoction should be used to the extent of a pint or two in the course of twenty-four hours. It possesses the estimable property of being innocent to the stomach. This organ will not reject the decoction of these herbs when it is so disordered and irritable as to render the squill, digitalis, &c., intolerable. In a case affected with gout and general dropsy, attended with distressing pain in the bowels, and so disordered a state of the stomach that the squill could not be administered, and yet it was necessary to give some active diuretic, most essential relief was found in this medicine. The infusion, decoction or tincture may be applied, and are beneficial in all diseases of the bladder and kidneys, attended with pain and irritation, and they afford speedy relief. They have increased the daily evacuation of urine at least three-fold. In all dropsical disorders they act as diuretic; in chronic diarrhœa, as astringent, and have effected cures without any auxiliary.

The extract from these plants is rather fetid, and more astringent than the infusion or decoction, but less than the oil, which is one of the most efficient vegetable styptics known. This extract and a syrup of the plant have been prescribed with considerable advantage in dry coughs and internal hæmorrhages. The dose is from five to ten grains of the extract often repeated. The most valuable medicinal property of these plants is, however, the astringent and styptic power of the oil, which undoubtedly has been the means of saving many lives in parturition and uterine hæmorrhage. A saturated solution of the oil in alcohol, properly applied, and a small quantity given in a spoonful of water will afford the most essential relief.

It is evident that these plants do not act as other diuretic and astringent remedies, but by a peculiar acrid effect on the system, worthy of investigation; they appear to increase as well as to prevent several discharges from the body.

These plants were well known to the northern Indians by the name of Cocash or Squaw-weed, as emmenagogues and diuretics. By the inhabitants of Cochin-China, who call them *Cay con hat*, they are recommended for the same virtues.

From the similarity of the two plants, the ERIGERON HETEROPHYLLUM has a just right to participation in the reputation bestowed on the other species. They have certainly been confounded with each other and used indiscriminately.



Nº 16.

SABBATIA ANGULARIS.

American Centaury.

GENTIANACEÆ.
The Gentian Tribe.

NO. 16.

SABBATIA ANGULARIS.

AMERICAN CENTAURY.

Place. United States.

Quality. Bitter.

Power. Emmenagogue, stomachic.

Use. Stomachic, febrifuge.

BOTANICAL ANALYSIS.

Natural Order. Gentianaceæ.—J. Stellatæ.—L.

CLASS V. *Pentandria.* ORDER *Monogynia.*

Gentianeæ, Juss. Gen. 141 (1789). R. Brown Prodr. 449 (1810). Lindl. Synops. 177 (1829). Von Martius Nov. Gen. &c. 2, 132 (1828).

GENUS. SABBATIA.

Named by Adanson, in honor of Liberatus Sabatti, an Italian botanist, who published (1772) many excellent botanical works.

SYNONYMES. Centaurée anguleuse (*F.*), Tansendgüldenkraut (*G.*), Centaura (*I.*), Gentiana Centaura (*S.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* four—five—ten, united at base, persistent.

COROLLA. Usually regular, limb divided into as many lobes as there are sepals, mostly twisted in æstivation.

STAMENS. Issuing from the tube of the corolla, as many as its lobes and alternate with them.

Ovary. One celled, sometimes rendered apparently two-celled by the introflexed placentæ. *Style* united into one, or wanting. *Stigmas*, one—two.

FRUIT. *Capsule* many seeded.

SEEDS. Small. *Embryo* straight, with fleshy albumen.

SABBATIA ANGULARIS.

THE SECONDARY CHARACTERS.

SABBATIA. *Calyx* five—twelve-parted. *Corolla* rotate. *Limb* five—twelve-parted. *Stamens* five (—twelve). *Anthers* erect, at length recurved, two-celled, cells distinct. *Stigmas* two-parted, with spiral divisions. *Capsule* one-celled, the valves a little introflexed.

Corolla wheel-form. *Stigmas* two, spiral or coiled. *Anthers* becoming revolute. *Capsule* two-valved, many seeded. *Flowers* one-petalled, inferior. *Seeds* covered.

THE SPECIFIC CHARACTERS.

SABBATIA ANGULARIS. *Stem* erect, square, the angles somewhat winged. *Leaves* ovate, amplexicaul. *Peduncles* elongated, corymbed. *Sepals* lanceolate, much shorter than the corolla.

Stem erect. *Leaves* heart-ovate clasping. *Flowers* with long peduncles corymbed, divisions of the *Calyx* lance-linear. *Stem* with four margined angles.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. ORDER MONOGYNIA. (Monopetalous.) *Flowers* inferior. *Corolla* regular. *Herbs* rarely shrubby. *Stamens* alternate, with petals. *Fruit* capsule or berry. *Capsule* one-celled, many seeded.

NATURAL HISTORY.

SABBATIA ANGULARIS is a species very common in the meadows of the United States, and is by no means an inelegant plant. It is universally known by the name of American Centaury or Angular Centaury, and is no less valued for its medicinal virtues than admired for its beauty. It is most commonly found in wet, low meadows, sometimes, however, on hills and in neglected fields, and there is no difficulty whatever in its cultivation.

This plant differs from the Chironia Centaurium or lesser-centaury of Europe, in the circumstance of the flowers, as well as the other parts of the plant, being intensely bitter. In every other respect it is very similar, and equally deserving of popular favor.

The root is annual, fibrous and yellow, divided into many parts, and furnished with numerous fibres. Stem straight, from ten to eighteen inches high, with opposite branches, forming a corymb, smooth, square, with small wings on the angles. Leaves opposite, quite sessile, subcordate and clasping, very smooth, nerved, ovate acute, very entire. Flowers terminal, handsome, inodorous, forming a large corymb. Corolla with obovate spreading segments, twice as long as

SABBATIA ANGULARIS.

the calyx, of a fine rose color, above much paler, and nearly white in the centre underneath, which gives to the buds a white appearance. In the centre of the corolla there is a defined pentangular star, of a rich yellow color, bordered with green. The petals are obovate, and vary in being narrower, sometimes nearly lanceolate-obtuse. The calyx consists of five narrow acute or almost subulate segments, little more than half the length of the corolla. The anthers are spiral, and of a rich yellow color.

The *SABBATIA ANGULARIS* is said to correspond with one of the most popular and extraordinary plants of China, and which the inhabitants of that country held in very high estimation. So valuable and important were the properties of the plant considered, that at one time it readily produced twice its weight in silver. Distinguished physicians among the Chinese have written volumes upon its virtues, and no medicine could be supposed to be of any value unless it contained a portion of this. It was universally considered a remarkable panacea, and believing it a remedy for all diseases, they bestowed upon it a marvellous name, signifying "*the plant which gives immortality.*" The singular and extraordinary virtues ascribed to this plant, among others, attracted the attention of a Jesuit missionary, who subsequently discovered in his travels through Canada, the great similarity between the plant of China and the one now under consideration. In consequence, large quantities were immediately collected and shipped to China, where, on account of the scarcity of the article in that country, it commanded an exorbitant price. The inhabitants of New England readily engaged in the enterprise, and it is said that the shipments of the root collected in the states of Vermont and New-Hampshire have laid the foundation of the fortunes of many respectable families. The plant has, however, from some unknown or unexplained cause, become unpopular, and at present will not pay the cost of exportation.

CHEMICAL AND MEDICAL PROPERTIES.

The whole plant, *SABBATIA ANGULARIS*, affords an intense, pure, and strong bitter, which property is communicated both to alcohol and water, and in sufficient quantity, extracts the whole of its active principles, leaving the insoluble part perfectly insipid. It appears to contain a bitter resin and mercin, and is entirely devoid of astringency, and almost without any aroma. The plant is almost inodorous, but the petals, leaves and stalk have an intensely bitter taste. The root has a slight aromatic smell, and does not tire the digestive organs.

SABBATIA ANGULARIS.

Before the Peruvian bark *Cinchona* was discovered or known, this plant was long used for the cure of fevers, and was one of the ingredients of the long celebrated *Portland powder*. It is still a very popular remedy throughout the United States in all kinds of fevers, remittent, nervous, typhus, and even yellow fever, and may be used in every stage.

Centaurry is justly considered one of the most efficacious bitters indigenous to the United States, and is certainly a good substitute for the English Gentian, which it very much resembles in taste, and to which it is quite an equivalent. It is a good stomachic, emmenagogue, febrifuge and vermifuge. The property resides principally in the extractive principle. It is generally administered in febrile diseases throughout the country, and employed by respectable practitioners in preference to the small Centaurry, *CHIRONIA CENTAURIUM*. In domestic practice it is also much used as a prophylactic against autumnal fevers. The most usual way to take it is in cold infusion, strong, and in large and repeated doses.

The following is, perhaps, the most useful tincture of this justly esteemed popular plant. Take four ounces of the flowers and leaves of *SABBATIA ANGULARIS* and one ounce of bruised orange peel, infuse them in two quarts of brandy for two weeks. One table spoon full of this tincture, taken before breakfast and dinner, will create an appetite and promote digestion; and in dyspeptic complaints generally, this is a very useful bitter and tonic, and may well supply the place of some of the more expensive remedies of this description. Children troubled with worms may take two tea-spoons full or more every morning, which will effectually destroy them. To prevent intermittent fevers, and to cure them, a wine glass full of the tincture with twenty drops of elixir vitriol in it, may be taken twice a day on an empty stomach.

In fevers, a tea made of two ounces of the flowery tops of Centaurry, and a handful of balm, in two quarts of soft water, may be drunk five or six times a day.

In order to assist female weaknesses, pour two quarts of boiling water on two ounces of the tops, and set the vessel over the coals for half an hour, strain it, and add a pint of rum to the strained liquor. Dose, a tea-cup full four times a day, bathe the feet in warm water, and set over the fume of a hot decoction of catnip, penny royal, &c.

In powder, the dose is from ten to twenty grains. Wine is a good vehicle for it, a wine glass being a dose. All the species of the Genus *SABBATIA* are medical, and nearly equivalents, although the plant under consideration is the strongest and most bitter.



Nº 17.

CORNUS FLORIDA,
Flowering Dogwood.

FOREIGN
The Cornus Florida

NO. 22.

CORNUS FLORIDA

FRANCIS LEWIS

Place.—North America.

Quality.—Bitter.

Power.—Astringent, tonic.

Use.—Fever, typhus, febrile disorders.

BOTANICAL ANALYSIS.

Natural Order. Cornace. Umbellata.—L.

Class 17. Ternaria. Order Monogamia

Cornus, Dec. Fruct. 4. 27. 1818. 1819.

Small Cornus

From Lat. Cord. 1818. The small cornus is a tree or shrub, 10 to 15 feet high. The flowers are small, white, and fragrant. The fruit is a small, round, red berry, which is eaten by the birds. The wood is hard and durable. The bark is smooth and grey. The leaves are alternate, ovate, and have serrated margins. The fruit is a small, round, red berry, which is eaten by the birds.

Properties. The small cornus is a tree or shrub, 10 to 15 feet high. The flowers are small, white, and fragrant. The fruit is a small, round, red berry, which is eaten by the birds. The wood is hard and durable. The bark is smooth and grey. The leaves are alternate, ovate, and have serrated margins. The fruit is a small, round, red berry, which is eaten by the birds.

Uses. The small cornus is a tree or shrub, 10 to 15 feet high. The flowers are small, white, and fragrant. The fruit is a small, round, red berry, which is eaten by the birds. The wood is hard and durable. The bark is smooth and grey. The leaves are alternate, ovate, and have serrated margins. The fruit is a small, round, red berry, which is eaten by the birds.

Preparation. The small cornus is a tree or shrub, 10 to 15 feet high. The flowers are small, white, and fragrant. The fruit is a small, round, red berry, which is eaten by the birds. The wood is hard and durable. The bark is smooth and grey. The leaves are alternate, ovate, and have serrated margins. The fruit is a small, round, red berry, which is eaten by the birds.

Analysis. The small cornus is a tree or shrub, 10 to 15 feet high. The flowers are small, white, and fragrant. The fruit is a small, round, red berry, which is eaten by the birds. The wood is hard and durable. The bark is smooth and grey. The leaves are alternate, ovate, and have serrated margins. The fruit is a small, round, red berry, which is eaten by the birds.

Remarks. The small cornus is a tree or shrub, 10 to 15 feet high. The flowers are small, white, and fragrant. The fruit is a small, round, red berry, which is eaten by the birds. The wood is hard and durable. The bark is smooth and grey. The leaves are alternate, ovate, and have serrated margins. The fruit is a small, round, red berry, which is eaten by the birds.

References. The small cornus is a tree or shrub, 10 to 15 feet high. The flowers are small, white, and fragrant. The fruit is a small, round, red berry, which is eaten by the birds. The wood is hard and durable. The bark is smooth and grey. The leaves are alternate, ovate, and have serrated margins. The fruit is a small, round, red berry, which is eaten by the birds.



CORNUS FLORIDA,
Flowering Dogwood.

CORNACEÆ.

The Cornus Tribe.

NO. 17.

CORNUS FLORIDA.

FLOWERING DOGWOOD.

Place.—North America.

Quality.—Bitter.

Power.—Astringent, tonic.

Use.—Fevers, typhus, febrile disorders.

BOTANICAL ANALYSIS.

Natural Order. Cornacæ. Umbellatæ.—L.

CLASS IV. *Tetrandia.* ORDER *Monogynia.*

Corneæ, Dec. Prodr. 4, 217 (1830), in part.

GENUS. CORNUS.

From Lat. *Cornu*, a horn. The wood being considered as hard and durable as horn. The Romans constructed warlike instruments with it; *bona bello cornus*, says Virgil.

SYNONYMES. Schönblühender Hartriegel (*G.*), Mon-ha-can-ni-min-schi and Hat-ta-wa-no-min-schi (*Delaware Indians*).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* adherent to the ovary, the *limb* minute, four or five-toothed or lobed.

COROLLA. *Petals* four or five, distinct, alternate with the teeth of the calyx.

STAMENS. Of the same number as petals, and alternate with them.

OVARY. One or two-celled.

FRUIT. A baccate drupe, crowned with the calyx.

SEEDS. Not solitary.

CORNUS FLORIDA.

THE SECONDARY CHARACTERS.

CORNUS. *Calyx* four-toothed. *Corolla* four-petaled. *Drupe* baccate, with a two-celled nucleus. *Involucre* four-leaved or wanting.

Cornus is the only North American genus. *Leaves* mostly opposite, entire and pinnately-veined. *Flowers* in cymes. *Hairs* centrally fixed. *Floral envelopes* valvate in aestivation.

THE SPECIFIC CHARACTERS.

CORNUS FLORIDA. Arboreous. *Leaves* opposite, ovate, acuminate, entire. *Flowers* small, in a close, cymose, umbel or head, surrounded by a very large, four-leaved, obcordate involucre.

Leaves ovate, acuminate. *Involucres* four, rarely five or six, very large, somewhat obcordate. *Fruit* ovate.

THE ARTIFICIAL CHARACTERS.

CLASS TETRANDRIA. *Stamens* four. ORDER MONOGYNIA. *Ovary* inferior. Polypetalous or apetalous. *Shrubs* (one species, herbaceous). *Fruit* a baccate drupe.

NATURAL HISTORY.

The CORNUS FLORIDA is a handsome tree, common throughout the United States, enlivening the woods in the spring by a profusion of large white blossoms, and bearing in the fall clusters of beautiful scarlet berries. In Louisiana, it blossoms in February, in the middle states in April and May, and more northerly in June. It continues a fortnight in full bloom, and, according to the Indians, it everywhere indicates when the Indian corn or maize is to be planted. It is the largest tree of its genus, and sometimes attains to the height of thirty or thirty-five feet, and a diameter of nine and ten inches. Usually, however, it is only eighteen or twenty feet high, by four or five inches in diameter. It is accurately described by Michaux the younger, in his elegant work on the forest trees of North America. The trunk is strong, invested with a rough blackish bark, which is tolerably thick, and very much separated into fissures or cracks. The branches are numerous, spreading and disposed regularly, being sometimes opposite to each other, and occasionally arising by fours. The younger branches take a semicircular direction upwards. The leaves are about three inches in length, opposite, oval, entire, acuminate, slightly glaucous or whitish underneath, and presenting on their upper surface many conspicuous ridges. About the end of summer they become

CORNUS FLORIDA.

speckled with black dots, and on the approach of winter, turn to a dull red color. The flowers are terminal on the little branches, small, of a greenish-yellow color, and aggregated in numbers. They are garnished with an involucre from three to four inches large, which surrounds them. This involucre is composed of four large orbiculate follicles, of a fleshy or coriaceous texture. They are white, and sometimes tinged with violet. The outer extremity of each follicle is notched, having the appearance of disease or injury. The notches are purplish or dusky rose-colored. The calyx is monophyllous, small, and four-toothed. It is deciduous, never continuing until the berries are ripe. The corolla is composed of four petals. The stamens are four in number, and equal. Pistil one, consisting of a roundish germ, beneath. The style filiform, and nearly the length of the corolla. Stigma obtuse. The flowers are succeeded by oblong berries, of a rich, shining, crimson or carmine color, always collected together to the number of three or four. They are ripe about the middle of September, and are then eagerly devoured by different birds.

When Dogwood is in full flower, it is an exceedingly magnificent and strikingly beautiful tree, very ornamental to the forest, and more so from the early period of its flowering. The tree grows very slow, and the wood is hard, compact, heavy and durable; it is white outside and chocolate color in the centre, taking a very fine polish. It may be used like Boxwood, and when stained of a light yellow color, resembles it altogether. All kinds of tools and instruments are made with it. It is likewise much used by cabinet makers and joiners for ornamental work.

CHEMICAL AND MEDICAL PROPERTIES.

By analysis, CORNUS FLORIDA is found to contain, in different proportions, the same substances as CINCHONA, having more of gum mucilage, extractive and gallic acid, and less of resin, quinine, and tannin. The Quinine of the CORNUS has been called *Cornine*, it has all the properties of the genuine sulphate of quinine, but very little is afforded. The double distilled water of CORNUS is lemon color, that of CINCHONA is reddish. From a summary of experiments it appears that Dogwood and Peruvian bark possess the same ingredients—gum, mucilage and extract, and that the last contains the gallic acid and tannin, though in different proportions. The Dogwood possesses most of the gum, mucilage and extract, and the Peruvian bark the most resin. The extract and resin possess all their active virtues, the extract all their tonic power. The resin, when separated from the

extract, is stimulant only, and probably the tonic power of the extract is increased when combined with a portion of the resin, as in the spirituous tincture.

The extract of Dogwood is less bitter and more astringent than that of the best Cinchona, but preferable to that of the inferior kinds. This extract contains all the tonic properties, the resin alone is merely stimulant. The similarity between Dogwood and Peruvian bark in their sensible qualities, their chemical analysis, and their action on the incised and dead fibre sufficiently prove an identity in their medicinal effects; and actual experiments with the bark of the *CORNUS FLORIDA* entitle it to be ranked among the best tonics of our country. Professor Barton says, "that it may be asserted with entire safety, that as yet there has not been discovered within the limits of the United States, any vegetable so effectually to answer the purpose of the Peruvian bark in the management of intermittent fevers as the *Cornus Florida*." Although Dogwood is a good substitute for Peruvian bark, yet it is evidently different in some respects; the powdered bark quickens the pulse, and sometimes produces pains in the bowels, but the sulphate of Cornine and the extract are not so stimulant. They are used in intermittent and remittent fevers, also, typhus and all febrile disorders. The dose of the powder is from twenty-five to thirty-five grains, often repeated.

In cases of debility, the *CORNUS FLORIDA* acts as a corroborant; it may be joined in practice with Gentian, Colombo, Chamomile, Liriodendron, Seneca root, &c. In some parts of the country the inhabitants often use it in decoction, and even the twigs are chewed as a prophylactic against fevers. The Indians use a warm infusion of the flowers for fevers and colics, and hence may be inferred that these possess the same tonic property as the bark.

The wood of the *CORNUS FLORIDA* is much used by dentists in the insertion of artificial teeth, and the young branches stripped of their bark, and rubbed with their ends against the teeth, render them extremely white. The Creoles of the West India islands are in the constant practice of substituting the Dogwood twigs for a shrub common among themselves, in cleansing their teeth. The striking whiteness of their teeth, universally acknowledged, is proof of the efficacy of the practice. The application of the juice of these twigs to the gums, is also useful in preserving them hard and sound.

A decoction of the bark of Dogwood has been employed by farriers with good effect, in a malignant fever called yellow water, Canada distemper, &c., which has proved remarkably fatal among horses in the United States.



N^o 18.

MAGNOLIA GLAUCA,

Small Magnolia.

Lith. of Jones & Newman

128 Fulton St. N.Y.

MAGNOLIACEÆ.

The Magnolia Tribe.

NO. 18.

MAGNOLIA GLAUCA.

WHITE BAY. *Small Magnolia.*

Place. United States.

Quality. Bitter.

Power. Tonic, stimulating.

Use. Fevers, rheumatism.

BOTANICAL ANALYSIS.

Natural Order. Magnoliaceæ.—J. Coadunatæ.—L.

CLASS XIII. *Polyandria.* ORDER *Polygma.*

Magnolie, Lk. Gen. 206 (1789), Magnoliaceæ, Dec. Syst. 1, 439 (1818), Prodr. 1, 77 (1824).

GENUS. MAGNOLIA.

Named by Linnaeus in honor of Francesco Pierre Magnol, Physician and Botanist at Montpellier, France. Author of *Magnum Montpelicense*, 1676.

Character. Magnolia glauca (L.), Genus Magnolia (Ger.), Die eisen graue Magnolie, (Linn.) (Linn.) (Linn.).

ESSENTIAL CHARACTERS.

Corolla tubular, five-lobed, spreading, colored like the petals.
Stamens many, imbricated, hypogynous, in several rows, imbricated.
Style simple, cylindrical, divided with short filaments and
lobes.
Fruit a torus, with a long, delicate funiculus.
Seeds several, from which they
are suspended by a long delicate funiculus.



N^o 18.

MAGNOLIA GLAUCA.

Bot. Magnolia

Edw. A. Mearns

1858

MAGNOLIACEÆ.

The Magnolia Tribe.

NO. 18.

MAGNOLIA GLAUCA.

WHITE BAY. *Small Magnolia.*

Place. United States.

Quality. Bitter.

Power. Tonic, stimulating.

Use. Fevers, rheumatism.

BOTANICAL ANALYSIS.

Natural Order. Magnoliaceæ.—J. Coadunatæ.—L.

CLASS XIII. *Polyandria.* ORDER *Polygna.*

Magnoliæ, Juss. Gen. 280 (1780), Magnoliaceæ, Dec. Syst. 1, 439 (1818), Prodr. 1, 77 (1824).

GENUS. MAGNOLIA.

Named by Plumier, in honor of Professor Pierre Magnol, Physician and Botanist of Montpellier, France, Author of *Botanicum Montpelicense*, 1676.

SYNONYMES. *Le Magnolier glauque (F.)*, *Graue Magnolia (Ger.)*, *Die eisen graue Magnolia (Dutch)*, *Hobuks Konsasi (Japan)*.

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* three—six, deciduous, colored like the petals.

COROLLA. *Petals* six—twelve, hypogynous, in several rows, imbricate, in æstivation.

STAMENS. Indefinite, hypogynous, distinct, with short filaments and adnate anthers.

OVARY. Several, in many rows upon an elongated torus.

FRUIT. Follicular or baccate, one—two-seeded.

SEEDS. Attached to the inner suture of the carpels, from which they are suspended by a long delicate funiculus.

MAGNOLIA GLAUCA.

THE SECONDARY CHARACTERS.

MAGNOLIA. *Sepals* three—five. *Petals* six—twelve, caducous. *Carpels* two-valved, one—two-seeded, imbricated into a cone. *Seeds* baccate, subcordate and suspended.

Calyx three-leaved. *Corol* six to nine petalled. *Capsules* numerous, imbricate on a strobile-like spike, two-valved. *Seeds* arilled, pendulous on long cords, berry-like.

THE SPECIFIC CHARACTERS.

MAGNOLIA GLAUCA. *Leaves* oval, glaucous beneath. *Petals* obovate, tapering to the base. *Flowers* terminal, white, solitary, of three sepals and several concave petals.

THE ARTIFICIAL CHARACTERS.

CLASS POLYANDRIA. *Stamens* twenty or more, arising from the receptacle. (Hypogynous.) ORDER POLYGNIA. *Leaves* never peltate. *Trees* with large showy flowers.

NATURAL HISTORY.

The MAGNOLIA GLAUCA, though in general only a small tree, sometimes attains the height of forty feet, and a diameter of twelve or fourteen inches. It is in the southern states only that the tree reaches this great elevation. Its most common height is from twenty to thirty feet, though it is frequently found flowering luxuriantly when it has reached a height of five or six feet only. In the New England states, clusters of this Magnolia, in full flower, may be seen, the largest individual among which does not exceed four feet in height, and all of them are much more deserving the appellation of bushes or shrubs than trees. The variation in the height of this species is much influenced by local exposure and peculiarity of soil. Trees of the greatest discrepancy in stature, but precisely alike in respect to the size of the leaves, flowers and fruit, sometimes occupy almost the same ground. The difference in these instances appears merely owing to accidental situation, the small ones occupying the shady thickets, and the taller trees the skirts of woods.

The trunk is covered with a smooth, greyish bark, is tortuous, and much divided into divaricating branches. The wood is whitish, and very light. The leaves are five or six inches long, and alternately disposed on the branches. They are of a long oval form, entire, thick, opaque, of a deep yellowish green color on their upper surface, and

MAGNOLIA GLAUCA.

glaucous or bluish white underneath. This agreeable green, relieved by the frequent presentation of the blue under side, exhibits a pleasing contrast in the leaves. Though at all times the foliage of this tree is beautiful, it appears to much more advantage during the inflorescence, from the harmony of coloring produced by the handsome cream-colored flowers. The leaves fall in the autumn of every year, and are reproduced in the spring, at which season they are of a much lighter color than when further advanced. The flowers are terminal and solitary, and about the size and shape of half a goose's egg. They are composed of many oval, concave cream colored petals, and exhale a subtle, bland, and to most persons, delicious odor. This emanation from the flowers is extremely penetrating. To some persons it is rather unpleasant, and to a few, insupportable, producing uneasiness in the chest and a tendency to fainting. The flowers are succeeded by little fleshy squamous cones, about an inch in length and three-quarters of an inch in diameter. They are of a green color, with occasionally a tinge of red. Each cone is composed of numerous cells of about twelve or eighteen lines in length. They contain the seeds, which are of a bright scarlet color. They force their way, when matured, by rupturing, longitudinally, the sides of their chambers, and thus escape. Previously to falling, they are suspended for some days by a delicate white filamentous thread, which allows them to hang just below the base of the cone, and by their beautiful contrast with the green scaly strobile, produce a very pleasing effect. The seeds are about the size of a grain of Guinea-corn, irregularly roundish, and somewhat narrowed above.

CHEMICAL AND MEDICAL PROPERTIES.

From the result of the chemical analysis of *MAGNOLIA GLAUCA*, by several eminent chemists, it appears to contain a bitter extract, resin and camphor. The medical properties, in the order of their strength, are the bark of the root, bark of the trees, and the cones, buds, and leaves. The taste is bitter, aromatic, and with scarcely any astringency. The plant evidently belongs to the class of tonic bitters, and is one of the most important articles of this useful set of medicines.

The smell of the *Magnolia* is pleasant and agreeable, somewhat similar to *Laurus*, *Acorus* and *Benzoin*, fugacious, but soon lost in the dried bark. It is tonic, stimulant, diaphoretic and stomachic.

The Genus *Magnolia* includes about ten American species, and probably as many Asiatic. As medicine, they are all indiscriminately used, and are considered fully equal to *Liriodendron*, *Cascarilla*,

Cornus, &c. The southern Indians called it *ITOMICO*, which means *royal tree*, and they considered it the emblem of peace, much in the same manner that the Olive is regarded. They valued the plant very highly, and on account of its celebrity as a remedy for rheumatism and fevers, they annually resorted to the river *Kauhaway*, where this *Magnolia* grows in abundance, for the purpose of collecting the bark.

The tincture of the fresh bark and cones is one of the best preparations; it is of considerable avail in intermittents of an atonic nature, and equal to *Cinchona*; in typhoid fevers it has also proved of very great advantage, but especially its good effects are apparent in chronic rheumatism. Dr. Barton mentions, that in inflammatory rheumatism it produced considerable relief by its sudorific effects after blood-letting.

The cones infused in spirituous liquors, are a popular stomachic. The liquor of this infusion imbibes a very bitter taste, and is considered a very good prophylactic against autumnal fevers. It is variously and very generally employed, and almost universal among the country people where it grows in great abundance, and this circumstance evinces the probability that it is frequently found efficacious.

The decoction of the bark of the trunk affords a hard, black, friable, gummy, resinous extract, and is said to be useful in diarrhoea, cough, phthisis, fever, hæmorrhoids, autumnal fevers and internal pains. A decoction of the young branches is effectually employed in catarrh and coryza; it proves a gentle cathartic, and terminates its operation by acting as a sudorific.

The powdered bark forms an agreeable aromatic tonic-bitter, which has been used in intermittents with considerable success. It may be given in doses of a drachm four or five times a day, or in decoctions and infusions, which may be taken to any extent the stomach will bear.

Like most vegetables endowed with aromatic bitter properties, the *MAGNOLIA GLAUCA* is sometimes employed in the preparation of spring bitters. The practice of taking this description of bitters is by no means here recommended, but among the different articles used for this purpose perhaps there is none more likely to act healthfully than this. The cones and seeds are not unfrequently used together, but the seeds alone form the most elegant and pleasant bitter. They should be infused in the best of spirits, and digested in the sun a day or two.

An ointment made of the carbonized wood of this *Magnolia* and hog's lard is good for ulcers, imposthumes, wounds or bruises. It should be spread on rag or silk, as an external covering to the dressing on lint where a tow-plaster cannot be conveniently used, as in wounds of the face and hands, a bubo, or any other sore, where an external plaster cannot readily be retained in its situation by a bandage.



№ 19.

CORNUS SERICEA.

Род. Спирей. Сын о-догврод.

CORNACEÆ.

The Cornus Tribe.

NO. 19.

CORNUS SERIACEA.

RED OSIER. *Swamp Dogwood.*

Place.—North America.

Quality.—Bitter.

Power.—Astringent, tonic.

Use.—Fevers, typhus, febrile disorders.

BOTANICAL ANALYSIS.

Natural Order. Cornacæ. Umbelata.—L.

CLASS IV. *Tetrandria.* ORDER *Monogynia.*

Cornacæ, Dec. Prodr. 4, 271 (1830), in part.

GENUS. CORNUS.

From Lat. *Cornu*, a horn. The wood being considered as hard and durable as horn. The Romans constructed warlike instruments with it; *bona bello cornus*, says Virgil.

SYNONYMS. Schönblühender Hartriegel (G.), Man-ha-can-ni-min-schi and Hai-ta-wa-wo-min-schi (*Delaware Indicar*).

THE ESSENTIAL CHARACTERS.

CALYX. Segments adherent to the ovary; the limb minute, four or five-toothed or lobed.

COROLLA. Segments four or five, distinct, alternate with the teeth of the calyx.

STAMENS. Of the same number as petals, and alternate with them.

OVARY. One or many celled.

FRUIT. A laciniate berry, united with the calyx.

SEEDS. Not solitary.



18 17

COENUS AMERICANA.

Fl. Cal. Swan & degenod.

CORNACEÆ.

The Cornus Tribe.

NO. 19.

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BOTANICAL ANALYSIS.

Natural Order. Cornacæ. Umbellatæ.—L.

CLASS IV. *Tetrandia.* ORDER *Monogynia.*

Cornææ, Dec. Prodr. 4, 271 (1830), in part.

GENUS. CORNUS.

From Lat. *Cornu*, a horn. The wood being considered as hard and durable as horn. The Romans constructed warlike instruments with it; *bona bello cornus*, says Virgil.

SYNONYMES. Schönblühender Hartriegel (*G.*), Mon-ha-can-ni-min-schi and Hat-ta-wa-no-min-schi (*Delaware Indians*).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* adherent to the ovary, the *limb* minute, four or five-toothed or lobed.

COROLLA. *Petals* four or five, distinct, alternate with the teeth of the calyx.

STAMENS. Of the same number as petals, and alternate with them.

OVARY. One or two-celled.

FRUIT. A baccate drupe, crowned with the calyx.

SEEDS. Not solitary.

CORNUS SERIACEA.

THE SECONDARY CHARACTERS.

CORNUS. *Calyx* four-toothed. *Corolla* four-petaled. *Drupe* baccate, with a two-celled nucleus. *Involucre* four-leaved or wanting.

Cornus is the only North American genus. *Leaves* mostly opposite, entire and pinately-veined. *Flowers* in cymes. *Hairs* centrally fixed. *Floral envelopes* valvate in aestivation.

THE SPECIFIC CHARACTERS.

CORNUS SERIACEA. *Branches* spreading. *Branchlets* woolly. *Leaves* ovate, rounded at the base, acuminate, ferruginous, pubescent beneath. *Cymes* depressed, woolly. *Drupe*s a bright blue.

THE ARTIFICIAL CHARACTERS.

CLASS TETRANDRIA. *Stamens* four. ORDER MONOGYNIA. *Ovary* inferior. Polypetalous or apetalous. *Shrubs* (one species, herbaceous). *Fruit* a baccate drupe.

NATURAL HISTORY.

The CORNUS SERIACEA is a shrub seldom attaining more than twelve feet height. Its most common stature, however, is from six to eight feet. The stems are numerous, straight, and covered with a shining reddish bark. The root is ligneous, branched, of a light greyish color, and smells somewhat like liquorice root; the radicles are reddish. The stem is erect, cylindrical, and branched. The branches are opposite, roundish, spreading, and of a dingy purple color. The young shoots are round, ringed, nearly without spots, and of a dark purple color, the very young ones more or less pubescent. The leaves are opposite, petiolated, ovate, pointed, entire on their margins, nerved, and somewhat veined, having the middle rib and nerves projecting underneath and sunk above. The under surface of the leaves, particularly near the costa and nerves, is covered with a dense, brownish, villous coat. The young leaves are doubled by the approximation of their sides; when full grown, they are plain, as represented in the largest leaf of the engraving. They vary in size, but in general, when mature, they are three inches long and an inch and a half broad. The petioles are one-fourth the length of the leaves, round below, with a slight furrow above, villous and purplish. The flowers are borne in cymes, which are terminal, pedunculated, erect, flat above, or occasionally a little convex. The expanded flowers of each cyme are not very numerous. Calyx monophyllous, four-toothed, villous, the teeth

CORNUS SERIACEA.

are linear, acute, spreading, persistent, about two lines broad. The corolla consists of four linear, acute, spreading petals, larger than the calyx. The stamens are four, erect, diverging, filaments scarcely longer than the corolla. The anthers are peltate, oblong, and of a yellow color. Pistillum germen, below globose, pitcher-shaped and villous. Style filiform, hardly shorter than the stamens. Stigma capitated and pubescent. The fruit consists of a collection of berry-formed, globular, fleshy drupes, of a beautiful cerulean blue color. Each berry is excavated at the base, white within, one-locular. Seed a roundish, compressed, nerved, two-celled nut.

The geographical range of the Red Osier or Swamp Dogwood, as commonly called, is extensive. It inhabits most thickets, the borders of swamps, rivers, creeks and rivulets. Its common companion, the *Cornus Stricta*, resembles it exceedingly, and may be easily confounded with it unless carefully examined. It flowers in June and July, and ripens its berries in September.

CHEMICAL AND MEDICAL PROPERTIES.

The medicinal virtues of the *CORNUS SERIACEA* are the same as those of the *CORNUS FLORIDA*, and both are allied, in their effects, to the Peruvian bark. The Red Osier is, therefore, a stimulant and tonic, and may be used in powder or in tincture, with proof spirits. About a scruple and a half, and from that quantity to a drachm of the former, may be given at a dose, and repeated three or four times a day. The usual proportions of the spirituous tincture may be used. The pulverized bark of the swamp Dogwood is not so popular or so much used as that of the Dogwood, but it is certainly not less deserving the attention of practitioners, particularly as the difficulty of procuring genuine Peruvian bark is so well known.

The comparative experiments of Dr. Walker, of the properties of the Peruvian bark and these two species of *CORNUS*, are extremely interesting, and have produced results highly favorable to these articles.

From the chemical investigation of the properties of the Corni, it appears (*Dr. Walker's Inaugural Dissertation*, pp. 24 and 25), that upon distilling equal quantities of the pulverized bark of the root of *CORNUS FLORIDA* and *CORNUS SERIACEA* and of red Peruvian bark, a fluid was obtained from the latter differing from that procured by the two former in no respect but in possessing a flavor not aromatic, but peculiar to the bark. The fluid was clear and transparent. It appears further, that upon subjecting these materials to a second distillation, the fluids obtained had a more disagreeable smell than those

CORNUS SERIACEA.

from the first, and a taste somewhat acerb. The fluid yielded by the Corni acquired a lemon color, that from the Peruvian bark was tinged with red. The following results are given by Dr. Walker, of the changes which took place upon testing these different fluids. The fluid distilled from

	<i>With litmus paper.</i>	<i>Oxy-Sulphate.</i>	<i>Acet. Lead.</i>	<i>Carb. Alumen.</i>
The Corn. Flor.	Red.	Black.	Precipitate	Effervescence.
Corn. Seri.	Red.	do.	do.	do.
Cort. Peru.	Red.	Brown.	do.	slight do.

The inference deduced from this experiment is, that gallic acid is contained in the three substances used, and that it exists in greater quantity in the Corni than in the Bark. The gallic acid also comes over in distillation in an uncombined state. A decoction of the bark of the root of CORNUS FLORIDA yields, by evaporation, a gum-like mass. Two drachms of this gum were obtained from seven and a half ounces of the decoction. With a view to ascertain the constituent parts of this mass, two drachms in successive quantities of alcohol were macerated until the last portion ceased to be changed in color and taste; this, like the former portions, was separated from the gum by the filter; after the gum was dried upon the filter, it was collected and weighed only half a drachm. The dried gum was then dissolved in a small quantity of water. The solution was imperfect, not transparent nor bright colored; it possessed no particular taste, which might not be ascribed to its viscid consistence, and it produced no change of color with a solution of the oxy-sulphate of iron. Suspecting, from the want of transparency, that there might be some mucilage in the solution, diluted sulphuric acid was added in small portions to the solution, a precipitate slowly fell to the bottom in a coagulated form. When the precipitation had ceased, it was separated from the solution and evaporated to dryness at the same time with the solution. By weighing each residuum, the mucilage was detected in the proportion of three to five, that is, eighteen grains of gum and twelve of mucilage. Observing the solution to turn dark by the acid, it was inferred that the want of transparency in the gummy solution was not entirely owing to the presence of the mucilage, but to the fine powder of the medicine which the viscosity of the fluid suspended and concealed, and probably the change of color noticed above was owing to the carbonation of these particles by the acid. The CORNUS FLORIDA contains more extract and gum than the Peruvian bark, and is more soluble in water, while the latter, containing more resin, is more easily soluble in alcohol. The powder of the bark of CORNUS FLORIDA is more miscible in water than that of the Cinchona for the same reason.



N^o. 20.

SYMPLOCARPUS FÆTIDUS

Skunk Cabbage.

ARACEÆ.

The Arum Tribe

NO. 20.

SYMPLOCARPUS FÆTIDUS

SKUNK CABBAGE.

Place. America.

Quality. Fœtid.

Power. Nervine, acrid.

Use. Dropsy, spasms, rheumatism.

BOTANICAL ANALYSIS.

Natural Order. Araceæ, Aroideæ.—J. Piperitæ.—L.

CLASS IV. *Tetrandria*. ORDER *Monogynia*.

Araceæ, Wood, 362 (1845), Aroideæ, Juss. Gen. 23 (1789), R. Brown Prodr. 333 (1810), Dec and Duby 480 (1828), Lindl. Synops. 246 (1829), Acorins, Link. Handl. 1, 144 (1829).

Synonyma. Stinkende Zehrwurtz (G.).

GENUS. SYMPLOCARPUS.

From the Greek, *sympleo*, connection *carpos*, fruit. Nuttall adopted this generic name, inspired by Salisbury, but Icrodes Fœtidus, Bigelow, Potnos Fœtidus, Michaux, are also frequently used.

THE ESSENTIAL CHARACTERS.

Caules. Mostly solitary, and monœcious arranged upon a peduncle or spatheous spadix.

Inflorescence. Pedicels present, consisting of four—six parts.

Stamens. Six or eight, hypogynous, very short. Anthers

Style. Three-lobed. Stigma sessile.

FRUIT. Berry succulent or dry.

SEEDS. Solitary or several, with fleshy albumen.



N° 20.

STREPTOCARPUS FETIDUS

Stink Cabbage.

ARACEÆ.

The Arum Tribe.

NO. 20.

SYMPLOCARPUS FÆTIDUS

SKUNK CABBAGE.

Place. America.

Quality. Fætid.

Power. Nervine, acrid.

Use. Dropsy, spasms, rheumatism.

BOTANICAL ANALYSIS.

Natural Order. Araceæ. Aroideæ.—J. Piperitæ.—L.

CLASS IV. *Tetrandria.* ORDER *Monogynia.*

Araceæ, Wood, 362 (1845), Aroideæ, Juss. Gen. 23 (1789), R. Brown Prodr. 333 (1810), Dec and Duby 480 (1828), Lindl. Synops. 246 (1829), Acorinæ, Link. Handl. 1, 144 (1829).

SYNONYMES. Stinkende Zehrwurtz (*G.*)

GENUS. SYMPLOCARPUS.

From the Greek, *συμπλοκη*, connection *καρπος*, fruit. *Nuttall* adopted this generic term, imposed by *Salisbury*, but *ICTODES FÆTIDUS*, *Bigelow*, *POTHOS FÆTIDUS*, *Michaux*, are also frequently used.

THE ESSENTIAL CHARACTERS.

CALYX. Mostly achlamydeous and monœcious arranged upon a naked or spothaceous spadix.

COROLLA. *Perianth* when present, consisting of four—six parts.

STAMENS. Definite or indefinite, hypogynous, very short. *Anthers* ovate, extrorse.

OVARY. Three, one—several-celled. *Stigma* sessile.

FRUIT. Berry succulent or dry.

SEEDS. Solitary or several, with fleshy albumen.

SYMPLOCARPUS FÆTIDUS.

THE SECONDARY CHARACTERS.

SYMPLOCARPUS. *Spathæ* ventricose. *Spadix* oval, covered with perfect flowers. *Perianth* deeply four-parted. *Segments* cucullate, cuneate, truncate, persistent, becoming thick and spongy. *Berries* globose, two-seeded, imbedded in the *spadix*.

General *calyx* a *spathe*. *Spadix* simple, covered with flowers. *Perianth* corol-like, deeply four-parted, permanent, becoming thick and spongy. *Style* pyramid form, four-sided. *Stigma* simple, minute. *Berries* globose, two-seeded, inclosed in the spongy *spadix*-receptacle.

THE SPECIFIC CHARACTERS.

SYMPLOCARPUS FÆTIDUS. *Leaves* cordate-oval, acute. *Spadix* sub-globose preceding the leaves.

Stemless. *Leaves* radical, heart-ovate, very large. *Spadix* supporting the flowers in a sub-globose head.

THE ARTIFICIAL CHARACTERS.

CLASS TETRANDRIA. *Stamens* four. ORDER MONOGYNIA. *Ovary* superior, apetalous, endogenous. *Flowers* in a *spadix*. *Odor* fetid.

Spathæ ventricose, ovate, acuminate. *Spadix* roundish, covered with hermaphrodite flowers. *Calyx* deeply four-parted, persistent. *Segments* cucullate, truncate, becoming thick and spongy. *Petals* none. *Style* pyramidal, four-sided. *Seeds* solitary, immersed in the spongy receptacle. *Leaves* very large, smooth and green, strongly veined and entire, preceded by conspicuous shooting stipules.

NATURAL HISTORY.

SYMPLOCARPUS FÆTIDUS is a common plant, growing in swamps, meadows and ditches, renowned for its odor, which is scarcely less offensive than that of the animal whose name it bears. It is remarkably volatile, and cannot be retained by any menstruum. The plant is exclusively a native of North America, and delights in shade. It seldom appears sporadically, and where found at all, it is generally in abundance. An extreme humid and rich soil appears necessary to its luxuriant growth.

The plant is subaquatic, flowering and leafing from the root, which consists of a vast number of verticillate cylindrical thick fibres, many of which are near a fourth of an inch in diameter. They diverge from their point of cincture, and penetrate the earth or mire to the depth of two feet, and sometimes more. The fibres are whitish, colored with brownish-red rings.

The flowers appear before the leaves, or at least when these make

their appearance they are closely convoluted. The leaves are preceded by colored sheathing stipules, and about the end of April, or beginning of May, are fully developed, when they are very large. They are commonly twelve, fifteen, and eighteen inches long, and nine or ten broad; they are sometimes seen, in favorable situations, more than two feet long, and twelve inches broad. They are oblong-ovate, heart-shaped, at the base smooth, strongly veined, and have a large succulent middle rib projecting below.

The flowers are concealed in a singular spongy ovoid spathe, acuminate and depressed, obliquely at the apex, and auriculated at the base. These spathes have the appearance, and are not unaptly compared to some kinds of shells. Upon opening them the flowers are found situated upon a globose pedunculated spadix. They are destitute of petals, have a four-parted calyx divided at the base. Segments hooded, flattened and notched at the apex. There are four stamens situated opposite to the divisions of the calyx, having flat, awl-shaped filaments, with short oblong anthers. The style is thick, and four-sided, stigma shorter than the stamens. The seeds are numerous, large, naked, irregularly roundish, and speckled with purple and yellow; they are immersed in a large spongy receptacle near to the surface.

CHEMICAL AND MEDICAL PROPERTIES.

Every part of this curious plant, even the seeds, is strongly imbued with the peculiar alliaceous odor, which has given rise to the vulgar name expressive of the obnoxiousness of the plant. The odor emanating from the broken spathe and the bruised seeds resembles the smell of asafœtida. The leaves have, perhaps, a more disagreeable smell than any other part of the plant. Their odor has been compared to that thrown off by the skunk, or pole-cat, and like that, it may be perceived at a considerable distance. The smell from the spathe and flowers is pungent, and very subtle; they possess a great show of acidity. The pungency of the plant is probably concentrated and increased by being shut up and confined in a close room; but in the open air *SYMPLOCARPUS FÆTIDUS* has certainly no pernicious effect, and the ridiculous tales of its deadly influence on those who approach it, have no better foundation than the weakness and credulity of mankind to believe them.

Various experiments seem to show that this plant contains a volatile acid principle, readily dissipated by heat, a resinous substance, and a gummy or mucous principle. The seeds contain a considerable quantity of fixed oil. The root, as well as every part of the plant,

possesses very powerful antispasmodic powers, similar to those of asafœtida, and other fetid gums. It has been highly recommended as a palliative in spasmodic asthma, and it is reputed to have effected very considerable relief, when other means had failed. Thirty or forty grains of the dried pulverised roots are recommended to be given during the paroxysm, and repeated as often as circumstances may require. After the fit has gone off it is necessary to persevere in the use of the medicine; its continuance is recommended till the patient is entirely cured. This practice is said to be imitated from that of the Indians (who call this plant *skoka*) in their treatment of this complaint.

Two tea-spoonsful of the powdered root of this plant, given in spirits and water, have procured immediate relief in cases of violent hysteria, after the ordinary remedies for such affections, musk, and other antispasmodics had been ineffectually tried. On repeating the use of the medicine, it afforded more lasting relief than any other remedy had given. It has also afforded very considerable benefit in chronic rheumatism, in wandering spasmodic pains, and in hooping-cough, in chronic coughs of patients having a cold and phlegmatic habit. In spasmodic affections of the abdominal muscles during parturition, or after delivery, this root is of great advantage, and has proved very beneficial.

The bruised leaves are frequently applied to ulcers and recent wounds, with very good effect. They are also used as an external application in cutaneous affections, and the expressed juice of the leaves is successfully applied to different species of herpes. Among the people in the country the leaves are commonly used to dress blisters, with the view of promoting their discharge; for this purpose they are slightly bruised, by being laid on a flat board, and having a rolling-pin passed a few times over them to reduce the projecting middle rib, nerves and veins, so as to enable every part of the leaf to come in contact with the surface of the blister. This plant is also strongly recommended in scurvy, as well as in all other diseases of the skin, in which the officinal wake-robin has been very highly extolled, and found useful.

As the active properties of SYMPLOCARPUS FÆTIDUS depend on a volatile principle, which is impaired by long keeping, especially in powder, it is better to preserve it in well stopped bottles, cut up in slices, ready to pulverize when wanted. It is given in pills, or mixed with syrup, in doses of ten to forty grains, two or three times a day. Decoction, and all preparations of this plant with heat, greatly impair its virtues.



Nº 21.

CASSIA MARILANDICA.

American Senna.

LEGUMINOSÆ.

The Leguminous or Bean Tribe.

NO. 21.

CASSIA MARILANDICA.

AMERICAN SENNA.

Place.—United States.

Quality.—Nauseous.

Power.—Cathartic, deobstruent.

Use.—Obstructions of the bowels.

BOTANICAL ANALYSIS.

Natural Order. Leguminosæ—J. Lomentaceæ.—L.

CLASS X. *Decandria*. ORDER *Monogynia*.

Legumino 3, Juss. Gen. 345 (1789), Brown Desc. (1822), Dec. Prodr. 2, 93 (1835),
Candl. Synops. 73 (1829).

GENUS. CASSIA.

The name Cassia is of the Hebrews and other orientals. In the books of the Old Testament, *Cassia* is mentioned, Psalm 138, 7, 8, and may be referred without hesitation to the present genus.

Names.—In Latin (L.), *Robakassie* (G.), *Pypkassie* (Dutch), *Cassievër* (Dan.), *Cassia* (Fr.), *Piyerari* (S.), *Amelús* (H.), *Savernaca* (San.), *Konne* (Jav.), *Kayar Chirber* (Pers.), *Drangu* (Jav.) *Mentus* (Jav.).

THE ESSENTIAL CHARACTERS.

Flowers.—Petals generally five, more or less united, often unequal.

Legumes.—Bilobed, either papilionaceous or regular perigynous.

Seeds.—2-6, sometimes inadelphous or distinct. *Anthers* versate.

Style.—Simple and simple. *Style and stigma* simple.

Placenta.—Placenta axillary, continuous (one-celled) or (a loment) joint-

SEEDS. Solitary or several, destitute of albumen.



PL. 21.

CASSIA MARILANDICA.

American Cassia.

LEGUMINOSÆ.

The Leguminous or Bean Tribe.

NO. 21.

CASSIA MARILANDICA.

AMERICAN SENNA.

Place.—United States.

Quality.—Nauseous.

Power.—Cathartic, deobstruent.

Use.—Obstipations of the bowels.

BOTANICAL ANALYSIS.

Natural Order. Leguminosæ.—J. Lomentaceæ.—L.

CLASS X. *Decandria.* ORDER *Monogynia.*

Leguminosæ, Juss. Gen. 345 (1789), Brown Diss. (1822), Dec. Prodr. 2, 93 (1825), Lindl. Synops. 75 (1829).

GENUS CASSIA.

From קציעה, ketsich of the Hebrews and other orientals. In the books of the Old Testament it occurs once, Psalm xlv. 7, 8, and may be referred without hesitation to the time of Solomon.

SYNONYMES. La Casse (*F.*), Rohnkassie (*G.*), Pypkassie (*Dutch*), Cassievër (*Dan.*, *Swed.*), Polpa di Cassia (*J.*), Fistularis (*S.*), Ameltás (*H.*), Suvernaca (*San.*), Konnekai (*Tam.*), Khyar Shiber (*Arab.*), Khyar Chirber (*Pers.*), Drangu (*Jav.*) Mentus (*Malay*), Sonali (*Beng.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* generally five, more or less united, often unequal.

COROLLA. *Petals* five, either papilionaceous or regular perigynous.

STAMENS. Diadelphous, monadelphous or distinct. *Anthers* versatile.

Ovary. Superior, single and simple. *Style* and *stigma* simple.

FRUIT. A legume, either continuous (one-celled) or (a loment) jointed into one-seeded cells.

SEEDS. Solitary or several, destitute of albumen.

CASSIA MARILANDICA.

THE SECONDARY CHARACTERS.

CASSIA. *Calyx* three-leaved. *Corolla* five-petaled, the three upper anthers sterile, three lower ones beaked.

Calyx lax, concave colored, deciduous. *Petals* roundish, concave, lower ones more distant, longer and more spreading. *Filaments* declined, three lower ones larger, three lower anthers very large, three upper, small, barren. *Leaves* abruptly pinnate.

THE SPECIFIC CHARACTERS.

CASSIA MARILANDICA. Smooth. *Leaflets* in eight or nine pairs, oblong-lanceolate, mucronate, equal, an obovate gland on the common petiole. *Flowers* in axillary racemes and terminal panicles.

Somewhat glabrous. *Leaves* in eight pairs, lance-oblong, mucronate. *Flowers* in axillary racemes and in terminal panicles. *Legumes* linear curved.

THE ARTIFICIAL CHARACTERS.

CLASS DECANDRIA. *Stamens* ten. ORDER MONOGYNIA. *Fruit* a legume. *Ovary* single and simple.

NATURAL HISTORY.

The generic name of this plant is of Asiatic origin, and was brought into Greece along with the commercial article which it denoted, by the Phœnician merchants. The specific appellation was given by Linnæus, in conformity with a common custom of which later discoveries have shown the impropriety, that of naming a new species of any genus from the particular place whence it was sent to him. Though the first specimens of CASSIA MARILANDICA were transmitted to Linnæus from the State of Maryland, the plant is now known to be extensively common in almost every state of the Union south and west of New York. Inappropriate as the specific name is, however, it still does and always ought to stand unchanged.

This beautiful plant is frequently met with in alluvial soil, growing in close masses, with many stems, nearly smooth, upright, from three to six feet high, cylindrical and simple, leaves alternate, petioles compressed, channeled above, with an ovate and stipitate gland at the base, bearing from eight to ten pairs of follicles with short uni-glandular petioles, flowers of a bright yellow color, paniculate, although partly axillary and in short racemes, having each from five to fifteen flowers, calyx colored, with six oval obtuse and unequal segments, petals five spatulate, the two lower ones larger, stamina with yellow filaments, germ deflexed with the lower stamina, and hairy, fruit pen-

CASSIA MARILANDICA.

dulous, linear and flat pods somewhat hairy and blackish, from two to three inches long, and containing from twelve to twenty seeds.

This plant is common from New York to Carolina, and where met with, is generally abundant. Though it is sometimes found remote from water, it will always appear, on examination, that such situations are exsiccated swamps or meadows. It delights in a low, moist, gravelly or sandy soil, preferring the borders of rivers, creeks and such watery places, to any other situations, and flowers from the last of June to the last of August.

The CASSIA MARILANDICA was introduced into England in 1723, and flowers there in August and October.

The naturalist has often reason to lament that travellers and merchants have given the name of one thing long known to another recently discovered, on account of a real or fancied resemblance in a single particular, although in every other respect it is entirely different. Such has been the fate of CASSIA. The Romans used the word with considerable latitude. When Virgil, extolling the simple fare of the husbandman, says,

“Nec casia liquidi corrumpitur usus olivi,”

he cannot be supposed to speak of the Cassia which he mentions in his second eclogue as interwoven with the flowers of the violet, poppy, narcissus and sweet smelling anise, in the garland made for Alexis, by the naiad. In the former passage he undoubtedly alludes to the aromatic bark which the luxurious citizens of Rome infused in their table and culinary oil to give it a grateful smell and flavor. In the latter, he must have intended some odoriferous herb or shrub, which is a native of Italy, but by what name it is now known cannot easily be determined.

“In the middle ages, the Arabian and Greek physicians, as appears from the writings of Aricenna and Myrepsus, acknowledged two kinds of Cassia, one, Cassia aromatica, a native of India, the Cassia of the ancients, the other, Cassia solutiva, a native of Egypt, totally different in its general appearance, botanical characters, and medical qualities, and which appears to have been honored with the same name as that which from time immemorial had distinguished the precious oriental spice merely on account of its pleasant smell, for we are informed by Alpinus, that when he was in Egypt, the latter part of the sixteenth century, the natives took great delight in walking early in the morning in the spring season near plantations of this kind of Cassia, and regaling themselves with the fragrance of its flowers. To this species and its numerous congeners, the term Cassia, as a generic appellation, is confined by modern botanists.”—ENCY.

CHEMICAL AND MEDICAL PROPERTIES.

CASSIA MARILANDICA is well known to be a very valuable cathartic of the milder class, and inferior in strength to the Alexandria senna. It is doubtless one of the most important of our indigenous medicines, but requires about one-third more than the foreign article to produce an ordinary cathartic effect. Physicians very generally admit that they have exhibited it with the same success as the common senna, and it is very generally used by country practitioners as a substitute for the officinal article. The leaves alone have commonly been used, but the best method of employing the plant for medical purposes is to use the dried leaves and follicles, and carefully rejecting the leaf-stalks. Thus used, the high character of the plant is maintained.

Senna is purgative, generally operating under four hours after it is taken, and is particularly adapted for children and very delicate women, and especially for all cases in which the bowels require to be certainly and moderately evacuated. In many habits it is sometimes apt to occasion griping, and therefore requires the addition of some aromatic, as caraway or cardamam seeds, or ginger, and its operation to be assisted by drinking plentifully of weak broths or gruel. The griping seems to be occasioned by the resinous matter, as the infusion made with water does not gripe, although it purges. The plant may be given in substance, powdered, but the more useful form is that of infusion. Decoction is a bad form, as the activity of the medicine is much impaired by the boiling, owing, according to some very respectable chemists, to the total dissipation of the nauseous and volatile principles; but, according to others, it is owing to the oxydisation of the extractive, which also accounts for the severe gripings induced by the decoction. The dose of the powder of the leaves is from a scruple and a half to two drachms, and operates with mildness; the infusion is weaker, and the tincture is less available, though stronger.

The affinity of CASSIA MARILANDICA to two of the articles which constitute the senna of commerce, renders it probable that these foreign plants might be supplanted without difficulty and with great profit in our southern states. An additional very powerful consideration in support of this hypothesis is the fact, that since it appears *pure senna* is not to be obtained from Egypt, and that the adulterating plant or CASSIA SENNA is much inferior to our native species, it cannot be doubted that the cultivation of the CASSIA MARILANDICA would afford a much purer senna than we now use, and at one-fourth the cost of the imported article. These facts and hints are certainly not unworthy the attention of our southern planters and physicians.



Nº 22.

GERANIUM MACULATUM.

Spotted Geranium Cranes-bill.

GERANIACEÆ.

The Geranium Tribe.

NO. 22.

GERANIUM MACULATUM.

SPOTTED GERANIUM. *Cranes' Bill*.

Place.—Europe, America.

Quality.—Soporific.

Power.—Astringent, tonic.

Use.—Dysentery, cholera infantum, cynanche tonsillaris.

BOTANICAL ANALYSIS.

Natural Order. Geraniaceæ.—J. Gruinales.—L.

CLASS XVI. *Monadelphia*. ORDER *Decandria*.

Gerania, Juss. Gen. 268 (1789), Geraniaceæ, Dec. Fl. Fr. 4, 828 (1805), Prodr. 1, 637 (1824), Lindl. Synops. 56 (1829).

SYNONYMS. Le Geranium (*F.*), Der Storchschnabel (*G.*), Oijevaarsbek (*Dutch*), Storcksnab (*Dan.*), Storknäf (*Swed.*), Geranio (*J.*), Jerenio (*S.*), Schuratelina, nos (*Fr.*)

GENUS. GERANIUM.

From Greek, γέρων, a crane, the capsule and beak resembling the head of that bird.

THE ESSENTIAL CHARACTERS.

Calyx. Sepals five, persistent, ribbed, one sometimes saccate, or spurred at base.

Corolla. Petals five, hypogynous or perigynous, unguiculate, with long claws.

Stamens. Usual: monadelphous, hypogynous, twice or thrice as long as the petals.

Ovary. Composed of five pieces, placed round an elevated axis, each one-celled, one-seeded.



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GENUS. GERANIUM.

From Greek, γερανός, a crane, the capsule and beak resembling the head of that bird.

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* five, persistent, ribbed, one sometimes saccate, or spurred at base.

COROLLA. *Petals* five, hypogynous or perigynous, unguiculate, æstivation twisted.

STAMENS. Usually monadelphous, hypogynous, twice or thrice as many as the petals.

OVARY. Composed of five pieces, placed round an elevated axis, each one-celled, one-seeded.

GERANIUM MACULATUM.

FRUIT. Formed of five pieces, cohering round a lengthened indurated axis, each piece consisting of one cell, containing one seed, having a membranous pericarpium, and terminated by an indurated style, which finally curls back from the base upwards, carrying the pericarpium along with it.

SEEDS. Solitary, pendulous, without albumen.

THE SECONDARY CHARACTERS.

GERANIUM. *Sepals* and *Petals* five, regular, glands five, nectariferous, united to the base of the longer stamens. *Stamens* ten, all perfect. *Fruit* rostrate at length separating into five, long-styled, one-seeded carpels. *Styles* smooth inside.

Styles erect, longer than the stamens, permanent. *Stigmas* five, oblong, reflexed. *Carpels* five, aggregate, globose, each tipped with the long linear erect, pointed, rigid, style, smooth, naked, at length recurved and adhering by its point to the summit of the axis.

THE SPECIFIC CHARACTERS.

GERANIUM MACULATUM. *Leaves* three—five-parted, cut, radical ones on very long stalks. *Peduncles* two-flowered. *Stem* somewhat angular, dichotomous, erect, retrorsely pubescent.

Erect: pubescence reversed. *Stem* dichotomous. *Leaves* opposite, three or five-parted, gashed, upper ones sessile. *Peduncles* two-flowered. *Petals* obovate.

THE ARTIFICIAL CHARACTERS.

CLASS MONADELPHIA. *Stamens* united by their filaments into one set. **ORDER DECANDRIA.** *Fruit* of five distinct carpels, which separate from the axis, &c.

Calyx of five leaves. *Petals* five. Nectariferous glands five. *Fruit* beaked, of five aggregate *capsules*, each tipped with a long recurved naked awn.

NATURAL HISTORY

GERANIUM is the original genus of Linnæus, formerly including all those ornamental species properly called Geraniums, since divided by L'Heritier into three genera, *Erodium*, *Pelargonium* and *Geranium*, the latter characterized as mentioned at the head of this article, under the botanical analysis. This species is everywhere found in moist woods and the skirts of fields, generally preferring low grounds, though sometimes seen on high hills, and is not inferior in beauty to many that are cultivated in the parlor and greenhouse.

The plant is extremely common in many parts of the United States,

GERANIUM MACULATUM.

having a very extensive geographical range from Maine to Louisiana, Missouri and Florida. It is a beautiful plant, well deserving cultivation; the flowers are large, but scentless, red, purple, or white, with darker veins. It blossoms in the spring and summer, from May to July. The best time for collecting the GERANIUM MACULATUM for medicinal purposes is during the fall.

The root is perennial, irregularly gibbous, horizontal, oblong, thick rough and knobby. It is brownish, mottled with green externally, and greenish white within, becoming brittle or friable upon siccation, and then easily pulverisable in the mortar. From the root arise, generally, one stem, and from four to eight root leaves, supported by petioles from eight to ten inches in length. The stem is erect, terete, and this, as well as its divisions and peduncles, is of a sage-green color, and thickly beset with reflexed hairs. At the height of six, eight or ten inches from the ground the stem becomes forked, and at the point of division is garnished by a pair of large leaves, supported on petioles less than half the length of those of the radical leaves. The leaves at the fork are commonly much the largest, and are frequently inverted from their upright position, either by a reflection of the petiole or a convolution of it. Those situated on the upper part of the stem are furnished either with short petioles, or are entirely sessile. The peduncles arise from the dichotomous divisions of the stem, and uniformly bear two flowers on short pedicles. The first fork or division of the stem is furnished with four lanceolate, ciliate, membranaceous stipules of a salmon color. The upper stipules are linear, but ciliated, and of the same color. The calyx consists of five oval-lanceolate, ribbed, cuspidated segments, plumously ciliated on their outermost margins, and membranaceous on the other edges—occasionally three of the segments are ciliated on their edge, and the other two have membranaceous margins. Petals, five in number, obovate, and without notches at the apex. Stamens always ten, having glands at the base, and oblong convex deciduous anthers of a purple color. Germ, egg-shaped. Style, the length of the stamens at first, but afterwards becoming elongated and persistent. Stigmas five. The capsule contains five seeds, which when matured are scattered by the elasticity of the awns arrayed along the permanent style.

CHEMICAL AND MEDICAL PROPERTIES.

The medicinal virtues of GERANIUM MACULATUM reside exclusively in the root, which is nearly scentless, taste astringent, but not unpleasant. It contains much tannin, more than kino, extractive, lignine

and kinic acid, or a peculiar acid, differing from gallic acid, in not reddening vegetable blues, and not passing over in distillation. The active principles are soluble in water and alcohol, the alkalies neutralize them.

The practice of using a decoction of the *Geranium* is extensively followed in the country, for all bowel complaints; and this is done from a knowledge of its astringency, but sometimes, perhaps, improperly, or too early. Whether the use of the astringent decoction in dysentery can always be admissible, is perhaps doubtful, and whether it has ever actually done much good in that complaint is somewhat problematical. It is very likely that as diarrhœa is frequently called dysentery, in the country, the powers ascribed to this plant in curing this last complaint are misapplied, and that its exhibition in cases of common diarrhœa has proved beneficial on account of its astringent properties.

Boiled in milk it proves an efficacious medicine in cholera infantum. It contains but little resin, and is, therefore, more particularly adapted to cases where heating and stimulating medicines are less proper. In many cases of looseness of the bowels, the exhibition of this medicine has proved of as much efficacy as other astringents.

The western Indians value this plant highly, and are said to esteem it as the most effectual of all their remedies for syphilis. They use it also for wounds, gonorrhœa, ulcers in the legs, diabetes, bloody urine, involuntary discharge of urine, immoderate menstruations, &c. The general effects of GERANIUM MACULATUM on the system, are to give tone to the bowels and stomach, stop all immoderate discharges, and prevent internal mortification.

An aqueous infusion of the root has been recommended as an injection for gonorrhœa, but some physicians prefer a saturated tincture, combined with white vitriol, to be administered in cases of gleet. The common means of managing those obstinate discharges, however, seem quite as efficacious as the plant in question.

In apthous affections of the mouth, a decoction of the root is a very useful, important, and not unpleasant remedy. For this purpose abundant evidence is afforded of its decided good effect. Dr. Eberle says, "I have frequently used a strong decoction of the root of the GERANIUM MACULATUM, in cynanche tonsillaris, and with evident advantage. As a gargle in ulcers of the tongue and fauces, I have found it highly useful. In a chronic, and very obstinate case of apthous ulceration of the mouth, after various articles had been used by others, as well as myself, unsuccessfully, the patient was relieved by the use of gargles made of the root of this plant."



COMPTONIA ASPLENIFOLIA
Sweet Fern.

LITH OF LEWIS & BROWN, N. Y.

MYRICACEÆ:
The Gale Tribe.

NO. 23.

COMPTONIA ASPLENIFOLIA.

SWEET FERN.

Place.—Europe, America.

Quality.—Balsamic.

Power.—Stomachic, astringent.

Use.—Diarrhoea, cholera infantum, debility.

BOTANICAL ANALYSIS.

Natural Order. Myricaceæ. Amentaceæ *Myricææ*.—J.
Amentaceæ.—L.

CLASS XXI. *Monœcia*. ORDER *Triandria*.

Author. Rich. Anal. du Fr. (1808), Ach. Rich. Élém. de la Bot. ed. 4, 561
(1824), Lindl. Synops. 242 (1829), Casuarinææ Mirbel in Ann. Mus. 16, 451 (1810),
E. Brown in Flinders, 2, 571 (1814).

GENUS. COMPTONIA:

Named in honor of Henry Compton, Lord Bishop of London, who made extensive collections of plants.

Properties. Complanier odorant (F.), Streifenfarren (G.)

THE ESSENTIAL CHARACTERS.

FLOWERS. Monoecious or dioecious, amentaceous, each axillary to a bract.

SCHEME. *Stamens*, two—six. *Anthers*, two—four-celled, opening longitudinally.

FERTILE. *Ovary*, one-celled, one-ovuled, surrounded by several hypogynous scales. *Stigmas*, two sub-
strate or delated, and petaloid.

FRUIT. Drupaceous or dry.

SEEDS. Solitary, erect, without albumen.



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GENUS. COMPTONIA:

Named in honor of Henry Compton, Lord Bishop of London, who made extensive collections of plants.

SYNONYMES. Comptonier odorant (*F.*), Streifenfarren (*G.*)

THE ESSENTIAL CHARACTERS.

FLOWERS. Monœcious or dicœcious, amentaceous, each axillary to a bract.

STERILE. *Stamens*, two—six. *Anthers*, two—four-celled, opening longitudinally.

FERTILE. *Ovary*, one-celled, one-ovuled, surrounded by several hypogynous scales. *Stigmas*, two subulate or delated, and petaloid.

FRUIT. Drupacious or dry.

SEEDS. Solitary, erect, without albumen.

COMPTONIA ASPLENIFOLIA

THE SECONDARY CHARACTERS.

COMPTONIA. *Flowers* monœcious. STERILE FLOWERS. *Ament* cylindric. *Bract* reniform-cordate, acuminate. *Calyx* scale two-parted. *Stamens* three, forked. *Anthers* six. FERTILE FLOWERS. *Ament* ovate. *Calyx* scales six, longer than the bract. *Styles* two. *Nut* ovoid, one-celled.

STAMINATE FLOWERS. *Ament* cylindric, with calyx-scales, one-flowered. *Corol* two-petalled or none. *Filaments* two-forked. PISTILLATE FLOWERS. *Spike* or *Ament* ovate. *Corol* six petalled (the corol may be called a calyx). *Styles* two. *Nut* oval, one-celled.

THE SPECIFIC CHARACTERS.

COMPTONIA ASPLENIFOLIA. *Leaves* long linear-lanceolate, alternately sinuate-pinnatifid. *Stipules* in pairs, acuminate. *Barren Flowers* in erect cylindric catkins, terminal and lateral. *Fertile Flowers* in a dense rounded burr or head, situated below the barren ones. *Fruit* a small, ovate, brown, one-celled nut.

THE ARTIFICIAL CHARACTERS.

CLASS MONŒCIA. *Stamens* apart from the pistils, in different flowers upon the same plant. ORDER TRIANDRIA. *Shrubs* angiospermous, exogens, monœcious. *Leaves* sinuate-pinnatifid. *Flowers* in aments. *Plant* aromatic, with pinnatifid-lobed leaves.

NATURAL HISTORY.

COMPTONIA ASPLENIFOLIA is a well known, handsome, aromatic shrub, having leaves resembling the Asplenium or Spleen-wort, and hence the specific name. It blossoms very early in March and April, before the leaves are unfolded, and unless sought for at this early season, will seldom be found flowering, that state of the plant continuing but a very short period. The plant is very common throughout the United States, from New England to Carolina, on hills and alluvial plains, in poor, rocky and sandy soils, forming vast glades in thin woods; frequently seen on the Alleghany mountains and in the plains, but nearly disappearing west of the mountains, and unknown to the western prairies. It is generally observed that the branches die at the end of the third year, the new wood then succeeding to the old, as in the *rubi*, and that it is seldom found in fruit, though it flowers abundantly.

Sweet fern is a small shrub with many crooked branches, and

attains the height of two, and from that to three, very seldom four feet. The root is ligneous, long, and horizontal, and often extending to the length of three or four feet. The stems are slender branched, somewhat hairy, and are crowded with a profusion of leaves, which are alternate sessile with two small oval acute stipules at the base, from three to five inches long, half an inch broad, acute at both ends, with a strong middle nerve on each side, regularly sinuate by large equal obtuse lobes. Flowers appearing before the leaves, the male in many superior, lateral and cylindrical catkins; the female inferior in a few globular, or oval lateral catkins; scales of both catkins imbricated, concave, reniform, acuminate, caducous, and one flowered. Male flowers with a two leaved perigone shorter than the scales, each part equal, and keeled. Six stamina, or anthers on three short forked filaments. Female flowers with a bristly perigone of six filiform persistent segments, larger than the scales. Pistil oval, two capillary styles. Seeds evalve, oval nuts, or achenes compressed yellow, forming a round burr.

CHEMICAL AND MEDICAL PROPERTIES.

The properties of *COMPTONIA ASPLENIFOLIA* are astringent, tonic, calefacient, cephalic, balsamic, expectorant, &c. It contains benzoic acid, tannin, and a resinous substance. The taste is balsamic and pungent. When the acid is perfectly pure, it is inodorous, but usually it is found to possess a slight aromatic odor; its taste is pungent, sweetish, acrid, and acidulous; it is in feathery or flocculent crystals, soft to the touch, and not pulverulent, of a beautiful whiteness and a silky lustre.

The whole plant, but chiefly the leaves, is possessed of a strong, peculiar resinous and spicy scent, particularly observable when the leaves are bruised or pressed in the hand or between the fingers. It possesses all the properties of the astringent and tonic balsams, and is particularly recommended for diarrhœa, loose bowels, and the summer complaint of children, or cholera infantum, in the form of a weak decoction. This decoction, sweetened, forms an extremely grateful drink for children, and from its moderate astringency, and bracing and tonic effect on the bowels, it will always be found to be a useful auxiliary in the treatment of this disease.

In Pennsylvania and Virginia, the inhabitants use this plant for many other diseases, in rachitis, in debility, in fevers, as a diluent tonic, in rheumatism and contusions. The almost universal use among the country people, who dwell where it grows in great abun-

COMPTONIA ASPLENIFOLIA.

dance, as a remedy for diseases already mentioned, evinces the probability that it is frequently found efficacious, and there is little doubt the shrub is well deserving further and better attention.

When the bloody flux prevailed as an epidemic in Rhinebeck, in 1781, and swept off the inhabitants daily, an infusion of Sweet Fern was employed with such success, that it was considered almost a specific. It produces perspiration without increasing the heat of the body.

A conserve of this plant is likewise a good medicine in hæmoptysis or spitting of blood, provided it be taken in sufficient quantity and long enough persisted in. It may be taken in the quantity of two or three ounces a day, and if the patient be troubled with a cough, it should be made into an electuary with balsamic syrup. Chewing the root is also a very good remedy.

Though numberless medicines are extolled for expelling and killing worms, yet it is well known no disease more frequently baffles the physician's skill, and though a medical writer of the present age has enumerated upwards of fifty plants, all celebrated for killing and expelling worms, yet the *COMPTONIA ASPLENIFOLIA* is singularly enough not included. This plant, however, is a most powerful vermifuge for the tape worm. A case of this description, accompanied with swoonings, privation of speech and a voracious appetite, occurred in Rhode Island. The patient had voided portions of the tape worm for twenty years, and had tried various medicines to no purpose, at length he tried a strong decoction of this plant, taking large quantities daily for several days; after a brisk purgative the worm was at length expelled.

In the year 1775, the king of France was induced to purchase, for a considerable sum, from the widow of a surgeon in Switzerland, the recipe of a medicine strongly recommended as an effectual cure for the tape worm. On analysis, it was found to contain little else than the powder of the root of *COMPTONIA ASPLENIFOLIA*, to be administered in the following manner. Take a dose of calomel and jalap in the usual form, the next day take three drachms of the powdered root, and about two hours after repeat the dose of calomel and jalap, and drink a tea-cup full of tea made from the root of Sweet Fern every hour till the tape worm is expelled. When the worm commences to pass the bowels, care must be taken not to break it off, or it may grow again, for it has this peculiar property. The tape worm has come away from the patient after taking a drachm of the powder without having recourse to any purge.

The *COMPTONIA ASPLENIFOLIA* is thus a far more valuable article in the *Materia Medica* than is generally supposed, and should be appreciated accordingly.



Nº 24.

CONVOLVULUS PANDURATUS .

Fiddle-leaved Bind-weed .



114
Crotalaria retusa L.
Flora of the United States

CONVOLVULACEÆ.

The Morning-glory Tribe.

NO. 24.

CONVOLVULUS PANDURATUS.

WILD-POTATOE. *Fiddle-leaved Bindweed.*

Place.—Europe, America.

Quality.—Acrid, bitter.

Power.—Cathartic, diuretic, pectoral.

Use.—Gravel, strangury, dropsy.

BOTANICAL ANALYSIS.

Natural Order. Convolvulaceæ.—J. Campanaceæ.—L.

CLASS V. *Pentandria.* ORDER *Monogynia.*

Convolvuli, Juss. Gen. 133 (1789), Convolvulaceæ, R. Brown Prodr. 481 (1810),
Lindl. Synops. 167 (1829.)

GENUS. CONVOLVULUS.

From the Lat. *Convolvère*, to entwine from the habit. A large genus of twining or prostrate herbs.

SYNONYMES. *Le liseron* (F.), *Die winde* (G.), *Winde* (D.), *Il vilucchio* (I.), *La corregruela* (S.), *Oliserão* (P.), *Snerli* (Dan.)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* five, much imbricated, usually united at base, persistent.

COROLLA. Regular. *Limb* five-lobed or entire, plaited and twisted in æstivation.

STAMENS. Five, inserted into the base of the corolla, and alternate with its lobes.

OVARY. Two—four-celled, free. *Styles* united into one.

FRUIT. *Capsule*, two—four-celled, valves with septifragal dehiscence.

SEEDS. Few, large, with their mucilaginous albumen. *Cotyledons* foliaceous.

CONVOLVULUS PANDURATUS.

THE SECONDARY CHARACTERS.

CONVOLVULUS. *Calyx* five-parted, naked, or with two small bracts near the base. *Corolla* campanulate or funnel-form, five-plaited. *Stamens* shorter than the limb. *Ovary* two—three-celled, cells two-ovuled. *Style* simple. *Stigma* simple or two-lobed. *Capsule* valvate, two—four-celled.

Calyx five-parted, with or without two bracts. *Corolla* funnel-form, plaited. *Stigma* two-cleft or double. *Cells* of the capsule two or three, each, one or two-seeded.

THE SPECIFIC CHARACTERS.

CONVOLVULUS PANDURATUS. *Stem* twining. *Leaves* broad—cordate or panduriform. *Peduncles* long, one—four-flowered. *Calyx* smooth. *Corolla* tubular, campanulate.

Twining, pubescent. *Leaves* broad, cordate, entire or lobed, guitar-form. *Peduncles* long. *Flowers* fascicled. *Calyx* glabrous, awnless. *Corolla* tubular, bell-form.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. ORDER MONOGYNIA. Monopetalous. *Flowers* inferior. *Corolla* regular. *Herbs* (rarely shrubby). *Stamens* alternate with petals. *Fruit* capsule or berry. *Cells* with one or two seeds. *Corolla* limb entire

Calyx perianth five-cleft. *Corolla* monopetalous, funnel-shaped, plated, border generally spreading more or less, five-lobed. *Stamina*, filaments five, awl-shaped, shorter than the corolla, approximating at the base. *Pericarp* a capsule or dry berry. *Seeds*, one or two in each cell.

NATURAL HISTORY.

The Genus *CONVOLVULUS* contains a large number of species, of which about sixteen are natives of this continent. The one now under consideration, derives its specific appellation from the shape of its leaves, which are frequently panduriform or fiddle-shaped. The plant is perennial, and flowers in July and August. It is found everywhere in the country, from Canada and New England, to Florida and Missouri, growing in sandy and slaty fields, by fences and the road side, in poor and loose soils, on gravelly hills and alluvions, in open glades and thickets, but seldom in shady woods.

The root of *CONVOLVULUS PANDURATUS* is perennial, very large, cylindric or fusiform, from two to four feet long, as thick as the arm, yellowish outside, whitish and milky inside, with many fissures often branched below and attenuated above. Stems several from the same root, procumbent or climbing, slender, smooth, round, purplish, from

CONVOLVULUS PANDURATUS.

four to eight feet long, sometimes branched. Leaves cordate at the base, broad, alternate, petiolate, margin entire or undulate, or lobed in the sides like a fiddle, very sharp, but hardly acuminate, smooth, deep green above, pale green below. Petioles two—three inches long. Peduncles axillary, longer than the petioles, generally branching at the top and bearing several large flowers. Flowers in fascicles of two to six. Calyx with five unequal segments, ovate, obtuse, concave mutic, two smaller opposite, outside. Corolla large, funnel-shaped, about two or three inches long, and as broad above, base tubulose, color white, or incarnate, or purplish. Stamina white, filaments filiform, unequal, inclosed, anthers oblong. Style white, filiform, stigma bipartite, segments linear. Capsule oblong, with two cells and four seeds.

Linnæus named this plant *panduratus*, because the leaves are often lobed in the sides like a fiddle, but this does not always happen, and some plants have all the leaves cordate and entire. This plant is one of the false jalaps, and others are found from Georgia to Yucatan, in the sandy shores, and several are growing in South America. The true jalap of commerce has been ascribed to several plants, and a controversy exists on the subject. The true *Convolvulus jalapa* appears to grow in the Andes of South America and Mexico.

Bindweed is of easy cultivation, it grows readily in any soil, and is increased by the roots and seeds or by cuttings in sand.

CHEMICAL AND MEDICAL PROPERTIES.

The taste and smell of the root of *CONVOLVULUS PANDURATUS* approximate to scammony and jalap; they are, however, less nauseous and acrid. It possesses a large quantity of starch, and its properties are cathartic, diuretic and pectoral. It acts like jalap, rhubarb, briony and scammony, at a larger dose when given in substance, but the extract from the fresh root, which is milky, is more efficient, and is a mild cathartic at a small dose of ten or twelve grains. The plant is a safe substitute for the more costly roots already mentioned, and as the root often grows very large, sometimes weighing twenty pounds, it might advantageously be made an article of commerce.

Bindweed is a good purgative, in the torpid state of the intestines, in lencophlegmatic, hypochondriacal and maniacal subjects, in worm cases, and the slimy state of the bowels to which children are subject; and as a hydragogue cathartic in dropsy, it is supposed to possess singular efficacy. A tablespoonful of the powdered root may be taken twice a week. The Indians were well acquainted with its purgative qualities, and they also employed it as an external application for removing hard tumors, itch, scurf, &c. It is said, that they can

handle rattle-snakes with impunity, after wetting their hands with the milky juice of the root of this plant, or of *Arum Triphyllum*.

The root of the plant seems to possess some hydragogue properties, and has been very highly recommended in many parts of the United States, in cases of gravel. It is used either in powder or in decoction. Dr. Harris, of New Jersey, found an infusion or decoction of the root very useful in his own person. He is persuaded that it has enabled him to pass the calculous granules with greater facility. The fresh root cut in slices, and infused in spring or rain water, for twelve hours, and the patient taking a teacup-ful, four or five times a day, has carried off the urine, and has likewise been found very efficacious in bringing away large quantities of earthy matter in flakes. In some parts of Pennsylvania, where its root is collected and sold for *Mechoacanna*, it is represented to possess the same virtues and appearance as that article.

A syrup made of this plant, with skunk cabbage, is highly recommended as a pectoral and a mild and sure cathartic, and has been used with very good effect for consumptive coughs and asthma. Take two pounds of this root, bruised, and one pound of the bruised root of *Symplocarpus Fœtidus* or Skunk Cabbage, both dried, boil them in eight quarts of spring or rain water, to the consumption of four, strain the decoction through fine linen, to which add two quarts of honey, and boil the syrup down to three quarts. Keep the mixture in a stone jug, to be used in the following manner. Take a wineglass-ful of this liquor daily, four or five times a day, and use the following tea: pour a quart of boiling water on an ounce of the bruised dry root of Skunk Cabbage, and sweeten it with honey. Dose, a teacup-ful three times a day.

The root should be collected for medical purposes, at the end of summer, and if to be dried, ought to be cut in slices.

ADVERTISEMENT.—The second volume of the MATERIA MEDICA BOTANICA will be published in monthly numbers. Plants No. 25 and No. 26, commencing January, 1846. Each number will contain two plates of plants, colored from original drawings taken from nature, with the Botanical Analysis, Natural History, and Chemical and Medical Properties, as in the first volume.

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Price 12½ cents per Number, or \$1 50 cents per year.

PETER P. GOOD

Housatonic Institute, New Milford, Litchfield County, Connecticut.



Nº 25.

PHYTOLACCA DECANDRIA.

Poke Garget.

PHYTOLACCACEÆ.

The Garget-Poke Tribe.

NO. 25.

PHYTOLACCA DECANDRIA.

POKE. *Garget, Jalap.*

Place.—Europe, America.

Quality.—Anodyne, narcotic.

Power.—Cathartic, acrid.

Use.—Fevers, rheumatism, cancer, gout.

BOTANICAL ANALYSIS.

Natural Order. Phytolaccaceæ. Atriplices *Phytolaccaceæ*—J.
Miscellaneæ—L.

CLASS X. *Decandria.* ORDER, *Decagynia.*

Phytolaccæ, K. Brown in Conco, 454 (1818).

GENUS. PHYTOLACCA.

From the Greek *porra*, a plant, and Latin *lacca*, lac, because the plant produces berries with a fine purple juice resembling lac. The English-American name, Poke, is a corruption of *Pocun*, the name by which it was formerly known in Virginia.

SYNONYMS. *Moralla* 4 grapes (F.), *Die scharlachbere* (G.), *Lakplant* (D.), *Piania lacca* (J.), *Herba carumia* (S.), *Kalalic* (Surinam).

THE ESSENTIAL CHARACTERS.

Flowers. Regular, 5-lobed, petaloid.

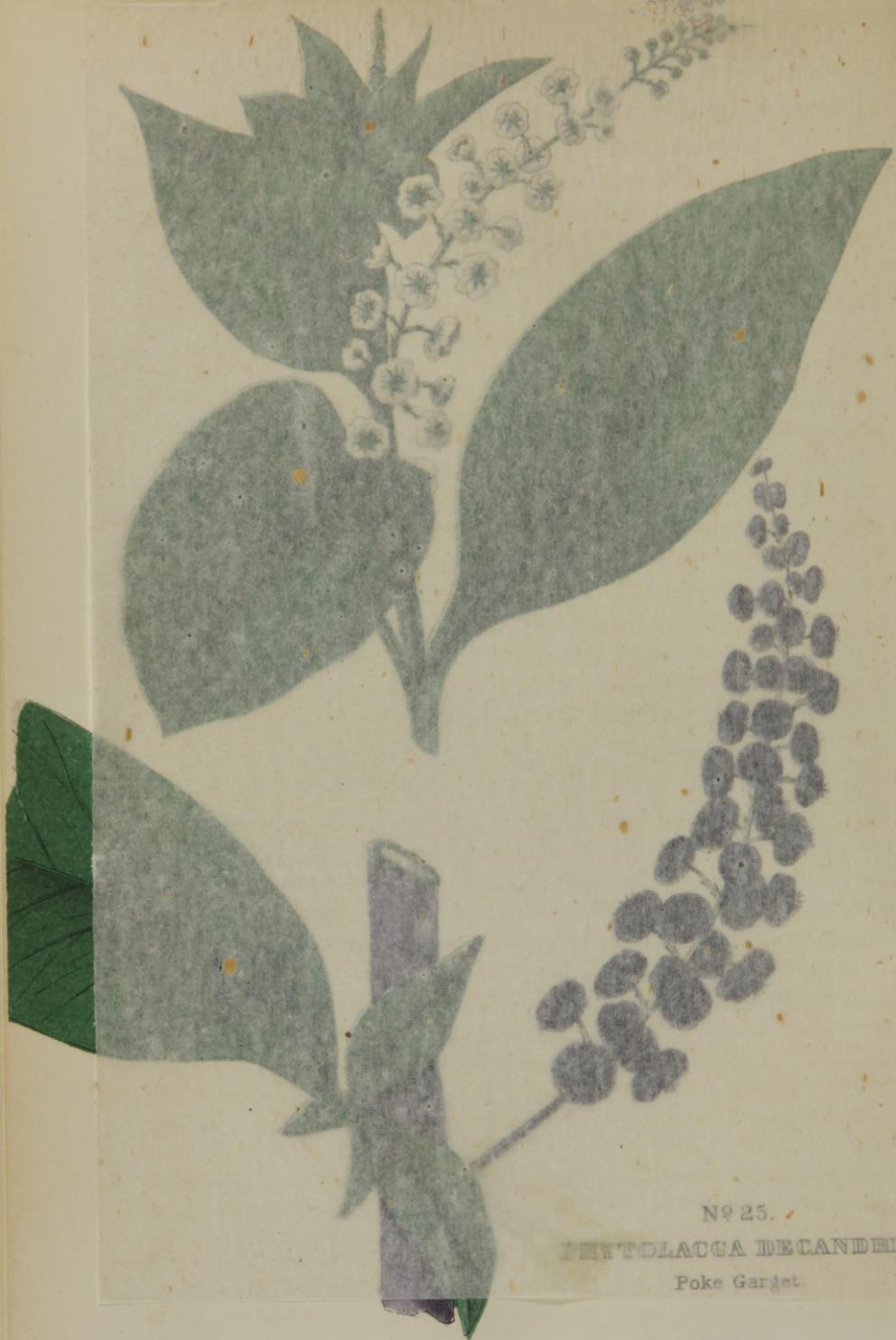
Corolla. 5-lobed. (By some authors the corolla is called a calyx.)

Stamens. 10, and alternate with the sepals or indefinite.

OVARY. One-several-celled. *Styles* and *Stigmas*, equal in number to the cells.

FRUIT. Baccate or dry.

SEEDS. Solitary, ascending. *Embryo* cylindric, curved around fleshy albumen.



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Phytolaccæ, R. Brown in Couco, 454 (1813).

GENUS. PHYTOLACCA.

From the Greek *φυρον*, a plant, and Latin *lacca*, lac, because the plant produces berries with a fine purple juice resembling lac. The English-American name, Poke, is a corruption of Pocan, the name by which it was formerly known in Virginia.

SYNONYMES. Morelle à grappes (*F.*), Die scharlachbere (*G.*), Lakplant (*D.*), Pianta lacca (*I.*), Hierba carmin (*S.*), Kalalio (Surinam).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* four-five, petaloid.

COROLLA. Wanting. (By some authors the corolla is called a calyx.)

STAMENS. Four-five, and alternate with the sepals or indefinite.

Ovary. One-several-celled. *Styles* and *Stigmas*, equal in number to the cells.

FRUIT. Baccate or dry.

SEEDS. Solitary, ascending. *Embryo* cylindric, curved around fleshy albumen.

PHYTOLACCA DECANDRIA.

THE SECONDARY CHARACTERS.

PHYTOLACCA. *Calyx* five-sepaled, resembling a corolla. *Stamens* seven-twenty. *Styles* five-ten. *Berry* superior, ten-celled, ten-seeded.

Calyx none. *Corolla* five-petalled or five-cleft, calyx-like, inferior. *Berry* ten-celled, ten-seeded.

THE SPECIFIC CHARACTERS.

PHYTOLACCA DECANDRIA. *Leaves* ovate, acute at both ends. *Flowers* with ten stamens and ten styles.

Leaves ovate, acute at both ends. *Flowers* racemed. *Berries* flattened at the ends.

THE ARTIFICIAL CHARACTERS.

CLASS DECANDRIA. *Stamens* ten. ORDER DECAGYNIA. Apetalous. *Calyx* petaloid, five-sepaled. *Fruit* a ten-seeded berry.

NATURAL HISTORY.

The PHYTOLACCA DECANDRIA is a plant very common to both the Old and the New World. It is found in the south of Europe, and in America it inhabits a very extensive tract of country, from the New England States to Mexico, and probably much farther south. It grows generally along road-sides and hedges, and in old fields. It is seldom found in woods, but when there, it appears to have grown up from seeds accidentally deposited by birds.

The root, when young, is nearly perpendicular in its direction; as it advances in age, it throws out numbers of lateral shoots, or branches. It often grows to a very large size, nearly the thickness of a man's arm. It is succulent and of a whitish color. The stem is frequently eight or ten feet high, with the diameter of an inch or more, herbaceous, round, smooth and branching. In some places, when mature, it is of a fine, deep purple color. The leaves are five inches long, two-three broad, alternate, sitting upon foot stalks, ovate, oblong, acute, very entire and smooth; they are petioled, and of a rich green color. Racemes cylindric, long at first, terminal, becoming finally opposite to the leaves. Flowers, greenish white, consisting of five ovate concave sepals, ten stamens, with white two-lobed anthers, and ten short recurved styles. The fruit is a dark purple berry, orbicular, depressed, having eight or ten longitudinal furrows, umbilicated by the pistils. There are as many loculaments as there are pistils. The berries are at first green, afterwards they are of a fine red color, and when perfectly ripe they are black. The seeds are reniform, or kidney-shaped, black, shining, and smooth. There is one seed in each loculament.

In many parts of the United States, the inhabitants very generally boil the young roots, and eat them in the manner of spinach. The stems, when boiled in this state, are scarcely distinguishable from it; they are nutritious, wholesome, and in taste equal to asparagus. Indeed, in some cases it is thought preferable, as it is a well-known fact that it does not affect the urine with fœtid odor, which so commonly occurs after eating asparagus.

CHEMICAL AND MEDICAL PROPERTIES.

The numerous experiments made with this plant by several eminent chemists, tend to prove that the *PHYTOLACCA DECANDRIA* contains gum and resin, with a large proportion of saccharine matter. The proportions of the gum and resin are, however, very different; thus, the quantity of resin from the root is very small in comparison to that of the leaves or berries, and the gum is also less than that of the berries. The stems and leaves contain more potash than any other plant—sixty-seven per cent. by burning, and forty-two per cent. of pure caustic potash, by lixivation. The plant also appears evidently to possess an anodyne quality, which may be inferred from the drowsiness it occasions, and perhaps from the ease in its operation as an emetic. It is diaphoretic, cathartic, and diuretic. These effects probably proceed from the narcotic and anodyne qualities above noticed. When an emetic is exhibited in small doses, diaphoresis generally is the result, especially if combined with an opiate; and frequently emetics, when they pass unchanged from the stomach into the intestines, prove cathartic: such substances, indeed, often show diuretic effects.

As an emetic this plant seems hardly inferior to ipecacuanha. Ten grains of the powder will seldom remain on the stomach, and twenty or thirty grains will always produce a powerful emesis, and sometimes catharsis. It operates with ease and rarely occasions nausea, pain, or cramp; it is rather slow in its effects, but continues to operate for a longer period of time than is usual with emetics, though it is readily checked with opium. The powdered leaves are also sometimes used for the same purpose, but the root is generally preferred, as it appears to be much more powerful, and, consequently, smaller doses of it are necessary.

The various effects of the different parts of this plant are remarkable. The root is more powerful than the other parts, notwithstanding it contains a smaller proportion both of gum and resin. It seems, however, highly probable that it contains in a greater quantity than the other parts, something of a volatile and corrosive property, (which exists throughout the whole plant,) as, when tasted, it is evidently stronger and more acrid than either the leaves or the berries. This corrosive and volatile property, appears also to be much more evident in the green than in the dry state of this vegetable, and is least

sensible when it is boiled. On this account, persons who have taken decoctions of this plant, were not only frequently disappointed, although the decoctions were strong, but they had to swallow immense doses before any cathartic effect could be produced.

This plant has obtained considerable reputation in the treatment of rheumatic affections, and lately the attention of many of the inhabitants of the United States has been drawn by its extraordinary effects, of the success of which they speak with astonishment. The case of Mr. Wm. Matlock, who was cured by the use of this valuable remedy, deserves to be mentioned. He had been afflicted with this disease for about eight or nine years, during which time he was attended by a number of physicians, but in vain: they tried every thing they could think of, (though they never had recourse to phlebotomy;) some remedies gave relief for a short time, but their effects were soon over. In this condition, his case really became desperate; he was, for a considerable time, unable to move; his jaws became locked, which once continued about ten days,) and his appetite failed. He at last had recourse to the tincture of the berries of *PHYTOLACCA DECANDRIA*. In about a week his appetite began to return, and his pains to subside: when the medicine purged him too much, he discontinued its use for a few days. By persisting in this remedy for about three months, he was perfectly restored, and became able to follow his business as usual. Mr. Matlock infused about a pint measure full of the berries in a pint of brandy. Of this he took a common wine glass full every night and morning.

As an external application, Poke, or Garget, has proved very beneficial in all sorts of cutaneous diseases, in cancerous sores, etc. It acts as a local stimulant and a mild caustic. It has been used to advantage in fistula lachrymalis, in the form of an extract applied twice a day on the part affected, and in hæmorrhoids, given internally in the form of an infusion, and when it does not operate, the same infusion is to be injected into the rectum. This method will in general effect a perfect cure.

The Portuguese were formerly in the habit of mixing the juice of the berries with their red wines, in order to give them a deeper color; but as it was found to debase the flavor and make the wine deleterious, the subject was represented to the king, who ordered all the stems of the *PHYTOLACCA* to be cut down yearly, to prevent further adulteration. The same practice was common in France, till it was prohibited by an edict from Louis XVI. under pain of death.

Farmers give a decoction of this plant to drench cattle, and apply them in the form of poultice for discussing tumors. In the disease called "yellow water," (a true sinochus, beginning with sinocha, and ending in typhus,) the *PHYTOLACCA* has proved very useful. The food of horses affected with this disease, should be sprinkled with a decoction of the roots of this plant.



№ 26.

HAMAMELIS VIRGINIANA.

Witch Hazel.

HAMAMELACEÆ.

The Witch-Hazel Tribe.

NO. 26.

HAMAMELIS VIRGINIANA.

Witch-Hazel.

Place.—North America, Japan.

Quality.—Slightly bitter.

Power.—Astringent, herpetic.

Use.—To remove canker from the stomach and bowels.

BOTANICAL ANALYSIS.

Natural Order. Hamamelaceæ Berberides *Hamamelaceæ*—J.
Miscellaneous—L.

CLASS IV. *Tetrandria.* ORDER, *Digynia.*

Hamamelis, Linn. R. Br. in Abel's voy. to China, (1618.) A. Richard Nouv. Élém. 338.
Class., Jacq. Prod. 4, 367, (1830.)

GENUS. HAMAMELIS.

From the Greek *ἄμα*, *ama*, that is, with an apple, because the fruit is upon the tree at the same time with the flowers.

SYNONYMS. *Lamprolance* (F.), *Die zauberstrauch* (Ger.), *Toverhazelaar* (Dutch).

THE ESSENTIAL CHARACTERS.

Stamens. Adherent to the ovary, four-cleft.

Pistil. *Petal*s four, linear.

Stamens. From three opposite the petals barren, (or more clefts than petals, with no petals.)

Stamens. *Stamens* solitary.

Stamens. *Stamens*, the summit free from the calyx. TWO-beaked, two-celled.

SEEDS. Pendulous.



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Miscellanæ—L.

CLASS IV. *Tetrandria.* ORDER, *Digynia.*

Hamamelideæ, R. Br. in Abel's voyage to China, (1818.) A. Richard Nouv. Elém. 532,
(1828,) Dec. Prod. 4, 267, (1830.)

GENUS. HAMAMELIS.

From the Greek *Ἄμα μήλον*, that is, with an apple, because the fruit is upon the tree at the same time with the flowers.

SYNONYMS. *L'hamamelis* (F.), *Die zauberstrauch* (Ger.), *Toverhazelaar* (Dutch.)

THE ESSENTIAL CHARACTERS.

CALYX. Adherent to the ovary, four-cleft.

COROLLA. *Petals* four, linear.

STAMENS. Eight, those opposite the petals barren, (or many, and all fertile, with no petals.)

OVARY. Two-celled, *ovules* solitary.

FRUIT. *Capsule* coriaceous, the summit free from the calyx. Two-beaked, two-celled.

SEEDS. Pendulous.

HAMAMELIS VIRGINIANA.

THE SECONDARY CHARACTERS.

HAMAMELIS. *Calyx* four-leaved, or cleft, with an involucl of two-three bracts at base. *Petals* four, very long, linear. *Sterile stamens* scale-like, opposite the petals, alternating with the four fertile ones. *Capsule* nut-like, two-celled, two-beaked.

Involucure three-leaved. *Perianth* four-leaved or four-cleft. *Petals* four, very long, linear. *Nut* two-celled, two-horned.

THE SPECIFIC CHARACTERS.

HAMAMELIS VIRGINIANA. *Leaves* obovate, acuminate, undulate-dentate, cordate, with a small sinus at base. *Flowers* sessile, three-four together, with a yellowish calyx, and four long, yellow, curled, or twisted petals. *Capsule* roundish, oblong, partly invested by the permanent calyx, containing two nuts.

Leaves inversely egg-shaped, acute, toothed, cordate, with a small sinus.

THE ARTIFICIAL CHARACTERS.

CLASS TETRANDRIA. *Stamens* four. **ORDER DIGYNIA.** *Shrubs*, or small trees. *Flowers* with four linear, and very long petals. *Capsules* two-celled.

NATURAL HISTORY.

The **HAMAMELIS VIRGINIANA** is a curious and remarkable shrub, not unfrequent in the forests of New England and North America. Amidst the reigning desolation of autumn and winter, this plant alone puts forth its yellow blossoms, and thus enlivens the otherwise dreary, surrounding scenery. The plant flourishes from New England to Carolina and Ohio; it is commonly found in damp woodlands, on hills and mountains, near the stony banks of streams, and rarely in alluvions, or in plains. The blossoms continue from October till February, totally distinct from all other trees, and the fruit remains on throughout the whole year, till the next fall, when it frequently explodes, with a noise like *Hura crepitans*, scattering the seeds around. The blossoms show a handsome yellow appearance, and are scattered along the branches in clusters of from three to five. They do not appear until the leaves begin to decay, when they remain in bloom until the snow falls, imparting to the woods a gay and spring-like beauty.

The Witch-Hazel is a shrub from six to ten feet high, with irregular branches, flexuous and knotty, bark smooth, gray, with brown dots. Leaves rather large, smooth, alternate, petiolate, obovate, base with a small sinus and unequal lobes, margin with unequal faint teeth, commonly obtuse, end obtuse, nerves prominent. Flowers on short

pedicels, clustered three to five together, in several places along the branches. Calyx small, but enlarging with the fruit, with three or four scales at the base, divided into four thick, oval, pubescent segments. Petals yellow, much longer, linear, obtuse, often undulate or revolute. Stamina four, opposed to petals, shorter than the calyx. Pistil, oval central, a short style, two stigmas obtuse. Fruit, a nut-like capsule, similar to a hazel-nut; but bilobed and split above, pubescent, yellowish with two cells, containing each an oblong black seed, with a broad arilla at the base. This capsule is one year ripening, and opens with elasticity, and instantaneously, with a noise, by two half valves throwing off the seeds.

The HAMAMELIS VIRGINIANA, in the appearance of the leaves, very much resembles the common hazel-nut, *CORYLUS AMERICANA*, but the blossoms are entirely different. The small branches were formerly used by the adepts of the occult arts, for "divining rods," to indicate the presence of precious metals, and of deep springs of water underground. The *Alnus* and *Corylus* were, however, often substituted for the shrub under consideration. A forked branch was used, and the two branches held in both hands; when and where the point drops are to be found the metals or springs sought. There are even at this day, persons who deem a denial of these virtues to the *Hamamelis Virginiana*, an offence little short of heresy.

Hamamelis is the name under which Athenæus describes a fruit like an apple. This is another of the not very commendable freaks of gentlemen who name genera; the present plant being more like a hazel-nut than an apple-tree.

CHEMICAL AND MEDICAL PROPERTIES.

The properties of the HAMAMELIS VIRGINIANA are not accurately ascertained, not having been as yet analyzed. It seems, however, from its peculiar popularity, to deserve the particular attention of practitioners. It is supposed to contain tannin, amarine, extractive, and essential oil. It is also said to be sedative, astringent, tonic, discutient, and very extensively and advantageously used in the north by herbalists.

This shrub has been highly esteemed by the Indians generally, and by the Osage tribe in particular, who called it *Sheuba*, and who universally employed it for the cure of ulcers, tumors, sores, etc.

The bark is slightly bitter and astringent, leaving a pungent sweetish taste, which remains for a considerable time. The smell is not unpleasant. It affords an excellent topical application for painful and inflammatory external inflammations generally. The bark and leaves dye brown, and with the addition of copperas make an excellent black. The inner rind is strongly recommended as a cataplasm poultice, or wash, in severe and painful inflammations of the eyes, and has been

found very efficacious. The leaves possess the same qualities, and may be used in the same manner, and for the same purposes. The leaves are an excellent astringent, and in combination with cayenne, may be freely and advantageously employed in any cases in which astringents are necessary. They have the reputation, also, of being anti-septic, and tonic. The infusion is useful in bleeding from the stomach; and, administered in the form of an injection, affords great relief in distressing and irritable piles. The leaves pulverised and used as snuff, are an excellent remedy for bleeding at the nose. A tea made with the leaves is a powerful styptic, and is frequently employed for many purposes;—in amenorrhœa, bowel complaints, pains in the sides, menstrual affections, bleeding of the stomach, etc. etc. In the latter case, the chewed leaves, decoction of the bark, or tea of the leaves, are all employed with very great advantage. In some cases the blood-vessels are so affected that hæmorrhage and ulceration take place. In such instances, the Witch-Hazel is particularly calculated, if judiciously applied, to remove purulent matter, and keep the orifice cleansed, while the same is healing. A strong decoction of the bark and leaves of this plant is frequently used, and with encouraging effect, in the form of an injection into the vagina, as a remedy in the bearing down pains of women, which occur at other periods than during labor, or for prolapsus, or falling down of the womb. In chronic stages of dysentery, after the inflammatory diathesis, tenesmus, etc., have been removed, this decoction has restored patients to health, after various tonics and astringents had been used to no purpose. A strong decoction is also commonly administered in injection, for bowel complaints, and with like success.

The seeds of this plant are sometimes eaten by the Indians, and in the south, where they are erroneously called, Pistachio nuts, although quite unlike the *Pistacia vera*, or true Pistachio of the Mediterranean. They are similar in shape to the esculent Pine seeds of *Pinus picea*; cylindrical, shining, black, outside white and farinaceous, inside rather oily and palatable, but less edible than the hazel-nut.

All the species of the genus HAMAMELIS have probably the same properties. In the north, the *Hamamelis parvifolia* is equally used. This species is distinguished by smaller leaves, pubescent beneath, hardly cordate at the base, undulate, and sinuate. The shrub is smaller than the HAMAMELIS VIRGINIANA, with blossoms of a brighter yellow, and grows in mountains.

The *Hamamelis macrophylla*, or big-leaf Witch-Hazel, is only found in the southern mountains, and is readily known by its large, rough, and round leaves.

Upon the whole, the HAMAMELIS VIRGINIANA may be said to be a mild and efficient astringent and anti-septic in all cases, and a safe substitute for *Statice*, *Myrica* and *Rubus*.



Nº 27.

LOBELIA INFLATA.

Emetic weed, Indian tobacco, Eyebr...

LOBELIACEÆ.

The Lobelia Tribe.

NO. 27.

LOBELIA INFLATA.

Emetic-weed, Indian Tobacco, Eyebright.

Place—United States.

Quality—Acrid, nauseous.

Power—Emetic, antispasmodic.

Use—To cleanse the stomach, relax the tissues and remove obstructions.

BOTANICAL ANALYSIS.

Natural Order. Lobeliaceæ—J. Campanulaceæ—L.

CLASS V. *Pentandria.* ORDER. *Monogynia.*

Campanulaceæ, 2 R. Brown, Prodr. 562. (1810.) Lobeliaceæ, Juss. Ann. Mus. 18. 1. (1811.) Dec. and Duby, 310, (1828.) Lindl. Synops. 187, (1829.)

GENUS. LOBELIA.

Named in honor of Matthias de Lobel, a distinguished Botanist and Physician to James I. Died in London, 1616.

SYNONYMS.—Lobelia (F.)

THE ESSENTIAL CHARACTERS.

CALYX. Superior, the limb five-lobed, or entire.

COROLLA. Limb irregular, five-lobed, the tube inserted into the calyx.

STAMENS. Five, inserted with the corolla, and alternate with its lobes.

Anthers coherent into a tube. *Pollen* oval.

OVARY. Adherent to the calyx tube. *Style* simple. *Stigmas* surrounded with a fringe.

FRUIT. A capsule, two or three-(rarely one)-celled.

SEEDS. Numerous.



Nº 27.

LOBELIA INFLATA.

Emetic weed, Indian tobacco, Eye-bright

LOBELIACEÆ.

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SYNONYMES.—*Lobelia* (F.)

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COROLLA. Limb irregular, five-lobed, the tube inserted into the calyx.

STAMENS. Five, inserted with the corolla, and alternate with its lobes.

Anthers coherent into a tube. *Pollen* oval.

Ovary. Adherent to the calyx tube. *Style* simple. *Stigmas* surrounded with a fringe.

FRUIT. A capsule, two or three-(rarely one)-celled.

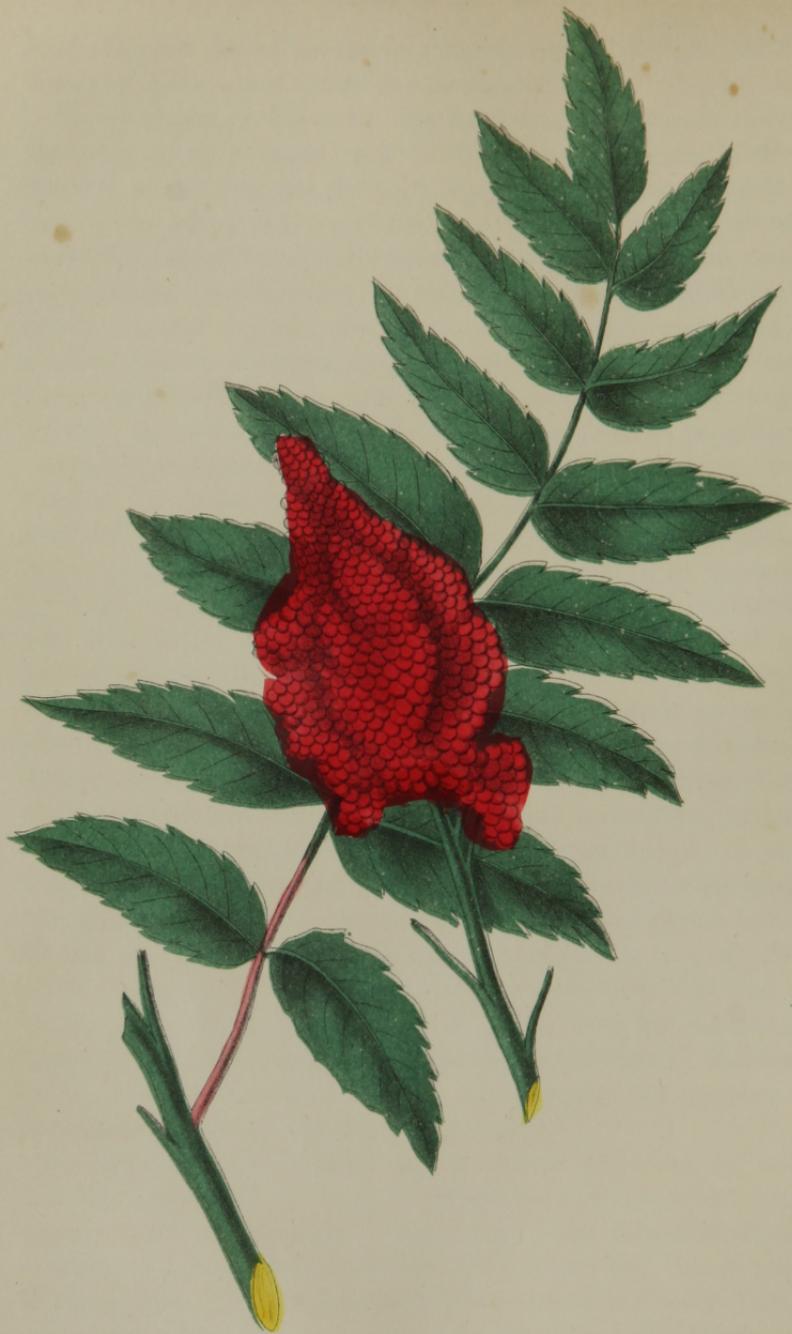
SEEDS. Numerous.

sation through the whole system ; acting therefore on the nervous system, and being a very diffusible stimulant of it.

Every portion of this plant, the *LOBELIA INFLATA*, is endued with the same acrid, pungent, and finally nauseating taste. On chewing the root, the leaves, the stem, or one of the capsules, the first impression on the palate is not very decided ; but on continuing the chewing, a sense of heat or biting is perceived in the back part of the tongue, and in the fauces. At this time, the taste of the plant is similar to tobacco, seneka, or tartar-emetic ; but if the mastication be continued, nausea and free increase of saliva come on ; and if the quantity of the article in the mouth be sufficient, and is swallowed, nausea and vomiting supervene, succeeded by great relaxation of the muscles, perspiration, and temporary prostration. One or two teaspoonsful in the recent state, will produce full vomiting in most persons. From this account it is evident that the effects of this plant are very stimulating to the mouth, and fauces, and throat ; and indeed, the great relaxation of muscular energy which it produces when extensively used, appears calculated to expect relief, if not cure, in cases of hydrophobia. Dr. Good relates a case of this description effectually cured in its last stage, which deserves attention ; but the subject has never yet been properly pursued. This plant has been recommended, in some shape or other, for almost every disease ; but for the following it may be considered as most efficient :— spasmodic asthma, bronchial cough, tetanus or lockjaw, and strangulated hernia. In asthma, particularly, the plant appears to be almost a specific, although it has failed in some cases when the disease was not spasmodic. In Europe this plant is extensively used as a remedy for this complaint, and with decided advantage. It is used till it produces nausea and vomiting, while for many diseases it is well to give small doses, frequently repeated. It avails thus for pneumonia and cough caused by accumulated mucus in the bronchias. For hernia, it is given in injection, like tobacco, which produces a complete relaxation, when the hernia can easily be reduced.

LOBELIA does not entirely lose its active properties by boiling or scalding. It should be used in substance or infusion ; the seeds and young leaves are strongest. One single grain is sometimes sufficient to produce emesis, while a moderate dose is said to be about ten grains of the powder. A tea-spoonful of the tincture is the usual dose ; but when made with the seeds it is more efficient, and a single dose has cured the lockjaw, by relaxing instantly the jaws and the whole system.

The free use of this plant is strongly recommended in all nervous diseases, fits, convulsions, spasms, asthma, tetanus, St. Vitus's dance, hydrophobia, &c. No means or process ever discovered are capable of producing a greater degree of relaxation of organic-fibre, and yet nothing that can relax at all, is less injurious to the constitution.



Nº 28.

RHUS GLABRA.

Smooth Sumach.

ANACARDIACEÆ.

The Cashew Tribe.

NO. 28.

RHUS GLABRA.

Smooth Sumach.

Place.—Europe, America.

Quality.—Styptic.

Power.—Astringent, refrigerant.

Use.—Diarthœa, dysentery, piles.

BOTANICAL ANALYSIS.

Natural Order. Anacardiaceæ—J. Dumosæ—L.

CLASS V. Pentandria. ORDER, Trigynia.

Terebintaceæ, Juss. Gen. 368, (1789.) in part. Casnyviæ or Anacardiæ, Brown, in Congo, 431, (1818.) Terebintaceæ, Kunth, in Ann. des Sc. Nat., 2, 338, (1824.) Trib. 1 and 2, Dec. Prodr., 2, 62, etc., (1825.) Juss. Dict. des Sc. Nat. v. 53, (1828.)

GENUS. RHUS.

From the Greek *rho*, to flow, because it is useful in stopping hæmorrhage.

SYNONYMS.—Le sumach ordinaire (F.), Der sumach (Ger.), Samak (Dutch), Semmoos (I.), Zamaque (Sp.), Sumagre (Port.), Koschewnoe derewo (Russ.)

THE ESSENTIAL CHARACTERS.

Calyc. Sepals three-five, united at base, persistent.

Corolla. Petals same number as sepals; sometimes wanting, imbricate-protrusæ.

Stamens. As many as petals, alternate with them, distinct on the floral axis.

Gynoecium. Ovary three-lobed. Ovules one. Styles three, or wanting.

Flowers. Perfect, or wanting, usually the latter.

Flowers perfect, sometimes polygamous or diœcious, regular, small.



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Natural Order. Anacardiaceæ—J. Dumosæ—L.

CLASS V. *Pentandria.* ORDER, *Trigynia.*

Terebintaceæ, Juss. Gen. 368, (1789.) in part. Cassuviæ or Anacardiæ, Brown, in Congo, 431, (1818.) Terebintaceæ, Kunth, in Ann. des. Sc. Nat., 2, 333, (1824.) Trib. 1 and 2, Dec. Prodr., 2, 62, etc., (1825.) Juss. Dict. des Sc. Nat. v. 53, (1828.)

GENUS. RHUS.

From the Greek *ῥέω*, to flow, because it is useful in stopping hæmorrhage.

SYNONYMS.—Le sumach ordinaire (*F.*), Der sumach (*Ger.*), Sumak (*Dutch*), Sommaco (*I.*), Zumaque (*Sp.*), Sumagre (*Port.*), Koschewnoe derewo (*Russ.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* three-five, united at base, persistent.

COROLLA. *Petals* same number as sepals; sometimes wanting, imbricate in æstivation.

STAMENS. As many as petals, alternate with them, distinct on the base of the calyx.

Ovary. One-celled, free. *Ovules* one. *Styles* three, or wanting. *Stigmas* three.

FRUIT. A berry, or drupe, usually the latter.

SEEDS. Solitary.

Flowers perfect, sometimes polygamous or diœious, regular, small.

THE SECONDARY CHARACTERS.

RHUS. *Calyx* of five sepals, united at the base. *Petals* and *Stamens* five. *Fruit* a small one-seeded, sub-globose drupe.

Calyx five-parted. *Petals* five. *Berry* one-seeded, small sub-globular.

THE SPECIFIC CHARACTERS.

RHUS GLABRA. *Leaflets* smooth, lanceolate, acuminate, acutely serrate, whitish beneath. *Fruit* downy.

Branches, petioles, and leaves glabrous. *Leaves* pinnate, many-paired. *Leaflets* lance-oblong, serrate, whitish beneath. *Fruit* silky.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. **ORDER TRIGYNIA.** *Flowers* inferior. *Leaves* alternate. *Shrubs.* *Berry* one-seeded.

NATURAL HISTORY.

The species of RHUS called RHUS GLABRA or smooth sumach, is a native of North America, and also of the south of Europe. It is found in almost all parts of the United States, and grows abundantly in old neglected fields, along fences, and on the borders of woods, and stony hills and mountains, and generally in gravelly soils. The shrub rises from four to twelve feet high; the root sending up many stems which divide into slender, woody, straggling branches, covered with smooth, brownish bark. The leaves are arranged into two rows, upon smooth petioles, and consist of many pairs of opposite leaflets, with an odd one at the extremity. They are all lanceolate, acuminate, acutely serrate, glabrous, of a deep, shining green color on their upper surface, and hoary or whitish beneath. In the autumn their color changes to a beautiful red.

The flowers appear in July and August, and are reddish-green, and disposed in large, erect, terminal, compound thyrses, which are followed by dense clusters of small crimson berries, covered with a very soft down. A whitish powder collects upon them soon after the occurrence of frost, which has received the name of "Indian salt." The berries, which become ripe in the early part of the fall, should be carefully collected before this substance is allowed to be washed away by the rain.

The bark of this and some other species, give out a milky juice on being broken.

This plant is considered no better than a weed in some parts of North America, where it overruns land left for a few years in pasture.

In Europe, however, it is sometimes carefully cultivated, even in green-houses, where it will thrive well in loam and peat; and cuttings

root freely under a hand-glass in sand. The hardy kinds grow in common soil, and are increased by cuttings of the roots or layers.

In some of the species of this genus, the flowers are hermaphrodite; in others, the male and female are on separate plants; and in some they are polygamous, males being mixed with the hermaphrodites.

The species from the Cape of Good Hope, rarely flowers in this country, and is chiefly cultivated for the sake of its foliage, which is neat, and not susceptible of injury from bad management.

CHEMICAL AND MEDICAL PROPERTIES.

The Genus *RHUS*, to which the species belongs, now under consideration, comprehends several varieties which possess poisonous properties, and should be carefully distinguished from the *RHUS GLABRA*, which is perfectly innocent, and whose berries are in some places used for culinary purposes. They have a sour, astringent, but not unpleasant taste, and are often eaten by the country people with impunity. The acid to which they owe their sourness is the malic, and is contained in the pubescence which covers their surface; as, when it is washed away by warm water, the berries are wholly free from any acidity.

The virtues of the *RHUS GLABRA* are completely extracted by water, and partially by alcohol. The aqueous infusion reddens litmus paper; precipitates the solution of sulphate of iron, black; that of nitrate of silver, brown, and throws down a precipitate with gelatine; hence the chemical analysis of *RHUS GLABRA* proves that it contains gum, resin, gallic acid, and tannin. It results also from the same experiments, that a narcotic principle is present on which its effects very materially depend.

The medicinal qualities of the plant are in a great measure ascribed to its stypticity and astringency; properties which it possesses in a sufficient degree to render it useful in dyeing, and tanning of leather, for which it was celebrated in the time of Dioscorides. In Spain and Portugal, the *RHUS GLABRA* is cultivated with extraordinary care. The country people cut down the shoots every year, quite to the root, and after being dried, they are reduced to powder by a mill, and thus prepared for the purposes of dyeing and tanning.

Both the leaves and berries have been advantageously employed in medicine; but the former are more astringent and tonic, and have been longer in use in various complaints indicating this class of remedies. The leaves may be employed, in combination with other articles, for all the purposes of an astringent. The berries, which are red, and of a roundish, compressed figure, contain a pulpy matter, in which is lodged a brown, hard, oval seed, manifesting a considerable degree of astringency. The pulp, even when dry, is gratefully acid, and has been discovered to contain an essential salt, similar to that of wood-

sorrel, or perhaps more nearly allied to crystals of tartar. The young shoots have great efficacy in strengthening the stomach and bowels; they are best, administered in a strong infusion. The seeds dried, reduced to powder, and taken in small doses, are used in dysentery, rheumatism, dysuria, sore throat, putrid fevers, hæmorrhage, gangrene, etc. They have an agreeable acid taste, and make a cooling drink, infused in water.

A tea made from *Smooth Sumach*, is useful in stranguary and bowel complaints. It is the color of wine, and makes a pleasant medicinal drink for children. Sweetened with honey, it is very beneficial as a gargle, in sore throat, and for cleansing the mouth, in putrid fevers.

In eastern countries the berries are commonly used as a pickle and their acidity is extremely grateful. Therefore, like many other acid summer fruits, these berries may be advantageously taken to allay febrile heat, and to correct bilious putrescency.

The bark of the root is considered a valuable antiseptic, in the form of a poultice, for old ulcers, and it is scarcely equalled by any other remedy. An infusion of the inner bark of the root, employed as a gargle, is recommended by experienced practitioners, as a specific in the sore mouth attending inordinate mercurial salivation. For ring-worms, tetter, and other cutaneous diseases, this plant furnishes an excellent external application; and as a wash for offensive sores, it has also proved very beneficial, having the effect to render them clean and white.

The Chippeway Indians regard the root of this plant as a sovereign remedy in the venereal disease. They use the decoction without any limitation, and it is said to soften the violence of the disease, to remove the sensation of heat and pain, and to be an effectual cure in gonorrhœa.

The gum which exudes from the bark, on being punctured during the summer, is similar to copal, and cures the toothache by being applied in hollow teeth. It is also singularly beneficial in gleet and obstructions of the urine, in the form of pills. They increase the secretion of urine, and lessen its burning or scalding on being voided. Take of sumach-gum, and fir-balsam, equal parts; pulverised loaf-sugar sufficient to form them into pills. One or two may be taken at a dose, and repeated two or three times a day.

The excrescences which are produced under the leaves of *RHUS GLABRA*, resemble galls in character, and contain large quantities of tannin and gallic acid. These galls have been used as a substitute for those imported, and are thought to be in every respect preferable. They may be collected at little expense, as they are produced very abundantly in the Western States. These excrescences, finely powdered and made into an ointment with fresh lard, afford a soothing application for piles.



Nº 29.

TARAXACUM-DEUS-LEONIS.

Dandelion.

COMPOSITE.

The Aster Tribe.

NO. 29.

TARAXACUM DENS-LEONIS.

Dandelion.

Place.—Europe, America.

Quality.—Milky.

Power.—Saporous diluting, diuretic.

Use.—Hypochondriasis, jaundice.

SYNONYMICAL ANALYSIS.

Order. Composite. *Suborder*. Cichorioideae—J. Composite—L.
Class. XIX. *Syngenesia*. *Order*. Polygamia Equalis.

Compositae, Almus, Pam. 3, 103, (1768.) *Knaut in Benth. N.G. et Sp.*, Vol. 4, (1830.)
Flora Mexic., 140, (1823.) *Synantheseae*, Rich. Aral. (1808.) *Cassini Dict. Sc.* N. 10.
180, (1808.) *Flora*, 35, 363, (1836.) *Caryophytæ, Cynarocéphalæ and Cichoracæ*, Juss.
18, (1837.)

GENUS. TARAXACUM.

Character.—Herbaceous, acaulescent, on account of its once celebrated medical
virtues.

Origin.—It grows in the East, Lower Asia (G.), Persia (G.), Friesland (G.),
the North of Europe (Russ.), Papaya (Pap.)

ESSENTIAL CHARACTERS.

The flowers are attached to the ovary, the disk wanting, the
corolla pale, bristles hairs, &c. called

ligulate or

the tube of the corolla. *Anthers*
cohering into a cylinder.



N° 20

TARAXACUM OFFICINALE L.

Dandelion

COMPOSITÆ.

The Aster Tribe.

NO. 29.

TARAXACUM DENS-LEONIS.

Dandelion.

Place.—Europe, America.

Quality.—Milky.

Power.—Saponaceous, diluting, diuretic.

Use.—Hypochondriasis, jaundice.

BOTANICAL ANALYSIS.

Natural Order. Compositæ. *Cichoraceæ*—J. Compositæ—L.

CLASS XIX. *Syngenesia.* ORDER *Polygamia Æqualis.*

Compositæ, Adans. Fam. 2, 103, (1763.) Kunth in Humb. N G et Sp., Vol. 4, (1820.)
Lindl. Synops. 140, (1829.) Synanthereæ, Rich. Anal. (1803.) Cassini Dict. Sc. N. 10.
131, (1818.) Ibid, 60, 563, (1830.) Corymbiferæ, Cynarocephalæ and Cichoraceæ, Juss.
Gen., (1789.)

GENUS. TARAXACUM.

From the Greek TARAKTIKOS, cathartic; on account of its once celebrated medical qualities.

SYNONYMES. Le Pissenlit (*F.*), Der Iowenzahn (*G.*), Paardebloem (*D.*), Piscia in letto (*I.*), Amargon (*S.*), Molotschai trawa (*Russ.*), Papawa ziele (*Pol.*)

THE ESSENTIAL CHARACTERS.

CALYX. Closely adherent to the ovary, the limb wanting or membranaceous, and divided into palæ, bristles, hairs, &c., and called pappus.

COROLLA. Superior, consisting of five united *petals*, either ligulate or tubular.

STAMENS. Five, alternate with the lobes of the corolla. *Anthers* cohering into a cylinder.

TARAXACUM DENS-LEONIS.

OVARY. Inferior, one-celled, one-ovuled. *Style* two-cleft, the inner margins of the branches occupied by the stigmas.

FRUIT. An achenium, dry, indehiscent crowned with the pappus.

SEEDS. Solitary, quadrangular.

Flowers collected in a dense head (capitum) upon a common receptacle, surrounded by an involucre of many bracts (scales.)

THE SECONDARY CHARACTERS.

TARAXACUM. *Involucre* double, the outer of small scales much shorter than the inner, appressed row; *receptacle* naked; *achenia* produced into a long beak crowned with the copious, white, capillary pappus.

Calyx double, imbricate, with flexible leaflets. *Receptacle* naked. *Egret* stiped.

THE SPECIFIC CHARACTERS.

TARAXACUM DENS-LEONIS. *Outer scales* of the involucre reflexed. *Leaves* runcinate, smooth, dentate.

Outer scales reflexed. *Scape* flowered. *Leaves* runcinate with toothed divisions.

THE ARTIFICIAL CHARACTERS.

CLASS SYNGENESIA. *Stamens* five, cohering by the tips of their anthers. ORDER POLYGAMIA ÆQUALIS. Herbaceous plants. *Flowers* or florets collected into dense heads (compound flowers.) *Corollas* monopetalous, of various forms.

NATURAL HISTORY.

Every one is acquainted with the *Dandelion*, which is found growing in all open situations, and blossoming at all seasons except winter. It is common to Europe, Asia, and America. It is spread all over the United States, and (though supposed by some to have been introduced) is undoubtedly a native plant.

TARAXACUM DENS-LEONIS is a perennial plant; the root is fusiform, and externally of a dark color. The leaves are all radical, and examples of that peculiar form termed runcinate, that is re-uncinate, the teeth or claws inclining backwards towards the base of the leaf rather than the summit. In very moist situations, however, they are nearly entire, toothed, smooth, and of a pleasant green color. The flower-stem is an erect one-flowered simple scape, hollow, round, naked, smooth, fistulous, fragile, and abounding with a milky bitter juice. The flower is terminal, large, of a golden color, and closes in the evening; the calyx is smooth, with the exterior scales loosely turned down; the florets are very numerous, ligulate, and toothed at the extremities. The receptacle is spheroidal and punctured. After the flower is closed and decayed, the scape rises higher and bears a head

of perfected seeds and seed-down, the airy, globular form of which is very conspicuous among the tall grass. The seeds are obovate, furrowed, of a pale olive color, and furnished with a radiated pappus on a large stipe.

The Dandelion is regularly produced in the markets of the larger cities of Europe, and is recommended as a winter salad, blanched like Endive. The tender leaves in spring, used in compound salads, are equal to those of Endive or Succory. The plant is seldom, however, cultivated, being generally found in sufficient luxuriance almost everywhere. As a weed, it is difficult to extirpate it, because every inch of the root will form buds and fibres, and thus constitute a new plant. It is, however, easily propagated by seeds, and if introduced as a garden plant, it should have a rich deep soil, and be carefully tied up and earthed round to blanch it effectually. To prevent the weakening of the plant and the dispersion of the seed, it will be well to cut off the flowers as they appear.

Swine appear fond of the plant, and goats will eat it; but sheep and cows dislike it, and horses refuse it altogether.

CHEMICAL AND MEDICAL PROPERTIES.

The *TARAXACUM DENS-LEONIS* is inodorous, but has a bitter, somewhat sweetish acidulous taste. The milky juice reddens the vegetable blues, owing to the presence of tartaric acid. Water extracts the juice better than alcohol, and scarcely any thing is taken up by either, yet caoutchouc has been detected in it. The decoction is precipitated by infusion of galls and solutions of nitrate of silver, muriate of mercury, and super-acetate of lead. Sulphate of iron strikes with a pale olive color, and after some time throws down a precipitate. Hence it is probable that the active principles of *TARAXACUM DENS-LEONIS* are extractive, gluten, a bitter principle which does not appear to be resinous, and tartaric acid either free or as a super-tartrate.

This plant has been long used on the continent of Europe, and with undoubted advantage, as a remedy in jaundice, dropsy, pulmonic tubercles, hepatic obstructions, and some cutaneous diseases. In England and the United States the plant has only been lately tried, and although its powers appear to have been very much overrated by the German and other continental physicians, yet it certainly possesses considerable efficacy in these diseases.

The root, leaves, and stock of the Dandelion contain a large proportion of bitter, milky juice, which possesses very considerable activity, the immediate effect of which is to remove visceral obstructions, particularly of the kidneys and urinary passages, and the spleen. It has a direct action upon the liver and kidneys, exciting them when languid. These parts of the plant are said to be mildly detergent and

aperient. They owe however these qualities chiefly, if not wholly, to the milky juice already mentioned, and which is saponaceous. Boerhave highly commends them as a resolvent; but the more immediate and sensible operation of this plant is to loosen the bowels and promote urine, which it does with little stimulus, though in a slight degree. Dr. Pemberton speaks of the properties of the root, leaves, and stalk of this plant with very great commendation, and recommends them accordingly. Dr. Murray observes that they resolve viscid humors, open obstructed vessels, and prove a valuable remedy for various eruptive complaints.

Great advantages have resulted from using the extract in chronic inflammation and incipient schirrhous of the liver, and in chronic derangements of the stomach. The extract is also well adapted for cases in which bile is deficient without an impaired state of stomach. It is applicable also to hepatic diseases and derangement of the digestive organs generally. Take of fresh Dandelion root, bruised, a pound, boiling water a gallon; macerate for twenty-four hours; then boil down to four pints, strain the hot liquor, and evaporate it to a proper consistence. Dr. Good affirms, that he has known great advantages result from the use of this extract. The usual dose is from ten grains to one dram, united with sulphate of potassa; or in the form of infusion, made by boiling two drams of the fluid root in two pints of water down to a pint, and to the strained fluid add three drams of supertartrate of potassa. Two ounces may be taken, three or four times a day.

Dandelion is frequently prescribed as a diuretic in domestic practice, with advantage; it is employed beneficially in all diseases of the urinary organs, and in dropsical affections of the abdominal viscera: it may be given in decoction. Take of the fresh herb and roots of Dandelion, four ounces; water, two pounds; boil to one pound, and strain the expressed fluid. By decoction water takes up the whole of the active principles of the *Taraxacum*. When the bowels are sluggish, or there are serous deposits, the addition of the bitartrate of potassa will greatly improve the efficacy of this decoction. The dose is from two ounces to three ounces, twice a day.

This plant, as a winter salad, possesses too much bitter principle to render it fit for the table under any management. The roots are eaten raw as a salad by the French, and boiled by the Germans like Salsafy and Scorzonera. Dried and ground into powder, they afford a substitute for coffee, in all respects equal to that of Chicory roots.

Dr. Rush speaks highly of the power of *TARAXACUM DENS-LEONIS*, and says that "*liver-grown* cattle are speedily relieved by grazing in fields abounding with this vegetable."

Dandelion should always be used fresh; for even extracts of it, as well as the root, leaves, and stalk, lose their power by keeping.



Nº 30.

ASCLEPIAS TUBEROSA.

Tuberous rooted Asclepias, Butterfly weed.

ASCLEPIADACEÆ.

The Asclepiadaceous Tribe.

NO. 30.

ASCLEPIAS TUBEROSA.

Tuberous-rooted Asclepias. Butterfly-Weed.

Place.—North America.

Quality.—Nauseous.

Power.—Sudorific, anodyne.

Use.—Pleurisy, colic, dysentery.

BOTANICAL ANALYSIS.

Natural Order. Asclepiadaceæ—J. Contartæ—L.

CLASS V. *Pentandria.* ORDER. *Digynia.*

Apocynæ, Juss. Gen. 143, (1789) in part; Dec. and Duby, Bot. Gall. 323, (1826.)
Asclepiadæ, R. Brown in Wern. Trans. 1, 12, (1809.) Prodr. 454, (1810.)

GENUS. ASCLEPIAS.

From the Greek name of Æsculapius, of the Latins, the god of Medicine and Physicians.

SYNONYMS.—*L'asclepiade* (F.), *Die seidenfrucht* (Ger.) *Zydevrught* (Dutch), *Asclepiade* (L.), *Asclepiada* (Sp.).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* five, slightly united, persistent.

COROLLA. *Petals* five, united at base, regular, deciduous, twisted-tubercularly in association.

STAMENS. Five inserted into the base of the corolla, and alternate with its segments. *Filament* connate. *Anthers* two-celled, cells sometimes nearly divided by partial septa. *Pollen*, when the stamens have, coming in masses, which are as many as the cells, or confluent into pairs, and adhering to the five processes of the stigma, either by twos, by fours, or singly.



N° 30

ASCLEPIAS TUBEROSA

Tuberous rooted Asclepias, Butterfly weed.

ASCLEPIADACEÆ.

The Asclepiadaceous Tribe.

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CLASS V. *Pentandria.* ORDER. *Digynia.*

Apocynæ, Juss. Gen. 143, (1789) in part; Dec. and Duby, Bot. Gall. 323, (1828.)
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GENUS. ASCLEPIAS.

From the Greek name of Æsculapius, of the Latins, the god of Medicine and Physicians.

SYNONYMES.—L'asclepiade (*F.*), Die seidenfrucht (*Ger.*) Zydevrugt (*Dutch*), Asclepiade (*I.*), Asclepiada (*Sp.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* five, slightly united, persistent.

COROLLA. *Petals* five, united at base, regular, deciduous, twisted-imbricate in æstivation.

STAMENS. Five inserted into the base of the corolla, and alternate with its segments. *Filament* connate. *Anthers* two-celled, cells sometimes nearly divided by partial septa. *Pollen*, when the anther bursts, cohering in masses, which are as many as the cells, or confluent into pairs, and adhering to the five processes of the stigma, either by twos, by fours, or singly.

OVARY. Two. *Styles* two, approximate, often very short. *Stigmas* united into one, which is common to both styles, and with five glandular angles.

FRUIT. *Follicles* two, one of them sometimes abortive.

SEEDS. Numerous, pendulous, almost always comose at the hilum. *Albumen* thin. *Embryo* straight. *Cotyledons* foliaceous. *Radicule* superior.

THE SECONDARY CHARACTERS.

ASCLEPIAS. *Calyx* small. *Petals* united at base, reflexed. *Corona* (nectary) five-lobed, with five averted horns at the base of the lobes. *Antheridium* (connate mass of anthers) five-angled, truncate, opening by five longitudinal fissures. *Pollinia* (masses of pollen) five distinct pairs. *Follicles* two, ventricose. *Seeds* comose.

Petals five, reflexed. *Nectaries* five, concave, erect, containing little horns, each stamen with a pair of pendulous masses of pollen, suspended from the top of the stigma. *Follicles* smooth.

THE SPECIFIC CHARACTERS.

ASCLEPIAS TUBEROSA. *Stem* ascending, hairy, with spreading branches at top. *Leaves* alternate, oblong, lanceolate, sessile. *Umbels* numerous, forming large terminal corymbs.

Stem erectish, at the top spreading-branched, very rough-haired. *Leaves* scattered, oblong, lanceolate, rough-haired. *Umbels* terminal, sub-corymbed.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. ORDER DIGYNIA. Monopetalous. *Stamens* inserted on the pistil, consolidated with it. *Juice* milky.

NATURAL HISTORY.

The genus to which the superb plant ASCLEPIAS TUBEROSA belongs, contains an assemblage of some of the most beautiful productions of the vegetable kingdom; and the plant under consideration is perhaps one of the most elegant of this description.

The root is large, fleshy, and somewhat irregularly tuberous, sending up numerous erect and somewhat decumbent hairy stems, branching at the top. The stems are round, very hairy, and of a reddish color. The leaves are scattered, and supported on petioles little more than the eighth of an inch in length, varying in being lanceolate-oval, long-oval, lanceolate, and repand on the margin. They are of a deep rich green above, much paler underneath, and very hairy. The umbels are terminal, and somewhat in the form of a corymb. The bracteal involucre is composed of numerous narrow-linear, nearly

subulate membranaceous leaves, of a salmon color. The flowers are situated in terminal corymbose umbels, and are of a brilliant reddish-orange color. The fruit is a long, narrow, roundish pod, pointed at each end, and the seeds, like the rest of the genus, are furnished with a long, silky appendage. The plant continues for a long time in bloom, at which time its rich green leaves, contrasted with its gorgeous inflorescence, render it a universal favorite. Its geographical distribution is very extensive, being found from the northern states to the southern boundary of the Union; but it is most abundant in the Carolinas and Georgia. It is found all over the United States, but most abundant in the south, and generally in fields and open situations, on poor and gravelly soils, along gravelly streams, on hills, and sometimes in meadows. It flowers in the months of June and July. It generally requires a good deal of room to show its characters, and is readily propagated by seeds, or dividing the roots.

The singular structure of the flower of the *ASCLEPIAS TUBEROSA*, is such as to puzzle Botanists; and it might as well be considered decandrous as monadelphous, the flowers appearing to have a double corolla. The inner one has five lobes, called nectaries or auricles. This structure, however, renders the genus very natural and easily recognizable.

CHEMICAL AND MEDICAL PROPERTIES.

Many estimable qualities are usually attributed to this very favorite plant and popular medicine; subtonic, diaphoretic, expectorant, diuretic, laxative, escarotic, carminative, antispasmodic, &c. It is a mild sudorific, acting safely without stimulating the body. The plant may also be confidently recommended as a mild cathartic, particularly suitable to the complaints of children, as it leaves the bowels in a tranquil condition; and as a certain diaphoretic, attended with no inconsiderable expectorant effect. The multitude, respectability, and strength of evidence in favor of these very desirable qualities, leave no room to suppose that the plant has received undue encomiums. Its expectorant effect in pneumonia, and catarrha, is substantiated by a multiplicity of corroborative facts, the relation of which is derived from undoubted respectability.

The powdered root of the *ASCLEPIAS TUBEROSA* frequently acts as a mild purgative, but it is particularly valuable for its virtues as an expectorant and febrifuge; and in this respect its efficacy is amply confirmed by the testimony of numerous physicians, from observations during extensive practice of long standing. From the successful employment of this plant for many years, several respectable practitioners have imbibed such confidence, that they extol it as possessing the peculiar and almost specific quality of acting on the organs of respi-

ration, powerfully promoting suppressed expectoration, and thereby relieving the breathing of pleuritic patients, in the most advanced stage of the disease; and in pneumonia, fevers, recent colds, catarrhs, and diseases of the breast in general, this remedy has proved wonderfully efficacious. It should be taken in the form of a strong infusion, a tea-cup full every two or three hours.

Butterfly-Weed is supposed to act specifically on the lungs, to promote suppressed expectoration, and to relieve the breathing and pains in the chest. In inflammation of the lungs it is always beneficial. It appears to equalize the circulation, and exert a mild tonic effect as well as a stimulant power over the excretories. It has been given in asthma, rheumatism, syphilis, and even in worms. It is said, when taken freely in a strong decoction till it vomits, to have cured the bite of a rattlesnake. Taken in that quantity, it creates a profuse perspiration, which carries off the poison.

But in flatulency, colics, and griping pains in the stomach, its benefits are most conspicuous in giving quick and effectual relief. It has, in the hands of skilful practitioners, removed many misnamed liver complaints. For these purposes, it is best administered in powder; a teaspoonful every half hour till relief is obtained.

In a low state of typhus fever, this plant has produced perspiration when other sudorifics had failed.

By many respectable families in the country, this root has long been esteemed as a domestic medicine, and resorted to for relief of pains of the stomach, from flatulence and indigestion; hence the vulgar name of *Wind root*, by which it is known in some parts of the country, and from its color it is by some called *White root*. By a perseverance for several weeks, in the use of about one drachm of the powdered root every day, the lost tone of the stomach and digestive powers has been restored.

All these valuable properties of the ASCLEPIAS TUBEROSA, many of which are well attested, richly entitle the plant to a distinguished reputation; and so numerous and respectable are the authorities in support of its celebrity, that its elevated character as a medicine claims undisputed reputation.

The doses are from twenty to thirty grains of the powdered root, three times a day, or a gill of the decoction and infusion every few hours: a vinous infusion, and a decoction in milk, are also strongly recommended in some cases.

ASCLEPIAS SYRIACA is remarkably odoriferous, and in Canada the French eat the tender shoots in spring like asparagus. The natives make a sugar of the flowers, gathering them in the morning when they are covered with dew, and collect the cotton from their pods to fill their beds. On account of the silkiness of this cotton, Parkinson calls the plant *Virginian silk*.



Nº 31.
QUERCUS RUBRA.
Red Oak.

PLATE 100. QUERCUS YONKANA. (See page 100.)



100
QUERCUS YONKANA
Lam.

CUPULIFERÆ.

The Oak Tribe.

NO. 31.

QUERCUS RUBRA.

Red Oak.

Place.—Northern parts of Europe and America.

Quality.—Dry, styptic.

Power.—Astringent.

Use.—The bark and cups in diarrhœa, tertians, hæmorrhages.

BOTANICAL ANALYSIS.

Natural Order. Cupuliferæ—J. Amentaceæ—L.

CLASS 21. *Monœcia.* ORDER. *Polyandria.*

Cupuliferæ, Rich. Anal. du Fr. (1808.) Lindl. Synops. 239, (1829.) Blume Flora Javæ, (1829.)
Corylaceæ, Mirb. Elém 906, (1815.) Quercineæ. Juss. in dict Sc. Nat. Vol. 2, Suppl. 12, (1816.)

GENUS. QUERCUS.

From the Celtic *quer*, excellent, and *cuez*, a tree; so called emphatically on account of its beauty and because the sacred mistletoe grew upon it. The more common Celtic name was *derw*, hence druid.

SYNONYMES.—Le chêne (F.), Die eiche (G.), Eik (Dutch), Quercia (I.), Roble (S.), Pelut (Pers.),
Dub, (Russ.), Dab (Pol.), Eeg (Dan.), Ek (Sweed).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* regular and membranous, or scale-like.

COROLLA. None.

STAMENS. One—three times as many as the sepals, inserted into their bases.

OVARY. Adherent, seated within a coriaceous involucre (cupule) with several cells and several ovules in each. *Stigmas* several, sessile, distinct.

FRUIT. A bony or coriaceous nut, more or less enclosed in the cupule.

SEEDS. One, two, or three (most of the ovules being abortive) pendulous.

Albumen wanting. *Embryo* large. *Radicle* minute, superior. *Cotyledons* fleshy, plano-convex.

Flowers generally monœcious. STERILE in aments, FERTILE solitary, or two, or three together or in fascicles.

THE SECONDARY CHARACTERS.

QUERCUS. STERILE FLOWERS, in a loose ament; *Calyx* mostly five-cleft. *Stamens* five-ten. FERTILE FLOWERS. *Cupule* cup-shaped, scaly; *Calyx* incorporated with the ovary, six-lobed; *Ovary* three-celled, two of the cells abortive; *Style* one; *Stigmas* three; *Nut* (acorn) coriaceous, one-celled, one-seeded, surrounded at the base by the enlarged, cup-shaped, scaly-cupule.

STAMINATE FLOWERS, ament loose; *Calyx* sub-five-cleft. *Coral* none; *Stamens* five-ten. PISTILLATE FLOWERS, *Calyx* one-leafed, entire scabrous, being a woody cup; *Style* one, *Stigmas* two-five; *Nut* or acorn, one-celled, one-seeded, coriaceous, surrounded at the base by the permanent calyx.

THE SPECIFIC CHARACTERS.

QUERCUS RUBRA. *Leaves* on long petioles, smooth, obtusely sinuate. *Lobes* rather acute, dentate; *Cup* shallow and flat, smoothish; *Acorn*, subovate.

Leaves long-petioled, oblong, glabrous, obtusely sinuate. *Lobes* acutish, toothed, setaceous-mucronate; *Calyx* saucer-form, smoothish; *Acorn* sub-ovate, turgid.

THE ARTIFICIAL CHARACTERS.

CLASS MONŒCIA. *Stamens* apart from the pistils in different flowers upon the same plant. ORDER POLYANDRIA. *Trees*, Angiospermous monœcious. *Fruit* a nut (acorn) bony or coriaceous, and more or less enclosed by a cupule, *Leaves* simple.

NATURAL HISTORY.

The Cupuliferæ constitute a large portion of the forests of the northern temperate regions, and of mountainous tracts within the tropics. The order comprehends the oak, the hazel-nut, the beech, and the chestnut, and can scarcely require much to be said of their history, they are too common to be unknown, even by the most ignorant. The red oak is the most common species in the Northern States, and in Canada. It is a lofty wide spreading tree, seventy feet in height, with a diameter of three or four. The leaves are six—ten inches long, smooth on both sides, with deep and rounded sinuses between the narrow mucronated lobes. The flowers appear in May, succeeded by very large acorns, contained in cups so shallow as

rather to resemble saucers, and are greedily devoured by wild and domesticated animals. The wood is reddish, coarse-grained, of little value as timber, but excellent for fuel. The bark is extensively used in tanning.

The galls of commerce, are not the production of this species of *QUERCUS*; they are obtained from the *quercus infectoria*, a species scattered throughout all Asia Minor, from the Bosphorus as far as Syria, and from the waters of the Archipelago as far as the frontiers of Persia. The gall comes at the shoots of the young boughs and is produced by a small hymenopterous insect or fly, with a fawn-colored body, dark antennæ, and the upper part of the abdomen of a shining brown. The insect punctures the tender root with its sting, which is spiral, and deposits its egg in the puncture. This occasions a morbid irritation in the vessels of the part; the gall rises in a few hours, and attains its full size in a day or two before the larva is hatched; the egg grows with the gall, and it is by the irritation which it keeps up—not as has been supposed by the maggot feeding on the juices of the plant—that the morbid excitement is maintained in the vessels of the part, sufficient for the production of this kind of vegetable wen. The galls are gathered before the larva within them changes to a fly and eats its way out; for when this has happened the galls are greatly deteriorated. The first galls that are picked are known by the terms *black* or *blue galls*, and *green galls*. Those which are gathered afterwards are of an inferior quality and denominated *white galls*. The best galls are those of Aleppo, and are brought to this country in bags and cases.

CHEMICAL AND MEDICAL PROPERTIES.

Almost every part of the *Oak* is astringent, but the bark only is officinal; and as its epidermis is perfectly inert, it is taken for medical purposes from the smaller branches, the epidermis of which is still thin, and scarcely cracked. The bark cut in spring is preferable to that which is cut in winter as it contains four times the quantity of the astringent principle or tannin.

Oak bark is inodorous, has a rough astringent taste, and yields its virtues to both alcohol and water. The watery infusion is affected by all those tests which indicate the presence of gallic acid, tannin and extractive. Sir H. Davy found that one ounce of the inner cortical part of young oak bark, affords by lixiviation one hundred and eleven grains of solid matter, of which seventy-seven are tannin; the cellular integuments, or middle colored part, yields forty-three grains only of solid matter, of which nineteen are tannin; and the epidermis furnishes scarcely any quantity either of tannin or of extractive. The quantity of tannin, however, varies according to the size and age of the trees and the season at which they are barked. It has been discovered that the infusion of oak bark does not precipitate tartarized an-

timony or the infusion of *Santa Fecinchona*, which resembles the officinal red cinchona, although both of these are precipitated by infusion of galls. The infusion of oak bark, however, forms a precipitate with infusion of yellow cinchona bark.

Oak bark is tonic and astringent. It has been given, united with bitters and aromatics, with seeming advantage in intermittents; but it is in every respect, inferior to *cinchona*, and cannot be depended on. It is, however, useful in obstinate diarrhœa and alvine hæmorrhages; and it is strongly recommended in the malignant coryza (*snuffles*) of infants, when, in spite of keeping the bowels regular and the use of cordials, the child become weak and pallid.

The following is the usual form under which oak bark is exhibited:

Take of oak bark, an ounce; water two pints. Boil down to a pint and strain. From oak bark, thus treated, the greater part of its astringent matter is extracted. The decoction is nearly inodorous, has a brown color, and the austere taste of the bark. It reddens tincture of litmus, and is precipitated by solutions of isinglass, infusion of yellow cinchona bark, the carbonates of the alkalis, the aromatic spirit of ammonia, lime water and solutions of sulphate of iron, acetate of lead, oxymuriate of mercury and sulphate of zinc, which are therefore incompatible in formulæ with it. The precipitates produced by the two last salts, do not take place for a considerable time. It does not precipitate tartar emetic in solution.

The decoction is recommended as a local astringent, it is used as a gargle in cynanche and relaxation of the uvula; as an injection in passive uterine hæmorrhages, epistaxis of aged persons, in leucorrhœa, and the gleet discharge which often remains after miscarriages. It is also a useful wash in piles and proclidentia recti.

The extract of oak bark is highly recommended for the cure of rupture. After a rupture has been reduced, bathe the part and apply the truss. Repeat this operation three or four times a day till cured.

Galls are the most powerful of the vegetable astringents. They are seldom used as an internal remedy, although in combination with bitters or aromatics, they have been given in obstinate diarrhœas, passive intestinal hæmorrhages and intermittents. They are frequently ordered in the form of gargles and injections; and an ointment formed of galls in fine powder with eight parts of simple ointment and a small proportion of powdered opium is a useful application to blind piles. For internal exhibition, the dose of galls may be from ten grains to one scruple, which may be given twice or thrice a day.

Proof spirit dissolves tannin, consequently the following tincture of galls contains all the astringency of the galls, and may be employed in the same cases. The dose is from one to three drams. Take of galls, in powder, two ounces; proof spirit sixteen ounces. Macerate for seven days, then filter through paper.

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Nº 32

CAPSICUM ANNUM.

Red Pepper. Cayenne Pepper.

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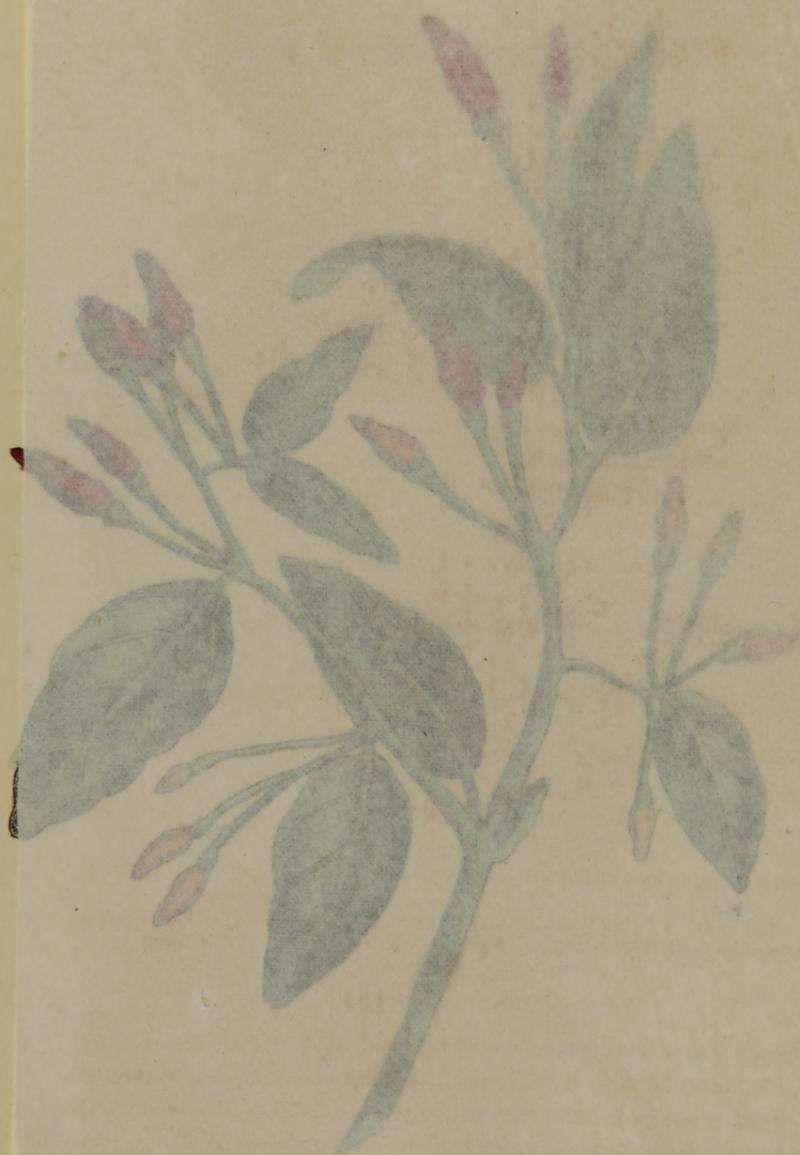
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SEEDS. Numerous. *Embryo* curved, lying in fleshy albumen.



N° 42

CAPSICUM ANNUUM.

Red Pepper Common Pepper.

SOLANACEÆ.

The Potato Tribe.

NO. 32.

CAPSICUM ANNUUM.

Red Pepper. Cayenne Pepper.

Place.—East and West Indies.

Quality.—Pungent.

Power.—Stimulant, aperient.

Use.—Rheumatism, palsy, gout, &c.

BOTANICAL ANALYSIS.

Natural Order. Solanaceæ.—J. Luridæ.—L.

CLASS V. *Pentandria* ORDER. *Monogynia*.

Solanææ. Juss. Gen. 124, (1789); R. Brown Prodr. 443, (1810); Lindl. Synops. 180, (1829.)

GENUS. CAPSICUM.

From the Greek *καπρω*, to bite, on account of the taste of the fruit.

SYNONYMS.—Le piment (*F.*), Der Spanische pfeffet (*Ger.*), Spaanchepeper (*Dutch*), Il peberone (*I.*), El Pimentero (*Sp.*), Pimentao (*Port.*), Vallia-Capo-Molazo (*Malab.*), Perez (*Russ.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* four—five, more or less united, mostly persistent.

COROLLA. Regular, *Limb* four—five-cleft, plaited in æstivation, deciduous.

STAMENS. Four—five (sometimes one abortive), inserted on the corolla alternate with its segments. *Anthers* bursting longitudinally, rarely by terminal pores.

OVARY. Free (superior), two-celled, with the placenta in the axis. *Styles* and *Stigmas* united into one.

FRUIT. A capsule or berry.

SEEDS. Numerous. *Embryo* curved, lying in fleshy albumen.

CAPSICUM ANNUM.

THE SECONDARY CHARACTERS.

CAPSICUM. *Calyx* five-cleft, erect, persistent. *Corolla* rotate, five-cleft. *Anthers* connivent. *Fruit* capsular, dry, inflated.

Corolla wheel-form. *Berry* juiceless, inflated. *Anthers* converging. *Calyx* angular.

THE SPECIFIC CHARACTERS.

CAPSICUM ANNUM. *Stem* herbaceous. *Fruit* oblong on smooth stalks, erect or pendulous.

Stem herbaceous. *Peduncles* solitary.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. ORDER MONOGYNIA. Monopetalous. *Flowers* inferior. *Corolla* regular. *Stamens* alternate with petals. *Fruit* a capsule or berry. *Cells* two, many seeds. *Æstivation* plicate.

NATURAL HISTORY.

The CAPSICUM ANNUM is an herbaceous, branching annual plant, which, though a native of both the Indies, is cultivated in nearly all parts of the world. It was introduced into England in 1548, and was highly esteemed in Gerard's time. It flowers during the summer months, and the fruit ripens in October.

The stem is herbaceous, roundish, smooth, crooked, branching and rising two or three feet in height. The leaves are ovate, smooth, entire, placed on long footstalks in an irregular order. The flowers are peduncled, axillary, solitary and white. The calyx is persistent, tubular and divided at the edges into five short segments. The corolla is wheel-shaped, five-cleft, the segments pointed and plaited. The filaments are short, tapering with oblong anthers; and the germen is ovate, supporting a slender style which is longer than the filaments, and terminated by a blunt stigma. The fruit is a long conical pendulous pod-like berry, of a shining orange-scarlet or sometimes yellow color, two-celled and containing a dry spongy pulp with several flat kidney-shaped seeds.

The plant is cultivated for its fruit, which is used in a green state for pickling, and ripe for mixing with other ingredients, as Tomatos, &c., to form sauces. They are also dried and ground and used like Cayenne pepper. The seed is sown in the end of March or beginning of April, on a

moderate hot bed, and covered a quarter of an inch. When the plants are two or three inches in growth, some are transplanted into a new slight hot-bed to forward them for final planting, or in default of such a hot bed, they are placed in a bed of light rich earth from twelve to eighteen inches apart, where they are finally to remain till the end of May, and protected during night by mats. They will flower in July and produce plenty of pods, which ripen in October.

CHEMICAL AND MEDICAL PROPERTIES.

The fruit of the CAPSICUM or Cayenne pepper, possesses an aromatic odor, which is somewhat impaired by drying, and an aromatic, extremely pungent, acrimonious taste, setting the mouth as it were on fire, and the impression remaining long on the palate. These sensible qualities are imparted to water, alcohol and ether. Half a dram of the powder infused in three ounces of boiling water lost twelve grains. The infusion is precipitated by infusion of galls, and alcohol dissolves the precipitate. It is only precipitated by nitrate of silver, perchloride of mercury, acetate of lead, the sulphates of iron, zinc, and copper; the alkaline subcarbonates and alum: and is not altered by the mineral acids, the solution of potassa, nor cilicized potassa. The ethereal tincture, when evaporated on the surface of water, left an orange-colored resin, in which the pungency of the CAPSICUM was concentrated. These experiments point out the substances which are incompatible in formula with infusions of Capsicum, and has led to the conclusion that it contains chiefly cinchonia, resin, vegetable mucus, and an acrid principle, a fixed oil, in which the acrimony resides. When sold in powder, CAPSICUM is sometimes adulterated with red lead, which, however, may be readily detected by the methods already detailed.

The berries of the CAPSICUM are a powerful stimulant unaccompanied with any narcotic property. They have been successfully given in atonic gout, in dyspepsia, when accompanied with much flatulence, in tympanitis and paralysis. In dropsies and other cachectic complaints, when chalybeates are indicated, a small portion of powdered CAPSICUM is recommended as an excellent addition; and it has been employed with remarkable success in obstinate intermittents. The experience of several very eminent Practitioners of its efficacy as an adjunct to cinchona in intermittents, is abundant to recommend its use. It has also been found very beneficial in lethargic affections, and one of the most singularly popular tinctures of the day, as a specific for these affections is but an infusion of Capsicum (with some other herbs) in proof spirit, with a small quantity of sulphuric acid.

The diseases however, in which CAPSICUM has been found most useful are, cynanche maligna, and scarlatina maligna, in which it is given both internally, and used as a gargle. Its sensible effects are heat in the stomach

and a general glow over the body, without much affecting the pulse, and as a gargle it cleans without impeding the healing of the ulcers of the fauces: and in palsy of the tongue it is strongly recommended. Cataplasms of Capsicum, operate as powerful rubefacients in chrome, rheumatism, palsy, gout, &c., without blistering the skin, and are likewise used to relieve the conic and delirium, which almost constantly attend tropical fevers. The diluted juice of the fruit is said to be a sovereign remedy in ophthalmia from relaxation.

CAPSICUM has become notorious as a principal article in the practice of Thompsonian doctors, who affirm that it retains the vital heat, and causes a free perspiration: they boast of employing it in all diseases, in doses of half, to one teaspoonful with good effect, to have cured agues, fever, &c., &c., with it, and to have found it always harmless. Notwithstanding these universal encomiums, it is difficult to believe it is not pernicious, rather than harmless in inflammatory disorders.

The fruit of CAPSICUM, commonly called red pepper, is gathered when ripe, dried in the sun, pounded and mixed with salt: it is then kept stopt in bottles, and is commonly known by the name of Cayenne pepper. A mixture of sliced cucumbers, shallots or onions, cut very small, a little lime juice and Madeira wine, with a few pods of bird pepper, *Capsicum Baccatum*, well mashed and mixed with the liquor, seldom fails to provoke the most languid appetite in the West Indies. It is there called *Man-dram*. Gathered fresh from the plant, the pods of all the species are liberally used in the East and West Indies to assist digestion and correct flatulencies. For these purposes only is the plant or its fruit useful in food, it is scarcely serviceable to the healthy, but it is medicinal to the sick, stimulating the stomach and exciting the nerves, particularly in lethargic and paralytic affections. The powder of the berries sprinkled in socks, will cure the coldness of the feet; and as a weak wash it is said to be a specific for relaxed sore eyes.

Many varieties of this species of CAPSICUM enter into the composition of *Cayenne pepper*, but certainly the best which is from the West Indies ready prepared, is made from the *Capsicum Baccatum* or bird pepper. Cayenne pepper is often mixed with muriate of soda, and sometimes with a less innocent substance, the red oxide of lead. This fraud may be discovered by boiling some of the suspected pepper in vinegar, and after filtering the decoction, adding to it a solution of sulphurated hydrogen gas, which will throw down a black precipitate; or sulphate of soda may be used, in which case, if the pepper contain oxide of lead, a white precipitate will be produced, which after being dried and exposed to heat, mixed with a little charcoal, will afford a globule of lead.

The common red pepper of our gardens is a species of the CAPSICUM ANNUM, but possesses inferior powers to that which grows in tropical climates, and especially in Africa.



N° 33.

ATROPA BELLADONNA

SOLANACEÆ.

The Potato Tribe.

NO. 33.

ATROPA BELLADONNA.

Deadly Nightshade, Dvale.

Place.—Europe.

Quality.—Insidid, poisonous.

Power.—Narcotic, anodyne.

Use.—Dysentery, fistula, convulsions, epilepsy.

BOTANICAL ANALYSIS.

Natural Order. Solanacea—*J.* Lurida—*L.*

CLASS V. Pentandria. ORDER. Monogynia.

Solanum, Juss. Gen. 154, (1759); R. Brown Prodr. 443, (1810); Lindl. Synops. 156, (1829.)

GENUS. ATROPA.

From the Greek *ATROPAS*, the name of one of the three fates in Grecian mythology, whose office it was to cut the thread of human life; this office, the poisonous fruit of this plant is also well adapted to perform.

SYNONYMS.—*La Belladone (F.)*, *Die wolfskirsche (Ger.)*, *Doodkruid (Dutch)*, *Atropa (L.)*, *Atropa (Sp.)*, *Belladonna (Port.)*, *Eoschenaja wischnja (Russ.)*

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* four—five, more or less united, mostly persistent.

COROLLA. *Regular*, *Limb* four—five-cleft, plaited in aestivation, deciduous.

STAMENS. *Four—five* (sometimes one abortive), inserted in the corolla alternate with its segments. *Anthers* bursting longitudinally, rarely by terminal pores.

OVARY. *Free* (superior), two-celled; with the placenta in the axis.

Styles and Stigmas united into one.



ATHOPA BELLADONNA

SOLANACEÆ.

The Potato Tribe.

NO. 33.

ATROPA BELLADONNA.

Deadly Nightshade, Dwale.

Place.—Europe.

Quality.—Insipid, poisonous.

Power.—Narcotic, anodyne.

Use.—Dysentery, fistula, convulsions, epilepsy.

BOTANICAL ANALYSIS.

Natural Order. Solanaceæ—J. Luridæ—L.

CLASS V. *Pentandria.* ORDER. *Monogynia.*

Solanaceæ, Juss. Gen. 124, (1789); R. Brown Prodr. 443, (1810); Lindl. Synops. 180, (1829.)

GENUS. ATROPA.

From the Greek ATROPAS, the name of one of the three fates in Grecian mythology, whose office it was to cut the thread of human life; this office, the poisonous fruit of this plant is also well adapted to perform.

SYNONYMES.—La Belladone (*F.*), Die wolfskirsche (*Ger.*), Doodkruid (*Dutch.*), Atropa (*I.*), Atropa (*Sp.*), Belladonna (*Port.*), Beschenaja wischnja (*Russ.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* four—five, more or less united, mostly persistent.

COROLLA. Regular, *Limb* four—five-cleft, plaited in æstivation, deciduous.

STAMENS. Four—five (sometimes one abortive), inserted in the corolla alternate with its segments. *Anthers* bursting longitudinally, rarely by terminal pores.

OVARY. Free (superior), two-celled, with the placenta in the axis. *Styles* and *Stigmas* united into one.

FRUIT. A capsule or berry.

SEEDS. Numerous. *Embryo* curved, lying in fleshy albumen.

THE SECONDARY CHARACTERS.

ATROPA. *Calyx* persistent, five-cleft. *Corolla* campanulate. *Stamens* five, distant. *Berry* globose, two-celled, sitting on the calyx.

Corolla bell-form. *Stamens* distant. *Berry* globular, two-celled, sitting on the calyx.

THE SPECIFIC CHARACTERS.

ATROPA BELLADONNA. *Stem* herbaceous. *Leaves* ovate, entire. *Berries* black.

Stem herbaceous, brachiate. *Leaves* ovate, entire. *Berries* black and poisonous.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. ORDER MONOGYNIA. Monopetalous. *Flowers* inferior. *Corolla* regular. *Stamens* alternate with petals. *Fruit* a capsule or berry. *Cells* two, many seeds. *Estivation* plicate.

NATURAL HISTORY.

This plant is an exotic perennial, found however in many parts of this country, particularly in shady places where the soil is calcareous, flowering in June, and ripening its berries in September. The root is thick, fleshy and creeping; sending up several erect, purple-colored, herbaceous, annual stems about three feet in height, branching, leafy, round and somewhat fleshy. The leaves are lateral, in pairs of unequal size, decurrent, on short petioles, egg-shaped, pointed, entire; of a dusky green color above and paler below; soft and fatty to the touch. The flowers are supported on one-flowered, solitary, axillary peduncles; large, drooping, and having a faint narcotic odor: the calyx is green, persistent, and deeply divided into five ovate segments; the corolla bell-shaped, of a lurid hue externally, and within dusky or brownish violet, with a yellow variegated base, enclosing five filaments shorter than the corolla, nodding and bearing large anthers; with a pyramidal germ, supporting a long simple style and two-lobed stigma. The ripe berry is large, seated within the calyx, roundish, with a longitudinal furrow on each side, shining, smooth and of a deep purple color; containing many seeds, and a sweetish, violet-colored juice.

The whole plant, and especially the berries, is poisonous. Nature however has been more parsimonious in her warnings with respect to this plant, than to others of the same natural family. Neither the smell

for the taste is offensive; and if the color of the flowers proves in some degree a repellant, that of the fruit on the other hand is in an equal degree at least attractive and inviting. Hence children, and persons ignorant of the qualities of this plant, have often suffered from eating the berries, the beautiful appearance and sweet taste of which render them very alluring.

CHEMICAL AND MEDICAL PROPERTIES.

The leaves of *ATROPA BELLADONNA* are inodorous; the taste is slightly nauseous, sweetish, and subacid. They do not lose their active properties by drying. Several eminent chemists have found that they contain a substance resembling animal albumen, salts with a base of potassa, and a bitter principle, soluble in alcohol, on which their narcotic quality depends; and which has since been ascertained to be an alkali, named *Atropia*. The seeds yield the largest proportion of this principle. Every part of the plant is poisonous. The symptoms induced are those of intoxication, accompanied with fits of laughter and violent gestures; great thirst, difficulty of deglutition, nausea, dilatation of the pupil, with the eyelids drawn down; redness and tumefaction of the face, stupor or delirium, a low and feeble pulse, paralysis of the intestines, convulsions and death. The best mode of averting these fatal effects is by exhibiting emetics of sulphate of zinc, or of copper, and assisting their operation by irritating the fauces; then evacuating the bowels by active purgatives and glysters; and following these by large doses of vinegar and other vegetable acids. The recovery however is always slow. If the experiments of some eminent physicians be correct, lime-water should be the antidote for poisoning by this plant.

The deleterious effects already enumerated demonstrate that *ATROPA BELLADONNA* is a very powerful narcotic. It is also diaphoretic and diuretic. When injudiciously or incautiously given, or when it is taken for a considerable length of time, even in small doses, it is apt to induce a dryness and stricture of the pharynx and adjoining parts of the œsophagus, sickness, vertigo, and dimness of sight: symptoms sufficiently indicative of the necessity of suspending its use for some time, and giving it in smaller doses when it is resumed. The internal administration of this well known plant appears to have been suggested by the advantages resulting from its external application. Several learned practitioners have found this plant very serviceable in the early stage of scirrhous and cancerous affections. Others have asserted that it cures hydrophobia; its efficacy in this disease is however very much doubted, for it produces one of the most distressing symptoms of that malady—thirst; together with constriction of the pharynx. It has also been given with considerable advantage in obstinate intermittents, chronic rheumatism,

gout, paralysis, amaurosis epilepsy and pertussis; in the last of which diseases Dr. Good speaks of its efficacy from his own experience.

Dr. Jno. Bailey, in his observations on the use of BELLADONNA, (8vo. 1817,) asserts that it has the power of allaying convulsions arising from scrofulous irritation; and its beneficial effects in neuralgia facialis have been well ascertained. Though the powers of this plant as a narcotic are certainly great, yet they have not been found sufficiently constant and permanent to insure its general use. Externally, used either as a fomentation, or the dried leaves powdered and sprinkled over the parts, it is of singular efficacy in diminishing the pain of cancerous and ill-conditioned sores: it obtunds the pain of hæmorrhoids; and as the infusion, when dropped into the eye, produces a great dilatation of the pupil, it has been proposed, and in many instances found useful for dilating the pupil previous to the extraction of the cataract; and the extract has now become exceedingly popular and is commonly used by most practitioners in this country for the same purpose. The application gives no pain; and it is well adapted to make examination of the state of the lens and capsule, previous to determining on the operation. This plant is also frequently administered internally in scrofulous ophthalmia and inflammation of the retina. It has however been ascertained that this power is destroyed by alkaline solutions. Its operation appears to be limited to the radiated fibres of the iris. By continued use, it loses its effect; but regains it after the application has been for a short time suspended.

Dr. Hahmeman and Professor Koreff have stated that ATROPA BELLADONNA, given during the prevalence of scarlatina, has the power of protecting the individual who takes it from the infection. Dr. Randhahn, physician to the Orphan Hospital at Langendorf, in Prussia, has confirmed this fact, by experiments on one hundred and sixty children exposed to the contagion in the above named hospital. The leaves of ATROPA BELLADONNA furnish the best form of exhibition. Dr. Paris observes the recent leaves, powdered and made into an ointment with an equal weight of lard, properly applied, prevents priapasm, and relieves chordee more effectually than any application which has been proposed. Externally the leaves make a good assuaging poultice. BELLADONNA may be given in substance, beginning with one grain of the dry leaves powdered, and gradually increasing the dose to twelve or fourteen grains; or of an infusion made with one scruple of the dried leaves in ten fluid ounces of boiling water: two ounces may be given daily and the dose cautiously increased.

Care should be taken not to confound the plant under consideration, owing to the common name, with woody nightshade (*solanum dulcamara*) or black nightshade (*solanum nigrum*.) Though all narcotic plants, ATROPA BELLADONNA is infinitely more active than either of the other nightshades, and indeed than most other narcotic vegetables.



Nº 34.

MYRICA CERIFERA.

Bayberry.

MYRICACEÆ.

The Gale Tribe.

NO. 31.

MYRICA CERIFERA.

Bayberry, Wax Myrtle.

Place.—United States, England.

Quality.—Bitter, wax-bearing.

Power.—Astringent, emetic.

Use.—To cleanse the stomach and bowels.

BOTANICAL ANALYSIS.

Natural Order. Myricaceæ—J. Amentaceæ—L.

Class XXII. Insuper. Order. Tetrandria.

Myrica cerifera L. *Sp. Pl.* 1204. — *Fl. Borac.* 22. — *Rich. Flor. de la Bot.* ed. 4, 561, (1828.)
Myrica cerifera L. *Sp. Pl.* 1204. — *Compositæ*. — *Index in Ann. Mus.* 16, 451, (1810.) *Z.*
Myrica cerifera L. *Sp. Pl.* 1204.

Genus. MYRICA.

Myrica (from *Myrica* = water) because some of the species are native of river banks.

Myrica cerifera L. *Sp. Pl.* 1204. — *Waldst. u. Schmidt* (Ger.) *Waldst. u. Schmidt* (Dutch.) *Waldst. u. Schmidt* (Fr.) *Waldst. u. Schmidt* (Eng.)

THE ESSENTIAL CHARACTERS.

Order.

Class.

Stamens & *Flowers.* — *Stamens* two—six. *Anthers* two—four-celled, opening longitudinally.

Female Flower. — *Ovary* one-celled, one-ovuled surrounded by several hypogynous scales. *Stigmas* two, subulate, or dilated and notched.

Smell. — Disagreeable or dry.

Taste. — Bitter, wax, without albumen.

Uses. — *Myrica cerifera* L. *Sp. Pl.* 1204. — *Waldst. u. Schmidt* (Ger.) amentaceous, with axillary to a leaf.



NO. 11

MIRICA CERIFERA,

Mirica

MYRICACEÆ.

The Gale Tribe.

NO. 34.

MYRICA CERIFERA.

Bayberry, Wax Myrtle.

Place.—United States. England.

Quality.—Bitter, wax-bearing.

Power.—Astringent, emetic.

Use.—To cleanse the stomach and bowels.

BOTANICAL ANALYSIS.

Natural Order. Myricaceæ—J. Amentaceæ—L.

CLASS XXII. *Diæcia.* ORDER. *Tetrandria.*

Myricæ, Rich. Anal. du Fr. (1808,) Ach. Rich. Elem de la Bot. ed. 4, 561, (1828.)
Lindl. Synops. 242, (1829.) Casuarinæ, Mirbel in Ann Mus. 16, 451, (1810.) R.
Brown in Flinders 2, 571, (1814.)

GENUS. MYRICA.

From the Greek MURO, to flow; because some of the species are native of river banks and inundated places.

SYNONYMES.—Le cirier, (F.) Der wachsbau (Ger.) Waschboompje (Dutch.) Woskownik (Russ.) Pors (Dan. Norw. and Swed.)

THE ESSENTIAL CHARACTERS.

CALYX.

COROLLA. None.

STERILE FLOWERS. *Stamens* two—six. *Anthers* two—four-celled, opening longitudinally.

FERTILE FLOWERS. *Ovary* one-celled, one-ovuled surrounded by several hypogynous scales. *Stigmas* two, subulate, or dilated and petaloid.

FRUIT. Drupaceous or dry.

SEED. Solitary, erect, without albumen.

FLOWERS. Monœceous or diœceous, amentaceous, each axillary to a bract.

THE SECONDARY CHARACTERS.

MYRICA. *Flowers* diœcious. *Aments* ovate-oblong. *Scales* loosely imbricate, lunate. STERILE FLOWERS. *Stamens* four—six, short, erect. *Anthers* large, four-valved. FERTILE FLOWERS. *Ovary* one, superior. *Styles* two, spreading. *Stigmas* two, acute. *Drupe* one-celled, one-seeded.

STAMINATE FLOWERS. *Ament* oblong. *Calyx* an ovate lunulate scale. *Corolla* none. *Stamens* four to six. *Anthers* four-valved. PISTILLATE FLOWERS. *Calyx and Corolla* like the staminate. *Stigmas* two. *Drupe* or berry one-seeded.

THE SPECIFIC CHARACTERS.

MYRICA CERIFERA. *Leaves* cuneate-lanceolate, acute and with a few serratures at the top. *Sterile aments* lax. *Scales* acute. *Fruit* spherical, naked, distinct.

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.

THE ARTIFICIAL CHARACTERS.

CLASS DICECIA. *Stamens* apart from the pistils in different flowers upon different plants. ORDER TETRANDRIA. *Shrubs* angiospermous, diœcious. *Ovary* one-seeded, not parasitic. *Stamens* four—six. *Stigmas* two. *Leaves* punctate with resinous glands.

NATURAL HISTORY.

This interesting and useful shrub is a native of the United States and most abundant on the sandy sea coast, though frequently found in dry woods and fields. It varies much in size, from two feet to eight. The stem of the Bayberry is covered with a greyish bark and has a very branching top with numerous dry looking, scattered leaves, varying from wedge-lanceolate to linear-lanceolate, on short petioles. The fertile plants produce small aments of flowers succeeded by dense, irregular clusters of a small, round, dry berry-like fruit. This fruit consists of a globular stone enclosing a kernel and covered with a coating of whitish wax, which being separated by boiling water constitutes the Bayberry tallow or Myrtle wax of commerce.

The plant growing in a sandy soil has a thicker bark upon the root, than that found in other localities, and is considered of a better quality. The roots should be collected early in the spring or late in the fall, freed from dirt, and pounded with a mallet or club to separate the bark. This should be thoroughly dried, without exposure to a wet or damp atmosphere, and reduced to powder, previous to being used.

All the species of *MYRICA* grow well in peat soil or sandy loam in a moist situation. They are increased by seeds or layers but not readily by cuttings.

CHEMICAL AND MEDICAL PROPERTIES.

Various experiments prove that the plant *MYRICA CERIFERA* contains tannin, resin, gallic acid and mucilage. It is also astringent, emetic, pectoral, nervine, subnarcotic, cephalic, vermifuge, menagogue, stomachic, &c.

There is perhaps no form of disease (so valuable and important is the plant under consideration) in which the Bayberry, if properly administered, will not prove beneficial. In many parts of the New England states, the decoction is in common use as a remedy in scarlet fever, and it is usually administered without any regard to quantity. If the throat is affected, it is also employed with very great advantage as a gargle. Instances are not uncommon where parents have cured their children of this distressing and dangerous complaint by this article alone, after the attending physicians had given them up as hopeless.

This plant is also a very valuable remedy in diarrhœa, dysentery and dyspepsy. The decoction given in the dose of a tea-cupfull and repeated two or three times, will rarely fail to effect a cure. This decoction is also eminently serviceable in jaundice, and is effectual in removing all obstructions of the liver, spleen, kidneys and urinary passages.

The tea is a useful wash in badly-conditioned sores and should always be employed, where its pungency is not an objection. The powder makes a good dentrifice and not only cleanses the teeth, by its mechanical action with the brush, but renders the gums more sound and healthy. A tea-spoonfull of the fine powder taken in water once a day, for a few days in succession, will remove the most offensive breath by correcting the secretions. Scented with the fragrant oils, as golden rod or spicy wintergreen, it furnishes a delightful snuff which may be used to advantage in headachs and colds; it clears the head and relieves the headach and operates as a sternutatory, sometimes causing violent sneezing.

Myrtle wax or Bayberry tallow of commerce is a concrete oil of moderate hardness and consistence; it has in part the tenacity of beeswax, though without its unctuousity; it also possesses with these properties the brittleness in some degree of the resins. The color of this wax is a pale green, the shades of the different species of *MYRICA* are somewhat varied, in most of them the green has a tendency to a dirty gray, in others it is lighter and more transparent. Its specific gravity is about 1.0150. It is fused at a temperature of 109° Fahr. By sufficiently increasing the heat it burns with a peculiarly clear and white flame, producing little smoke, and during the combustion emits an agreeable aromatic odor.

Chemists and Physicians who have paid particular attention to the properties of the Myrtle wax furnished by the different native species of the genus *MYRICA*, have made some very interesting observations.

1st. That water has no action upon it either when cold or at the boiling point.

2d. Alcohol when boiling, dissolves it sparingly, and it precipitates again in cooling.

3d. Sulphuric ether, at the common temperature of the atmosphere, dissolves it only in small quantities, but acts upon it rapidly when boiling, the greater part of which separates as the ether cools.

4th. Rectified oil of turpentine, at the common temperature of the atmosphere, softens the wax; assisted by heat, one hundred grains of the spirit dissolve six grains of the wax, part of which separates as the fluid cools.

5th. When boiled with liquid potassa, the fluid becomes turbid, and the wax rises to the surface nearly without color in a flocculent form. In this saponaceous state it has lost its inflammability and fusibility and forms an opaque solution with water.

6th. Pure ammonia exhibits with it phenomena in many respects similar to those produced by the fixed alkalies, though in a less degree than that resulting from the action of potash.

7th. The mineral acids have but little effect upon it; the sulphuric, when assisted by heat, converts it into a dark brown mass; the nitric changes the color from green to a pale yellow, and by a long digestion in muriatic acid it becomes a bright orange.

Bayberry tallow possesses a very considerable astringent quality, and in an eminent degree that of a narcotic or anodyne. To the taste the grain is astringent and somewhat styptic, making a very sensible and lasting impression on the fauces, and its odor is pleasant and balsamic. Its astringent quality is supposed to reside in the kernel, or the covering which surrounds the seed, and which gives a very fine lake color in the fresh state. This property is attributed to gallic acid, but the experiments which led to this deduction are not satisfactory. The only active quality of the medicine is the coloring principle, which it imbibes from the pellicle of the seed in preparing it, and this is proved from the circumstance of the wax of the first boiling being much paler while that which succeeds becomes much darker and possesses more of the balsamic odor, and from the fact that the liquor in which it has been boiled, when evaporated to the consistence of an extract, has been most successfully applied to the most obstinate state of disease.

Bayberry is very successfully used in typhoid dysentery. The best mode of administering it is a drachm or two of the concrete oil rubbed to powder or made into pills with mucilage and oil of cinnamon, premising its administration by gentle evacuants.



Nº 35.

BORAGO OFFICINALIS.

BORAGINACEÆ.

The Borage Tribe.

NO. 35.

BORAGO OFFICINALIS.

Common Borage.

Place.—Europe.

Quality.—Oleraceous.

Power.—Stomachic, diaphoretic.

Use.—The herb and flowers in melancholy.

BOTANICAL ANALYSIS.

Natural Order. Boraginaceæ—J. *Asperifolia*—L.

Class V. *Pentandria*, *Order*. *Monogynia*.

Synonymy.—*Boerhaave*, *Icon.* 143 (1713); *H. Brown* *Prodr.* 499, (1813); *Lindl.* *Synops.* 42, (1822).

Genus. BORAGO.

Indicated to be composed from *Lat.* *Cox*, *heart*, and *Agg*, to affect; on account of its great quality.

Synonymy.—*Sourache* (*F.*), *Borago* (*Ger.*), *Bernagio* (*Dutch*), *Borrachine* (*I.*), *Borak* (*Sp.*), *Boragou* (*Fert.*), *Ogaretschnaja trawa* (*Russ.*), *Borak* (*Pol.*).

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* five, regular, more or less united at base, persistent.

COROLLA. *Petals* five, regular, (very rarely irregular,) united at base, hypogynous, imbricate in aestivation.

STAMENS. Five, inserted into the corolla and alternate with its lobes.

OVARY. Deeply four-lobed, the *Style* arising from the base of the lobes.

FRUIT. Nuts or achenia four, distinct, one-seeded. *Seeds* without albumen. *Embryo* with a superior radicle. *Cotyledons* plano-convex.



Hort. bot. ...

BORAGINACEÆ.

The Borage Tribe.

NO. 35.

BORAGO OFFICINALIS.

Common Borage.

Place.—Europe.

Quality.—Oleraceous.

Power.—Stomachic, diaphoretic.

Use.—The herb and flowers in melancholy.

BOTANICAL ANALYSIS.

Natural Order. Boraginaceæ—J. Asperifoliæ—L.

CLASS V. *Pentandria.* ORDER. *Monogynia.*

Boraginæ, Juss. Gen. 143, (1789); R. Brown Prodr. 492, (1810); Lindl. Synops. 163, (1829.)

GENUS. BORAGO.

Supposed to be corrupted from Lat. Cor, heart, and Ago, to affect; on account of its cordial qualities.

SYNONYMES.—Bourrache (*F.*), Borago (*Ger.*), Bernagie (*Dutch*), Borrachine (*I.*), Borraja (*Sp.*), Borragein (*Port.*), Oguretschnaja trawa (*Russ.*), Borak (*Pol.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* five, regular, more or less united at base, persistent.

COROLLA. *Petals* five, regular, (very rarely irregular,) united at base, hypogynous, imbricate in æstivation.

STAMENS. Five, inserted into the corolla and alternate with its lobes.

OVARY. Deeply four-lobed, the *Style* arising from the base of the lobes.

FRUIT. Nuts or achenia four, distinct, one-seeded. *Seeds* without albumen. *Embryo* with a superior radicle. *Cotyledons* plano-convex.

THE SECONDARY CHARACTERS.

BORAGO. *Calyx* five-parted. *Corolla* rotate, with acute segments. *Orifice* crowned. *Filaments* converging. *Achenia* rounded, imperforate at base, inserted lengthwise into an excavated receptacle.

Corolla wheel-form; the throat closed with rays.

THE SPECIFIC CHARACTERS.

BORAGO OFFICINALIS. *Leaves* ovate, alternate, the lower ones petiolate. *Calyx* spreading. *Peduncles* terminal, many-flowered.

Leaves alternate. *Calyx* spreading.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. ORDER MONOGYNIA. Mono-petalous. *Flowers* inferior. *Corolla* regular. *Herbs* (rarely shrubby.) *Stamens* alternate with petals. *Fruit* four naked achenia. *Leaves* rough.

NATURAL HISTORY.

All the species of the BORAGO tribe are exotic in America, and natives principally of the temperate countries of the northern hemisphere of the eastern continent. They are extremely abundant in all the southern parts of Europe, the Levant and middle Asia. In the arctic circle they are less frequent, and almost disappear in the tropics. A few species only are found in such latitudes; and in North America, introduced on account of the beauties of the flowers, they are less abundant than in Europe.

BORAGO OFFICINALIS is an annual and sometimes a biennial succulent plant; native of Europe, and in the United States a common inhabitant of the garden, and in cultivated grounds. The stem is herbaceous, straight and furnished with rough hair; radical leaves very large, oval and supported by long canaliculate petioles; caulinary leaves sessile, oval, lanceolate, and hairy; flowers blue paniculate, distant from each other at the extremity of the branches; corolla rotate, orifice closed by six connivent, lanceolate and acute processes; anthers close to each other. The whole plant is rough, erect, three feet high, with terminal clusters of handsome sky-blue flowers, which make a beautiful appearance, and are produced for several months in succession.

The common Borage is raised from seed; it loves a dry soil. This plant will grow even when transplanted, but it prospers best when it

remains where sown. Where the young leafy tops and flower-spikes are in demand, permit the stem to run up.

CHEMICAL AND MEDICAL PROPERTIES.

BORAGO OFFICINALIS has scarcely any smell, and possesses an herbaceous and mucilaginous taste. All parts of the plant contain a mucilaginous substance; a matter containing nitrogen, soluble in water, and insoluble in alcohol; acetate and other salts of potassa; salts of lime; and nitrate of potassa. To these constituents the plant owes all its active principles. The French formerly held this plant in very high estimation, and considered it one of the four famous cordial flowers, but among the moderns it has fallen into neglect.

An infusion of the leaves and flowers sweetened with honey is frequently employed as a demulcent, refrigerant and gently diaphoretic drink in catarrhal affections, rheumatism, diseases of the skin, &c. &c.

A water distilled from the flowers of this plant is held in great esteem as a cordial and strengthener; it will however produce but little benefit if the constitution is not at the same time improved by the judicious employment of a proper diet, air, exercise and clothing.

The expressed juice of the stem and leaves, or a syrup, may be used with great benefit in all putrid and pestilential fevers, to resist and expel the morbid matter. It is also serviceable in obstinate coughs, catarrhs, and affections of the lungs. Dose from two to four ounces.

The flowers made into a conserve were formerly recommended in putrid malignant fevers, and hypochondriacal complaints; they remove obstructions, and have a very beneficial effect in jaundice. They may also be applied externally with great advantage as an emollient. In a great number of inflammatory cases Borage is frequently employed as a demulcent, diuretic and sudorific: it is of a remarkable cooling nature, and consequently may be used with success particularly in inflammation of the eyes externally, and inwardly in fevers as above.

The capability of sustaining the health, vigor and strength of the system in man upon a diet purely vegetable, is established beyond the possibility of doubt. When this food is in sufficient quantity and of a good quality, more robust, active and vigorous frames, and a greater amount of general health, than are presented by the individuals who make use of it, can scarcely be met with in the inhabitants of any other country, or among any other classes of society, whatever may be the nature of their diet. Although vegetable aliment requires a longer time to digest in the stomach than that from the animal kingdom, and notwithstanding the latter presents a larger amount of nutritive matter in a smaller bulk than the former; yet it is indisputable that the human system can

derive from vegetable food as great a quantity of suitable nourishment as from animal, while the former produces much less excitement and heat and is therefore far less liable to produce over-fulness of the blood-vessels, or to predispose the organs to disease. As a general rule, it will be found that they who make use of a diet, consisting *chiefly* of vegetable substances properly cooked, more especially the farinaceous seeds and roots, have a manifest advantage in looks, strength and spirits over those who partake largely of animal food; they are remarkable for the firm, healthy plumpness of their muscles and the transparency of their skins. This statement, though somewhat at variance with popular opinion, is amply supported by experience.

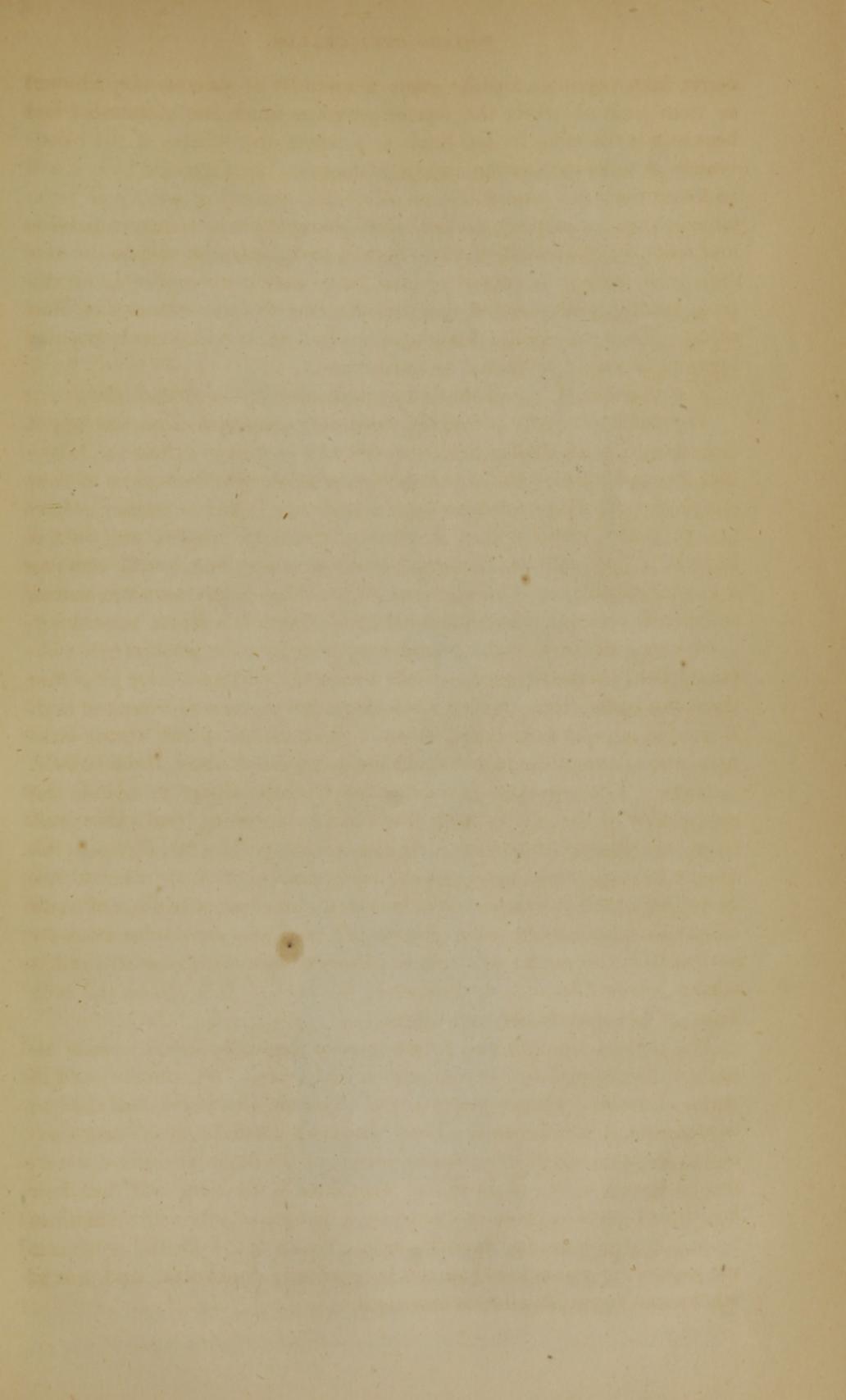
The varieties of vegetable food contain gluten, starch and gum.

Vegetable gluten is one of the proximate principles of vegetables; it is contained in all the farinaceous seeds and in many of the roots, leaves and fruits of various plants. It is the principle which imparts to flour the property of fermenting and making bread. Of the nutritive properties of gluten, distinct from its other vegetable principles, but little is known. The superior nutritious powers of wheat flour, which contains a greater abundance of gluten than all the other farinaceous substances, sufficiently prove, that in combination with starch it is highly nourishing.

Starch is another of the proximate principles of vegetables; it is obtained from all the farinaceous seeds and roots. Of its nutritive properties there can be no doubt, though it is seldom used in a separate state as food. It is often administered boiled in water as an article of diet during sickness, and is one of the best demulcents in various diseases of the bowels.

Gum. The vegetable gums obtained from the Egyptian acacia, the gum-arabic of the shops, and from the plum, cherry, and other fruit trees, are highly nutritious. Whole caravans passing through the deserts have subsisted upon gum alone, possessing at the same time sufficient vigor and strength. Gum is seldom, however, made use of as an aliment. Dissolved in water it is largely used as a demulcent drink for patients laboring under irritation or inflammation of the stomach, and in all the febrile affections or diseases of the bowels, it is almost the only drink or diet that should be allowed.

The diet of children and young persons generally should consist almost exclusively of farinaceous aliment and milk. In summer, and in warm climates a greater proportion of vegetable food is required than in winter, and in cold climates. They who with a sufficiency of daily exercise in the open air, to preserve the activity of the digestive organs, nevertheless spend a life of ease and comparative inaction, will find their health and comfort better promoted by a diet principally vegetable, than by one in which animal food abounds. Towards the decline of life also the amount of animal food should be gradually diminished, and that of wholesome vegetable aliment increased.





Nº 36.

EUPHORBIA IPECACUANHA.
(American Ipecacuanha.)

EUPHORBIACEÆ.

The Euphorbiaceous Tribe.

NO. 36.

EUPHORBIA IPECACUANHA.

American Ipecacuanha.

Flora—Brazil, Peru.

Geology—Brazil.

Uses—Elixir, cathartic, emetic.

See—*Pharmacopoeia*, *U.S.*

SYNONYMICAL ANALYSIS.

Alph. Bot.—*Euphorbia*—J. Tricoccos—L.

Pharm.—*Euphorbia*—*Opuntia*—*Quadrifida*.

Pharmacopoeia, *U.S.* (1820); *Euphorbia*, 23. In *Jour. Med.* (1824.)

SYNONYMICAL ANALYSIS.

Pharmacopoeia, *U.S.* (1820); *Euphorbia*, 23. In *Jour. Med.* (1824.)

Pharmacopoeia, *U.S.* (1820); *Euphorbia*, 23. In *Jour. Med.* (1824.)

THE ESSENTIAL CHARACTERS.

Flowers—

Stamens—

Styles—

FERTILE FLOWERS. *Ovary* free, of two—nine, more or less united carpels, coherent to a central prolongation of the axis.

Styles distinct, often two-cleft.

FRUIT. *Capsule* of three dehiscent carpels which open elastically.



Nº 36.

EUPHORBIA IPECACUANHA.
(American Ipecacuanha.)

EUPHORBIAEÆ.

The Euphorbiaceous Tribe.

NO. 36.

EUPHORBIA IPECACUANHA.

American Ipecacuanha.

Place.—United States.

Quality.—Sweetish.

Power.—Emetic, cathartic, stimulant.

Use.—Dropsy, caries, tooth-ache, &c.

BOTANICAL ANALYSIS.

Natural Order. Euphorbiaceæ—J. Tricoccæ—L.

CLASS XXI. *Monœcia.* ORDER. *Monandria.*

Euphorbiæ, Juss. Gen. 385, (1789.) Euphorbiaceæ, Ad. de Juss. Menogr. (1824.)
Lindl. Synops. 220, (1829.)

GENUS. EUPHORBIA.

This Genus is the EUPHORBION of Dioscoridis, and it was so named after Euphorbus, Physician to Juba, King of Mauritania, who brought the Euphorbium or juice of the *E. officinalis* into practice.

SYNONYMES.—L'euphorbe, (*F.*), Das euphorbium (*Ger.*), Euphorbium (*Dutch*), Euforbio (*I.*), Euforbio (*Sp.*), Euphorbio (*Port.*)

THE ESSENTIAL CHARACTERS.

CALYX. Inferior, lobed or wanting.

COROLLA. *Petals* or scales equal in number to the sepals, or wanting.

STERILE FLOWERS. *Stamens* definite or indefinite, distinct or monadelphous. *Anthers* two-celled.

FERTILE FLOWERS. *Ovary* free, of two—nine, more or less united carpels, coherent to a central prolongation of the axis.

Styles distinct, often two-cleft.

FRUIT. *Capsule* of three dehiscent carpels which open elastically.

EUPHORBIA IPECACUANHA.

SEEDS. With a large embryo in fleshy albumen.

FLOWERS. Monœcious or diœcious.

THE SECONDARY CHARACTERS.

EUPHORBIA. *Flowers* Monœcious, mostly achlamydeous. *Involucre* monophyllous, subcampanulate, with four—five petaloid segments alternating with as many external, gland-like teeth. **STERILE FLOWERS**, twelve or more. *Stamen*, one. *Filament* articulated in the middle. **FERTILE FLOWERS**, solitary, central. *Ovary* pedicellate. *Styles* three, bifid. *Capsule* three-lobed, three-celled. *Cells* one-seeded.

Involucre perianth-like, inflated, with alternating petal-like segments. *Staminate florets* twelve or more, at the base of the stipe of the pistillate flower, each consisting of an anther united to a pedicel by a filament. *Pistillate flower* central, single, stiped, with three two-cleft styles. *Capsule* three-lobed.

THE SPECIFIC CHARACTERS,

EUPHORBIA IPECACUANHA. Procumbent or suberect, small, smooth. *Leaves* opposite, obovate and lanceolate. *Peduncles* elongated, axillary, one-flowered.

Procumbent, small, glabrous. *Leaves* opposite, oboval or lanceolate. *Peduncles* axillary, elongated, one-flowered.

THE ARTIFICIAL CHARACTERS.

CLASS MONÆCIA. *Stamens* apart from the pistils in different flowers upon the same plants. **ORDER MONANDRIA.** Monœcious. Calyx-like, involucler, enclosing several staminate (monandrous) flowers with one pistillate flower.

NATURAL HISTORY.

The very singular species **EUPHORBIA IPECACUANHA** is exclusively a native of the United States. It is extremely amorphous, varying so much in the shape of its leaves, their color, and in fact in the whole appearance of the plant, that in its different states it might be taken by those unacquainted with it for several distinct species of the same genus. The root is perennial, large, from four to six feet long, and generally near an inch or an inch and a half in diameter. It is tuberculated and of a yellowish color, sending off towards its upper end numerous smaller roots, generally about the thickness of a crow or goose quill and sometimes larger. The stems are numerous, dichotomous, white under the earth or sand and red, pale-green or yellow above. The stipules are heart-shaped and small. The leaves are opposite, sessile, and are generally oval, sometimes obovate, occasionally lanceolate, and not unfrequently even linear. They are always entire on their margins, but sometimes when obovate are emarginated or notched at the

apex. While the plant is in flower in May the leaves are very small, when it grows older they become much increased in size. The flowers are situated in solitary and flowered peduncles, varying in length from less than an inch to three inches. The seeds are three in number, enclosed in a triangular-like capsule.

This plant is very generally confined to the great Atlantic alluvial region extending from New-Jersey to Florida and Mexico, along the sea, and very common there in sands and pine woods. It blossoms from June to August, and affords a multitude of varieties. It delights in a loose, moist, sandy soil, and is often found growing in beds of sand only. As the root alone is used, it may be gathered for medical purposes at any time. It is equally efficacious whether dug up in April or September. It might be exported and afforded cheap.

It is a singular coincidence that the name given to the root of the several varieties of this Genus by the Indians of Louisiana is *Peheca*, so very similar to the Brazilian native name of *Ipeca*, and both meaning emetic root.

The plate represents an entire plant of the crimson variety, with a portion of the root. The specimen from which this figure was drawn (in May) had a root of the thickness of the lowest part five and a half feet long. Where the stems are red, they appeared above the sand.

CHEMICAL AND MEDICAL PROPERTIES.

EUPHORBIA IPECACUANHA has been very particularly analysed by several eminent Chemists. It contains mucilage, sugar, starch, caoutchouc, resin, an essential oil, tannin and a peculiar principle similar to *Emeta*, which is soluble in alcohol and colors it yellow, but insoluble in water, forming oxalic acid with nitric acid, and might be called *Oxalemis*. The roots and leaves of the different varieties have a sweetish taste and not unpleasant, with a peculiar smell when rubbed, but no nauseous taste or smell. The milk is acrid, and by siccation between the fingers it is convertible into caoutchouc.

The properties of this plant are emetic, cathartic, diaphoretic, expectorant, astringent, rubefacient, blistering and stimulant. It is highly recommended by some physicians as equivalent to the officinal ipecacuanha, which some even think it ought to supersede, but others contend it is less mild and bland, and although equal or even stronger is not so useful in all indications. It has been considered too violent in its operation, but it has since been found manageable and safe: the action is always proportionate to the quantity taken, which is not the case with the common ipecacuanha. As a cathartic the plant has been found equal or better than jalap or scammony, requiring only half the dose; ten grains will commonly purge well, while twenty-five to thirty grains pro-

duce repeated evacuations from the stomach. Given in large doses they excite violent vomiting attended with heat, vertigo, dizziness and debility. A diversity, however, has been noticed in various constitutions, the same doses being sometimes inert, cathartic or emetic, or both; in some instances it often produces nausea even in small doses and then acts as diaphoretics like ipecacuanha, to which it is preferable by having no unpleasant taste, nor exciting pains and spasms.

These peculiar properties reside in the thick bark of the root, which forms two-thirds of the whole root and produces one-twelfth of watery extract and one-tenth of alcoholic extract. It may be substituted for ipecacuanha in all the pharmaceutic preparations, wine, tincture, extract, &c. The emetic dose of the wine is an ounce, of the extract three to five grains. When used as a diaphoretic and expectorant the dose is three or four grains of the powder. It may be combined with opium or antimonials.

The root of the EUPHORBIA IPECACUANHA, bruised and applied to the skin, produces vesication in about twelve hours, which lasts two or three days; this property has not yet, however, been applied to practical purposes, but it is probably equivalent to that of the officinal *Euphorbium* used by farriers.

This plant has been given as a hydragogue in dropsies, but owing to its effects, its internal use is now rejected. Neither as an errhine can it be used alone, for it sometimes occasions so much inflammation as to produce hæmorrhage from the nostrils and swell the integuments of the head. When properly diluted, however, with starch or any other inert powder and cautiously used, it is an effectual and excellent errhine in lethargy, deafness, palsy, amaurosis and similar cases.

The milk of all the species of this Genus is good to destroy Warts and cure Herpes; it also affords a kind of black varnish or gum-elastic.

In combination with sulphate of potassa and opium the root of this plant furnishes a Dover's powder which is in no way inferior to the *Pulvis ipecacacuanhæ compositus*. Indeed it has this advantage over the foreign article, that its taste and odor are not unpleasant. Considering how often the imported ipecacuanha is adulterated, it will be found of the utmost importance to pay more particular attention to this native article, which may become even an advantageous substitute, and is a real addition to our list of valuable emetics. That the EUPHORBIA IPECACUANHA is possessed of virtues entitling it to supersede the use of the imported Ipecacuanha, the extensive experience of eminent Physicians declares, and this is corroborated by the numerous trials of the medicine that have very lately been instituted. It has indeed some advantages which the imported article does not possess. It is not unpleasant either in taste or smell, and it is well known that to some persons the officinal ipecacuanha is so disagreeable that they cannot take it at all.



Nº 37.

SOLANUM DULCAMARA.

Bittersweet. Woody Nightshade.

SOLANACEÆ.

The Potato Tribe.

NO. 87.

SOLANUM DULCAMARA.

Bittersweet. Woody Nightshade.

Place—Europe, America.

Quality—Nauseous, somewhat sweet.

Power—Anodyne, repelling, diuretic.

Use—Contusions, rheumatism, pleurisy, asthma, &c.

BOTANICAL ANALYSIS.

Family Order. Solanac. J. Lurida—L.

Class 4. Pentameris. Order. Monogymia.

Genus. Solanum. L. (1753). 2. Journ. Trav. 443, (1800). Lindl. Synops. 180,

GENUS SOLANUM.

Endogen. woody. Some derive it from Lat. sol, sun, and Græc. anem, without being related to the nightshade species. Others find solari, to comfort, though the application is not correct.

Species. *Mandib. (F.)*. Die schwarze nachtschatten (G.). Zwarte nachtschade (D.). *malabarica (L.)*. *Rosa mosca (S.)*. *Herva mosca (Port.)*. *Enaliddib (Arab.)*

THE ESSENTIAL CHARACTERS.

Stems. Herbs four—five, more or less united, mostly persistent.
Leaves. Lurida, herb four—five-cleft, plain in aestivation, deciduous.
Flowers. Five (sometimes one abortive,) inserted on the corolla, with five segments. Anthers bursting longitudinally, long, four-lobed.



1891
AMERICAN HERBARIUM
GEORGE ENGELMANN PAPERS

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The Potato Tribe.

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Place—Europe, America.

Quality—Nauseous, somewhat sweet.

Power—Anodyne, repelling, diuretic.

Use—Contusions, rheumatism, pleurisy, asthma, &c.

BOTANICAL ANALYSIS.

Natural Order. Solanææ—J. Luridæ—L.

CLASS V. Pentandria. ORDER. Monogynia.

Solanææ, Juss. Gen. 124, (1789); R. Brown, Prodr. 443, (1810.) Lindl. Synops. 180, (1829).

GENUS. SOLANUM.

Etymology uncertain. Some derive it from Lat. SOL, sun, and Greek ANEW, without having reference to the nightshade species. Others from SOLARI, to comfort, though the application is not evident.

SYNONYMES.—Morelle (*F.*), Der schwarze nachtschatten (*G.*), Zwaste nagtschade (*Dutch*), Solatronero (*I.*), Hierbe mora (*S.*), Herva moira (*Port.*), Enabeddib (*Arab.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* four—five, more or less united, mostly persistent.

COROLLA. Regular, limb four—five-cleft, plaited in aestivation, deciduous.

STAMENS. Four—five, (sometimes one abortive,) inserted on the corolla alternate with its segments. *Anthers* bursting longitudinally, rarely by terminal pores.

SOLANUM DULCAMARA.

OVARY. Three (superior) two-celled, (four-celled in *Datura*,) with the placenta in the axis. *Styles* and *Stigmas* united into one.

FRUIT. A capsule or berry.

SEEDS. Numerous. *Embryo* curved, lying in fleshy albumen.

THE SECONDARY CHARACTERS.

SOLANUM. *Calyx* of five (rarely more) sepals, slightly united at base, persistent. *Corolla* rotate, or campanulate. *Anthers* slightly cohering, opening by two pores at the top. *Berry* two-celled, many seeded.

Calyx five to ten-parted, permanent. *Corolla* bell or wheel-form, five-lobed, plaited. *Anthers* thickened, partly united, with two pores at the top. *Berry* containing many seeds, two to six-celled.

THE SPECIFIC CHARACTERS.

SOLANUM DULCAMARA. *Stem* shrubby, flexuous, thornless. *Leaves* ovate-cordate, upper ones hastate. *Clusters* cymose.

Stem unarmed, woody, climbing. *Lower leaves* mostly cordate, glabrous. *Upper leaves* mostly guitar-hastate, few-flowered. *Corymbs* opposite to leaves.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. ORDER MONOGYNIA. Monopetalous. *Flowers* inferior. *Corolla* regular. *Herbs* (rarely shrubby). *Stamens* alternate with petals. *Fruit* capsule or berry. *Cells* two, many seeds. *Æstivation* plicate.

NATURAL HISTORY.

The SOLANUM DULCAMARA is a true *Solanum*, and a well known shrubby plant, native of Europe and naturalized in the United States, growing in the eastern and northern states from New England to Ohio in shady fertile grounds, especially in watering situations, and flowering from June to August.

The root is ligneous, the stem woody, roundish, twining, branched, and climbing (when supported) to the height of six or eight feet; the leaves are alternate, on footstalks smooth, soft, about two inches long, and one broad, and of a dull green color, the lowermost cordate and undivided, and the uppermost halbert-shaped; they are all entire at the margin. The flowers are in elegant clusters opposite to the leaves, or terminal, drooping, spreading, smooth, alternately subdivided, and having the semblance, but not the structure, of a true cyme: each consisting of a small purplish calyx with blunt segments, a corolla of five reflected, equally-divided, pointed, bright violet-colored segments with two round green dots at the base, and a longitudinal deeper purple vein through the centre of each segment; and large, erect, almost sessile

lemon-yellow anthers; the berries, which ripen in September and October, are oval, scarlet, very juicy, bitter, and esteemed poisonous. They continue to hang in beautiful bunches after the leaves have fallen.

The annual stems or extreme twigs are the parts most commonly employed, and should be collected in the autumn, after the leaves have fallen, as at that season they are more powerful, depending perhaps on their being less succulent and containing more of the peculiar secretion on which the virtues of the plant depend. The soil in which the plant grows also affects its medicinal powers. A high and dry situation being the most proper for this purpose.

There is a point of agreement among the plants brought together in Natural Orders which is of the greatest practical importance. This is that those plants which agree in structure almost invariably correspond in properties also. Thus, when a plant is recognized as a member of a particular Natural Order, an almost certain account may be given of its properties—whether it is likely to be injurious or wholesome, to furnish valuable medicines or important articles of food. It must be remembered, however, that the peculiar properties of the plant do not pervade every portion of it, and that it may hence be possible to obtain wholesome nutriment even from members of orders most distinguished for their deleterious properties. The plant under consideration, for instance, belongs to the same family as the common potato, (*Solanum Tuberosa*), and is one instance among a few others that have been noticed of plants of the same order greatly differing in their medicinal properties.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The *SOLANUM DULCAMARA* contains an alkaloid substance originally discovered by M. Desfosses, of Besancon, in the berries of the *Solanum Nigrum*, and has been subsequently found in the stalks, leaves and berries of the plant under consideration. This substance he called Solania. It is in the form of a white opaque powder, inodorous and slightly bitter, fusible at a little above 212° , scarcely soluble in water, soluble in alcohol and ether, and capable of neutralizing the acids. It is prepared by precipitating the juice of the berries by ammonia; drying this precipitate, and treating it with boiling alcohol. The alkali is deposited as the spirit cools. Besides Solania, the twigs of the *SOLANUM DULCAMARA* contain also a peculiar principle, to which Pfaff gave the name of Pieroglycion, indicative of the taste they possess. This may be obtained in a crystalline state, by the following process. The watery extract is treated with alcohol, the tincture evaporated, the residue dissolved in water, the solution precipitated with subacetate of lead, the excess of this salt decomposed by sulphuretted hydrogen, the liquor then evaporated to dryness and the residue treated with acetic ether, which yields

the principle in the form of small isolated crystals by spontaneous evaporation. In the plant are also found a vegeto-animal substance, gummy extractive, gluten, wax, resin, benzoin, acid starch, lignine, and various salts of lime.

The whole plant is used as an alterative, anodyne, diuretic, narcotic, repellant, &c. The taste is slightly bitter, followed by a sweetness (whence the name) not unlike that of liquorice root, depending probably on an uncrystallizable sugar, with a slight degree of acrimony. The article is very strongly recommended by many very respectable Practitioners, and pronounced adequate to produce nearly all the good effects of sulphur, antimony and mercury, in chronic rheumatism; humoral asthma, dropsy, and in lepra vulgaris and alphas, scabies, ptyriasis, and all cutaneous affections. It has also been used in pleurisy, peripneumonia, dyslochia, ainenorrhœa and scrofula. Dr. Willan, in his description and treatment of cutaneous diseases, remarks that "Bitter-sweet is not applicable for the cure of lepra nigricans," nor is it of the least use in acute rheumatism, and notwithstanding some have strongly recommended it, in fluor albus and suppression of the menses it has proved of little advantage.

When given in too large doses at first, SOLANUM DULCAMARA occasions nausea, vomiting, syncope, violent palpitation and convulsive twitchings in the eyelids, the lips and the hands. It therefore requires to be begun with small doses, which ought to be always moderate and gradually increased, beginning with one ounce of the decoction or five grains of the extract three times daily, but when most cautiously administered, if the above symptoms occur, the dose must be lessened, and some aromatic conjoined.

The usual form under which BITTER SWEET is used, is that of watery infusion or decoction; of which two ounces may be taken four times a day and gradually increased till some slight disorder of the head indicates the activity of the medicine. It may also be given in substance pulverized. The dose of the powder may be from twenty grains to one drachm taken in a cup full of milk.

In cutaneous affections a strong decoction is often applied with good effect to the skin, at the same time that the medicine is taken internally.

SOLANUM DULCAMARA irritates the digestive canal, and when it has been absorbed, it seems principally to act upon the cutaneous system. It promotes perspiration, causes an itching and prickling sensation of the skin. It acts likewise on the nervous system; for its employment is occasionally followed by slight convulsive motions, heaviness of the head, &c. The narcotic influence attributed to it appears to be rather suppositious than real, or at least it is very weak. Further experiments on this plant are very desirable, and it would be a good subject for a dissertation.



Nº 38.

ULMUS FULVA.

Slippery elm. Red elm.

ULMACEÆ.

The Elm Tribe.

NO. 38.

ULMUS IULVA

Slippery Elm. Red Elm.

Plant—North America.

Quality—Mucilaginous.

Place—Frustrated, 1816.

Use—Frustrated, 1816. Infusion, &c., inflammation.

BOTANICAL ANALYSIS

Natural Order. *Ulmaceæ*—L. *Amentaceæ*—J.

CLASS V. *Pentandria*. ORDER *Diœcymia*.

Ulmaceæ, Michel Bern. 905 (1815); Lindl. Synops. 236 (1829). *Celtidæ*, Rich.

GENUS. ULMUS.

From Elm, its original name in Anglo-Saxon, Teutonic, Gothic, and other Celtic dialects. Being introduced unchanged in English.

SYNONYMS—*Uomo* (P.), *Uo ulme* (G.), *Ulm* (Dutch), *Olmo* (I. S. Part.), *Kas-gan* (Arab.), *Ulm* (Rus.), *Uir* (Pol.), *Morakoe sulo* (Kus.)

THE ESSENTIAL CHARACTERS.

CALYX. Free from the ovary, campanulate, four–five cleft, imbricate in anthesis.

COROLLA. Wanting.

STAMENS. Inserted in the base of the calyx, as many as its lobes, and opposite to them.

OVARY. One–two celled. *Ovules* solitary. *Stigmas* two, distinct.

FRUIT. Indehiscent, either a samara or drupe, one-celled, one-seeded.



Nº 38.

ULMUS FURVA.

Slippery elm. Red elm.

ULMACEÆ.

The Elm Tribe.

NO. 38.

ULMUS FULVA.

Slippery Elm. Red Elm.

Place—North America.

Quality—Mucilaginous.

Power—Demulcent, tonic.

Use—Diarrhœa, dysentery, &c., inflammation.

BOTANICAL ANALYSIS.

Natural Order. Ulmaceæ—L. Amentaceæ—J.

CLASS V. Pentandria. ORDER Digynia.

Ulmaceæ, Mirbel Elem, 905 (1815); Lindl. Synops. 225 (1829). Celtideæ, Rich.

GENUS. ULMUS.

From ELM, its original name in Anglo-Saxon, Teutonic, Gothic, and other Celtic dialects, having remained unchanged in English.

SYNONYMES.—L'orme (*F.*), Die ulme (*G.*), Olm (*Dutch*), Olmo (*I. S. Port.*), Kasagatsch (*Turk.*), Ilim (*Rus.*), Ilm (*Pol.*), Morskoe salo (*Rus.*)

THE ESSENTIAL CHARACTERS.

CALYX. Free from the ovary, campanulate, four—five cleft, imbricate in æstivation.

COROLLA. Wanting.

STAMENS. Inserted in the base of the calyx, as many as its lobes, and opposite to them.

Ovary. One—two celled. *Ovules* solitary. *Stigmas* two, distinct.

FRUIT. Indehiscent, either a samara or drupe, one-celled, one-seeded.

ULMUS FULVA.

SEED. Pendulous, without albumen. *Cotyledons* foliaceous.

FLOWERS. Perfect or polygamous.

THE SECONDARY CHARACTERS.

ULMUS. *Flowers* perfect. *Calyx* campanulate, four—five cleft. *Stamens* five—eight. *Styles* two. *Samara* compressed, with a broad, membranaceous border.

Calyx bell-form, withering. *Border* four to five cleft. *Seed* one, enclosed in a flat membranaceous samara. *Stamens* vary from four to eight.

THE SPECIFIC CHARACTERS.

ULMUS FULVA. *Branches* rough. *Leaves* oblong-ovate, acuminate, nearly equal at base, unequally serrate, pubescent both sides, very rough. *Buds* covered with fulvous down. *Flowers* sessile. *Calyx* downy, sessile. *Stamens* short, reddish, seven in number.

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.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. ORDER DIGYNIA. Apetalous. *Trees*. *Fruit* a samara.

NATURAL HISTORY.

The ULMUS is a genus of hardy trees, most of them valued for their timber. It is indigenous, and grows very abundantly in woods and low grounds, flowering in March or early in April, before the leaves are unfolded. It may be found in all parts of the United States north of Carolina, but especially abundant west of the Alleghany mountains. It grows to a considerable height, from twenty to forty feet, and its diameter is from one to two feet. The branches are strong, spreading and lateral; with the bark of the trunk very rough and cracked, but that of the younger branches smooth and tough. The leaves are rough on both sides, villose beneath along the veins, doubly serrate, longer on one side of the midrib than on the other, about three inches long, two broad, and of a dark green color. The leaves of the ULMUS FULVA, Slippery Elm, are larger, thicker, and rougher than those of the ULMUS AMERICANA, White Elm, and exhale a pleasant odor. The flowers which appear before the leaves, are in distinct gems, clustered, at the extremity of the young shoots, scarcely peduncled, numerous, small, of a red color, and have a violet odor, are succeeded by membranaceous seed-vessels of a compressed and oval shape, containing one oval seed.

ULMUS FULVA.

The genus *ULMUS*, like *Salix*, is one of those whose species are so nearly related as to be often confounded. Linnæus considered all the European elms as forming only one species. At present Botanists make five British species, besides an equal number in America.

The wood is used in all works where it may be continually dry or wet; as for water pipes, pumps, water-wheels, &c. It is also very generally used for weather boarding, and for common cabinet work. The knotty parts, like those of the ash, are used for naves and hubs. The whole makes good fuel and charcoal.

The narrow leaved elm requires a light dry soil and warm situation, and will not do well in sand or gravel, in exposed places; but the smooth-barked elm is a very hardy tree, and will grow in thin clayey soil on retentive substrata better than most others. It will also thrive in situations elevated and exposed on all sides.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The bark of the *ULMUS FULVA* is an article of much importance in the practice of medicine, and particularly in medical surgery. It is in long, nearly flat pieces, from one to two lines in thickness, of a fibrous texture, a tawny color which is reddish on the inner surface, a peculiar sweetish, not unpleasant odor, and a highly mucilaginous taste when chewed. By grinding it is reduced to a light, grayish fawn-colored powder. It abounds in mucilaginous matter, which it readily imparts to water. The inner bark is used, and is brought to the shops separated from the epidermis. That of the young branches is of a whitish-yellow, fulvous, rather brittle and extremely mucilaginous, and devoid of any sensible astringency; that of the old branches is thicker, of a darker color, slightly mucilaginous and astringent. It contains fecula, ulmine and gum; is edible and mild yet very efficient demulcent, diuretic, pectoral, deobstruent, emollient, &c. It is inodorous, and has a slightly bitter, slimy taste.

The decoction or infusion of this bark has been very usefully employed as a demulcent, in affections of the urinary passages and in some diseases of the alimentary canal. In dysentery, diarrhœa and cholera infantum, it has proved a very efficient medicine; and is successfully prescribed in these instances.

The internal use of the decoction of this bark, has been found very efficacious in lepra vulgaris and in other varieties of cutaneous diseases; but it is seldom found to show its good effects in these complaints before its use has been continued for several months. The more diuresis it produces the more certain is its beneficial operation.

This bark pulverized has lately been very extensively used, boiled with water or milk in the form of pap, as a light nourishment for chil-

dren affected with diarrhœa, dysentery, &c. One drachm of the powder boiled with water or milk and sweetened with sugar, forms a common bowlful of this pap.

When boiled in a small quantity of water, it forms a thick, dark-brown colored decoction, which gelatinizes as it cools; and when evaporated leaves a brittle, semi-transparent substance, soluble in water, but insoluble in alcohol and ether, to which, however, it imparts a brownish color. The brittle residue, when treated in the same manner as Klaproth treated the gum-like exudation from the *Ulmus nigra*, afforded nearly the same results; and consequently it must be regarded as *ulmin*; but from the effects of some re-agents, it is considered a peculiar modification of potassa, which Scheele detected in elm bark. *Ulmin* is the substance which exudes spontaneously from the tree; it is also found in the Oak, Chesnut, and other trees, and according to Berzelius, is a constituent of most kinds of bark.

As an external application in the form of poultice, it is an admirable remedy, far exceeding any other known production, for ulcers, tumors, swellings, gunshot wounds, chilblains, burns, cutaneous diseases, erysipelas, felons, old obstinate ulcers and scabs. It is also used very advantageously as a wash for sore mouth or thrush.

It quickly and powerfully allays inflammation, promotes resolution, also suppuration, and heals speedily.

The tea has long been known among Indian women as a specific, to insure easy parturition. They drank it for about two months previously, and it is now in very general use.

The surgeons of the revolutionary army of 1776, and also those of General Wayne's army, who defeated the Indians in August, 1794, used this bark as an external application to gunshot wounds. Poultices made of the flour of the bark were applied to the wounds, which were soon brought to suppuration and to a disposition to heal. When tendency to mortification was evident, this bark bruised and boiled in water produced the most surprising good effects. On those occasions also the soldiers used it as nutriment, and it is stated that a soldier who lost his way, supported himself for ten days upon this mucilage and that of *sassafras*. The Indians, it is said, resorted to it for nutriment in extreme emergencies. When eaten alone, however, it produces sour stomach and eructations. In fact, slippery elm is one of the most valuable articles in the *Materia Medica*. It is used to moisten the parched mouth, to correct irritation of the throat, lungs, stomach and bowels, to lubricate all parts, to nourish weak stomachs, to relieve thirst, to give constant moisture and softness to a cataplasm, to roll up pills in, to aid in the action of enemas, &c., and with charcoal and gum myrrh, to prevent mortification. Taken in large quantities it has been known to expel worms by merely sliding them out of the body.



Nº 39.

SAMBUCUS CANADENSIS.

Common Elder.

ROSACEAE.

Subtribe *Tride.*

NO. 13.

Sambucus glauca.

Common Name

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... ..
... ..

... ..

... .. J.

... .. *Triglochin*.

... .. (1838).
... .. (1836).

GENUS *SAMBUCUS*.

Sambucus, Greek *Sambuke*, Heb. *Sabaca*, a musical instrument sup-
posedly made of the hollow stem of the Elder, on account of its hardness.

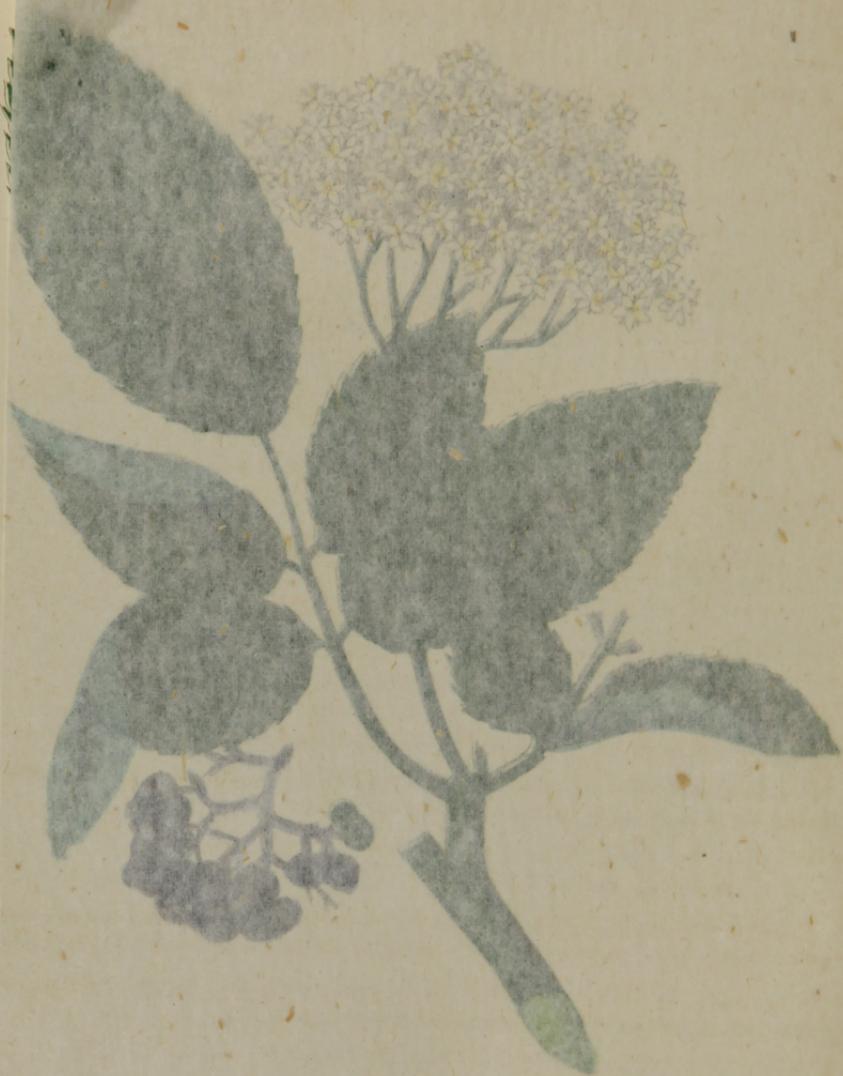
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THE ESSENTIAL CHARACTERS

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N° 32.

SAMBUCUS CANADENSIS.

Common Elder.

CAPRIFOLIACEÆ.

The Honeysuckle Tribe.

NO. 39.

SAMBUCUS CANADENSIS.

Common Elder.

Place—Northern temperate zones.

Quality—Acrid, nauseous.

Power—Sudorific, herpetic.

Use—Erysipelas, fevers, rheumatism, and eruptions.

BOTANICAL ANALYSIS.

Natural Order. Caprifolia—J. Dumosæ—L.

CLASS V. Pentandria. ORDER. Trigynia.

Caprifolia, Juss. Gen. 210 (1789) in part. Caprifoliaceæ, Dec. and Duby 244, (1828.)
Lindl. Synops. 131, (1829.) Dec. Prod. 4, 321, (1830.)

GENUS. SAMBUCUS.

From the Lat. *Sambucus*, Greek *Sambuke*, Heb. *Sabucca*, a musical instrument supposed to have been made of the hollow stem of the Elder, on account of its hardness.

SYNONYMES.—Le sureau (*F.*), Der hohlunder (*G.*), Vlierboom (*Dutch*), Sambuco (*I.*), Sauco (*Sp.*), Uchuyu (*Chin.*), Busina (*Russ.*), Bez (*Pol.*)

THE ESSENTIAL CHARACTERS.

CALYX. Adherent to the ovary (superior), the limb five (rarely four) cleft or toothed.

COROLLA. Tubular or rotate, regular or irregular.

STAMENS. As many, or one less than as many as the lobes of the corolla, alternate with them and inserted on the tube.

OVARY. Three (rarely four or five) celled. *Style* one. *Stigmas* one—four.

SAMBUCUS CANADENSIS.

FRUIT. Baccate, fleshy or dry, crowned with the persistent calyx lobes.

SEEDS. Pendulous.

THE SECONDARY CHARACTERS.

SAMBUCUS. *Calyx* five-parted. *Corolla* five-cleft. *Stamens* five. *Berry* pulpy, three-seeded.

Calyx five-parted or five-cleft, small. *Corolla* sub-urceolate, or sub-rotate, five-cleft. *Stigma* minute, sessile. *Berry* globose, one-celled, three-seeded.

THE SPECIFIC CHARACTERS.

SAMBUCUS CANADENSIS. *Stem* shrubby. *Cymes* five-parted. *Leaves* nearly bipinnate. *Leaflets* oblong-oval, acuminate, smooth.

Branchlets and petioles glabrous. *Leaflets* about in four pairs, oblong-oval, glabrous, shining, acuminate. *Cyme* lax, divided into about five parts.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. ORDER TRIGYNIA. *Flowers* superior. *Corolla* rotate or urn-shaped. *Shrubs* with opposite leaves.

NATURAL HISTORY.

The SAMBUCUS CANADENSIS is a common well-known shrub, indigenous in the United States, from six to ten feet high, with a branching stem which is covered with a rough gray bark, and contains a large spongy, light and porous pith, especially when young. The small branches and the leaf-stalks are very smooth. The leaves are opposite, pinnate, sometimes bi-pinnate, and composed usually of three or four pairs, with an odd one of oblong-oval, acuminate, smooth, shining, deep-green leaflets, the midribs of which are somewhat pubescent. The flowers are small and numerous, white, and disposed in very large, loose, level-topped cymes, having about five divisions, with a heavy odor. The berries are small, globular, and when ripe of a deep dark purple color.

The shrub grows in thickets and low waste moist grounds, along fences, and on the borders of small streams, in all parts of this continent from Canada to Carolina. It flowers from May to July, and ripens its berries early in the autumn. The whole plant has a narcotic smell, and it is not prudent to sleep under its shade.

Professor Martyn observes, the shrub is a whole magazine of physic to the rustic and country practitioner. The fruit is in demand in many places, but especially in London and the principal English towns, for

making elder wine of the expressed juice; a powerful, warming and enlivening article for family use. The berries ripen in perfection for the purpose of making this wine about the middle and end of September and in October, and should then be gathered in bunches.

The wood is used by the Turner and Mathematical Instrument maker; and is made into tops, angling rods and needles for weaving nets. It is exceeding tough and hard, and was always famous for these qualities, so that Pliny says it consists of nothing but skin and bones.— (B. xxi. c. 39.)

The common Elder will grow almost any where, either in open or shady situations; it may be planted in any out-ground or waste spot, in single standards or in rows to assist in forming boundary fences. Those planted in the hedge order, if suffered to grow up untrimmed, will produce abundance of berries for use.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The flowers of the *SAMBUCUS* are the officinal portion; they have a peculiar faint, sickly and sweetish odor which is strong in their recent state, but becomes feeble by drying. Their taste is bitterish. These properties are imparted to water by infusion and also by distillation, during which a small portion of volatile oil is separated, which on cooling assumes a butyraceous consistence. Water distilled from them contains an appreciable portion of ammonia. The berries are nearly inodorous. They have a sweetish acidulous taste, dependent on the saccharine matter and malic acid which they contain. They yield on expression a fine purple juice, which forms a vinous liquor very highly esteemed in the North of Europe. It is colored violet by alkalis, and bright red by acids; and the coloring matter is precipitated blue by acetate of lead. M. A. Chevalier has ascertained that paper stained with this juice is as delicate a test of the presence of alkalis and acids as litmus paper. The inner bark is inodorous, and has a faint sweetish taste, which is succeeded by a slight bitterness and a very permanent acrimony. Both water and alcohol extract their virtues, which are said to reside especially in the green layer between the liber and epidermis. According to Simon the active principle of the inner bark of the root is a soft resin, which may be obtained by exhausting the powdered bark with alcohol, filtering the tincture, evaporating to the consistence of syrup, then adding ether, which dissolves the active matter, and finally evaporating to the consistence of a thick extract. Of this, twenty grains produced brisk vomiting and purging.

The flowers and berries are diaphoretic and aperient. The flowers are used in fomentations and cooling ointments, and to afford their odor to water in distillation. A tea made of the flowers yields a mild ano-

dyne purgative, and is recommended to remove the hepatic affections of children and to obviate costiveness. They are also said to be excellent to purify the blood.

The expressed juice of the berries, dried to the consistence of a rob, (to the consistence of honey by evaporation before it has fermented,) proves a useful aperient medicine. It opens obstructions of the viscera, promotes the natural evacuations, and if continued a length of time, does considerable service in various chronic disorders. An ounce of the juice of the berries purges. This juice inspissated was formerly much used and enjoyed some reputation as a remedy in febrile diseases, rheumatism, gout, eruptive and syphilitic diseases.

The inner green bark is a hydragogue cathartic, acting also as an emetic in large doses. It is said to prove efficacious in dropsy and in small doses to be a useful aperient and deobstruent in various chronic affections. An infusion of this bark in wine in the dose of half an ounce or more, is said to purge moderately, and in smaller doses to prove an efficacious deobstruent capable of promoting all the fluid secretions.

The young leaf buds are strongly purgative, and are violent and unsafe.

Elder wine, so highly esteemed and valued in Europe, is made by mixing twelve and a half gallons of ripe elder berry juice and forty-two pounds of sugar, with thirty-seven and a half gallons of water, that previously has had boiling in it six ounces of ginger and nine ounces of pimento, bruised and strained off: and when rather less than milk warm, almost cold, add one pint of good yeast, and let it foment for fourteen days in the barrel, then bung it close, and bottle it in six months.

The liquid sold in the stores as Green Oil, or Oil of Elder, is prepared by boiling the leaves of the Elder in rape oil. It is employed as a liniment. By distillation the flowers of the Elder yield a small quantity of butyraceous, odoriferous oil, but totally unfit for any useful purpose whatever.

Elder flower water is frequently made from the pickled flowers, (*flores sambuci saliti*;) which are prepared with alternate layers of the flowers and common salt compressed and preserved in a well closed vessel, the water which exudes being rejected. It is principally used as a perfume.

Elder ointment is simply emollient and possesses no advantages over simple ointment. It is a vestige of the redundant practice of former times. The formula is as follows: Take of fresh elder flowers three pounds, prepared hog's lard four pounds, mutton suet two pounds. Boil the leaves in the lard until they are crisp, then strain by expression. Finally melt and add the suet.



N^o 40.

MALVA SILVESTRIS.

High Mallow



No 40

MALVA SYLVESTRIS.

High Mallow

MALVACEÆ.

The Mallow Tribe.

NO. 40.

MALVA SILVESTRIS.

High Mallow.

Place—England.

Quality—Mucilaginous.

Power—Demulcent, astringent.

Use—Stranguary, inflammations, pains.

BOTANICAL ANALYSIS.

Natural Order. Malvaceæ—J. Columniferae—L.

CLASS XVI. Monadelphia. • ORDER Polyandria.

Malvaceæ, Juss. Gen. 271, (1789), in part. Brown in Voy. to Congo, p. 8, (1818).
Kunth Diss. p. 1, (1822). Dec. Prodr. 1, 429, (1824). Lindl. Synops. p. 40, (1829).
Malvaceæ, Malveæ, Aug. St. Hill Fl. Brass. mer. 1, 173, (1827.)

SYNONYMES.—La mauve (*F.*), Die malve (*Ger.*), Maluwe (*Dutch*), Malva (*I.*), Malva (*Sp.*)

GENUS. MALVA.

Altered by the Latins from the Greek word *Malache*, soft, in allusion to the soft mucilaginous qualities of the species.

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* generally five, more or less united at their base, bearing an involucl, valvate in æstivation.

COROLLA. *Petals* equal in number to sepals, hypogynous.

STAMENS. Indefinite, monodelphous. *Anthers* one-celled, bursting transversely.

MALVA SILVESTRIS.

OVARY. Of several *carpels* arranged in one or more rows around a common axis. *Styles* as many as the *carpels*, either united or distinct.

FRUIT. Capsular or baccate. *Carpels* one or more seeded, united or distinct.

SEEDS. Sometimes hairy.

THE SECONDARY CHARACTERS.

MALVA. *Calyx* three-cleft, the *involucl* mostly three-leaved. *Carpels* numerous, one-celled, one-seeded, arranged circularly.

Calyx double, outer one three-sepalled, inner one five-cleft. *Carpels* many, arranged circularly, one-celled, one-seeded.

THE SPECIFIC CHARACTERS.

MALVA SILVESTRIS. *Stem* erect. *Leaves* five—seven lobed, sub-acute. *Peduncles* and *petioles* hairy.

Stem erect. *Leaves* about seven-lobed, acutish. *Peduncles* and *petioles* hairy.

THE ARTIFICIAL CHARACTERS.

CLASS MONADELPHIA. *Stamens* united by their filaments into one set. ORDER POLYANDRIA. *Calyx* valvate in æstivation, generally double. *Herbs*.

NATURAL HISTORY.

The MALVACEÆ, or *Mallow Tribe*, is a somewhat important class of plants, forming about one fiftieth of all the flowering plants of tropical vallies. But few are natives of the temperate, and none of the frigid zone. In the Northern states they are all herbs.

The MALVA SILVESTRIS, the common or high mallow, of which we have given a plate, is a perennial, indigenous plant, common and popular every where, and of the easiest culture, often springing up spontaneously, growing on waste grounds and at the sides of roads where it is not cropped by cattle; and flowering from June till October. The root is fusiform, branching, and of a whitish color. The stem frequently erect, near three feet high, branched, round, hairy, and many-flowered. The hairs frequently spring in stillate clusters. The leaves are alternate, petiolate, cordate, divided into seven lobes, plaited, somewhat rough, and crenate; the upper ones are almost palmate. At the base of each foot-stalk are two small scale-like stipules. The flowers, which stand in slender, hairy peduncles, are large, composed of five inversely cordate, purple reddish petals, with veins of a darker hue, three times

MALVA SILVESTRIS.

longer than the calyx, which is hispid. The capsules are from ten to fifteen in number, of a roundish kidney form, crustaceous, brittle, close all round, of a dark straw color, excavated, and wrinkled in the back. The seeds are kidney shaped, ash colored, and furnished with an arillus which opens inwardly.

A tree of the mallow kind is said by Prosper Alpinus to afford food to the Egyptians, and the Chinese use some sort of mallow as food. MALVA was reckoned an excellent vegetable among the Romans, but what species is uncertain, and probably not the *Malva silvestris*, as we learn from Horace,

Me pascunt olivæ

Me Cichorea, levesque, Malvæ.

LIB. I. ODE xxx.

Almost every child is familiar with the cheeses that he finds among the commonest plants in the country, and there is not a civilized human being who does not make great use of *cotton* fabrics, yet few save professed Botanists, are aware how close a relation there is between the humble neglected plant that bears the former, and the cherished exotic shrub to which we are indebted for the latter. They both, however, belong to this order, MALVACEÆ, which is marked by characters that readily distinguish it; and which may be explained from the common mallow, as well as from any other of the more highly-prized species.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

From the result of the chemical analysis of *Althæa Officinalis*, (the constituents of MALVA SILVESTRIS being probably similar,) it appears to contain fatty oil, glutinous matter, uncrystallizable sugar and althein, mucilage, starch, phosphate of lime, vegetable medulla and woody fibre. The substance which has been called *Althein*, is identical with *Asparagin*. It is crystallizable, odorless, and almost tasteless. It is soluble in water and alcohol, but it is insoluble in absolute alcohol and in ether. Acted on by the watery solutions of the alkalis, it evolves ammonia, and is converted into aspartic acid; hence it is called *asparamide*, as it is an aspartite of ammonia. It has no influence on the therapeutic properties of the root.

The herb and flowers of the common Mallow are the officinal parts. They are inodorous, and have a weak, herbaceous, slimy and mucilaginous taste. They abound in mucilage, which they readily impart to water, and the solution is precipitated by acetate of lead, and is little more than a simple solution of vegetable mucus. The infusion and tincture of the flowers are blue and serve as a test of acids and alkalis, being reddened by the former and rendered green by the latter. The roots and seeds are also mucilaginous.

Common mallow is emollient and demulcent. The herb, however,

is more so than the root. The infusion and decoction are sometimes employed in dysentery, ischuria, stranguary and nephritic complaints; they are applicable to all other cases which call for the use of mucilaginous liquids. They are also used as an emollient injection, and the fresh plant forms a good suppurative or relaxing cataplasm in external inflammations. They are also used in the form of enema in tenesmus and nephritic colic, and in that of cataplasms and fomentations in phlegmonous inflammation.

In humid asthma, hoarseness, and likewise in affections of the kidneys and gravelly complaints, this plant is of eminent service, as by lubricating and relaxing the vessels, it procures a more easy passage to the stagnant fluids. The plant is also used with equal advantage externally for softening and maturing hard tumors, and it also affords relief in difficult teething.

The mucilage obtained from every part of this plant, the root, the herb, and the flowers, is capable, by being boiled in water or milk, to thicken them to the consistency of a syrup. This syrup is of a quality well calculated to defend the internal parts against the irritating effects of acrimonious humors. Consumptive patients have derived very considerable advantage from its use, and it has been thought to have performed cures in some instances. The roots are to be boiled in milk, (and asses' milk is most particularly recommended,) and this should be the principal food and nutriment of the patient.

Medicines of mucilaginous character are particularly suited to prevent the action of acrid and stimulating matters upon the mucous membrane of the throat, lungs, stomach or bowels, or even upon the skin, when either is the seat of disease; and that not by correcting or changing the properties of the substance coming in contact with these parts, but by enveloping them in a mild and viscid matter, which prevents their action upon the morbidly irritable surfaces: or, as is most generally the case, by covering and shielding the latter. This description of medicine acts *directly* on the parts with which they come in contact; the top of the larynx being soothed by them first, and indirectly the inflamed portion of the air passages. As they possess no active powers, they may be taken in such quantities as the stomach will bear.

Mallow roots contain a considerable quantity of mucus, which is extracted unaltered by water. The simple decoction of the roots is viscid, of a pale yellow color, sweetish, and has a peculiar odor resembling that of boiled turnips. The formula is as follows: Mallow roots dried and bruised four ounces, raisins, stoned, two ounces, water seven pounds. Boil down to five pounds, set aside the strained liquor until the dregs have subsided, and then decant it. This decoction is a useful demulcent; in the above preparation the raisins increase its sweetness and render it more palatable.



Nº 41.

INULA HELENIUM.

Elecampane.



Nº 41.

INULA HELENIUM.

Elecampane.

COMPOSITÆ.

The Aster Tribe.

NO. 41.

INULA HELENIUM.

Elecampane.

Place—South of Europe.

Quality—Aromatic, mucilaginous.

Power—Astringent, stomachic.

Use—Cough, humid asthma, hypochondriasis, colic, scabies.

BOTANICAL ANALYSIS.

Natural Order. Compositæ *Corymbifera*—J. *Discoidea*—L.

CLASS XVII. *Syngenesia.* ORDER. *Polygamia.*

COMPOSITÆ, Adans. Fam. 2, 103, (1763); Kunth in Humb. N. G. et Sp. vol. 4, (1820); Lindl. Synops. 140, (1829). SYNANTHEREÆ, Rich. Anal. (1803); Cassini Dict. Sc. N. 10, 131, (1818); Ibid, 60, 563, (1830). CORYMBIFERÆ, CYNAROCEPHALÆ, and CHORACEÆ, Juss. Gen. (1789).

GENUS. INULA.

From the Greek ELENION, fabled to have sprung from the tears of Helen.

SYNONYMES.—*L'inule aunce* (*F.*), *Der alant* (*G.*), *Gewoon alant* (*D.*), *Enula* (*I.*), *Enula campana* (*S.*), *Dewjatchik* (*Russ.*)

THE ESSENTIAL CHARACTERS.

CALYX. Closely adherent to the ovary, the limb wanting, or membranaceous and divided into palæ, bristly hairs, &c., called *pappus*.

COROLLA. Superior, consisting of five united *petals*, either ligulate or tubular.

STAMENS. Five, alternate with the lobes of the corolla. *Anthers* cohering into a cylinder.

INULA HELENIUM.

OVARY. Inferior, one-celled, one-ovuled. *Style* two-cleft, the inner margins of the branches occupied by the stigmas.

FRUIT. An achenium, dry, indehiscent, crowned with a pappus.

SEEDS. Solitary, quadrangular.

Flowers collected into a dense head (capitum) upon a common receptacle, surrounded by an involucre of many bracts (scales.)

THE SECONDARY CHARACTERS.

INULA. *Heads* many-flowered. *Involucre* imbricate. *Ray-flowers* numerous, pistillate. *Disk-flowers* perfect. *Receptacle* naked. *Pappus* simple, scabrous. *Anthers* with two bristles at base.

Involucre imbricate, generally squarrose. *Egret* simple, scabrous, sometimes a minute exterior chaffy one. *Anthers* ending in two bristles at the base. *Ray-florets* numerous, always yellow.

THE SPECIFIC CHARACTERS.

INULA HELENIUM. *Leaves* amplexicaul, ovate, rugose, downy beneath. *Involucre scales* ovate. *Flowers* large, solitary, terminal, of a bright yellow. *Rays* linear, with two or three teeth at the end.

Leaves clasping, ovate, rugose, tomentose beneath. *Scales of the involucre* ovate.

THE ARTIFICIAL CHARACTERS.

CLASS SYNGENESIA. *Stamens* five, cohering by the tops of their anthers. **ORDER POLYGAMIA.** Herbaceous plants. *Flowers* or *florets* collected into dense heads, (compound flowers.) *Corollas* monopetalous of various forms.

NATURAL HISTORY.

INULA HELENIUM is an indigenous perennial, native of Europe naturalized and now very common in the United States. A large herbaceous coarse-looking plant, common by road-sides and occasionally in pastures and rich moist soils. It flowers in July and August, and ripens its seeds in September. The root is thick, branched, externally of a brown or grey color and internally white. The stem, which rises from four to six feet high, is leafy, round and furrowed branched near the top and villous. The leaves are large, ovate, serrated, veined, of a deep green color on the upper surface and on the under reticulated, tomentose and whitish. The radical ones are petiolate, but those of the stem are sessile and embracing. The flowers are terminal, solitary, large, and of a golden yellow color. The calyx is scaly, the exterior scales are large, ovate, imbricated and externally tomentose, the interior are narrow, linear, equal, and chaffy. The florets of the ray are nu-

INULA HELENIUM.

merous, spreading, twice the length of the calyx, linear with the apex tridentate. The anthers end in two bristles at the base. The seeds are quadrangular, smooth, slightly curved, and furnished with a somewhat chaffy pappus. The receptacle is reticulate and papillous. The roots of elecampane found in the stores are generally obtained from garden plants. They are fit for use in the second year of their growth, and at this age are preferable to the older roots, which become stringy and woody. They should be dug up in autumn.

Elecampane is propagated by offsets in autumn, after the plant has done flowering; these, if planted in a deep soil, rather moist, or in a shady situation, will be fit for use the end of the second year.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The root of the *INULA HELENIUM* is the officinal part. When fresh it is very thick and branched, having whitish cylindrical ramifications which are furnished with thread-like fibres. It is externally brown, internally whitish and fleshy, and the transverse sections present radiating lines. The dried root, as found in the stores, is usually in longitudinal or transverse slices, and of a yellowish grey color internally. The smell is aromatic or camphoraceous, yet slightly fœtid, and when chewed the taste is at first disagreeable, glutinous and in some degree resembling that of rancid soap, then aromatic, bitter and hot. Iodine colors the root brown. Sisquichloride of iron produces in the infusion a green color.

According to the analysis of Funcke, *ELECAMPANE* contains, 1. A volatile oil, which crystallizes; 2. A peculiar fecula; 3. Bitter extractive matter; 4. Free acetic acid; 5. Resin; 6. Albumen; 7. Fibrous matter. Both water and alcohol extract its virtues, the tincture possessing more of the bitterness and pungency of the root than the watery infusion. In the bitter extractive matter resides the tonic property of Elecampane. The decoction, after standing some hours, deposits a white powder resembling starch in appearance, but its properties show it to be a distinct principle, and it has therefore been named *Imulin*, which term has been generally adopted. It differs from starch in being deposited unchanged from its solution in boiling water when the liquor cools, and in giving a yellowish instead of a blue color with iodine. This *Imulin* has been found in the roots of several other plants, and is an amylaceous substance, organized, according to Raspail, like common starch. It is very slightly soluble in cold water, but very soluble in boiling water, from which it is deposited as the solution cools. It is slightly soluble in boiling alcohol. Iodine gives it a yellow tint; this distinguishes it from ordinary starch. Besides this principle, Elecampane contains, according to John, a white concrete substance called

INULA HELENIUM.

Helenin or Elecampane-camphor, intermediate in its properties between the essential oils and camphor. Colorless, prismatic crystals, heavier than water, fusible, volatile, very soluble in ether, oil of turpentine and boiling alcohol, but insoluble in water. Nitric acid converts it into resin.

INULA HELENIUM is usually ranked as a tonic and gently stimulant. It acts likewise as an excitant, on account of the camphorated volatile oil which it contains. It is supposed to possess deobstruent, diuretic and expectorant properties. In its operation it is allied to sweet flag. It has been regarded as a remedy of great efficacy especially in the complaints peculiar to females, and it is still occasionally resorted to with good effect in cases of retained or suppressed menstruation. It likewise possesses the general properties of a strengthening restorative medicine, and may be used accordingly. The root is an excellent pectoral and is very beneficial in coughs; it is also very advantageously used in chronic diseases of the lungs, and is particularly beneficial when the affection of the chest is attended with weakness of the digestive organs, or with general debility. In dyspepsia, attended with relaxation and debility, it has been administered with considerable benefit. On account of the deobstruent and diuretic virtues which the root of this plant possesses, it is successfully prescribed in chronic engorgements of the abdominal viscera, and the dropsy to which they so often give rise. It has also been highly recommended both as an internal and external remedy in tetter, psora, and other diseases of the skin. It is employed in the exanthematica to promote the eruption. In general the root of the plant may be said to attenuate viscid phlegm, relieve humoral cough and asthma, excite urine and insensible perspiration, gently loosen the bowels, strengthen the stomach and the tone of the viscera.

It may be taken alone, in powder or decoction, or it may be combined with other articles and formed into a syrup for all the above diseases. A teaspoon full of the pulverised root may be taken three times a day in molasses, together with a teacup full of a decoction of one pound of the dried root boiled to three quarts, taken night and morning.

Elecampane, comfrey and slippery elm, boiled to a syrup and mixed with honey, and taken freely three or four times a day, is an excellent remedy for coughs. This syrup will be found to loosen the phlegm and quiet the tickling. If rightly used it will often cure. The root well candied, however, is the most effectual and sure remedy. A little at a time may in this way be held almost continually in the mouth and swallowed gently, so that it will take effect much better than by a larger dose swallowed at once.

It is sometimes given to horses that are troubled with the heaves.



N° 42.

POLYGALA SENEKA.

Seneka Snake-root.

POLYGALACEÆ.

The Milk-wort Tribe.

NO. 42.

POLYGALA SENEGA.

Seneca Snake-root, Mountain Flax.

Place—United States.

Quality—Acid, acrid.

Power—Sudorific, expectorant, diuretic, cathartic.

Use—Bite of rabid animals, rheumatic affections, croup, &c.

BOTANICAL ANALYSIS.

Natural Order, Polygalaceæ—J. Lomentaceæ—L.

CLASS XVII. *Diadelphia*. ORDER *Octandria*.

Procedure. Juss. Ann. Mus. 14, 586, (1809). Mem. Mus. 1, 395, (1815). Dec.
1817, 1, 329 (1818). Lindl. Synops. 39, (1829). Aug. de St. Hilaire and Moquin-
Tandon Mem. Mus. 17, 313, (1829.)

GENUS. POLYGALA.

From the Greek *Polys*, many, and *Gala*, milk, from its milky juice.

Characters.—Le polygale (*L.*), Die kreuzblume (*G.*), Kruisbloem (*Dutch*), Poligala (*F.*), Poligala (*S.*), Yama tagi (*Jap.*), Isiod (*Russ.*), Wyezka koniecz (*Pol.*)

THE ESSENTIAL CHARACTERS.

Corolla.—Spreads into very irregular, three exterior, two interior, larger and narrower.

Claws.—Petals three, hypogynous, one larger and anterior, keel-

Stamens.—Eight. *Filaments* combined in a tube which is split on the upper side, and coherent to some extent with the claws of the petals.



POLYSCIAS SENECENSIS

Seneca Snake-root.

POLYGALACEÆ.

The Milk-wort Tribe.

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BOTANICAL ANALYSIS.

Natural Order. Polygalaceæ—J. Lomentaceæ—L.

CLASS XVII. *Diadelphia.* ORDER *Octandria.*

POLYGALÆE, Juss. Ann. Mus. 14, 586, (1809). Mem. Mus. 1, 395, (1815). Dec. Prodr. 1, 321, (1824). Lindl. Synops. 39, (1829). Aug. de St. Hilaire and Moquin-Tandon Mem. Muss. 17, 313, (1829.)

GENUS. POLYGALA.

From the Greek *POLUS*, many, and *GALA*, milk, from its milky juice.

SYNONYMES.—*Le polygale (F.)*, *Die kreuzblume (G.)*, *Kruisbloem (Dutch)*, *Poligala (I.)*, *Poligala (S.)*, *Fima fagi (Jap.)*, *Iztod (Russ.)*, *Wyezka konicza (Pol.)*

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* five, very irregular, three exterior, two interior, larger and petioloid.

COROLLA. *Petals* three, hypogynous, one larger and anterior, keel-shaped.

STAMENS. Hypogynous, six—eight. *Filaments* combined in a tube which is split on the upper side, and coherent to some extent with the claws of the petals.

POLYGALA SENEGA.

OVARY. Superior, compressed, two-celled, one often abortive. *Style* curved and often cucullate.

FRUIT. Loculicidal or indehiscent.

SEEDS. Pendulous.

THE SECONDARY CHARACTERS.

POLYGALA. *Calyx* five-leaved, persistent, two of the sepals wing-shaped and colored. *Vexillum* cylindrical. *Capsule* obcordate, two-celled, two-valved.

Calyx five-sepalled, permanent, unequal, two of them wing-like, larger, colored. *Corol* irregular, (or rather, *calyx* three-sepalled, *corol* imperfectly papilionaceous). *Capsule* obcordate, two-celled, two-valved. Keel of the corol sometimes appendaged. *Seeds* hairy.

THE SPECIFIC CHARACTERS.

POLYGALA SENEGA. *Stem* erect, smooth, simple, leafy. *Leaves* alternate, lanceolate, tapering upwards. *Flowers* slightly crested, in a terminal spike. *Calyx* larger than the corolla, five-leaved, colored.

Stem erect, simple, leafy. *Leaves* alternate, lanceolate. *Spike* terminal, filiform. *Flowers* alternate, not crested.

THE ARTIFICIAL CHARACTERS.

CLASS DIADELPHIA. *Stamens* united by their filaments, forming two sets. ORDER OCTANDRIA. *Petals* three, the lowest one carinate. *Sepals* five, two of them winged and colored.

NATURAL HISTORY.

The POLYGALA SENEGA is a native of every part of the United States, though it is most abundant in the southern and western states, where it is collected in great quantities and exported in bales of from two to four hundred weight. The root, as it occurs in commerce, varies from the size of a small quill to that of the little finger. It presents a thick knotty head, which exhibits the traces of the numerous stalks, and from which proceeds a moderately thick, tapering root that is branched, twisted and covered with a corrugated, transversely cracked epidermis, which is yellowish brown in the young, and brownish gray in the old roots. The root frequently exhibits crowded annular protuberances, and has a projecting keel-like line extending along its whole length. The bark is thick, hard and resinous, and contains the active principle of the plant; the central woody part is white and inert.

“The Seneca Snake-root (says Bigelow) is firm, hard, branching and perennial, consisting of a moderately solid wood and a thick bark. The

POLYGALA SENEGA.

root sends up a number of annual stems, which are simple, smooth, occasionally tinged with red. The leaves are scattered, nearly or quite sessile, lanceolate, with a sub-acute point, smooth, paler underneath. Flowers white, in a close terminal spike. The calyx, which in this genus is the most conspicuous part of the flower, consists of five leaflets, the two largest of which, or wings, are roundish ovate, white and slightly veined. Corolla small, closed, having two obtuse lateral segments, and a shorter crested extremity. Capsules obcordate, invested by the persistent calyx, compressed, two-celled, two-valved. Seeds two, oblong-ovate, acute at one end, slightly hairy, curved, blackish, with a longitudinal, bifid, white appendage on the concave side. The spike opens gradually, so that the lower flowers are in fruit while the upper ones are in blossom."

This genus *POLYGALA* is a beautiful example of the manner in which occasional irregularities in structure are compensated by nature. When we examine the stamens, we find them possessing the character of the Leguminosæ, one of the most distinctly marked of all the natural orders. Instead, however, of the papilionaceous flower, with its keel and banner and wings, we have a tubular corolla approaching to the character of the Labiatae. To make up for the absence of the wings, the two lateral segments of the calyx are expanded into roundish-ovate, flattened wing-like leaves, which are white, like petals, and may be considered as a part either of the calyx or corolla.

The plant grows in peat soil, and young cuttings root freely in sand; the hardy sorts prefer a similar soil, and are increased by dividing at the root or by seeds.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

Seneca Snake-root has a faint aroma, which is at first not unlike that of ginseng, but soon becomes nauseous. The taste is at first mucilaginous and sweetish, and being chewed becomes somewhat pungent and acrid, and produces a very peculiar irritating sensation in the fauces. These properties are communicated to the watery decoction, which is more acrid than the alcoholic tincture; and although not unpleasant to the taste at first, soon manifests the peculiar pungency of the root, spreading through the fauces, or exciting a copious discharge of saliva, and frequently a short cough. This root communicates neither taste nor smell to water distilled from it. Alcohol extracts its virtues, and the tincture is decomposed by the addition of water, which precipitates a resinous principle. The whole virtues of the plant are extracted by proof spirits, although the decoction is for practical purposes the most efficacious preparation.

POLYGALA SENEGA has been repeatedly made the subject of chemi-

cal investigation. According to Mr. Gehlen, this root contains *Senegin*, resin, sweet extractive matter, gum and albumen, lignous fibres, &c. According to Dr. G. Folchi, it is composed of a thick oil, partly volatile, free gallic acid, an acrid matter, a yellow coloring matter, a little wax, a gummy extract, a matter containing nitrogen, similar to gluten, woody fibres, sub-carbonate, sulphate and muriate of potassa, carbonate, sulphate and a little phosphate of lime, carbonate of magnesia, iron and silex. Mr. Peschier, an eminent pharmacist of Geneva, asserts that he obtained from the POLYGALA SENEGA three new substances, which he calls *Polygalina*, *Polygalic acid* and *Isolisin*. The two first substances form in the root a polygalate of polygalina.

Senegin appears to be the active principle of Polygala. It is solid, brown, translucent, of an unpleasant taste; when it is reduced to powder, its smell provokes sneezing. It is insoluble in water and ether, but easily soluble in alcohol.

Seneca Snake-root is a very energetic stimulant, and in large doses often produces vomiting and alvine evacuations. In moderate doses this remedy increases absorption, and consequently augments the natural excretions, particularly that of urine, and frequently occasions a copious pyalism.

The root of this plant was introduced into medicine as a remedy for the bites of the rattlesnake and other venomous animals, in the early part of the last century, by Dr. Tennant, a Scotch physician, residing in Pennsylvania, who, reasoning from the effects of the poison, and of the remedy in removing them, was induced to try it in pneumonic affections, and found it useful. On account of its stimulant properties, however, it can be employed in these complaints only after the resolution of the inflammation by evacuations or other means.

It proves more directly useful in humoral asthma, chronic catarrh, and some kinds of dropsy, and has been found very efficacious in rheumatic and scrofulous ophthalmia, even after pus had appeared in the anterior chamber. The extract, combined with carbonate of ammonia, has been found efficacious in some cases of lethargy: and the decoction given in divided doses, at short intervals, till it vomit or purge, has been employed very successfully in croup. It has also been used as a stimulant gargle in the same disease.

In Germany, according to Dr. Ammon, it is administered internally with great success in the treatment of very acute ophthalmia, in which the antiphlogistic remedies so often fail. Dioscorides says that the plant was believed to excite the lacteal secretions in women.

It may be administered either in the form of powder or decoction, combined with aromatics, opium or camphor, which check its nauseating qualities. The dose in substance is from ten grains to one drachm repeated every three or four hours.



Nº 43.

RIBES RUBRUM.

Common red Currant.

GROSSULACEÆ.

The Gooseberry Tribe.

NO. 43.

RIBES RUBRUM.

Red Currants.

Place—Europe, America.

Quality—Acid.

Power—Cooling.

Use—Inflammatory and putrid fevers, thirst.

BOTANICAL ANALYSIS.

Natural Order. Grossulariæ—J. Pomaceæ—L.

CLASS V. Pentandria. ORDER. Monogynia.

GROSSULARIÆ, Dec. Fl. Fr. 4, 406, (1804). Kunth Nov. G. et Sp. 6, 58, (1823). Dec. Prodr. 3, 477, (1828). RIBESIÆ, Ach. Rich. Bot. Med. 2, 437, (1823). GROSSULACEÆ, Mirb. Elem. 2, 897, (1815). Lindl. Synops. 106, (1829).

GENUS. RIBES.

An Arabic name of uncertain etymology, applied to the Rheum ribes.

SYNONYMS.—Le grosseiller commun (F.), Die Johannisbeere (G.), Aalbeis (Dutch), Ribes rosso (I.), Ribes rojo (S.), Groselheira vermelha (Port.), Smorodina krasnaja (Russ.).

THE ESSENTIAL CHARACTERS.

CALYX. Superior, four--five cleft, regular, colored, marcescent, imbricate in estivation.

COROLLA. *Petals* inserted in the throat of the calyx, small, distinct, as many as sepals.

STAMENS. As many as petals and alternate with them, very short.

Anthers introrse.



Nº 43.

RIBES RUBRUM.

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Place—Europe, America.

Quality—Acid.

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Use—Inflammatory and putrid fevers, thirst.

BOTANICAL ANALYSIS.

Natural Order. Grossulariæ—J. Pomaceæ—L.

CLASS V. Pentandria. ORDER. Monogynia.

GROSSULACEÆ, Dec. Fl. Fr. 4, 406, (1804). Kunth Nov. G. et Sp. 6, 58, (1823). Dec. Prodr. 3, 477, (1828). RIBESIÆ, Ach. Rich. Bot. Med. 2, 487, (1823). GROSSULACEÆ, Mirb. Elem. 2, 897, (1815). Lindl. Synops. 106, (1829).

GENUS. RIBES.

An Arabic name of uncertain etymology, applied to the Rheum ribes.

SYNONYMES.—Le grosseiller commun (*F.*), Die Johannisbeere (*G.*), Aalbezie (*Dutch.*), Ribes rosso (*I.*), Ribes rojo (*S.*), Groselheira vermelha (*Port.*), Smorodina krasnaja (*Russ.*)

THE ESSENTIAL CHARACTERS.

CALYX. Superior, four—five cleft, regular, colored, marescent, imbricate in æstivation.

COROLLA. *Petals* inserted in the throat of the calyx, small, distinct, as many as sepals.

STAMENS. As many as petals and alternate with them, very short. *Anthers* introrse.

RIBES RUBRUM.

- OVARY. One-celled, with two parietal placentæ. *Ovules* numerous. *Styles* two.
- FRUIT. A one-celled berry, (the cell filled with pulp,) crowned with the remains of the flower.
- SEEDS. Anatropous. The *embryo* minute. *Radicule* next the micropyle.

THE SECONDARY CHARACTERS.

RIBES. *Petals* five, inserted with the *stamens* into the *calyx*. *Style* bifid. *Berry* many-seeded, inferior.

Calyx bell-form, five-cleft, sometimes flat. *Corol* and *stamens* inserted in the *calyx*. *Style* two-cleft. *Berry* many-seeded.

THE SPECIFIC CHARACTERS.

RIBES RUBRUM. *Racemes* glabrous, nodding. *Flowers* flattish. *Petals* obcordate. *Leaves* obtusely five-lobed. N. B. The variety ALBUM, the white currant, has yellow berries larger and less tart than the RUBRUM.

Unarmed. *Racemes* glabrous, nodding. *Corol* flat. *Petals* obcordate. *Leaves* obtusely five-lobed. *Stem* erect.

THE ARTIFICIAL CHARACTERS.

CLASS PENTANDRIA. *Stamens* five. ORDER MONOGYNIA. Polypetalous. *Flowers* superior. *Shrubs*. *Leaves* deciduous. *Calyx* extending above the ovary.

NATURAL HISTORY.

The RIBES RUBRUM are natives of the mountains, hills, woods and thickets of the temperate parts of Europe, Asia and America. They are unknown in Africa, the tropics of either hemisphere, or the South Sea islands. In North America they are particularly abundant, and on the mountains of Northern India they contribute to give a European character to that remarkable region.

The name *Currant* is said to be derived from the resemblance in the fruit to the little *Corinth* grapes or raisins, which under the name of currants are sold in a dried state in such quantities by grocers; the latter word being only a corruption of *Corinth*, and the fruit of this little grape, being familiarly known as such long before the common currants were cultivated.

The Currant is an exceedingly hardy fruit-bearing shrub, seldom growing more than three or four feet high. The fruit of the original wild species is small and very sour, but the large garden sorts produced

RIBES RUBRUM.

by cultivation, and for which we are chiefly indebted to the Dutch gardeners, are large and of a more agreeable sub-acid flavor.

In the examination of the flower of the common currant, the following will be found to be its structure. The calyx is a little globular cup, green without and purple within; its border is marked by five indentations, which show it to consist of five sepals. At its mouth are five small scales which are the petals, and between these are the stamens, which are also five in number. In the centre of these will be seen a single style, cleft at the top into two small stigmas, and these arise from an ovary which is situated below the calyx, imbedded as it were in the flower-stalk, very much as in the *Cactææ*. The ovary is one-celled, and contains a considerable number of ovules arranged upon two parietal placentæ.

Nothing is more easy of culture than the currant, as it grows and bears well in any tolerable garden soil. To propagate it, it is only necessary to plant in the autumn, or early in the spring, slips or cuttings, a foot long, in the open garden, where they will root with the greatest facility. The currant should never be allowed to produce suckers, and in order to insure against this, the superfluous eyes or buds should be taken out before planting it. When the plants are placed where they are finally to remain, they should always be kept in the form of trees; that is, with single stems, and heads branching out at from one to three feet from the ground. The after treatment is of the simplest kind, thinning out the superfluous wood every winter is all that is required. Where berries are required of an extra large size, stop or pinch out the ends of all the strong growing shoots, about the middle of June, or as soon as the fruit is two-thirds grown. This forces the plant to expend all its strength in enlarging and maturing the fruit. It is also best not to continue the cultivation of currant trees after they have borne more than six or eight years, as finer fruit will be obtained, with less trouble, from young plants, which are so easily raised.

The season when currants are in perfection is mid-summer, but they may be prolonged until October by covering the bushes with mats or sheltering them otherwise from the sun. The common red and the common white currants are totally undeserving a place in the garden, when those very superior sorts, the white and red Dutch, can be so readily obtained.

All the different kinds of currants are varieties of one species, except the black currant, (*Ribes nigrum*), which is a distinct species, of which no varieties have been obtained. The branches are weak and the bark is smooth, with large leaves and coarse growth, and the whole plant has a strong odor, disagreeable at first to many persons. The flowers are greenish and hollow. The fruit is a large berry and black. This species grows wild in Russia, where the juice

of its berries is made into wine, and in Siberia the leaves are used as tea.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

CURRENTS, perfectly ripe, are an agreeable fruit, and perfectly wholesome when eaten in moderation; they have less of a laxative effect upon the bowels than strawberries or gooseberries. The skin and seeds are in a great measure indigestible, and as these constitute a large portion of the dried currants that are imported, these are very apt to cause more or less irritation of the stomach and bowels: this indicates the necessity of great caution in their use. The plumpest and sweetest should be preferred.

RIBES RUBRUM, when ripe, contains malic acid, citric acid, sugar, gum, animal matter, lime, woody fibres and seeds. The properties are those of the generality of the order, except that in other species a mawkish or extremely acid taste is substituted for the refreshing and agreeable flavor of the currant. It allays thirst, lessens an increased secretion of the bile, and corrects a putrid and scorbutic state of the fluids. RIBES NIGRUM, the black currant, is tonic and stimulant, and has fragrant glands upon its leaves and flowers.

The cooling acid flavor of the currant is very generally relished by most people in moderate quantities, and the larger varieties make also a handsome appearance on the table. Before fully ripe, in domestic use, the currant is stewed for tarts like green gooseberries, and they are frequently employed along with cherries or other fruits in the same way; but one of the most valuable uses of this fruit is for making currant jelly, an indispensable and fashionable accompaniment to many dishes.

A sweet wine, of very pleasant taste, is made from the expressed juice of the currant, and very popular among farmers; that, however, which is afforded by the Isabella and Catawba grapes is every way to be preferred, because it may be made with less cost and trouble, and is infinitely more wholesome, requiring less additions of any kind to the pure juice. *Currant shrub*, made from the fruit in the same manner as lemonade, is a very popular summer drink in many parts of the country, and corresponds to the well-known Paris beverage, *Eau de grosseilles*.

The fruit of the black currant is likewise sometimes used in tarts, but it is chiefly valued for making a jam or jelly, much valued as a domestic remedy for sore throats. The young leaves dried, very strongly resemble green tea in flavor, and have been used as a substitute for it.

The jelly of black currants is a medicine very much in esteem for complaints of the throat. The jelly should be almost constantly kept in the mouth, and swallowed down very leisurely; it may likewise be mixed in the patient's drink, or taken in any other way.



N^o 44.

CYPRIPEDIUM PUBESCENS.

Lady slipper, Nerve-root.

ORCHIDACEÆ.

The Orchis Tribe.

NO. 44.

CYPRIPEDIUM PUBESCENS.

Lady's slipper, Nerve-root.

Place—Europe, America.

Quality—Bitter, nauseating.

Power—Anodyne, nervine.

Use—Nervous irritability, spasm, &c.

BOTANICAL ANALYSIS.

Natural Order. Orchidæ—J. L.

CLASS XX. *Gynandria.* ORDER *Diandria.*

ORCHIDES, Juss. Gen. 64, (1789). ORCHIDÆ, R. Brown, Prodr. 309, (1810); Rich. in Mem. Mus. 4, 23, (1816); Lindl. Synops. 256, (1829); Id. Genera and species of Orch. (1830).

GENUS. CYPRIPEDIUM.

From the Greek *Kypria*, Venus, and *Podion*, a slipper; in allusion to the elegant slipper-like form of the nectary, labellum or lip.

SYNONYMES.—*Sabot de la Vierge*, or *Soulier de Notre Dame* (F.), *Der Venusschuh* (G.), *Vrouweschoen* (D.), *Pantoffola* (I.), *Zucco* (S.), *Calcado de Nossa Senhora* (Port.), *Kokuschkinj Saposchki* (Russ.)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* three, usually colored, odd one uppermost by the twisting of the ovary.

COROLLA. *Petals* three, usually colored, odd one lowest by the twisting of the ovary. *Lip* (labellum or lowest petal) diverse in form, often lobed, frequently spurred at base.



N^o 44

CYPRIPEDIUM PUBESCENS

hay slipper, nerve-root.

ORCHIDACEÆ.

The Orchis Tribe.

NO. 44.

CYPRIPEDIUM PUBESCENS.

Lady's slipper, Nerve-root.

Place—Europe, America.

Quality—Bitter, nauseating.

Power—Anodyne, nervine.

Use—Nervous irritability, spasm, &c.

BOTANICAL ANALYSIS.

Natural Order. Orchideæ—J. L.

CLASS XX. *Gynandria.* ORDER *Diandria.*

ORCHIDES, Juss. Gen. 64, (1789). ORCHIDEE, R. Brown, Prodr. 309, (1810); Rich. in Mem. Mus. 4, 23, (1818); Lindl. Synops. 256, (1829); Id. Genera and species of Orch. (1830).

GENUS. CYPRIPEDIUM.

From the Greek KUPRIS, Venus, and PODION, a slipper; in allusion to the elegant slipper-like form of the nectary, labellum or lip.

SYNONYMES.—Sabot de la Vierge, or Soulier de Notre Dame (*F.*), Der Venusschuh (*G.*), Vrouweschoen (*D.*), Pantoffola (*I.*), Zueco (*S.*), Calgado de Nuessa Senhora (*Port.*), Kokuschkiny Saposchki (*Russ.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* three, usually colored, odd one uppermost by the twisting of the ovary.

COROLLA. *Petals* three, usually colored, odd one lowest by the twisting of the ovary. *Lip* (*labellum* or lowest petal) diverse in form, often lobed, frequently spurred at base.

CYPRIPEDIUM PUBESCENS.

STAMENS. Three, united into a central *column*, the two lateral ones generally abortive, and the central one perfect; more rarely, the central abortive and lateral perfect. *Anther* two, four, or eight-celled, persistent or deciduous, often operculate. *Pollen* either powdery or cohering in waxy masses, (*pollinia*.) which are either constantly adhering to a gland, or becoming loose in their cells.

OVARY. One-celled, with three parietal placentæ. *Ovules* indefinite. *Styles* consolidated with the stamens. *Stigma* a viscid cavity in front of the column.

FRUIT. Capsule, three-ribbed, three-valved.

SEEDS: Many, without albumen.

THE SECONDARY CHARACTERS.

CYPRIPEDIUM. The two lower sepals united into one segment, or rarely, distinct. *Lip* ventricose, inflated, saccate, obtuse. *Column* terminated by a petaloid lobe (barren stamen).

Calyx colored, four-sepalled, spreading. *Corolla* wanting; (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.

THE SPECIFIC CHARACTERS.

CYPRIPEDIUM PUBESCENS. *Stem* leafy. *Leaves* broad-lanceolate, acuminate. *Lobe of the column* triangular-oblong, acute. *Sepals* ovate, oblong, acuminate. *Petals* long, linear, contorted. *Lip* shorter than the petals, compressed.

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.

THE ARTIFICIAL CHARACTERS.

CLASS GYNANDRIA. *Stamens* and *style* consolidated. **ORDER DIANDRIA.** *Endogeous:* Herbs of grotesque and often beautiful forms, with corollas peculiarly irregular, and consisting of a perianth of six parts. *Seeds* numerous, small.

NATURAL HISTORY.

The natural order of the ORCHIDACEÆ, to which the CYPRIPEDIUM PUBESCENS belongs, is the most singular, the most fragrant, and the most difficult of culture. The flowers are often remarkable for their grotesque configuration, which has been likened to heads and bodies of animals, and for the strange character of their stems, which are sometimes attenuated into a degree of gracefulness scarcely equalled even

CYPRIPEDIUM PUBESCENS.

among grasses, and sometimes contracted into a clumsy goutiness of figure such as is known no where else. It is remarkable that in a group so numerous as this, consisting as it does of more than two thousand known species, and probably as many more which, being buried in the depths of unexplored tropical forests, have not yet been found or described, and extending over almost the whole habitable globe as far as the borders of the frozen zone, there should be so few species possessed of properties that make them in any way useful to man. The order is remarkable for those qualities only which please the eye.

The root of the Lady's slipper is perennial, with many long, thick, fleshy, cylindrical and flexuous fibres, of a pale or dark yellowish cast, diverging horizontally and growing in a mat. Stems one to five, growing from the same root, simple, erect, often pubescent and angular, rising one or two feet, bearing from three to seven leaves, and from one to three yellow flowers. Leaves alternate, sessile, sheathing, ovate or oblong, acute, pubescent or smooth, but always entire and with many parallel nerves, green above, paler beneath. Flowers sessile, when more than one, each has a bracteal leaf. Germen concrete or inferior, green, cylindrical, often curved. Perigone with five unequal and different sepals, and sometimes called petals by the Linnean school: two are external, oblong or lanceolate, acute, longer than the labellum, and green: two are internal, longer, narrower, spirally contorted and green: the fifth, or innermost and lower, called *Labellum*, is totally different from the others, shorter but larger, yellow with or without red spots, hollow like a bag, convex beneath, rounded in front, split above, with inflexed margins. Style and stamina concrete in the centre, above the germen, forming a central pillar, flattened above into an oblong deltoid lobe, supposed to be the stigma by some, and bearing before two anthers, lodged in separate cells. The fruit is an oblong capsule, with one cell, three valves, and a multitude of minute seeds.

There are several species as well as varieties of the *CYPRIPEDIUM*, some smooth and some hairy, and exhibiting a diversity of color in the blossom. All, however, very nearly correspond in the shape of the flower, which is of a singular form, and compared by some to a moccason, and hence by the Indians termed *Moccason* flower.

This plant is found all over the United States, from New England to Louisiana, though it is very rare in some places. It blossoms in May and June, and is much valued in gardens for its beauty and singularity, but it is difficult to cultivate. It will seldom grow from seeds; the roots should be taken up with earth around them and transplanted in a congenial rich light soil. The plants should be covered with some dry straw in very severe frosts, or if there should be too much wet; they

are not easily increased, but will sometimes perfect seeds in favorable situations, particularly if pains be taken to apply the pollen to the stigma.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

It frequently happens that those productions of nature which charm the eye with their beauty, and delight the senses with their perfume, have the least relation to the wants of mankind, while the most powerful virtues or most deadly poisons are hidden beneath a mean and insignificant exterior: thus the ORCHIDACEÆ, beyond their beauty, can scarcely be said to be of known utility, with a few exceptions.

The Lady's slipper, however, is one of the most valuable articles of vegetable medicine. Its operation upon the system appears to be in harmony with the laws of animal life, giving tone to the nervous system; and therefore is useful in all cases of nervous irritability, hysterical affections, spasms, fits, and all derangements of the functions of the brain, such as madness, delirium, &c., and in all cases of inability to sleep, particularly in fevers, consumptions, &c.

The properties of this plant are sedative, nervine, antispasmodic, &c., and accordingly it is the best substitute for Valerian in almost all cases. The roots are the officinal parts; they have a pungent, mucilaginous taste, and a peculiar smell, somewhat nauseous. From the result of several tests and experiments of eminent Chemists, they contain extractive, gum, fecula, and a small portion of essential oil. In all nervous diseases and hysteric affections, the beneficial effects are produced by allaying pain, quieting the nerves, and promoting sleep. Good effects are also obtained in nervous head-ache, epilepsy, tremors, nervous fevers, &c. It is preferable to opium in most cases, having no baneful or narcotic effects. The dose is a teaspoon full of the powder, diluted in sugar water, or in any other convenient form. The powder alone has been used, but an extract might be also efficient, unless the active principle is very volatile. As with Valerian, the nervine power is increased by combination with mild tonics.

Its exhibition in all cases where an anodyne effect is desired, is generally acknowledged beneficial.

The roots are the only part used, and they ought to be gathered in the spring before the tops begin to grow, or in the fall after they begin to die. After digging, they ought to be carefully separated, washed clean, and dried in the sun, or in a dry airy room. When fully dry, they should be packed away in barrels, or pulverized and bottled for use.

Boiling or scalding impairs the strength of the properties of the roots of the Lady's slipper.



Nº 45.

NYMPHAEA ODORATA.

Water lily.

NYMPHÆACEÆ.

The Water Lily Tribe.

NO. 45.

NYMPHÆA ODORATA.

Water Lily.

Place—Europe.

Quality—Fragrant.

Power—Astringent, tonic, cooling.

Use—Diarrhœa, dysentery, tumors, ulcers, &c.

BOTANICAL ANALYSIS.

Natural Order. Nymphæaceæ—J. Succulentæ—L.

CLASS XIII. *Polyandria.* ORDER. *Monogynia.*

Pharmacopœia, Salisbury, Ann. Bot. 2, p. 69, (1805). Dec. Prodr. Med. ed. 2, p. 119, (1820). Apot. 3, 39, (1821). Propt. 1, 113, (1824). Lindl. Synops. 15, (1829).

GENUS NYMPHÆA

From the Greek *Nymphais*, belonging to nymphs or naiads, who were supposed to inhabit pools and running water.

Characters.—*Le nenuphar (F.), Die sechblume (G.), Plompea (D.), Nonafara (I.), Nympha (L.), Naufar (Egypt.), Wodanoi lelei (Russ.)*

THE ESSENTIAL CHARACTERS.

Sepals and petals numerous, imbricated, gradually passing into each other.

Stamens. Stamens persistent. *Petals* inserted upon the disk, which surrounds the ovary.

Stamens. Numerous, in several rows upon the disk. *Staminal* perianth *lobes* acute, imbricate.



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Natural Order. Nymphæaceæ—J. Succulentæ—L.

CLASS XIII. *Polyandria.* ORDER. *Monogynia.*

NYMPHÆACEÆ, Salisbury, Ann. Bot. 2, p. 69, (1805). Dec. Prodr. Med. ed. 2, p. 119, (1816). Syst. 2, 39, (1821). Propr. 1, 113, (1824). Lindl. Synops. 15, (1829).

GENUS. NYMPHÆA.

From the Greek Nymphæa, belonging to nymphs or naiads, who were supposed to inhabit pure and running water.

SYNONYMES.—Le nenuphar (*F.*), Die seeblume (*G.*), Plompen (*D.*), Nenufare (*I.*), Nenufar (*S.*), Naufar (*Egypt.*), Wodanoi lelei (*Russ.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* and *petals* numerous, imbricated, gradually passing into each other.

COROLLA. *Sepals* persistent. *Petals* inserted upon the disk, which surrounds the pistil.

STAMENS. Numerous, in several rows upon the disk. *Filament* petaloid. *Anther* adnate, introrse.

NYPHÆA ODORATA.

OVARY. Many-celled, many-seeded, surrounded by a fleshy disk.

SEEDS. Attached to the spongy placentæ and enveloped in a gelatinous aril.

Flowers large, showy, often sweet-scented.

THE SECONDARY CHARACTERS.

NYPHÆA. *Sepals* four—five. *Petals* inserted on the torus at its base. *Stamens* gradually transformed into petals. *Stigma* surrounded with rays. *Pericarp* many-celled, many seeded.

Calyx four to seven leaved. *Corol* many-petalled. *Petals* about equalling the length of the calyx leaves, attached to the germ beneath the stamens. *Stigma* a broad disk, marked with radiated lines. *Pericarp* berry-like, many-celled, many-seeded.

THE SPECIFIC CHARACTERS.

NYPHÆA ODORATA. *Leaves* orbicular, cordate, entire, with veins prominent beneath. *Calyx* four-sepaled, equaling the petals. *Stigma* fifteen—twenty rayed.

Leaves round-cordate, entire, sub-emarginate. *Lobes* spreading asunder, acuminate, obtuse. *Petals* equalling the four-leaved calyx.

THE ARTIFICIAL CHARACTERS.

CLASS POLYANDRIA. *Stamens* twenty or more, arising from the receptacle (hypogynous). **ORDER MONOGYNIA.** *Ovaries* compound. *Placentæ* occupying the whole surface of the dissepiment. *Stigma* radiate.

NATURAL HISTORY.

The Water Lily is one of the most lovely of flowers, possessing beauty, delicacy and fragrance in the highest degree. It grows only in ponds and quiet streams, where the water is of sufficient depth to protect the plant from the frosts of winter. The rhizoma is several inches in diameter, extending in its muddy bed beneath the water to a great length, and sending up leaves and flowers to the surface. The leaves are nearly round, entire, of a fine glossy green, cleft at the base to the petiole, and floating on the surface of the water. The flowers consist of four sepals, white within, numerous, lance-shaped petals of the most delicate whiteness, often tinged externally with red, and a great number of yellow stamens beautifully curved. The filaments are gradually dilated from the inner to the outer series so as to pass insensibly into petals. The plant flowers in July, sometimes in such profusion as to mantle the surface of the water, and perfume the air with exquisite fragrance.

NYPHÆA ODORATA.

The flower of the Water Lily offers many points of interest. It consists of about twenty-five thickish oblong leaves of a white color, arranged in whorls of five each; the five external ones are green at the back, and may be regarded as forming the calyx; towards the interior of the flower the petals gradually become smaller, and are tipped with yellow at their points, which are thickened. From these a very gradual transition takes place towards the form of the stamen, and the inner rows of stamens (which are usually all together about fifty in number) shorten and produce less perfect anthers. The ovary has the lower floral leaves adherent to it, so that the stamens appear to arise from just below the stigmas. It consists of ten or eleven distinct carpels, which adhere closely together, their several walls still forming complete partitions in the ovary, each chamber or cell of which contains a large number of ovules. The ovary is surmounted by a number of orange-colored stigmas, radiating from the centre very much as in the Poppy; but as they are all united at the centre, they are considered as forming but a single pistil, and are therefore arranged in the artificial class and order as above. The tribe is most abundant in the northern hemisphere, and has been said to be entirely absent from South America; but a species has recently been discovered there, which in size and splendor far surpasses all others. This is the *Victoria regalis*, of which the leaf is from five to six feet in diameter, salver-shaped, with a rim rising from its edge of from three to five inches high, green inside and crimson on the exterior. The flower is of proportional dimensions, the expanded calyx sometimes attaining a diameter of twenty-three inches; this contains several hundred pistils, which are at first of a white hue, passing gradually towards pink in the centre, and those nearest it becoming pink throughout. As in the common Water Lily, the petals gradually change into stamens towards the interior of the flower; those next the calyx are fleshy and contain air-cells, which contribute towards the buoyancy of the flower.

Much controversy has arisen as to whether the order to which the Water Lily belongs should be ranked among exogens or endogens. The number of the parts of the flower, however, which are arranged in fives ranks the order with exogens, of which the number five is characteristic. The structure of the seed confirms this conclusion, for the embryo is a little dicotyledonous body, enclosed in a peculiar bag, which has been erroneously supposed a cotyledon, and the seed has thus been considered monocotyledonous.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The properties of the *NYPHÆA ODORATA* are astringent, tonic, deobstruent and cooling. The taste is styptic and bitter when fresh. The

plant contains a large quantity of tannin and gallic acid; also starch, mucilage, sugar, resin, ammonia, ulmine, tartaric acid, &c. From various experiments it is found to dye a dark brown and black color with iron. It is said to be preferable to *Statice* or *Geranium Maculatum* in almost all cases, being milder and quite as efficient. It is particularly excellent for removing morbid matter of every kind from every portion of the animal frame, being well calculated to promote the healthy action of the organs, and of course the result of its use will be the recovery of tone to the system.

Externally the roots and leaves are used for poultices in biles, inflamed tumors, scrofulous sores, and inflamed skin, and they are extolled as among the best articles for the purpose. In all cases the poultice is an excellent sedative to ease pain, and where there is a high state of inflammation to reduce the swelling. The poultice may be prepared in the following manner:—To a teaspoon full of the fine powder, add a gill of boiling water, a teaspoon full of slippery elm, (*Ulmus fulva*): stir well together, then thicken with Indian meal, or what is better, Boston crackers made fine.

Internally the roots are recommended in diarrhœa, dysentery, internal inflammations, ulcerations, or morbid discharges. They may be taken in decoction alone or with tonics. A preparation may be made, sometimes called the *Syrup of lilies*, in the following manner:—Take a handfull of the flowers, (some consider the roots preferable,) steep them moderately in a quart of water, over a slow fire, for an hour; then strain, and sweeten well with loaf sugar, grate in a little nutmeg, and add half a pint of brandy. Mothers will find this syrup an excellent article for children when teething, or in looseness of the bowels.

The fresh roots sometimes act as a rubefacient externally, the dry ones, however, are best for use; they are of a cooling, astringent nature. Country people take the juice of the roots with great success for the whites. The powder is likewise used for the same purpose and for weakness and debility. The fresh roots sliced and infused in wine restrain immoderate menstrual discharges, and assist purgings, particularly where the stools are accompanied with blood. The fresh juice of the roots, mixed with lemon juice, is said to be a good cosmetic, and to remove pimples and freckles of the skin. Half a pint of an infusion of the root, in the proportion of a pound to a gallon of water, taken twice a day for a considerable time, cured an obstinate leprous eruption on the arm.

The most proper time to gather the root of this plant is in the fall, after the stalk is withered and the ponds are dry or low. Cut up the roots and dry them in an open chamber, then pound or grind to powder as required, or keep for sale or exchange.



Nº 46.

DIGITALIS PURPUREA.

Fox-glove.

SCROPHULARIACEÆ.

The Figwort Tribe.

NO. 46.

DIGITALIS PURPUREA.

Purp. glocc.

Place—Europe.

Quality—Bitter.

Power—Narcotic, diaphoretic.

Use—Dropsy, palpitation of the heart, inflammatory diseases.

BOTANICAL ANALYSIS.

Natural Order. Scrophulariæ—J. Personatæ—I.

CLASS XIV. *Didynamia.* ORDER *Angiospermiæ.*

SCROPHULARIÆ, Juss. Gen. 117, (1789). SCROPHULARIÆ, R. Brink. Pflanz. 469, (1810). LINDL. Synops. 187, (1829). PEGIOLARIÆ, Juss. Gen. 99, (1789), in part. PERSONATÆ, Dec. Fl. Fr. 3, 573, (1815). ANTHRANINÆ, Dec. and Ruby, 542, (1828). HALLERIANÆ, Link Handb. 1, 595, (1829), a sect. of PERSONATÆ. SCOPARIÆ, Ibid. 629, the same. ERICÆ, Ibid. the same.

GENUS. DIGITALIS.

From Lat. DIGITABULUM, a thimble, or finger of a glove, from the resemblance and form of the flowers. Named by Fuchs.

SYNONYMS.—La digitale (*F.*), Der fingerhot (*G.*), Vingerhoed (*Dutch*), Digitale (*L.*), Dijital (*S.*), Digital (*P.*), Napostok (*Russ.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* five or six, unequal, more or less united at base inferior, persistent.

COROLLA. Binate, personate, or otherwise irregular; the lobes imbricate in æstivation.

STAMENS. Four, didynamous, rarely with the rudiment of the fifth;



No. 46

WILLIAM HALL & CO. NEW YORK

Fox-glove.

SCROPHULARIACEÆ.

The Figwort Tribe.

NO. 46.

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Foxglove.

Place—Europe.

Quality—Bitter.

Power—Narcotic, diaphoretic.

Use—Dropsy, palpitation of the heart, inflammatory diseases.

BOTANICAL ANALYSIS.

Natural Order. Scrophulariæ—J. Personatæ—L.

CLASS XIV. *Didynamia.* ORDER *Angiospermia.*

SCROPHULARIÆ, Juss. Gen. 117, (1789). SCROPHULARINÆ, R. Brown, Prodr. 433, (1810). Lindl. Synops. 187, (1829). PEDICULARES, Juss. Gen. 99, (1789), in part. PERSONATÆ, Dec. Fl. Fr. 3, 573, (1815). ANTIRRHINÆ, Dec. and Ruby, 342, (1828). HALLERIACEÆ, Link Handb. 1, 506; (1829), a sect of PERSONATÆ. SCOPARIACEÆ, Ibid, 822, the same. ERINÆ, Ibid, the same.

GENUS. DIGITALIS.

From Lat. DIGITABULUM, a thimble, or finger of a glove, from the resemblance and form of the flowers. Named by Fuchs.

SYNONYMES.—La digitale (*F.*), Der fingerhut (*G.*), Vingerhoed (*Dutch*), Digitale (*I.*), Dijital (*S.*), Digital (*P.*), Naperstok (*Russ.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* four or five, unequal, more or less united at base, inferior, persistent.

COROLLA. Bilabiate, personate, or otherwise irregular; the lobes imbricate in æstivation.

STAMENS. Four, didynamous, rarely with the rudiment of the fifth;

DIGITALIS PURPUREA.

sometimes two only, the three others either rudimentary or wholly wanting.

OVARY. Free, two-celled, many-seeded. *Style* simple. *Stigma* two-lobed.

FRUIT. *Capsule* two-celled, two-valved, with central placenta.

SEEDS. Indefinite, albuminous. *Embryo* straight.

THE SECONDARY CHARACTERS.

DIGITALIS. *Calyx* five-parted. *Corolla* campanulate, ventricose, in five sub-equal lobes. *Capsule* ovate, two-celled, two-valved, with a double dissepiment.

Calyx five-parted. *Corol* bell form, ventricose, five-cleft. *Stigma* simple or bilamellate. *Capsule* ovate, two-celled. *Flowers* racemed.

THE SPECIFIC CHARACTERS.

DIGITALIS PURPUREA. *Leaves* oblong, rugose, crenate. *Calyx* segments ovate-oblong. *Corolla* obtuse, upper lip entire. *Peduncle* as long as the calyx.

Leaflets of the calyx, ovate, acute. *Corol* obtuse, upper lip entire. *Leaves* lance-ovate, rugose.

THE ARTIFICIAL CHARACTERS.

CLASS DIDYNAMIA. *Stamens* four, two of them longer than the other two. ORDER ANGIOSPERMIA. *Seeds* in a pericarp. *Calyx* inferior. *Herbs*. *Herbage* green. *Seeds* many. *Calyx* imbricate in aestivation.

NATURAL HISTORY.

FOXGLOVE is an indigenous biennial plant, found growing generally on the sides of hills and roads where the soil is dry, sandy or gravelly. It flowers from the middle of June to about the middle of August. The root is knotty and fibrous, sending up an erect stem about four feet in height, round, downy and leafy. The lower leaves are in tufts, large, about eight inches in length and three in breadth, ovate and pointed, with bordered fleshy peduncles; the upper or stem leaves are alternate, sparse and lanceolate, and both kinds have bluntly-serrated, nearly crenate edges and wrinkled velvety surfaces, with the upper surface of a beautiful deep-green color, and the under paler and more downy. The flowers, which are numerous, are attached on footstalks to one side of the upper part of the stem, so as to allow them to hang down and form a very elegant terminal spike. At the base of each footstalk is a sessile pointed florid leaf. The uppermost segment of the calyx is narrower

than the other four. The corolla is monopetalous, of an oblong bell shape, and about the size of the little finger of an ordinary glove, bellying on the lower side with a short, tubular base. The upper lip is lightly cloven and more reflected than the under, which is larger. The corolla is guarded by long hairs at the mouth; its general color is a bright pinkish purple, with the tube white, and the bellying part sprinkled on the inside with dark purple spots on a white ground, which give to the outside a speckled appearance. The filaments are white, curved, bearing large oval yellow anthers. The germen is pointed, supporting a simple style with the apex cloven. The seed-vessel, which is a pyramidal capsule with a double partition, produced by the inflated margins of the valves; contains many small ferruginous punctated seeds.

The plant is of easy culture. The leaves should be gathered in the months of June or July, just before the plant comes into flower, and the mid-rib and stalk removed. They are dried with stove heat in a dark place. The seeds are very seldom employed.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The leaves of *DIGITALIS* are the only officinal part. They are of a bright green color when properly preserved, with scarcely any odor, but the taste is nauseous and acrid. They consist of volatile oil, a concrete flocculent volatile matter, fatty matter, extractive, tannin, &c.; and according to some, a peculiar alkaloid, which has been named *Digitalin*. The leaves yield their active properties to water, alcohol, ether, and the weak acids. The sesqui-salts of iron produce a dark, and solution of gelatin a white fleshy precipitate with infusion of digitalis, indicating the presence of tannin.

DIGITALIS, in small doses, gradually augmented, operates as a special stimulant to the kidneys, increasing the secretion of urine; in somewhat larger doses, or when its use is continued for a longer period, it acts as a sedative to the vascular system. This medicine has acquired a high reputation in the various forms of dropsy, but later experience has shown that it proves most serviceable in those symptomatic dropsical effusions which take place in the cellular membrane of the extremities and of the face, and which depend on diseases of the heart, of the kidneys, or of the liver. It is also better adapted as a diuretic for persons of a weak or enfeebled habit of body, than for the strong or the robust; and should any inflammatory symptoms be present, antiphlogistic treatment should be had recourse to before employing *Digitalis*. The kinds of dropsy in which its effects are most useful are ascites, anasarca, hydrothorax, and that species of swelling which succeeds parturition, phlegmasia dolens, where the legs and thighs swell, become pale and semi-transparent, with pain in both groins. It has also been

found of the greatest service when conjoined with nitrous acid in the dropsy which occurs in broken-down constitutions that have been long harassed by mercury. *Digitalis* will not cure a dropsy attended with palsy, unsound viscera, or other complications of disease, but by allaying the urgency of the symptoms, it gains time for other medicines to act. No benefit has hitherto been obtained from its use in hydatids and hydrocephalus.

Foxglove is efficaciously employed in inflammatory diseases, in active hæmorrhages, particularly from the uterine vessels, when the pulse is sharp, throbbing and frequent, in mania, in scrofula, and in most cases of increased vascular action, or in which it is essential to lessen the usual impetus of the blood, as in aneurism. In mania it acts as a narcotic, soothing the nervous system, and procuring sleep to the patient. The tincture is the best form of administering it in this disease, and the dose may be carried to an extent far beyond that which can be prescribed in other cases.

By a proper exhibition of *DIGITALIS*, the frequency of the pulse may be diminished any number of pulsations, and regulated at the pleasure of the practitioner: whilst at the same time it admits, to a certain extent, of the employment of such medicines as increase the firmness of the arterial action and give tone to the habit. When given to the full extent of which the system can admit, it is apt to accumulate, the pulse intermits, and vertigo, indistinct vision, and nausea, with vomiting or purging, occur; and if after these indications the quantity be still increased, or if any considerable portion of the recent herb be inconsiderately swallowed, it produces delirium, hiccough, cold sweats, convulsions, syncope and death.

Foxglove is administered in substance, or in decoction, or the watery infusion, or in tincture. When given in substance, it is frequently combined with aromatics, and most advantageously with squills, juniper, the diuretic salts of potash, when it is required only to produce its diuretic effect. It is always proper to begin with a very small dose of the powdered leaves given in a pill twice a day, and gradually to increase it till its effects are apparent either in the kidneys, the stomach, the pulse or the bowels. The medicine should then be discontinued, but in dropsy it may be repeated after an interval, if the whole of the water be not evacuated. During its employment diluents are useful and necessary, and immediately after it is discontinued, the strength should be recruited by generous food, steel and cordial tonics. The deleterious effects of an over-dose are to be counteracted by cordials, as brandy, mint tea and opium, and when these are not sufficient by blisters.

In the employment of *DIGITALIS* as a medicine, its effects require to be carefully watched; the patient should not use any active exertion, and should be visited at least daily by the medical attendant.



Nº 47.

GAULTHERIA PROCUMBENS.

Checkerberry.

ERICACEÆ.

The Heath Tribe.

NO. 47.

GAULTHERIA PROCUMBENS.

Checker-berry, Wintergreen.

Place—Europe, America.

Quality—Aromatic.

Power—Diuretic, stomachic.

Use—Chronic diarrhœa, debility arising from fatigue.

BOTANICAL ANALYSIS.

Natural Order. Ericacæ—J. Bicornes—L.

CLASS X. Decandria. ORDER Monogynia.

ERICÆ, Juss. Gen. 150, (1789). ERICÆ, R. Brown, Prodr. 557, (1810). Lindl. Synops. 172, (1829). RHODODENDRA, Juss. Gen. 155, (1789). ERICACEÆ, Desv. Journ. Bot. 28, (1813). RHODORACEÆ AND ERICACEÆ, Dec. Fl. Fr. 3, 671 and 673, (1815).

GENUS. GAULTHERIA.

Named in honor of Dr. Gaultier, a French physician and botanist of Quebec. The real name of the physician (says Barton) was Gantier, and how the letters l and b have crept into the word it is not easy to learn, unless by latinizing the French Gantier, which is Gaultierium.

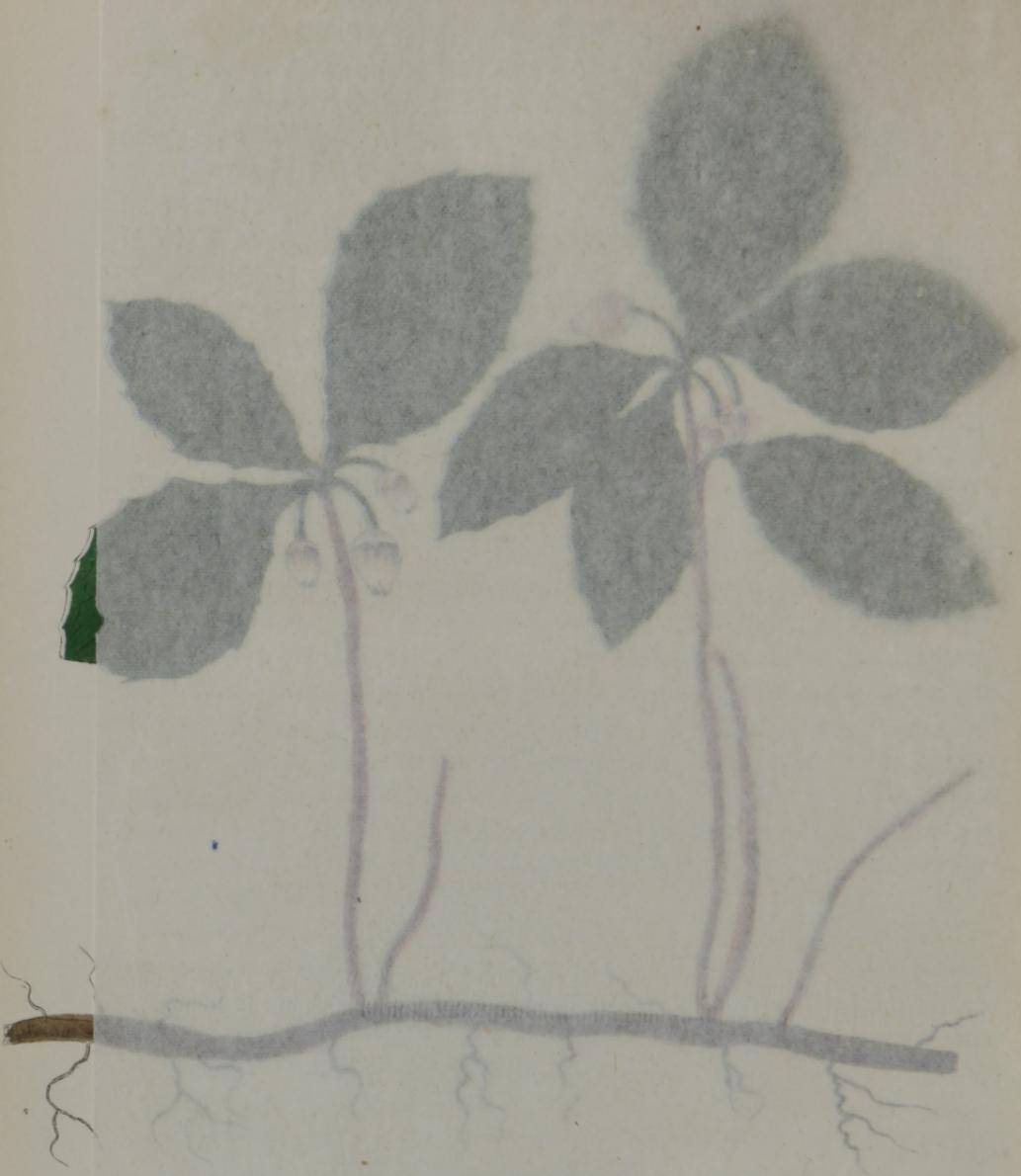
SYNONYMS.—Niederliegende Gaultheria (G.), Thibacca (Swid.), Pollon (Canada Is. Swed.).

THE ESSENTIAL CHARACTERS.

CALYX. Inferior or superior, five (seldom four—six-) leaved or cleft, rarely entire.

COROLLA. Regular or somewhat irregular, four—five (rarely six-) lobed. The petals rarely distinct.

STAMENS. Generally distinct and inserted with the corolla. *Anthers*



Nº 47.

GAULTHERIA PROCUMBENS.

Checkersberry.

ERICACEÆ.

The Heath Tribe.

NO. 47.

GAULTHERIA PROCUMBENS.

Checker-berry, Wintergreen.

Place—Europe, America.

Quality—Aromatic.

Power—Diuretic, stomachic.

Use—Chronic diarrhœa, debility arising from fatigue.

BOTANICAL ANALYSIS.

Natural Order. Ericacæ—J. Bicornes—L.

CLASS X. *Decandria.* ORDER *Monogynia.*

ERICÆ, Juss. Gen. 150, (1789). ERICÆÆ, R. Brown, Prodr. 557, (1810). Lindl. Synops. 172, (1829). RHODODENDRA, Juss. Gen. 158, (1789). ERICINÆÆ, Desv. Journ. Bot. 28, (1813). RHODORACÆÆ and ERICACÆÆ, Dec. Fl. Fr. 3, 671 and 675, (1815).

GENUS. GAULTHERIA.

Named in honor of Dr. Gaultheir, a French physician and botanist of Quebec. The real name of the physician (says Barton) was Gautier, and how the letters l and h have crept into the word it is not easy to learn, unless by Latinizing the French Gautier, which is Gaultherius.

SYNONYMES.—Niederliegende Gaultheria (*G.*), Thebuske (*Swed.*), Pollom (*Canada Indians*).

THE ESSENTIAL CHARACTERS.

CALYX. Inferior or superior, five (seldom four—six) leaved or cleft, rarely entire.

COROLLA. Regular or somewhat irregular, four—five (rarely six) cleft.

The *petals* rarely almost distinct.

STAMENS. Generally distinct and inserted with the corolla. *Anthers*

GAULTHERIA PROCUMBENS.

as many or twice as many as the lobes of the corolla, two-celled, generally opening by pores, often appendaged.

OVARY. Free, or rarely coherent with the calyx, two—several-celled.

Styles and *stigmas* united into one.

FRUIT. Capsular or baccate.

SEEDS. (Usually) indefinite and minute.

THE SECONDARY CHARACTERS.

GAULTHERIA. *Calyx* five-cleft with two bracts at the base. *Corolla* ovoidtubular. *Limb* with five small, revolute lobes. *Filaments* ten, hirsute. *Capsule* five-celled, invested by the calyx, which becomes a berry.

Calyx inferior, double. Outer two-leaved. Inner five-cleft (or *calyx* five-cleft, with two bracts.) *Corol* ovate. *Border* small, five-cleft, revolute. *Filaments* hairy. *Receptacle* ten-toothed (or with a ten-pointed *nectary*). *Capsule* five-celled, invested with the inner-berry-like calyx.

THE SPECIFIC CHARACTERS.

GAULTHERIA PROCUMBENS. *Stem* with the procumbent branches erect or ascending. *Leaves* obovate mucronate, denticulate, crowded at the top of the stem. *Flowers* few, drooping, terminal.

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.

THE ARTIFICIAL CHARACTERS.

CLASS DECANDRIA. *Stamens* ten. ORDER MONOGYNIA. *Fruit* not a legume. *Leaves* not sensitive. *Petals* present, or if not the plants have no green herbage.

NATURAL HISTORY.

GAULTHERIA PROCUMBENS is a pretty little evergreen shrubby plant, very generally known for its spicy leaves and its well-flavored scarlet berries. It is found every where throughout the United States, from Canada to Pennsylvania and Kentucky, and is common in woods and pastures, delighting in a sandy or loose soil. It is particularly abundant in the pine barrens of New-Jersey, and is brought to market in the months of November and December; and from the avidity with which it is bought up, it may be inferred that the plant is in very general use among the people.

The root is creeping, horizontal and very long, sending up at short distances one and sometimes two or more stems. The specific appella-

tion is not very appropriate, for though the stems frequently are bent, thereby having the appearance, among dead leaves and loom, of being procumbent, yet the upright position of the stem is equally and perhaps more common. The branches ascend from the rhizoma, which is usually uncealed; they seldom exceed a span in height, are round, of a redish color, and terminated by a few evergreen, oval, smooth, shining, cariceous leaves, paler underneath and somewhat spreading. The flowers are generally solitary, seldom exceeding three or five on a stem, and are supported by curved drooping peduncles of a yellowish-green hue. Calyx five-toothed, furnished with two bracts at the base, which have by some been considered as an exterior calyx. The corolla is white, contracted at the mouth, ovate, monopetalous, and terminated at its apex by five toothed indentures, which in shady woods are seldom open or spreading, though in sunny and exposed situations this sometimes happens. The pistil is short, simple above, dilated into a flat button at bottom, and surrounded by ten ciliated or plumous stamens. Filaments white, bent towards the corolla. Both filaments and anthers are of an agreeable delicate color. The flowers are succeeded by small capsules contained in a roundish, berry-form fleshy substance of a carmine color, produced by an enlargement of the calyx. Fruit well flavored, consisting of the capsule surrounded by the enlarged calyx, which becomes of a bright scarlet color. It possesses an aromatic peculiar flavor, and is extremely grateful to the taste.

The plant is hardy and easily cultivated by placing it in a light sandy loam, with a mixture of peat earth.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The leaves of GAULTHERIA PROCUMBENS are only officinal, though all parts of the plant are endowed with the peculiar flavor for which these are employed, and which is found in several other plants, particularly in the bark of the *Betula lenta* or sweet birch. To the very peculiar and agreeably aromatic odor and taste which belong to the whole plant, the leaves add a marked astringency, dependent on the presence of tannin. The aromatic properties reside in a volatile oil which may be separated by distillation. This oil is a product of the United States, and is prepared chiefly in New-Jersey. When freshly distilled it is nearly colorless, but as found in the stores it has a brownish-yellow or reddish color. It is of a sweetish, slightly pungent, peculiar taste, and a very agreeable characteristic odor, by which it may be readily distinguished from all other officinal oils. It is the heaviest of the known essential oils, and its unusual weight affords a convenient test of its purity. It is used chiefly on account of its pleasant flavor to cover the taste of other medicines.

GAULTHERIA PROCUMBENS.

GAULTHERIA has the usual stimulant operation of the aromatics, united with astringency, and may therefore be used with advantage in some forms of chronic diarrhœa, and especially the bowel complaints of children. Many people in the country are in the constant habit of taking strong infusions of this tea, after great fatigue and undue exposure to heat or cold, and the relief they find from it under these circumstances, arises doubtless from its stimulating and anodyne property. As it is a very grateful beverage, though not very active in its effects on the system, it will no doubt always prove a useful medicinal tea, particularly if its use be limited to those cases of depression of the system from the fatigue of labor, long journeys or any other cause in which stimulating and refreshing beverages may be advantageously employed. But in cases of fever, and where the increased action of the system render it improper and even hurtful, it may be prudent to caution those who are partial to the use of this tea against a practice capable of much injury.

Like other substances of the same class, this plant has been employed as an emmenagogue, and with a view of increasing the secretion of milk, but its chief use is to impart an agreeable flavor to mixtures and other preparations. It may be conveniently administered in the form of infusion, which is not unfrequently used at the tables in some parts of the country as a substitute for common tea. The name mountain tea implies that it is thus used, and with decided good effect. During the American revolution, it was a common practice to make a tea of the leaves of GAULTHERIA, and being sweetened with sugar and softened with cream, it was drunk at breakfast and supper instead of common tea or coffee.

The fruit possesses the peculiar flavor of the leaves in a high degree, and being at the same time sweetish, is much relished by some persons, and forms also a favorite article of food with partridges, deer, and other animals. The deer, particularly, are very fond of the berries of this plant, and they eagerly devour them wherever they are found; and it is a common opinion among the country people, to whom this fact is well known, that the peculiar and delicate flavor of venison is owing to this favorite food of the animal. One of the common names of the plant throughout the United States, *Deer-berry*, is sufficient evidence of this fact. Might it not be interesting to try the effects of these berries as food upon sheep or other animals prepared in their young state for our tables? It is not doubted that the peculiar delicate flavor of the flesh of the *Anas vallisneria*, or the common canvass-back duck, is owing to its feeding upon the *Vallisneria Americana*, or channel-weed, for when so situated as to be deprived of the opportunity of feeding on this article, the flesh loses that delicious flavor for which it is otherwise so remarkable.



Nº 48.

ZANTHOXYLUM AMERICANUM.

Prickly ash.

ZANTHOXYLACEÆ.

The Prickly Ash Tribe.

NO. 48.

ZANTHOXYLUM AMERICANUM.

Prickly Ash, Tooth-ache-tree.

Place—United States.

Quality—Bitter, aromatic.

Power—Stimulant.

Use—Rheumatism, tooth-ache.

BOTANICAL ANALYSIS.

Natural Order. Zanthoxyloea—J. Hedemeyer—L.

CLASS XXII. *Diocia.* ORDER *Pentandria.*

TENERINTACKA, Joss. Can. 395, (1789), in part. ZANTHOXYLOEA, Nees and Martius in Nov. Act. Bonn. 11, (1823). ADRIEN DE JUSSEAU *Rutaceae*, p. 114, (1835). *FRAXINACEA*, Kunth, *Ann. des Sc.* 2, 354, (1824). *TENERINTACKA*, Urb. G. *Bot. Prodr.* 2, 52, (1825).

GENUS. ZANTHOXYLUM.

From the Greek *Zanthos*, yellow, and *Xylon*, wood so named from its color.

SYNONYMS.—*Lo clavalier* (L.). *Das zahnebaum* (G.)

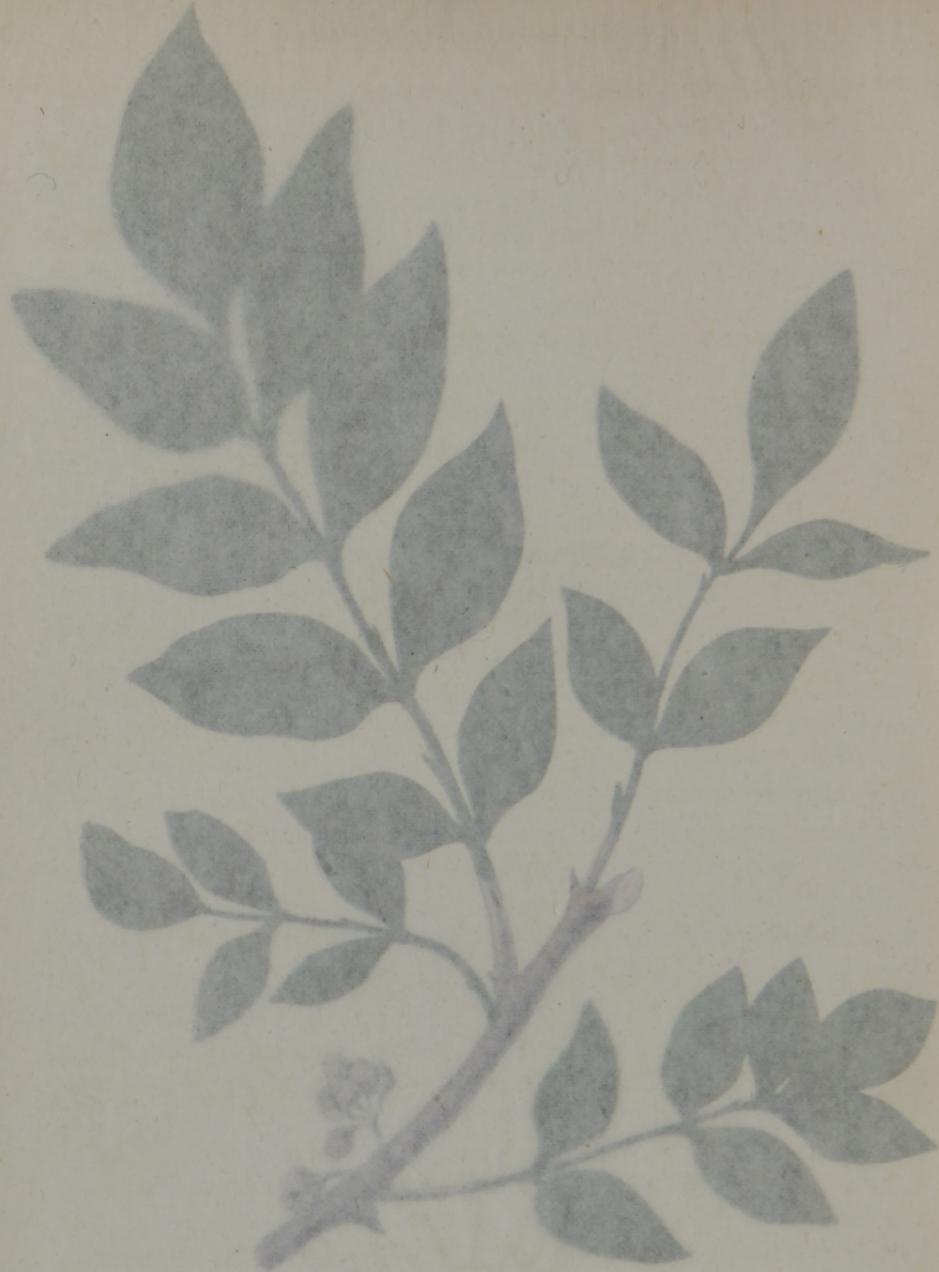
THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* three—small, adnate to the base.

COROLLA. *Petals* larger than the sepals, of the same number, or wanting.

STAMENS. Alternate with petals, or the same number, seldom twice as many; in the pistillate flowers either wanting or imperfect.

Anthers introrse.



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Prickly-ash.

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CLASS XXII. *Dioecia.* ORDER *Pentandria.*

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GENUS. ZANTHOXYLUM.

From the Greek XANTHOS, yellow, and ZULON, wood so named from its color.

SYNONYMES.—Le clavalier (*F.*), Der zahnwehbaun (*G.*)

THE ESSENTIAL CHARACTERS.

CALYX. *Sepals* three—nine, small, cohering at the base.

COROLLA. *Petals* longer than the *sepals*, of the same number, or wanting.

STAMENS. Alternate with petals, of the same number, seldom twice as many; in the pistillate flowers either wanting or imperfect.

Anthers introrse.

ZANTHOXYLUM AMERICANUM.

OVARY. Usually of the same number as sepals, stipitate, distinct or united.

FRUIT. Baccate, membranaceous, or drupaceous, or two-valved capsules.

SEED. *Carpels* three—five, one-seeded.

Flowers regular, polygamous, gray, green or pink.

THE SECONDARY CHARACTERS.

ZANTHOXYLUM. *Perfect flowers.* *Calyx* inferior, five-parted. *Corolla* wanting. *Stamens* three—six. *Pistils* three—five. *Carpels* three—five, one-seeded. *Pistillate flowers* like the perfect, but wanting the stamens. *Staminate flowers* like the perfect, but wanting the pistils.

ZANTHOXYLUM. *Staminate flowers.* *Calyx* five-parted. *Corol* wanting. *Stamens* three to six. *Pistillate flowers.* *Pistils* three to five. *Capsules* equal to the number of pistils. One-seeded.

THE SPECIFIC CHARACTERS.

ZANTHOXYLUM AMERICANUM. Prickly. *Leaves* pinnate. *Leaflets* ovate, sub-entire, sessile, equal at the base. *Umbels* axillary.

ZANTHOXYLUM FRAXINEUM. Prickly. *Leaves* pinnate. *Leaflets* lance-oval, sub-entire, sessile, equal at the base. *Umbels* axillary.

THE ARTIFICIAL CHARACTERS.

CLASS DIOECIA. *Stamens* apart from the pistils, in different flowers upon different plants. ORDER PENTANDRIA. *Trées.* Angiospermous, polygamous, perfect and imperfect flowers on different plants and similar. *Corolla* wanting. *Branches* and *petioles* prickly. *Stamens* more than two.

NATURAL HISTORY.

ZANTHOXYLUM AMERICANUM is indigenous, growing in woods and in moist shady places, throughout the Northern, Middle and Western States. It is not, however, very common in the Northern States, though it may be found in some neglected and marshy situations. The flowers appear in April and May, before the foliage. The leaves and capsules have an aromatic odor, recalling that of the oil of lemons.

The *Prickly ash* is a shrub from five to ten or twelve feet in height, with alternate branches which are armed with strong, conical, brown prickles with a broad base. The leaves are alternate and pinnate, consisting of four or five pairs of leaflets and an odd terminal one, smooth above, downy beneath, with a common footstalk which is sometimes

ZANTHOXYLUM AMERICANUM.

prickly on the back, and sometimes unarmed. The leaflets are nearly sessile, ovate, acute, slightly serrate, and somewhat downy on their under surface. The flowers, which are small, dense and greenish, are disposed in sessile umbels near the origin of the young shoots. The plant is polygamous, some shrubs bearing both male and perfect flowers, others only female. The perfect and the staminate flowers grow upon the same tree, and the pistillate ones upon a separate tree. The number of stamens is five, of the pistils three or four in the perfect flowers, about five in the pistillate. Each fruitful flower is followed by as many capsules as it had germs. These capsules are stipitate, oval, punctate, of a greenish-red color, with two valves, and one oval blackish seed. The berries grow in clusters on the top of the branches; they are small, black or deep blue, enclosed in a gray shell full of little holes or dots. The bark is thin and externally of an ash color or yellowish, internally white, and ought to be more generally known and used than it is. A good subject, consequently, for an inaugural dissertation.

Dr. Bigelow states, that the *Aralia Spinosa*, or angelica tree, which grows in the Southern States, is sometimes confounded with the *Zanthoxylum Americanum*, in consequence partly of being occasionally called *Prickly ash*. Its bark, however, both in appearance and flavor, is entirely different from that under consideration.

CHEMICAL AND MEDICAL PROPERTIES AND USES.

The root, berries and bark of the *ZANTHOXYLUM AMERICANUM* are all medicinal. The root, as found in the stores, is in pieces more or less quilled, from one to two lines in thickness, of a whitish color, internally somewhat shining, with an ash-colored or yellowish epidermis, which in some specimens is partially or wholly removed, and in those dried from the small branches is armed with strong prickles. The bark is very light, brittle, of a farinaceous fracture, nearly or quite inodorous, and of a taste which is at first sweetish and slightly aromatic, then bitterish and ultimately acid. The acrimony is imparted to boiling water and alcohol, which extracts the virtues of the bark. Its constituents, according to Dr. Staples, besides fibrous substance, are volatile oil, a greenish fixed oil, resin, gum, coloring matter, and a peculiar crystallizable principle, which he calls *Zanthoxylin*, but of which the properties are not designated. The bark of the *Prickly ash* is an energetic stimulant, and has acquired a considerable reputation as a remedy in chronic rheumatism, and it is also advantageously prescribed in gouty affections. Taken in full doses it produces a heat in the stomach, a tendency to perspiration, with more or less general arterial excitement, and consequently a relief to rheumatic pains. Twenty grains of the pounded bark may be taken three times a day in powder, or an ounce may be

boiled in a quart of water and the decoction taken in the course of twenty-four hours. It is, however, more generally used in combination with sarsaparilla and other articles, forming a syrup.

A strong decoction of the bark is also used with great success, as a wash for old and foul ulcers, and especially mercurial sores, which it always greatly cleanses and disposes to heal. The value of this remedy is attested by numerous instances of its success published in the London Medical and Physical Journal.

The fresh juice obtained from the root of the *Prickly ash*, is an excellent remedy in that painful complaint called by the country people the dry colic. This medicine causes a profound and composed sleep, when all sense of pain and other distressing symptoms vanish. Dose, two spoonfuls of the juice every two hours. To render the cure complete, give an infusion of the juice as a diet drink. This juice preserved in spirits of any kind, is also said to remove the most obstinate epileptic fits. Dose, a wineglass full morning and evening.

The berries are esteemed a good remedy in intermittent fevers and in colics: they may be used in spirituous or watery infusion; and in agues, after proper evacuations, they may be drunk during the interval of the fits, and in three or four days they will very generally produce beneficial effects.

“An internal and protracted use of this medicine, has, in several instances, produced salivation.” *Beach.*

The bark of this shrub is of the most importance and value. It is cleansing, antiseptic and strengthening; it promotes all the secretions; it is an excellent alterant, and a good substitute for cayenne; it is also a powerful and permanent bitter stimulant, and invaluable in bitters, where also the seeds should always be added, as they are warming and aromatic. It should, in fact, enter into compositions generally.

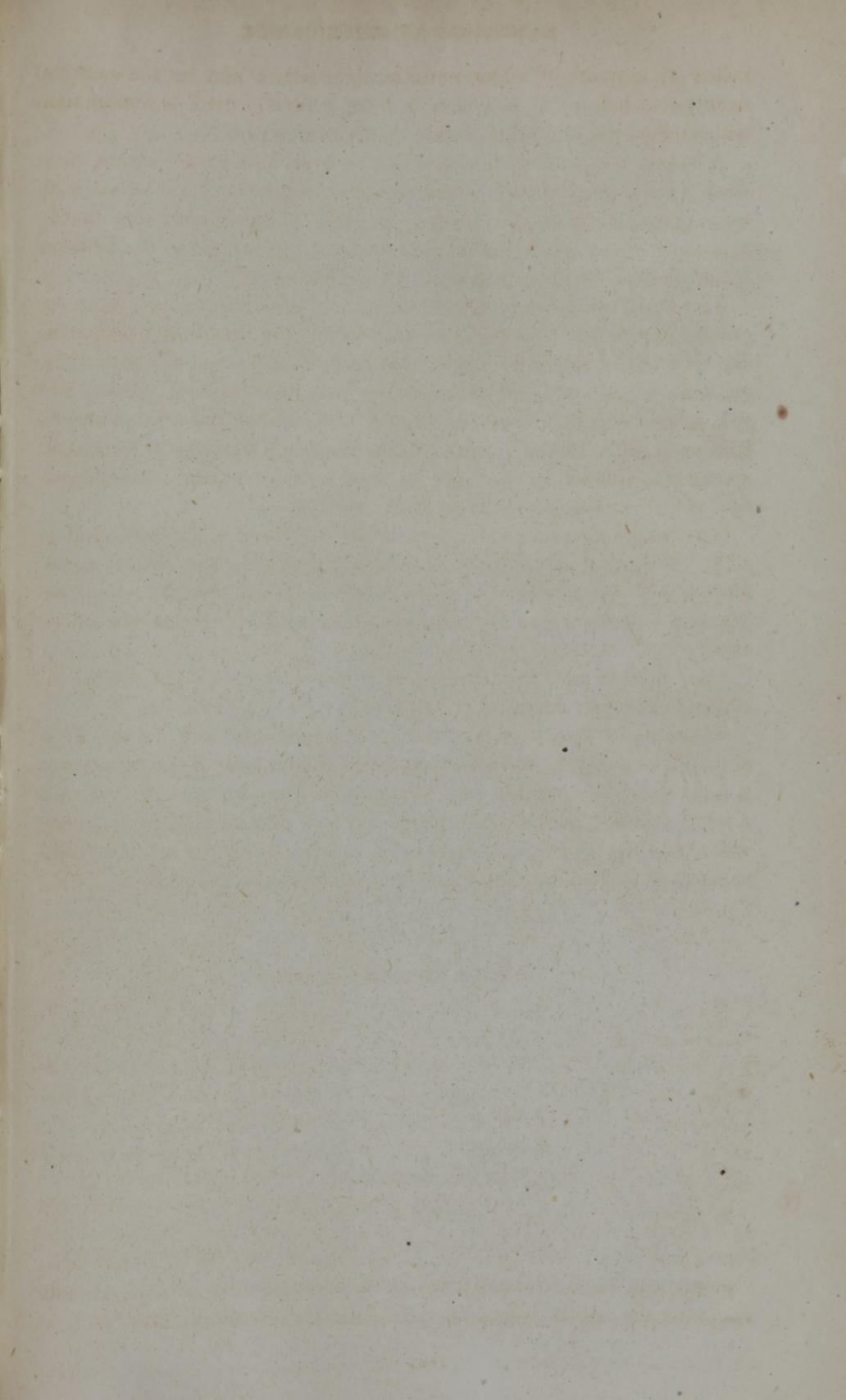
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OF THE LATE

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Mem. Am. Phil. Soc., and F. L. S. of Philadelphia, &c. &c.

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C. GREGO.

TO WHICH IS ADDED

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21st January, 1827,

BY CHARLES JERRAM, A. M.

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CONTENTS.

“World”—Essay on Providence—Remarks on our Lord’s miracles—J. M. Good removes to London—Address to the evening star—Verses to a Bath stove (left behind) at Sudbury—New perplexities and trials—Account of the Pharmaceutic association—Ignorance of many country Drug-gists, 1794—J. M. Good’s translations from Clementi Bondi—First introduction to Dr. Geddes—Translations from Dante, Klopstock, Rhakam, Sadi, &c.—His generalizing study of languages—Contributes to the Critical and other reviews—Loses his only son—Correspondence on the occasion—Monumental inscription—Commences his translation of Lucretius—Translation effected during his professional walks—United with Dr. Gregory and Mr. Bosworth in the Pantologia—Delivers lectures at the Surrey Institution—Occasional poetry: a Trifle, Birdbrook parsonage, the Wish, on the death of the Princess Charlotte, &c.—Contributes to the British review—Takes the degree of M. D.—Writes his system of Nosology—Study of medicine—Publishes the Book of Nature—His declining health and anticipations of death—Extracts from letters to Drs. Walton and Drake—Death—Brief character, by Mr. Roberts, &c.

CHAPTER II.

Review of the principal publications of Dr. Good, and an account of two important works yet unpublished.

Diseases of prisons—History of medicine—Excellencies and defects of the authorized version of Scripture, and inquiry into the expediency of a new translation—Translation of the Song of Songs—Memoirs of Dr. Geddes—Refutation of one of his errors—Translation of Lucretius—Sketch of the system of Epicurus—Exposure of some of its errors—Specimens of the translation, and of the notes—Anniversary oration, Medical Society—Essay on Medical Technology—Illustrative table—Translation of the Book of Job—Account of its nature and contents—Translation of Job xix.—Comparative specimens from Mr. Scott, Dr. Smith, &c.—Specimen of Dr. Good’s translation in heroic verse—Physiological nosology—Outline of Dr. Good’s system—Table of proposed affixes and suffixes—Study of Medicine—Quotation on distortion of the spine—Another on paropsis cataracta—Opinions of Medical journalists—The Book of Nature—Extract on the varieties of the human race—Translation of the Book of Proverbs—Extract from introductory dissertation—Translation of the Psalms—Extracts from Dr. Good’s historical outline—Specimens of the translation, and comparisons with other translations—Summary of Dr. Good’s intellectual character.

CHAPTER III.

A developement of Dr Good’s religious character.

Preliminary remarks on the superiority of the religious to the intellectual principle—On the law of reputation, and our responsibility for our opinions—To what extent is infidelity prevalent among medical men?—Whether changes of opinion fairly imply a want of principle?—Dr. Good adopts Socinian sentiments—Notes extracted from his interleaved Bible—His slow escape from speculative error—Metrical translation of Psalm xlii.—Correspondence with his minister on his separation from the Socinians—Becomes acquainted with the Rev. S. Marsden—Extract from an essay on happiness—Verses on entering his fiftieth year—The daisy, a short poetical effusion—The resting place—More notes from his interleaved Bible—Effect of the alarming illness of his two daughters—Illness and death of his son-in-law, Rev. Cornelius Neale—Fac simile of Dr. Good’s signature—Specimens of his devotional poetry—Selections from his occasional thoughts—Enoch—On ‘My kingdom is not of this world’—Form of prayer—On ‘The way everlasting’—On ‘Be of good cheer; it is I, be not afraid’—On ‘And they heard the voice of the Lord God walking in the garden in the cool of the evening’—On ‘And as he reasoned of righteousness, temperance and judgment to come Felix trembled’—On ‘Let us now go even unto Bethlehem, and see this thing which is come to pass, which the Lord hath made known unto us’—Dr. Good’s last letter—Account of his last illness and death.

APPENDIX.

Sermon occasioned by the death of Dr. Good, by Charles Jerram, A. M., &c. &c.—Hints relative to the life, writings, and character of the late Dr. John Mason Good—Dr. Good’s sketch of the character and labors of the Rev. Samuel Marsden.

ADVERTISEMENT.

It is the ordinance of Heaven that no man greatly distinguished for his talents and virtues should die, without leaving an important legacy to the world—the *legacy of his own character*. This is designed by Providence to be in the place of his living example and active efforts, to plead the cause of virtue after the eloquent tongue has been palsied by death, and to stimulate to noble enterprises on earth, when the spirit has entered on a higher sphere of action in heaven. Each generation, therefore, is bound to preserve some substantial record of its truly illustrious men; such as have associated high intellectual and moral attainments in the same character, have sustained through life eminent usefulness, and have contributed most under God to form its character. Men of this stamp will indeed do much, even without the aid of such a record, to guide the destinies of posterity; because such is the power of great talents, and such the connection of moral actions with each other, that from the life of every man of distinguished greatness and excellence there is a tide of influence sent forth which must force its way through every obstacle down the track of coming ages. Still the interests of society demand, that these influences be widened and perpetuated, by the erection of permanent memorials of departed greatness. If this is altogether neglected, or performed in a careless or cursory manner,—if it is entrusted to inadequate hands, or becomes a monument of the partiality of human friendship rather than a faithful account of those qualities and actions which have really made up the character—great injustice is done both to the claims of the living and the dead. It is true indeed, that the character of departed illustrious men may exert its full influence upon those who have known them well, without any other record of it than that which is inscribed upon their memories and their hearts: but with the mass of the world it is far otherwise; with them the want of some enduring and faithful delineation of what those men were, is the loss of all the good which might accrue to them from the contemplation of human intellect and virtue in some of their noblest forms.

As these Memoirs will undoubtedly be read by most of the intelligent members of the community, it is only necessary to refer to the amount and value of the intellectual habits and attainments of the man who fully acted up to the spirit of his motto, "*The measure of life is not the number of its days and years, but the amount of its virtues and duties performed.*" In the period of a life not unusually long, Dr. JNO. M. GOOD mastered many entirely distinct departments of knowledge;—he ranged through the whole field of oriental, classical and modern literature, and made himself familiar not only with the Hebrew, Syriack, Persian, Greek, Latin, German, Italian, French, Spanish and English languages, but also with the contents of most of the principal works in each. He also became a thorough scholar in various departments of natural and moral science, as his "*BOOK OF NATURE*" and other similar productions evince him to have been. He gained the highest rank

in the profession of medicine and surgery, both in theory and practice, and contributed one of the most valuable works, "THE STUDY OF MEDICINE," to that profession which it has ever received. He also enlarged his mind with copious practical knowledge, on almost all subjects of interest or utility. He engaged in making translations of the Book of Job, and the Psalms, and Solomon's Song, from the Hebrew—in executing his "great work," THE TRANSLATION OF LUCRETIUS FROM THE LATIN—in publishing notes and practical commentaries on the Scriptures—in writing poetry—in delivering lectures on physical and moral science and general knowledge—in preparing memoirs—in furnishing matter for several distinguished periodicals—and all with such success, as completely to confront the adage that "*the man of all pursuits is good at none.*" And besides all this, he frequently walked twelve or fourteen miles a day to attend upon so many patients as to yield fourteen hundred pounds sterling, or about seven thousand dollars a year. Distinguished as was Dr. JNO. M. GOOD in his profession, his mind did not consent to expatiate alone in that, for he was scarcely less distinguished as a philosopher and as a classical and biblical scholar. He was at first a materialist and a Unitarian; but as he continued to search the Scriptures and to extend his keen and practical observation of mankind, he became more and more convinced of the Scriptural view of the character, condition and moral relations and destinies of man, of the proper divinity and atonement of Christ, and of the way of salvation through Him. His dissatisfaction of course increased with the erroneous views which he had adopted, until his mind and heart broke from their servitude and ascended to God in sentiments of evangelical faith and love. He became a sound and consistent believer in Christ. He lived about twenty years after the change took place in his religious views, and by the grace of God was conducted to a correct apprehension and an adoring love of the sublime truths and principles of the gospel of Christ.

But while it is due alike to the memory of great and good men, and to the interests of posterity, that a faithful account of such characters should be preserved and transmitted, it is important that the proper time for performing this service should not be overlooked. A work of this kind may lose in a great degree its legitimate interest and effect by being delayed too long; for no record of departed excellence or greatness can come with much authority, unless it embodies the personal recollections of the writer, or at least is formed of materials of undisputed authenticity. The proper time for erecting such a monument as is here contemplated to the illustrious dead, is when they have been in the grave long enough to have their characters looked at with due impartiality, and yet not so long as to have thrown them in any degree into the mist of uncertainty. The biographer of such men is laboring for the world and for successive generations; and he should have every external facility, as well as every quality of mind and heart, which his important office demands.

The views which are here expressed have led to the endeavor to satisfy the reasonable demands of the christian and literary public, by the reproduction of a work (*except some important additions*) from the pen of an author long the intimate friend of Dr. GOOD, and probably better qualified to do justice to his character than any other man, and which will carry down to distant generations the example and influence of one of the brightest characters of the age.

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FROM THE FRENCH OF BOURGERY AND JACOB.

THE TEXT TRANSLATED BY

J. C. COMSTOCK, A. M.

KELLOGGS & COMSTOCK,

PUBLISHERS,

150 FULTON STREET, NEW YORK, AND 136 MAIN STREET, HARTFORD.

1849.

☞ THESE PLATES may be obtained, *on very accommodating terms*, on application (post paid) to PETER P. GOOD, A. M., Elizabeth-town, Essex County, New Jersey.

PROSPECTUS.

THE WORK of M.M. BOURGERY and JACOB, entitled "*Anatomie Élémentaire*," &c., recently published at Paris, has been justly celebrated for its elegance and accuracy. The utmost care, time, and labor, were bestowed upon its preparation, and the publishers even incurred the enormous expense of paying a distinguished French Artist for oil paintings from actual dissections, to serve as copies for the lithographed plates. The high price of the work, in consequence of such an extensive outlay of money, together with the additional expense of importation, has hitherto prevented its circulation to any considerable extent in the United States. Indeed, few perfect copies are to be found in this country, except perhaps in the portfolios of some of our most wealthy physicians. Under these circumstances, the present publishers have been encouraged, by the opinions of many medical gentlemen of high standing, in the belief that they would be justified in attempting an American edition. They have spared none of the facilities afforded them by the command of an extensive and well-known establishment, and by long experience in the business of Lithography, in endeavoring to render this edition equal to the original, in point of execution, while at the same time they are enabled to offer it at a greatly reduced price.

"The study of Anatomy," say the authors of this work, in their eloquent and sensible preface, "is rendered almost impracticable to the public generally, through the want of a method capable of universal application. We have attempted to supply this insufficiency, by presenting to the public a system of Anatomy; not that dry and repulsive Anatomy of books and of the dissecting-room, the tedious portion of professional physicians, but the science of organization, under a beautiful and attractive form, enriched with explanations of the highest interest, and divested of that ghastly material *cortége*, which produces so much disgust and aversion in the senses and imagination."

Most of the plates represent a full-length human figure. To avoid repetition, the two halves of the body display different layers, an arrangement which, for each plate, doubles the quantity of matter for study. The partial figures, disposed at the sides, present those important details which could not be seen in the principal figure. In any particular department, such as that of the muscles or of the vessels, the plates are reciprocally complete, one to another. Thus, one which displays two superficial layers of muscles, is followed by another representing the two deep layers, at the same point of view. A concise, but sufficiently-detailed text, gives a proper description and explanation of each half of the figure, terminated by a summary of the different physiological and surgical considerations which may be suggested.

All the figures being drawn in the proportion of half the natural size, and being surrounded by an outline of the exterior surface, by doubling the dimensions, the actual depth at which an artery, a nerve, or any other part, may be found, can always be ascertained. The place of intersection, of the planes, transverse and

antero-posterior, measured on two figures, one in front and the other in profile, fixes with the utmost exactness any point whatever, the exact position of which it is desired to determine.

The following are the subjects and the arrangement of the plates:

PLATES I. and II. OSTEOLOGY and SYNDESMOLOGY.

Plate I. Anterior plane. *Right side:* The dry bones. *Left side:* The bones clothed with their ligaments. At the limbs, the large vessels are added, so as to show distinctly their relations to the bones, and to indicate the points at which compression is to be applied in cases of hemorrhage.

Plate II. Posterior plane. The same arrangement.

PLATES III., IV., V., VI., VII., VIII. MYOLOGY and APONEUROLOGY.

Plate III. Anterior plane. *Right side:* Superficial muscles. *Left side:* Superficial aponeuroses.

Plate IV. Anterior plane. *Right side:* Muscles of the second layer. *Left side:* Muscles of the third layer.

Plate V. Posterior plane. *Right side:* Superficial muscles. *Left side:* Superficial aponeuroses.

Plate VI. Posterior plane. Second and third layers of muscles.

Plate VII. Lateral plane. Superficial and deep muscles. Muscles of the os hyoides.

Plate VIII. Diaphragm, interior of the trunk, muscles of the lower jaw, of the tongue, of the velum palati, and of the pharynx.

PLATES IX., X., XI., XII., XIII., XIV. ANGIOLOGY. Heart, lungs, arteries, veins, and lymphatics. On the different figures are indicated the points at which compression or ligature of the vessels is effected, and in regard to the veins particular, the proper points for performing venesection.

Plate IX. Interior of the trunk. Heart, lungs, and their envelopes. Large vessels.

Plate X. Vessels of the thorax and abdomen, azygos vessels, cerebral and spinal venous sinuses.

Plate XI. Anterior plane. Sub-cutaneous veins, and deep vessels.

Plate XII. Posterior plane. Superficial veins, and deep vessels.

Plate XIII. Lateral plane. Partial figures, internal maxillary and internal carotid vessels, &c.

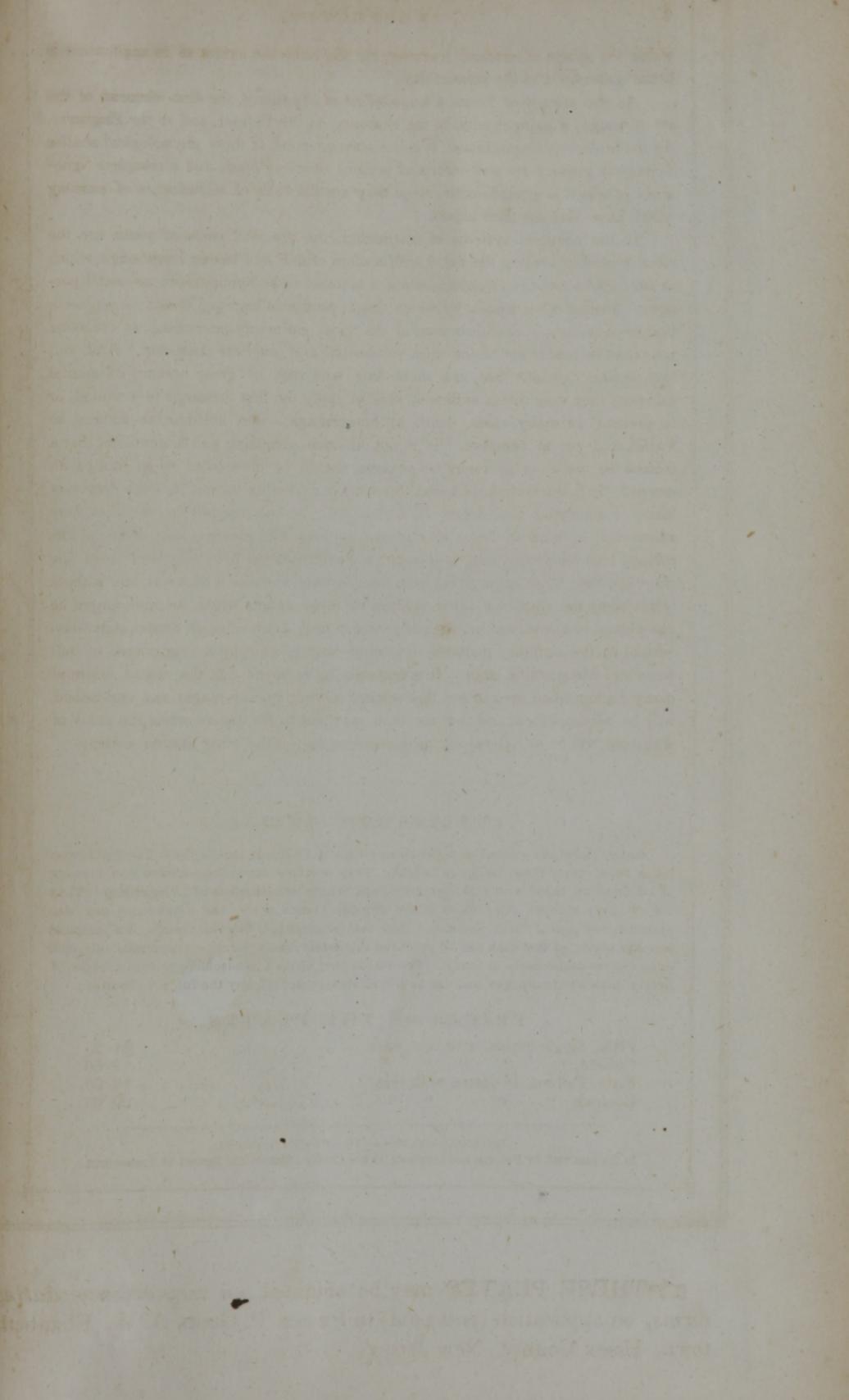
Plate XIV. Lymphatic vessels.

PLATES XV., XVI. NEUROLOGY.

Plate XV. Anterior plane. Encephalic nerves. Nerves of the extremities.

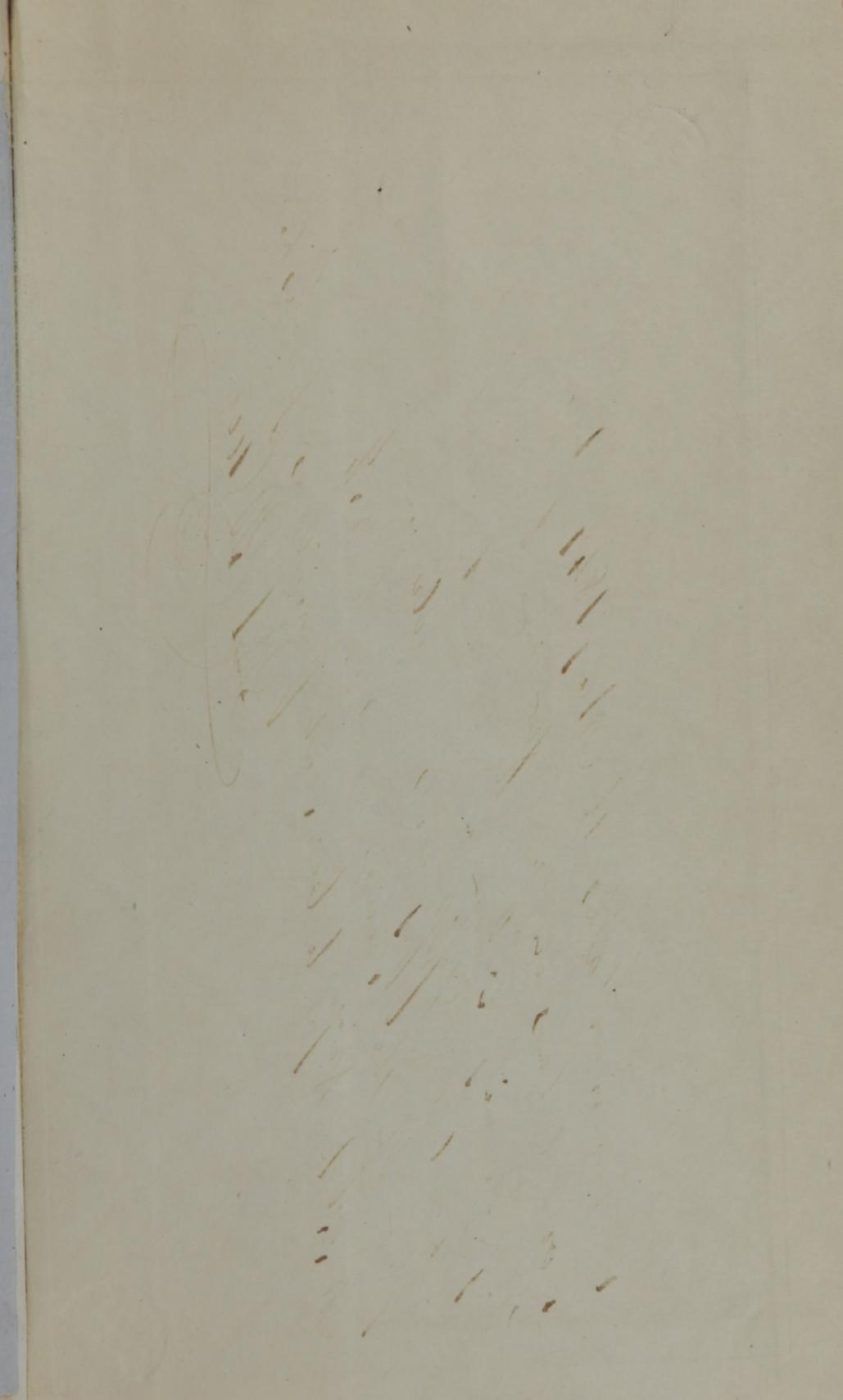
Plate XVI. Posterior plane. Great sympathetic nerve. Studies of the ganglions and their nerves. Pneumo-gastric nerves. Studies of the fifth and seventh cerebral pairs.

These plates will assist students to learn with readiness and facility, and will serve them as a guide in studying from nature. They will also recall to physicians those details which may have been forgotten. It is not, however, to those persons alone who exercise the art of healing that this work is intended to be useful. Prejudice for a long time caused the study of Anatomy to be confined exclusively



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