
RATTRAY'S
BOTANICAL
CHART.
3/6

SUPPLEMENT

TO

RATTRAY'S BOTANICAL CHART,

ON

THE CRYPTOGAMOUS PLANTS OF GREAT BRITAIN.

A Brief Outline of the Natural Systematic arrangement given by Sir William Jackson Hooker, in his splendid Work on the Cryptogamous Plants of Great Britain; in which it is made evident, that the clear and comprehensive mind of Linnæus, so fitted for distribution, definition, and denomination, had never been warmly engaged, or its energies properly called forth, to the Flowerless Plants, which compose his Class Cryptogamia, otherwise he would not have left such scope for improvement to his successors.—This Class is divided into 7 Orders, 17 Families, 3 Sub-Orders, several Sections, Sub-Sections, and Divisions.

ORDER I.

Filices, or the Ferns.

This Order contains 20 genera, thrown into one prime, and 3 sub-orders, from the figure, situation, and arrangement of the parts of fructification, and from the natural structure, habit, or port of the plants.

The prime order Filices (or true Ferns) contains 16 genera, separated into 2 sections, from the structure of the Capsule, its mode of opening, the presence or absence of an elastic ring, and the shape of the sori (or clusters) found on the back of the leaf or frond, or on its margin, and sometimes on a racemus or spike. Example of the 1st Section, Polypodium; of the 2d, Osmunda.

Sub-Order I. Lycopodiæcæ.—Character, Fructification among the leaves, Capsules sessile, with 2 or 3 valves, without a ring; contains only one genus, Lycopodium.

Sub-Order II. Marsilaceæ.—Character, Fructification, situated near the root of the plant in Capsules, inclosed by involucres, with a ring; contains 2 genera, Isocites and Pilulariæ.

Sub-Order III. Equisetaceæ.—Character, Fructification in an amentum or terminal spike, formed of many-sided peltate scales, under which are numerous globular Capsules, with 4 club-shaped filaments, covered by from 4 to 7 Bracteæ, opening lengthways: stems jointed, sheathed, and leafless: branches, if present, in whorls; has one genus, Equisetum.

ORDER II.

Musci, or the Mosses.

This Order contains 30 genera of plants, very diminutive in size, but of the most varied and beautiful structure, and they serve many wise purposes in the economy of Nature. Their reproductive organs are generally Monœcious; the anthers are found among the leaves, and the sporules (or seeds) in Thecæ (or capsules) on fine peduncles termed setæ, furnished with an operculum (or lid) and a Calyptra or veil. The genera are thrown into Sections, Sub-Sections, and Divisions. The Sections are 2, and formed from the setæ, being terminal or lateral. The Sub-Sections depend upon the operculum being adherent or deciduous, and from the presence or absence of a periostoma (or fringe). The Divisions are formed from the periostoma being single or double. This Order is beautifully illustrated by my good friend the ingenious and accurate Mr George Gardiner, in his Musci Britannici, or Pocket Herbarium of dried Mosses.

Section I.—Character, Setæ Terminal, (some species of the genus Dicranium have lateral setæ.) Contains 30 genera, divided into 3 Sub-Sections.

Sub-Section I.—Character, Operculum adhering. Contains 2 genera, having their lids fixed to the capsule, without periostoma, 4 valved, or entire. Andria and Phascum.

Sub-Section II.—Character, Operculum deciduous, capsule without periostome, contains 5 genera, Sphagnum, Œdopodium, Gymnostomum, Anictangium, and Schistos-tega.

Sub-Section III.—Character, Operculum deciduous, capsule with a periostoma, contains 23 genera, separated into 2 Divisions, from their periostoma being single or double. In the 2d division the genera are sub-divided from the cilia, being like distinct teeth, like laciniæ, or segments.

Section II.—Character, Setæ lateral. Contains 9 genera, divided into 2 Sub-Sections, from the capsule being furnished with, or being destitute of, a periostoma.

Sub-Section I.—Character, Capsule destitute of a periostoma. Contains one genus, Hedwigia. Known by its dimidiate Calyptra.

Sub-Section II.—Character, Capsule having a periostoma. Contains 8 genera, separated into 2 divisions, from the periostoma being single or double.

Division I.—Character, Capsule with a single fringe. Has 2 genera, Pterogonium and Leucodon. The first has 16, and the latter 32 teeth in the fringe.

Division II.—Character, Capsule with a double fringe. Contains 6 genera, separated into 2 subdivisions, from the inner fringe being composed of free or connected cilia.

Sub-Division I.—Character, Cilia of the inner fringe free. Contains 3 genera, Nickeria, Anomodon, and Daltonia.

Sub-Division II.—Character, Cilia of the inner fringe connected by a membrane or by transverse bars. Has 3 genera, Fontinalis, Hookeria, and Hypnum.

ORDER III.

Hepaticæ, or Liverworts.

This Order contains 6 genera of very small plants, mostly Frondose, seldom leaf-bearing, if so, the leaves are not severed, but Gemmæ are found on different parts of the leaves and Fronds. They (with the exception of 1 or 2 genera), like the common Mosses, on the application of moisture, after being dried for a length of time, will speedily revive.

The genera are distinguishable into 2 divisions, being with or without a Calyptra to their capsules, which are either 2 or 4 valved, sometimes with many openings at the top; seeds numerous among spiral filaments, without a lid; or somewhat round bodies, filled with very minute granulations, which pass out by a small opening at the top. The names of the genera are, The Riccia, Spherocarpus, Anthoceros, Targiona, Marcantia, and Jungermania.

ORDER IV.

Lichenes.

This Order contains a very extensive and intricate tribe of plants, which are the first among vegetable productions to clothe the bare rocks and stones with a soil suited to support the more highly organised plants. Some of them are used in the Arts, and others in Medicine, as the Cetacia Islandica, used in coughs and pectoral afflictions, consumptions, &c.; and when, by maceration in water, the bitter and cathartic principle is extracted, after being dried it is powdered, and baked into bread, or boiled with milk into an agreeable nutricious article of diet; as the poorer inhabitants of Iceland and Norway eat it as a luxury, and gratefully pour out their thankfulness to a bountiful Providence, which sends them bread out of the very stones. While the Cladonia rangifarina (or Lichen rangifarinus of Linnæus) grows in soils and situations in abundance where no other vegetable will live; and by forming the principal article of support for the Reindeer during the long winter of Lapland, it renders that country habitable to the human species.—This numerous tribe of plants vary much in shape, soil, and situation, growing on

the ground, on rocks, on stones, on living trees, or on dead timber. In consistency they are coriaceous, membranaceous, filamentous, or like fine powder. Some of them lie flat on the soil, and are variously lobed, while others are curiously branched, and erect themselves like little shrubs. They are generally furnished with a Thallus, crust, or Frond (universal receptacles), in which an indeterminate mass of sporules, knobs, spangles, puffs, Podaticæ, &c., are found in tubes or Thecæ.

There are 39 genera in this Order, formed into 17 distinct Families, from the appearance and consistency of the Thallus, Apothecia, &c.—Psuedo Fungi.

Family I.—Bæomyceæ, Thallus crustaceous, Apothecia Stipitate.
Fam. II.—Calicioideæ, Apothecia shaped like a goblet.
Fam. III.—Graphideæ, Apothecia sessile and linear.
Fam. IV.—Verucariæ, Apothecia half round, tubercle with a nucleus. (True Lichens)
Fam. V.—Liprariæ, Apothecia, naked sporules.
Fam. VI.—Variolarieæ, depressed or hollow shields.
Fam. VII.—Lecanoreæ, Apothecia sitting with a border and disk.
Fam. VIII.—Squamarieæ, Thallus somewhat leafy, scales connected more or less together, Apothecia sitting with a disk and border.
Fam. IX.—Parmilaceæ, Thallus slightly attached by a small base, or by fibres.
Fam. X.—Collemateæ, Thallus moist, or in a gelatinous state, Apothecia shield-like.
Fam. XI.—Peltigereæ, Thallus somewhat like the human nail, without or with a very slight border.
Fam. XII.—Umbilicariæ, Thallus attached by its centre, somewhat round.
Fam. XIII.—Ramalineæ, Thallus compressed and jagged. Apothecia shield-shaped.
Fam. XIV.—Usneæ, Thallus with a thread in the centre, Apothecia shield-shaped, fringed, without a rim.
Fam. XV.—Cornicularieæ, Thallus without a thread in the centre, slightly compressed occasionally.
Fam. XVI.—Spherophoreæ, Thallus somewhat round, erect, branched, and shrub-like. Apothecia round, and either solid or filled with a black powder.
Fam. XVII.—Cladonia, Thallus (or Padetia) tubular. Apothecia succulent and round.

ORDER V.

Characeæ.

This order contains but one genus, viz. Chara, which has about 8 species of submersed, leafless, aquatic plants, formed of straight tubes, transparent, or covered with the carbonate of lime, having verticulate branches. These plants have never been applied to any purpose, and regarding their properties there is nothing ascertained. Sir J. Edward Smith, and several others, place this genus in Monandria Monagynia.

ORDER VI.

Algæ, or Sea Weeds.

This Order contains few or none but aquatic plants, singular in their figure and texture, and considered by some as the lowest on the scale of vegetable beings; yet they approximate so closely to some of the less perfectly organised animals, as to render it difficult to draw the line of distinction between them. The Fucus, Ulva, and Conferva of Linnæus, embrace nearly all the numerous genera into which this Order is now separated by Woodward, Agardh, Lammouroux, and particularly by Dr Greville of Edinburgh, by whose devotional attachment, close attention, and invaluable labours, much steady light has been thrown upon this abstruse part of Botany. There are 112 genera, and 507 species enumerated in this Order, separated into 4 divisions, and grouped into 25 tribes.

Division I.—Inarticulatæ. Char. Leafy, thread-like plants, without joints. Contains 55 genera, arranged into 13 tribes, from their colour, structure, vesicles, fructification, &c.

Division II.—Confervoideæ. Char. Plants jointed, or seemingly so, without gelatine. Contains 29 genera, arranged into 4 tribes, from their colour being olive, green, red, brown, or purple—from their fructification being Monœcious or Diœcious, undivided, in granular masses, or separated by transverse septa into round or lenticular sporules. Some of them related to the Fungi, composed of filaments with capsules—growing in the sea, in fresh water, on land, or on rotten wood.

Division III.—Gloiocladiæ. Char. Plants composed of globules or filaments, covered with distinct gelatinous matter. Contains 12 genera, arranged into 3 tribes, from the Plants being thread-form or globular, jointed or branched, gelatinous or fleshy, in salt or fresh water.

Division IV.—Diatomaceæ. Char. Very minute Plants, formed of variously shaped granules, flat, or compressed in circles or in parallel lines, embedded in mucus or gelatine, ending in distinct segments—in salt or fresh water—generally found floating in masses, combined with other aquatic Plants.

There are several species of the Algæ eaten, and considered as delicacies. At certain seasons of the year, cattle feeding on the sea coast browse on them with greediness. Iodine, kelp, and a substitute for isinglass is obtained from some of them; while others of them have obtained a place in our pharmacopæias for their vermifuge properties.

ORDER VII.

Fungi, or the Mushroom Tribes.

This Order consists of Plants formed of cellular and fibrous matter, differing considerably in figure, texture, and duration. Most frequently soft, spungy, and moist, of short duration; others are hard, coriacious, or cortical, and last for years. Some of them possess, and others are destitute of, a central nucleus of gelatinous matter, while some are dry and powdery. They grow from decaying and decayed organised bodies; immersion in water prevents their reproductive sporidia ripening to perfection. Their sporules are found in some externally, in others internally, naked, or in cells, requiring frequently the concurrence of many of them to produce a single individual. Their qualities are extremely various, some of them being used, and much lauded as articles of food: others are alleged to possess valuable medicinal properties; while the greater number of them are indigestible, and poisonous to the human species, and truly destructive to timber, fruit-trees, and corn fields, by the dry-rot, &c. Some of them give out hydrogen, others carbonic acid gas, and inhale oxygen. In the great scale of Nature they apparently perform an important purpose, by facilitating the decomposition of dead organised matter. The Rev. M. T. Berkeley has enumerated and described upwards of 3000 species, and arranged them into 4 Sub-Orders, 22 Tribes, and 154 Genera, three of which genera, the Agaricus, Peziza, and Sphæria, are divided into 77 Sub-Genera, embracing about 639 species.

Sub-Order I.—Hymenomyates. Char. Hymenium, naked. Contains 46 genera, arranged into 6 Tribes, from the figure and direction of the receptacle, and from the Hymenium being superior or inferior. Names of the Tribes, Peliati, Clavati, Mitrati, Cupulati, Tremellini, Selerotiæi.

Sub-Order II.—Gasteromycetes. Char. Hymenium, contained in a uteriform bag. Contains 59 genera, arranged into 5 Tribes, from the receptacle being distinct or confluent with the uterus, with arrangement of the sporidia, or from the capsules being single or double—from the texture being vesiculose or floccose, and from the capsule being scarcely distinct from the nucleus, &c. The names of the Tribes, Angiogastres, Phymomyates, Trichospermi, Trichodermacei, and Pyrenomycetes.

Sub-Order III.—Hyphomyotes. Char. Sporidia on distinct naked threads, or joined in a common trunk. Contains 33 genera, arranged into 5 Tribes, from the nature of the sporidia, their size, situation, and manner of support—from the sporidia being on threads, horizontal or perpendicular, in tubes or septæ, or being without any distinct filaments bearing the sporidia. The names of the Tribes, Cephalotrichei, Mucorini, Dematiæ, Mucedines, and Sepedoni.

Sub-Order IV.—Coniomyaces. Char. Sporidia naked, within the uteriform bag, or under the outer bark of Plants. Contains 16 genera, arranged into 4 Tribes, from their sporidia being glued together into a disc, or into a nucleus, or chained into filaments, unattached, or stipitate; mostly under the cuticle of plants. The names of the Tribes are Tubercularini, Stilbosporei, Sporidesmiei, and Hypodermiei.

A BOTANICAL CHART; OR, CONCISE INTRODUCTION TO THE LINNÆAN SYSTEM OF BOTANY.

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BOTANY is that science which teaches us to distinguish one Plant from another; and consists in associating together, into classes, or groups, such plants as possess certain permanent characters in common, and in separating and distinguishing those that are dissimilar in character and appearance, by fixed rules correctly drawn from Nature; thereby enabling us to discover the properties and uses of the multifarious and variously organized bodies in the Vegetable Kingdom. The purpose of this Tabular Scheme, besides giving the Nomenclature of Botany, is to guide the Student, in the clearest and concisest manner, to an intimate acquaintance with the Anatomy of a Plant, the functions of its particular parts, and the elucidation of the most accurate and elegant mode of arrangement ever offered to the world by the genius of man; which system, or mode of arrangement, is founded upon characters drawn from the figure, situation, number, proportion, and connection of the various parts of a Plant.

When a Plant is taken up for examination, it is an object to obtain several flowers—some of them fully expanded, some just opening, others whose seed-vessels may be nearly ripe, and, if possible, one entire specimen of the Plant. Determine first whether the flower is male, female, or hermaphrodite; then, from the number, insertion, proportionate lengths, and connection of the Stamens, the Class to which the Plant belongs (by looking at the characters of the Classes in the Key annexed) will be easily found out; and, by counting the number of the Pistils, observing whether the seeds are naked or covered, and noticing the shape of the seed-vessel, &c. the Order will be readily ascertained. The characters of distinction of the Genera and Species are described under their heads in the following columns.

In Dr Smith's Flora Britannica, at the beginning of every Class there is a Synopsis of all the Genera belonging to that Class, digested according to their Orders, and again divided or grouped into sections by certain affinities or obvious characters; and to his excellent Compendium we would refer the student for the best generic and specific descriptions of our British Plants. These divisions and subdivisions, by lessening the labour, greatly facilitate the study of Botany, and will soon enable the student to

"Find tongues in trees, books in the running brooks,
Sermons in stones, and good in every thing."

The two first columns of the following Chart enumerate the various parts of a Plant, and under their proper heads are given the terms applied to the different forms of these parts, with concise explanations or definitions, illustrated by engraved figures, to which the numbers annexed refer. The remaining four columns give a connected view of the Linnean system; the first contains the names of the Classes, with a short character of each, and a figure in illustration. The next column contains the Orders, with cuts illustrative of their characters. For these illustrations we are indebted to Loudon's admirable Encyclopedia of Plants. In the third column the Genera are arranged according to their Orders, with their most common English names; the numbers in this column, within brackets, refer to and indicate the commencement of each Order. The other numbers refer to the Genera of each Class. The last column of the Chart contains a complete list of all the species of the Phenogamous Plants, and of the Felices and Musci in Cryptogamia, with the duration, time of flowering, soil, and situation of each. The names of the Genera in the Orders Algæ and Fungi follow, with such a number of the species as could be embraced in this sheet, thus forming a very complete catalogue of all the indigenous plants of Great Britain.

I. CLASSES.—The Classes are founded upon the number, the proportionate lengths, the connection, or the situation of the Stamens. The first 20 comprehend all the flowers which are obviously hermaphrodite; the 21st, such plants as have stamens on one flower and pistils on another; in the 22d, we find stamens in the flowers of one plant, and pistils in the flowers of another of the same species; in the 23d are found male, female, and hermaphrodite flowers on the same plant; and in the 24th class, the parts of fructification are inconspicuous.—Thus the Classes depend for their existence solely upon the sexual organs, except in the last class, where these organs are not distinctly seen. II. ORDERS.—The characters of this division depend upon the number of the pistils, the presence or absence of a seed-vessel, its shape, on the number and connection of the stamens, or the arrangement of the florets. The Orders in the first 13 classes are taken from the number of the pistils; the 14th, from the seeds being naked or covered; the 15th, from the shape of the seed-vessel; the 16th, 17th, and 18th, from the number of stamens; the 19th, from the arrangement of the florets; the 20th, 21st, 22d, and 23d, from the number and connection of the stamens; the orders of the 24th class are formed of natural families. III. GENERA.—Nature has connected the vegetable tribes by certain affinities or resemblances, and these resemblances have been made the foundation of Genera, to facilitate the knowledge of plants. To distinguish the Genera, it is necessary to describe accurately all the seven parts of fructification; and such a description is termed the generic character. The essential character of a genus depends upon some peculiarity in the structure of the flower, in which the plants of a genus agree with one another, and which distinguishes them from every other, and is most frequently taken from the calyx or corolla, or from the nectarium when present. The relative situation, proportion, integrity, or division of these parts,—the number and depth of these divisions,—whether toothed, cleft, parted, or in distinct leaves, constitute the essential distinction.

IV. SPECIES.—By a Species is meant each particular plant belonging to a genus, which retains its peculiar characteristic marks unchanged when raised from seed. They are, however, liable to vary, by culture, in colour, and some accidental circumstances. Specific distinction is founded on peculiarities of the stem, branches, leaves, inflorescence, roots, the presence or absence of down or thorns, the duration of the plant, &c. The figures within brackets, in the column containing the Species, refer to the Genera—the other figures indicate the month or months of flowering, January being the first. The following abbreviations are used in describing the duration, time of flowering, and soil or situation of the plants.

⊙	Annual
♂	Biennial
♃	Perennial
♄	Tree or shrub
A.	Anglesea
a.	Alpine
b.	Banks
ba.	Barren or sterile
bg.	Boggy or fens
bd.	Borders
br.	Branches
bu.	Bushy
cy.	Clayey or tenacious
c.	Calcareous
ch.	Chalky
cf.	Cliff
cl.	Clover
clt.	Cultivated
C.	Cornwall
Cm.	Cambridgeshire
cn.	Corn
cm.	Commons
co.	Coast
cr.	Clear
di.	Ditches
dp.	Deep
d.	Dry
D.	Devonshire
du.	Dunghills
el.	Elevated
eg.	Edges, or margins
e.	East
E.	England
f.	Floating
fi.	Fields or parks
fr.	Frequent
G.	Guernsey
Gr.	Grampian
gr.	Gravelly
gy.	Grassy
gv.	Graves
g.	Grounds
h.	Hedges
he.	Heaths
hi.	Hills or hillocks
hl.	High or lofty
H.	Highland
hp.	Heaps
in.	Inundated
im.	Immersed
I.	Irish or Ireland
lk.	Lakes
L.	London
mo.	Moist or damp
ma.	Marley
m	Marshes
mg.	Margins
me.	Meadows
mt.	Mountains
mc.	Micaceous
ms.	Mossy
mr.	Maritime
mu.	Muddy
n.	North
o.	Old
os.	Osiers
Ox.	Oxford
pa.	Pastures
pr.	Parasite
pl.	Places
p.	Pools or ponds
pn.	Plains
py.	Plenty or abundant
r.	Rivers
ρ.	Rare
rv.	Rivulets
rd.	Road
rn.	Ruins
ru.	Rubbish
rt.	Roots
rk.	Rocks
rot.	Rotten
rf.	Roof
sa.	Sandy or sand
sl.	Salt
S.	Scotland or Scottish
s.	Sea, or near the sea
si.	Soil
sit.	Situations
sh.	Shore
sd.	Shady
ς.	South
sp.	Spongy
sg.	Stagnant
st.	Stony or stones
sw.	Swamps
su.	Sunny
th.	Thickets
tr.	Trees
tk.	Trunks
tu.	Turfy
ws.	Waste
w.	Water
wt.	Wet or watery
W.	Wales
wd.	Woods
wl.	Walls
ω.	West
Y.	Yorkshire

Example—(1) Vulgare, ♄ 5,6 h. th. is the first species in the Class Diandria, Monogynia, Ligustrum, and is read Ligustrum Vulgare, a shrub, flowers in May and June, found in hedges and thickets. (12) Palustre, ♃ 6 7 sp. bg. si. is the last species in the Class Icosandria Polygynia, and is read, Comarum Palustre, a perennial, flowers in June and July, inhabits a spongy boggy soil.

Plants, in general, are composed of Root, Stem, Inflorescence, Fulcra, Flowers, and Fruit.

ROOTS.

THE RADIX or Root consists of two parts—the *Caudex* or Stock, and the *Radiculæ* or Small Fibres: it is commonly fixed in the earth, and imbibes the principal nourishment of the plant from the soil. The Roots of some plants exhale or give out certain excrementitious matter, which impregnates the surrounding soil, and has led some Physiologists to suppose that the Roots of all Plants possess similar functions. The small Fibres, or true roots, consist nearly of cellular substance; and are seemingly a continuation of the vessels which convey the nourishment of the Plant into the system of circulation. The solid portion of the Root is similar in composition and structure to the Stem; and although the chemical changes which the imbibed juices undergo in the Root may not be fully understood, yet the wonderful changes which these juices experience in passing through the vascular system of the Plant are evident, and point out the importance of the Root in the economy of the vegetable. The various kinds of Roots are, the

Articulatus, when the root is jointed, as in *Wood Sorrel*. 14
Bulbus, buds under ground. They may be scaly, 7, coated, 11, solid, 2, lateral, double, compound, as in *Lilium, Allium*, &c.
Dentatus, when fleshy branched roots have tooth-like processes. *Coral-rooted Ophrys*, 12
Fibrosus, when the root consists of a number of small fibres. *Poa*. 1
Fusiformis, when spindle-shaped, tapering gradually like the *Carrot* or *Beet*. 4
Granulatus, forming small round bodies, as in *Saxifraga granulata*. 6
Horizontalis, when lying horizontally on the ground, as in *Polypodium*. 3
Napiformis, when the knobs are round, like the *Common Turnip*.
Palmatus, hand-shaped, divided into three or more longish knobs. *Orchis latifolia*.
Præmorsus, when the *Caudex* appears as if bitten off, as in *Devil's Bite*. 10
Ramosus, when divided into many branches, as in most trees, &c.
Repens, creeping under the surface of the earth, and at intervals pushing up stems. 5
Squamosus, when the *Caudex* is covered with scales. *White Lily*. 7
Testiculatus, when two egg-shaped knobs grow together. *Orchis Moria*. 9
Tuberosus, when fleshy knobs adhere to the *Caudex* or to the fibres. *Dropwort*. 8

STEMS.

THE STEM is the principal trunk or body, which supports the branches, leaves, &c., of a vegetable; and may be either simple or branched. The Branches may be placed opposite or alternate, scattered or close, compact or spreading, diverging or divaricated, reflected, deflected, or retroflected. Stems may be bent or procumbent, straight or twining, creeping or climbing; they may be naked or covered with leaves, scaly or covered with bulbs, &c. In figure, they may be round or angular, compressed or half-round, woody, herbaceous, fleshy, or firm, smooth or rough. The Trunks of Trees and Shrubs are composed of a *Medulla* or Pith, the *Lignum* or solid wood, and the *Alburnum*, the soft new layers of wood; covered with three different coats of bark, viz. the *Liber*, the *Cortex*, and *Epidermis*. The stems of plants are described as follows:

Acaulis, when the stem is wanting. *Silene Acaulis*.
Caulis, peculiar to herbaceous plants, the principal stem elevating the leaves and flowers. 13
Confertus, branches thick set or crowded without order.
Coractatus, rising at acute angles from the stem, and sweeping nearly close up by it.
Culmus, the proper stem of the grasses, it may be simple or branched, knotted or knotless, bristle-like, with or without a sheath. 130
Dichotomus, the branches dividing regularly and repeatedly into pairs. *Missletoe*.
Fastigiatus, the branches at the bottom rising to an equal height with those at the top of the stem.
Frons, when the stem, leaf, and fructification are united. *Ferns*. 19
Pedunculus, the flower-stalk, supporting only flowers. 17
Petiolus, the leaf-stalk, bearing only leaves. 18
Scapus, a stem elevating the flowers only, as in the *Narcissus*, &c. 207 b.
Seta, the stem which bears only the fructification of mosses. 142 a.
Stipes, the stems of mushrooms, palms, and the pappus of some seeds. 141, 172
Surculus, the stem which bears the leaves of the mosses. 140
Truncus, the main stem or trunk of trees and shrubs.

INFLORESCENCE.

INFLORESCENTIA or INFLORESCENCE.—The particular mode of the arrangement of the Flowers affords one of the most permanent and certain characters of distinction among Plants, as the mode of Inflorescence seldom or never varies in any one species; although the number of the Flowers, in any of the following modes, would be a very uncertain character to found specific distinction upon. Under this term are comprehended the various modes of arrangement which Flowers assume, such as the

Amentum, when the flowers are thickly set upon a slender foot-stalk, with intervening scales, as in *Hazel, Birch, Oak*, &c. 131
Capitulum, when a number of flowers stand thick on one stalk, either of a spherical or roundish form, like a head. 132
Corymbus, when the foot-stalks of a *Racemus* are lengthened out to a flat surface. *Iberis*. 138
Cyma, a number of branched foot-stalks rising from a common point, as in *Elder*, &c. 136
Fasciculus, an irregular cluster or bundle, as in *Sweet William*.
Panicula, when a number of flowers are standing on long foot-stalks, unequally divided, as in *Poa* and many of the *Grasses*. 134
Pileus is the cap or top of a mushroom, supported by the stalk. 133 c.
Racemus, when every flower has a short foot-stalk, as in the *Currant*, &c. 151
Spadix, when all the flower-stalks are contained in a *vagina*—peculiar to *Palms*, and a few other plants. 152 a.
Spicula, when a number of flowers have only one *Calyx*—peculiar to *Grasses*. 153
Spica, a spike, a number of flowers without foot-stalks sitting on the stem. *Wheat*. 154
Thyrsus, when a panicle is condensed into an ovate form, as in *Privet*.
Umbella, a number of flower-stalks, of one length, issuing from a common centre, like the radii of a circle, as in *Hemlock*, they may be simple or compound. *Universal Umbel*, 161, a a. *Partial Umbel*, b b. *Involucrum*, c c. *Involucellum*, d d.
Verticillus or *Whirl*, when flowers encircle the stem in rings. *Mentha*. 157

Peculiar to Mosses.

Flos Capituliformis, formed like a little head or sphere.
Flos Disciformis, the flower formed like a star, as in *Polytrichium*.
Flos Gemmiformis, when the figure of the flower is like a swollen bud

FULCRA.

THE FULCRA or Props serve for defending, clothing, and keeping weak Plants erect, &c. Under this head we understand the other parts of the Plant, exclusive of the Root, Stem, Leaves, and Flowers, such as the

Aculeus, a prickle, formed from the bark, as in the *Rose, Briar*, &c. 26
Ampulla, a hollow bladder, found at the roots of some water plants. *Utriculariæ*. 15
Annulus, a thin membrane, like a ring, surrounding the stalk of the fungi. 133 a.
Arista, the awn or pointed beard of some of the *Grasses*.
Ascidium, a cylindrical hollow leaf, containing water, sometimes completely covered, opening occasionally. *Nepanthes*. 163
Bractea, floral leaves, situated among the flowers, generally differing in shape and colour from the leaves of the plant. *Orchis*. 23
Chirrus, a slender, twisted, thread-like body, which serves weak plants to clasp other bodies for support: *Vine*. 21
Gemma, the bud which contains the embryo of the leaves and flowers. 143
Glandula, a round body which either secretes or transpires fluids. 158
Gongylus, a round hard body in the fuci, which, on the death of the old plant, becomes a new one
Indusium is a thin membrane which covers the flowers or seeds of ferns. 171
Ligula, a small transparent strap, situated on the margin of the *vagina*, and at the base of the leaf. *Poa*, &c. 135
Ochrea, a leaf-like body, surrounding the flower-stalks of some grasses.
Pili, slender fine bodies, like hair, covering some plants. 22
Propago is the bud of mosses, which Linnæus considers as the seed.
Ramentum, small bristle-shaped, brown-coloured, thin leafets, without order on the stem, as in *Fir*, &c.
Spina, a thorn, formed from the woody part of the plant. *Cockspur Thorn*. 25
Stipulæ, small leaves or scales situated at the base of some of the foot-stalks of leaves. *Vicia, Lathyrus*. 20
Vagina, the prolongation of a leaf which rolls itself round the stem. *Bistort*.

LEAVES.

THE LEAVES are organs in a Vegetable, possessing functions nearly analogous to those of the lungs of Animals, affording an extended surface for the absorption and transpiration of air and moisture; they also assimilate the juices and fit them for nourishing and enlarging the various parts, and they likewise give shade to the Vegetable.

The Leaves are a continuation and expansion of the same vessels and matter which compose the Root, Stem, Branches, and Foot-stalks; and, in many plants, show their wonderful susceptibility of certain stimuli, exhibiting the most striking phenomena in changing their direction by the contraction or elongation of their fibres. They may be simple or compound; and are distinguished and denominated from their connection, situation, figure, substance, position, direction, or attachment. On examining a simple leaf, its base and apex, its circumference and margin, its upper and under surfaces, its substance and situation, must be considered; and are termed,

Acerosum, needle-shaped, a rigid linear leaf like the *Pinus*. 116
Acinaciforme, shaped like a scymitar, a thick leaf with one side sharp and the other broad. 88
Acuminatum, when the point is lengthened out. 61
Acutum, acute, when tapering gradually to a point. 60
Adversum, when the margin is turned towards the stem.
Alterna, when placed alternate. 119. *Articulatum*, jointed. 118
Amplexicaule, when the lobes of a *sessile* leaf embrace the stem. 111
Anceps, when a compressed leaf is sharp on both edges. 41
Angulare, of various angles. *Tri-* 34 *Quad-* and *Quinquiangularis*, three-, four-, or five-angled, &c.
Auriculatum, ear-shaped, nearly *hastate*, but the lobes rounded and smaller.
Axillare, when standing at the origin of the branch.
Bullatum, when the parts raised between the veins are like blisters
Canaliculatum, when the mid rib is furrowed or channeled. 8
Capillare, when like a hair. *Pilosum*, hairy, long fine hairs. 87
Carinatum, when the mid rib is formed like the keel of a ship.
Carnosum, fleshy, when there is a pulpy soft substance, as in *Houseleek*.
Cartilaginum, when the margin is harder than the disk of the leaf. 55
Caulinum, when attached to the principal stem.
Ciliatum, fringed with long hairs, distant from each other. 66
Compressum, compressed, when a thick leaf is flattened on both sides.
Connatum, when opposite *sessile* leaves are closely united at their base into one substance. 109
Concavum, hollow in the middle of the leaf.
Conferta, when so crowded that the stem cannot be seen.
Cordatum, heart-shaped. *Lamium album*. 47 *Obcordatum* inversely heart-shaped. 38
Crenata-acuta, sharply notched, points at right angles with the axis of the leaf. 68
Crenata obtusa, bluntly notched as above. 69 *Crenata-duplicata*, doubly notched. 54
Crenatum, notched, with small teeth, whose points stand at right angles with the mid rib.
Crispum, when fuller on the margin than the middle, the former curled. 58
Cucullatum, when rolled up like a hollow cone.
Cuneiforme, when blunt-pointed, and tapers to the base like a wedge. *C. Emarginata*. 81
Cuspidatum, when the *acuminate* leaf ends in a bristle.
Dædaleum, when the apex has a large circuit, but is cut off and ragged.
Decurrens, when the substance of the leaf runs down the stem. 112
Decussata, when set in four rows, forming a St Andrew's cross.
Deltoides, when short and bounded by three broad surfaces, like the letter delta 84
Demersum, when the leaves are found below water.
Dentatum, when small distinct teeth are placed on the margin. 51
Dentato-sinuata, having wide indentations, with small ones on them.
Dependens, when the base turns to the zenith and the apex to the earth.
Depressum, when the upper and under surfaces of a fleshy leaf are pressed together.
Disticha, when the leaves stand in two rows, as in *Yew* and *Pitch Fir*.
Dolabiforme, when a fleshy leaf is compressed and shaped like an axe. 77
Emarginatum, notched deeply, at the apex a portion taken out. 79
Enervium, when no nerves rise from the base, nerveless.
Ensiforme, sword-shaped, like the Iris.
Erectum, when the leaf forms a very acute angle upwards with the stem. 127
Erosum, gnawed, unequally sinuated, as if bitten at the edges. 43
Fasciculata, when the leaves stand in tufts, as in *Larch*, &c.
Fissum, cleft, when there is merely a split or cut half way down.
Flabelliforme, when shaped like a fan.
Florale Bracteæ, when standing close by the flower.
Frons-articularis, the jointed stem of a *Fern*. 95
Gibbosum, when both surfaces are convex, or seem swelled out.
Hastatum, halbert-shaped. 42 *Hispidum*, beset with rigid bristles. 73
Horizontale, when the upper surface of the leaf makes a right angle with the stem. 125
Imbricatum, when one leaf overlaps another, like tiles on a house. 117
Inæquale, unequal, when one lobe is larger than the other.
Incurvum, when bent in at the point towards the stem.
Inflexum, bent upwards and inwards at the apex. 128
Laciniatum, torn, when there are several irregular clefts in an oblong leaf. 46
Lacunosum, when the surface is hollow between the veins, pitted.
Lanceolatum, shaped like a spear, gradually narrowing to the point. 31
Lobatum, deeply divided into lobes. 57 *Trilobatum*, three-lobed. 39
Lineare, of equal breadth from the base to the apex, margins nearly straight. 32
Lineatum, streaked with depressed but not always parallel lines.
Linguiforme, when a compressed leaf is somewhat tongue-shaped. 74
Lunatum, moon-shaped, like the moon in her third quarter. 48
Lyratum, lyre-shaped, margin bayed, extreme segment large and round. 89
Membranaceum, like a membrane, when without any pulpy substance
Mucronatum, when a blunt ended leaf ends in a bristle.
Natans, when the leaf swims, as in *Water Lily*.
Nervosum, when the vessels run in parallel lines from base to apex. 83
Obliquum, when in a direction between horizontal and perpendicular.
Oblongus, considerably longer than broad. 30
Obtusum, when the end of the leaf is blunt. 59
Obtusum mucronatum, blunt, but terminating with a point. 62
Opposita folia, when the leaves are set opposite. 120
Orbiculatum, when the circumference is in all points at equal distances from the centre. 40
Ovatum, egg-shaped, nearly oval, but the diameter greater at the base than at the apex. 28 *Ovale*, oval shaped. 29
Paleaceum, when the foot-stalk is attached to the margin.
Palmatum, when more than half-way divided into five or six finger-like lobes. 44
Panduriforme, fiddle-shaped, having a deep curve or bay on both sides of an oblong leaf. 129
Parabolicum, a quadrangular figure, with two obtuse and two acute angles
Partitum, parted, divided down beyond the middle. 49
Papillosum, covered with scales or fleshy pimples. *Eryngium*. 75
Peltatum, when the foot-stalk is inserted into the disk of the leaf. 115
Perfoliatum, bored through, the stem passing through the leaf. 110
Petiolatum, when a leaf has a footstalk. 114
Pinnatum-abrupte, a winged leaf ending with an odd one. 97
Pinnatum-articulatum, winged, the common foot-stalk jointed. 94
Pinnatifidum, when the incisures or bays go almost down to the mid rib. 45
Planum, when the upper surface forms an even plane.
Plicatum, when the leaf is laid in regular folds. 70
Præmorsum, when the point seems as if bitten off.
Punctatum, dotted, having dots or points instead of veins or ribs.
Quaternum, four leaves round the stem. 121
Radicale, when they spring from the root, as in *Viola odorata*.
Radicans, when the leaf strikes roots.
Ramosum, when rising from the branches.
Reclinatum, when standing with its point towards the earth. 124
Remota, when separate from one another by considerable interstices.
Reniforme, kidney-shaped. *Ground ivy*. 35
Repandum, serpentine, small sinuses without angles on the margin. 50
Reticulatum, when the veins are like net-work.
Retrorsa-sinuata, the wide indentations pointing to the base of the leaf. 65
Retusum, slightly and bluntly notched at the end.
Revolutum, when rolled backwards with its point to the stem. 123
Rugosum, wrinkled, when the surface is raised between the veins. 67
Runcinatum, when the incisures of a *pinnatifid* leaf are pointed and bent downwards.
Sagittata-Cordata, something between arrow- and heart-shaped. 37
Sagittatum, arrow-shaped, the lobes pointed and bent outward like barbs 36
Seminale, when they grow out of the seed lobes when germinating.
Serratum, when the point of the teeth are turned to the apex like a saw. 52
Serratum-duplicatum, doubly sawcut, small teeth on the larger. 53
Sessile, when fixed to the stem, and there is no foot-stalk. 113
Sinuatum, sinuated, when shallow bays are cut out of the margin. 63
Sparsa, when they stand thick on the stem, scattered without order
Spinosum, when set with spines, as in the *Thistle*.
Squarrosa Laciniatum, when the incisures run in every direction, as in the *Thistle*.
Stellata sive Verticillata, when several are set star-like round the stem. 122
Subulatum, awl-shaped, a linear leaf sharply pointed. 33 *Subrotund*, somewhat round. 27
Sulcatum, furrowed, plowed with deep lines. 82
Teres, round, when formed like a cylinder. 78
Terna, when three leaves stand round the stem.
Tetragonum, when a long leaf is bounded by four narrow surfaces.
Tomentosum, downy, covered with a cotton-like substance. 80
Triquetrum, three-sided, when bounded by three narrow long sides. 85
Truncatum, when the point of a leaf is cut off or ends in a straight line. 56
Tubulosum, when hollow within, like the leaves of the *Onion*.
Uncinatum, when a leaf has a hook-shaped appearance.
Undulatum, waved, when the margin is bent upwards and downwards.
Vaginatum, sheathed, or sheathing the stem. 108
Venosum, when the fibres are branched from the mid rib. 72 *Avenium*, having no veins.
Verticale, perpendicular, forming a right angle with the horizon.
Verucosum, warty, having little lumps or warts on the surface.

When there are several leaves on one foot-stalk, they are termed Compound Leaves. Under the following heads will be found most of the varieties which compound leaves assume, with regard to arrangement.

Bigeminatum, when a divided leaf-stalk bears two leaves at each point.
Binatum, when the leaves stand in pairs. 71 *Bipinnatum*, double pinnated. 107
Biternatum, when a foot-stalk separates into three, bearing three leaves on each point.
Conjugata pinnatum, when a foot-stalk divides, and each pair makes a pinnated leaf. 103
Decompositum, when the primary leaf-stalk divides, each division forming a compound leaf.
Digitatum, when the bases of several leaves rest on one kindred foot-stalk. 75
Digitato-pinnatum, when four or five simply pinnated leaves are fixed to one foot-stalk.
Frons-pinnatus, a winged frons of *Fern leaf*. 96
Patens, when expanding in a direction nearly horizontal. 126
Pedatum, when there is some resemblance to the foot of a bird, as in *Black Hellebore*. 101
Pinnatum, winged, when a series of leafets, on the same plane, are fixed to one foot-stalk. 100
Pinnatum chirrosum, winged and terminating with a tendril. 93
Pinnatum-foliolis-alternis, the leafets placed alternately on the foot-stalk. 104
Pinnatum-foliolis-decursivis, winged leaf, leafets running down the stem. 90
Pinnatum foliolis-interruptis, smaller and greater leafets intermixed. 91
Quinatum, when five leaves are fixed to one foot-stalk.
Supra Decompositum, when more than doubly compound
Ternatum, when three leaves are supported on one foot-stalk. 105
Ternatum-duplicatum, doubly ternate, or twice three leaves, from one stem. 98
Ternatum sessile, a ternate leaf without foot-stalks. 99
Trigeminatum, when the former has two leaves at the division of the principal stalk.
Tripinnatum, when several doubly pinnated leaves are fixed to one common foot-stalk. 106.
Tripinnatum Abruptum, triply pinnated, or thrice winged abruptly. 106
Tripinnatum Terminale, triply pinnate or thrice-winged, terminating with an odd leaf. 92
Triternatum, triply ternate, or three times three leaves. 102
Triternatum, when a foot-stalk is divided into three, at each point again divided into three, these nine points bearing each three leaves.

The following are the parts of FRUCTIFICATION, *or the* FLOWERS *and* FRUIT; *with that Appendage, sometimes met with in Flowers, termed the* NECTARIUM.

THE Parts of Fructification are seven in number, viz. the CALYX, COROLLA, STAMINA, PISTILLUM, PERICARPIUM, SEMEN, and RECEPTACLE. These parts of the Flower, afford the most permanent marks or characters of distinction; and may indeed be looked upon as so many vegetable letters inscribed on the physiognomy of plants by the hand of God—the knowledge of which may be acquired with ease and celerity; and, when rightly understood, will lead, with safety and certainty, to the true knowledge of that most extensive volume of Nature's productions, the Vegetable World.

Flowers are either single or double, simple or compound. A flower is said to be single when all its parts are distinct and natural; double, when these become monstrous, multiplied, mutilated, or deformed. When a calyx contains only one set of stamens and pistils, &c., it is a simple flower; when a number of florets are contained within one common calyx, it is termed a compound flower. The florets in a compound flower may be either male, female, neuter, or hermaphrodite: when the latter, the stamens are five in number, united by their anthers round one pistil. The compound flowers naturally associate themselves into three distinct beautiful orders, viz. the *Discoideæ*, when the florets are all *Tubular* and of equal length, as in *Tansy*; *Semiflosculosi*, when all the florets are *Ligulate*, or tongue-shaped, like those in *Dandelion*; and the *Radiati*, when, like the *Mountain Daisy*, the florets in the centre are *Tubular* and those in the margin *Ligulate*. They are distinguished into genera by the figure and leaves of the calyx, by the structure and appearance of the *Receptacle*, and by the presence or absence of down or chaff on its surface, or on the seeds.

CALYX.

1st, THE CALYX, or FLOWER-CUP. The empalement or outer covering of the Flower is considered by Linnæus to be the termination of the *cortical epidermis* or outer bark of the plant; which, after accompanying the trunk through all its branches, breaks out with the flower, and is present in the fructification in this new form. The Calyx is mostly of a thick coarse substance, and generally green; while the Corolla is a delicate membrane, of a much finer texture, and is blue, red, or some other colour distinct from that of the leaves or stem of the plant. The use of the Calyx is seemingly to enclose, defend, support, and retain in their proper situation, the less hardy but more essential organs of fructification; it differs as to situation, figure, and number of its parts, and is termed accordingly, from its various appearances,

Amentum, catkin, chaff-like scales, among the flowers, as in *Hazel, Willow*, &c. 131
Anthodium, or *Calyx communis*, is a calyx which contains a number of little florets, so as, in appearance, to constitute only one flower, as in the *Mountain Daisy*, &c. 156
Auctus sive Calyculatus, a calyx, having a calyx or little cup at the base, as in *Dianthus*. 162
Calyptra, a veil, like an extinguisher, as in some *Mosses*. 142 b.
Perianthum, when it embraces the flower, as in *Rose, Pink*, &c. 212 a.
Gluma, a husk, the chaff of *Oats, Barley, Wheat*, and most *Grasses*. 137
Involucrum, a cover or fence, when standing remote from the flower, as in *Scabiosa*. 24 *Hemlock*. 161 c c.
Spatha, a sheath bursting lengthways, and allowing the flower-stalks to put forth, as in *Snowdrop, Narcissus*, &c. 152 b.
Volva, a curtain surrounding the stem and attached to the pileus or top of many of the Fungi. 133 b.

Modifications of the Calyx.

Abbreviatus, when considerably shorter than the corolla.
Caducus, falling off before the flower. *Papaver Somniferum*.
Deciduus, falling off at the same time with the flower. *Tilia Europæa*.
Dentatus, when the segments on the margin are not deeper than the fourth of the tube.
Duplex, double, as in *Malva, Althea*, &c. 164
Fissus, when the segments are cut down to the middle of the tube.
Integer, entire, not cut on the margin. 155
Monophyllus, consisting of one leaf. 147 *Polyphyllum*, consisting of two or more leaves, &c. 150
Partitus, divided beyond the middle and near to the base.
Persistens, remaining after the flower falls.

COROLLA.

2nd, THE COROLLA—the Wreath, Little Crown, or Blossom—the term given by Linnæus to the beautiful painted leaves of the Flower. The most conspicuous part of the Fructification, standing within, and supported by, the Calyx, is an expansion of the inner bark of the plant, generally consisting of three parts, viz. *tubus* the tube, *faux* the throat, and the *limbus* or expanded part of the blossom. These parts vary as to figure, situation, number, &c. Flowers may be of one or more *petals* or blossom-leaves, and are termed Monopetalous, Dipetalous, Tripetalous, Tetrapetalous, Pentapetalous, Hexapetalous, and Polypetalous. When a flower becomes double it is a monster. MONOPETALOUS FLOWERS are termed,

Campanulata, rounded at the base, and gradually widening towards the mouth like a bell. 146
Diformis, when the tube, after expanding, divides into unequal lobes. *Lonicera*.
Globosa, when, like a sphere, it widens out gradually to the middle. *Vaccinium*. 144
Hypocrateriformis, when the tube is long, and the rim flat and broad, like a salver, *Phlox*. 145
Infundibiliformis, an obverse cone, flat and turned out at the rim like a funnel. *Datura*. 139
Ligulata, when a short tube terminates in a long expansion on one side, like a tongue, as in *Dandelion*. 148
Personata, when the lips of a ringent corolla are close shut up, and the stamens and the pistils masked. *Snap-dragon*. 149
Ringens, a corolla having two segments, like the lips of an animal gaping. *Lamium*. 159
Rotata, when the tube is very short, and the rim flat like a wheel. *Verbascum* 160
Tubulosa, when like a hollow pipe of nearly equal diameter throughout. *Red Valerian*. 165
Unilabiata, upper or under lip of a ringent corolla is wanting—one-lipped. *Ajuga*. 167

POLYPETALOUS COROLLAS are termed,

Caryophyllacea, when five petals are shaped and disposed as in *Clove, Pink*, &c 166
Cruciata, when four petals stand opposite to each other, cross-like, as in *Stock, Mustard*, &c. 179
Irregularis, consisting of two or more petals of different lengths and inclinations.
Liliacea, when plants have one, three, or six petals, three or six stamens, a bulbous root, and leaves with longitudinal fibres, as in the *Crocus, Lily*, &c. 195 a a.
Malvacea, when five petals are attenuated downwards, so as to unite close at the base, as in *Mallows*, &c. 164
Papilionacea, butterfly-shaped, having four petals, the *vexillum, carina*, and the two *alæ*, as the *Pea*. 177
Rosacea when the petals are pretty round and have no claws at the base, like the *Rose*. 193

STAMINA.

3rd, THE STAMINA or STAMENS are thread-shaped processes, with little tops, generally surrounding the seed-bud, and constituting one of the essential parts of the flower (the male organ), said to be formed of the woody part of the plant, consisting of three parts, viz. the Filament, the Anther, and the Pollen. The Stamens vary as to situation, figure, number, proportionate lengths, and connexion.

The FILAMENT is that part which elevates the Anther, and is described in terms suited to its various appearances, as

Articulatum, when there are evident joints or commissures.
Capillare, equal thickness, as fine as a hair. *Filiforme*, thicker than a hair, thread-like. 173
Conniventia, when the filaments bend to one another at their tops.
Cuneiforme, compressed, tapering to a point, wedge-like. *Dilatatum*, broad, widened out. 175
Declinata, when, without describing a large circle, they turn downwards.
Geniculatum, bent at the joints like a knee. *Incurvum*, bent in from the middle, bow-like. 176
Pedicellatum, when standing on foot-stalks, as in *Sage*.
Plumosum, feathery—*Pilosum*, hairy—*Nudum*, naked—*Librum*, loose—*Connata*, joined.
Subulatum, like an awl, thicker below than above, gradually tapering. 181, 212 e e.

The ANTHER is that little bag or cellular body, containing the Pollen or fecundating powder, 212 g. which, viewed through a magnifying lens, appears hollow, and filled with a subtile fluid, and varying in figure, as

Adnata, closely attached on both sides to the point of the filament. 174
Apice dehiscens, opening at the top. *Latere dehiscens*, opening or bursting at the side.
Aristata, slender sharp substances, like *awns* of *Barley*. 185 *Muticus*, awnless, beardless.
Bifida, cleft, as in the *Grapes*. 184
Bilocularis, having two cells. *Unilocularis*, having only one cell.
Cristata, crested with cartilaginous points on the sides or base.
Dentata, when there are indentations or teeth on the margin. 183
Didyma, when double, or like two joined together.
Globosa, round like a globe. *Oblonga*, diameter greater one way than the other.
Horizontalis, horizontal. *Incumbens*, lying obliquely on the top of the filament. 182, 212 f f.
Linearis, when long, flat, and of equal breadth, strap-shaped.
Peltata, when circular, flat on both sides, and attached by the middle.
Reniformis, shaped like the kidney of an animal. *Sagittata*, shaped like an arrow.
Sessile, sitting, having no filament. *Stipitatis*, the filament on a foot-stalk.
Versatilis, movable with the wind or any slight cause.

PERICARPIUM.

5th, PERICARPIUM is the Seed-Vessel, or developed Seed-Bud, containing the seeds after fecundation. The Receptacle, or Calyx, performs this office in the Compound Flowers, and in all the Gymnospermia Plants. There are eight distinct kinds of seed-vessels described by Linnæus, viz. the

Bacca, a berry, pulpy without valves, seeds in the pulp, as in *Gooseberry*. 188
Capsula, Capsule, a membraneous vessel containing seed, of various shapes and divisions. 190
Drupa, a pulpy seed-vessel without valves, inclosing a stone, as in *Cherry, Plum*, &c. 187
Folliculus, a distended membrane of one valve, opening at one side. 191
Ligumen, a membrane of two valves, seeds fixed to one suture, as in *Pea*. 197
Pomum, a fleshy or pulpy seed-vessel, covering a capsule containing the seed, as in *Apple*. 198
Siliqua, a long pod with two valves, seeds attached to both sutures. 192
Strobilus, a set of hard-tiled scales, as in the cone of the *Fir*. 189

Willdenow adds the following;

Lomentum, a two-valved seed-vessel, with cells not opening. 203
Pepo, a succulent fruit, the seeds attached to the rind. 206
Samara, a winged fruit, as in *Elm*. 202
Theca, a dry fruit, opening with a lid, 199; and *Nux*, a nut, as in *Hazel, Oak*, &c. 200

RECEPTACULUM.

7th, THE RECEPTACULUM or RECEPTACLE, the place upon which the other parts of the Flower rest; it may be proper or common, bearing one or more flowers; it may be flat or spherical, dry or hard, soft or fleshy, smooth or covered with hair; and is sometimes the esculent part of the fruit, as in the *Strawberry*, &c., and is termed

Apiculatum, when covered with fleshy erect short points, prickly.
Conicum, rising to a point in the centre. 196 *Planum*, flat. 207 a
Convexum, somewhat elevated in the centre. 162
Favosum, when pits, like the cells of a honeycomb, cover the surface.
Glabrum, smooth, destitute of hairs or points.
Paleaceum, when set with scales or short leaves like chaff.
Pilosum, set with short stiff hairs. *Villosum*, set with long soft hairs.
Placenta, the place to which the individual seeds adhere.
Punctatum, when the surface is covered with small punctures.
Scorbiculatum, when there are deep round pits on the surface.
Setaceum, covered with rigid bristles. *Paleaceum*, covered with small leaves or scales.
Tuberculatum, when covered with small round eminences, or warty-like substances.
Varium, when the centre is smooth, and the rim chaffy, hairy, or prickly.

PISTILLUM.

4th, THE PISTILLUM or PISTIL, the female, or second essential organ of the Flower, consisting of three parts, viz. the Germen or rudiment of the future fruit; the Stylus, the style or shaft, seated on the Germen; and the Stigma or top of the style; covered in general with numerous inhaling tubercles, in most plants only visible through the microscope, and may vary in number, figure, &c. The GERMEN or Seed-bud is

Angiospermia, the seeds contained in a covering. *Gymnospermia*, the seeds naked.
Germen inferum, sive flos superus, when the germen is below the calyx and corolla.
Germen superum, sive flos inferus, when the germen is above the calyx or corolla. 212
Monospermum, one; *Disperma*, two; *Tetrasperma*, four; *Polysperma*, many seeds.
Pedicellatum, when furnished with a foot-stalk. 169
Sessile, sitting, when the seed-bud has no foot-stalk. 186

The STYLE or Shaft may be

Capillaris, slender, like a hair of equal thickness.
Clavatus, when thicker above than below, club-shaped. 212 c.
Crassus, gross, when very thick and short.
Deciduus, falling off immediately after impregnation.
Dichotomus, divided into two branches, each of which is again divided.
Lateralis, attached to the side of the germen. *Terminalis*, standing at top of the germens.
Marcescens, first withering, and then falling off. *Persistens*, when it does not fall off.
Multifidus, many-cleft. *Setaceus*, slender, but rigid like a bristle
Subulatus, thicker below than above, and sharp-pointed like an awl.

The STIGMA or Summit may be

Acutum, terminating in a sharp point. *Obtusum*, terminating in a blunt point.
Capitatum, headed, when globular or hemispherical.
Concavum, when hollow in the top, like the *Violet*.
Convolutum, when the divisions are rolled inwards.
Dentatum, when set with fine teeth.
Emarginatum, when flat and notched on the summit.
Pencilliforme, consisting of thick close fleshy fibres, like a pencil.
Petaloideum, when it has the appearance of a petal. 170
Revolutum, the divisions rolled backwards. *Spiralis*, when rolled up like a watch spring.
Uncinatum, hooked at the point. *Trifidum*, three-cleft. 212 d.

SEMEN.

6th, THE SEMEN, or SEED, is the essence of every fruit, and the rudiment of a new vegetable, rendered fertile by the aspersion of the Pollen. The parts of the Seed are the

Ala, a membrane or wing found attached to the back or margin of some seeds, or seed vessels [illegible]
Arillus, an ill-defined membrane, covering the seed, and sometimes the pericarpium.
Corculum, the little heart, 210 b. consisting of the rostellum, 210 c. and plumula, 210 d. the former descends into the earth and becomes the root, and the latter ascends and becomes the stem.
Coronula, a little crown or pappus, attached to the seed of the compound flowers.
Cotyledones, the seed-lobes, changing at germination into leaves. 210 a a.
Hilum, an external scar or mark, indicating the place of the corculum. 210 e e.
Tunica externa, the outer. *Tunica interna*, the inner integuments or coverings of the seed.

PAPPUS, down, a feathery or hairy crown on the seeds of most compound flowers.

Capillaris vel Pilosus, when very fine, like hairs.
Paleaceus, chaff-like scales or small leaves on the top of the seed.
Plumosus, down divided like a feather. *Tragopogon*. 178
Sessilis, sitting on the seed without foot-stalk. 201 *Stipitatus*, supported by a little foot-stalk. 172
Setaceus, when covered with rigid bristles. *Centaurea Nigra*. 180

NECTARIUM.

THERE is still another important organ met with frequently in Flowers, called the NECTARIUM, or Honey-Cup; the office of which seems to be the secreting or containing the honey of the flower, and affords the best marks of generic distinction. The principal diversities, in form or situation, of this striking appendage may be embraced in the following varieties.

Barba, short hairs or soft bristles at the opening of the calyx or corolla. *Thymus*. 208
Calcaratum, when shaped like a cockspur, as in *March Violet*, &c. 194
Corniculatum, when shaped and crooked like a horn. *Delphinium*. 209
Cucullum, a hollow bag or hood, as in *Aconitum*. 204
Cyathiforme, when formed like a cup, embracing the germen. *Narcissus*. 195 b.
Favosum, when honeycombed, or having pits like a honeycomb. *Fritillaria*.
Fornix, the arch, a small elongation on the tube or throat of the corolla, as in *Anchusa*. 205
Glandulæ Nectariferæ, small glands or round bodies giving out honey. *Cruciform flowers*.
Plicatum, plaited, when some part of the corolla is folded inwards. *Staticæ*.
Pori Nectariferi, small holes or pores giving out honey, as in *Hyacinth*.
Staminiforme, an appearance like stamens, as in *Parnasia Palustris*.
Squamæ Nectariferæ, small scales that secrete honey, as in *Ranunculus*. 211

A Key to the Four Grand Divisions of Linnæus' Sexual System of Botany, illustrated by the Indigenous Plants of Great Britain.

CLASSES.	ORDERS.
1. MONANDRIA. *monos* one, *aner* a man. Plants of 1 stamen and 1 or 2 pistils. Our native plants in this class have nothing but simplicity of structure to recommend them.	1 Monogynia. *monos* one, *gyne* a woman. 2 Digynia.
2. DIANDRIA. The native plants in this class have 2 stamens and 1 or 2 pistils, the flowers are larger and their parts more distinct than in the first class. Some are cultivated for their beauty, others are used at table in medicine, or in the arts.	1 Monogynia. 2 Digynia.
3. TRIANDRIA. Plants of 3 stamens and 1, 2, or 3 pistils; besides a considerable number of very beautiful plants, and a few useful in medicine, this class contains the most important natural family in the whole circle of vegetation—the family of the grasses, with which the Author of Nature has so beautifully carpeted the surface of this globe, and which affords the greatest part of the food of man, and all the phytivorous animals. And in proportion to their importance in the economy of Nature, the solicitude for their propagation and preservation has been most amply expressed; they produce seeds in abundance, and the cropping of their leaves, and the treading on their stems, only tend to spread and increase their roots.	1 Monogynia. 2 Digynia. 3 Trigynia.
4. TETRANDRIA. The Plants in this class are distinguished from those in Didynamia by their 4 stamens being of equal lengths, and by their flowers being of distinctly different natural orders. Some of the plants of this class possess medicinal qualities. The Madder affords a spiritous tincture, used as a stimulant and deobstruent in obstructed Catamenia, &c.; it is also much used in dying, and forms a considerable article of commerce. The root of the Cheese Rennet possesses similar properties; its leaves coagulate milk, and were formerly considered an efficacious remedy in epilepsy. The dried Woodruff gives out a very permanent aromatic odour, somewhat similar to the Tonquin bean. The leaves of the Holly have cured intermittent fever; and an infusion of them drank as tea, is said to be a preventative against the gout.	1 Monogynia. 2 Digynia. 3 Tetragynia.
5. PENTANDRIA. Plants of 5 Stamens not united. This class is distinguished from Syngenesia, by its flowers being simple, while those of Syngenesia are compound. If we except the genus Ribes, there are few native plants belonging to this class, which bear berries fit for eating, and all the *monopetalous* plants, with 5 stamens, whose fruit is a berry, have been found to be poisonous. Indeed, a very considerable number of the plants in this class possess active properties, and several of them are very strong poisons, such as the Deadly Nightshade, Bittersweet, Thornapple, Henbane, Hemlock, Dropwort, &c. However, the intrepid and ingenious research of Baron Stoerk could turn their deleterious properties to sanative purposes; for by a series of bold and well conducted experiments, correctly marked in their results, he changed the baneful qualities of these potent herbs into ineffable blessings to the human species; and the most excruciating pains that flesh is heir to have been speedily relieved, sight given to the blind, and many obdurate cases of rheumatism, scirrhus, cancer, &c. (diseases before deemed irremediable) have been completely cured by preparations of these invaluable plants.	1 Monogynia. 2 Digynia. 3 Trigynia. 4 Tetragynia. 5 Pentagynia. 6 Hexagynia. 7 Polygynia.
6. HEXANDRIA. In this class the flowers have six stamens all nearly of the same length, and 1 to 4 pistils, but none of the genera have four petals like those we find in Tetradynamia.	1 Monogynia. 2 Digynia. 3 Trigynia. 4 Polygynia.
7. HEPTANDRIA. Plants of 7 stamens. There is only one native genus in this class.	1 Monogynia.
8. OCTANDRIA. The native plants of this class have 8 stamens, and 1, 3, or 4 pistils. Some of the Ericas are much admired for their beauty, and the Daphne is an active alterative medicine.	1 Monogynia. 2 Trigynia. 3 Tetragynia.
9. ENNEANDRIA. Plants of 9 stamens. This class contains only one indigenous plant.	1 Hexagynia.
10. DECANDRIA. The native plants in this class have 10 stamens, and 1, 2, 3, or 5 pistils. The genus Dianthus has a number of beautiful species, the Saponaria has been used with good effect in some diseases as an alterative medicine, and the Oxalis yields the oxalic acid in a certain state.	1 Monogynia. 2 Digynia. 3 Trigynia. 4 Pentagynia.
11. DODECANDRIA. Plants from 11 to 19 Stamens, and 1, 2, 3, or 12 pistils.	1 Monogynia. 2 Digynia. 3 Trigynia. 4 Dodecagynia.
12. ICOSANDRIA. This class consists of hermaphrodite plants, with 20 or more stamens fixed in the *calyx*. They produce our most esteemed fruits; and no poisonous fruit has yet been found where the parts of the flower correspond with the characters of this class.	1 Monogynia. 2 Pentagynia. 3 Polygynia.
13. POLYANDRIA. The plants belonging to this class are hermaphrodite, and have 20 or more stamens fixed in the *receptacle*,—the situation or insertion of the stamens constitutes the essential and characteristic distinction between the 12th and 13th classes; particular attention should be paid to this circumstance, as the greater number of the plants in the 13th class are poisonous.	1 Monogynia. 2 Pentagynia. 3 Polygynia.
14. DIDYNAMIA. This class consists of plants with four stamens, two longer than the other two, and one pistil. The orders are formed upon the presence or absence of a covering to the seeds—the flowers in the first order are all ringent—in the second order, they are most frequently personate, or resupinate. The virtues of the Gymnospermious plants reside principally in their leaves; they are aromatic, cephalic, and resolvent—the plants in Angiospermia possess active medicinal properties, some of them, as the Digitalis, are poisonous, in very small doses, and the rest require to be administered with caution.	1 Gymnospermia. 2 Angiospermia.
15. TETRADYNAMIA. Plants of 6 Stamens, 4 long and 2 short, and 1 pistil, which turns into a two-valved pericarp, called a Siliqua; some of these pericarps are long, and retain the name siliqua, others are short, round, or flat, and receive the name of silicle, and upon this distinction of their seed-pods, the orders are formed.	1 Siliculosa. 2 Siliquosa.
16. MONADELPHIA. The plants in this class have the filaments of their stamens united into one set. The marsh and common Mallows are used as demulcents in Dysentery, Dyarrhœa, Gonorrhea, Calculus, &c.	1 Pentandria. 2 Decandria. 3 Polyandria.
17. DIADELPHIA. The plants in this class have their stamens in two sets, of which the first genus is an excellent example; but there are five of the genera strictly Monadelphous in the union of their stamens, and the other genera have one stamen separate from the rest on the upper surface of the pistil.	1 Hexandria. 2 Octandria. 3 Decandria.
18. POLYADELPHIA. The plants of this class are hermaphrodite, and their stamens are united into three or more sets. There is but one British genus.	1 Polyandria.
19. SYNGENESIA. This class is composed of compound flowers, consisting of many little florets within one common calyx; when these are hermaphrodite they have five stamens united by their anthers into a cylinder, round one pistil. Some of the florets are tubular, others ligulate, some hermaphrodite, some female, and others neuter. Our British genera are embraced by Dr Smith, in three orders; viz. 1st. those where the little florets are all hermaphrodite, ex. Thistle; 2d. those where the florets in the disk are hermaphrodite, and those in the ray, female, ex. Mountain Daisy; the 3d, where the florets in the disk are hermaphrodite, and those in the circumference, neuter, ex. Blue Bottle.	1 Polygamia Æqualis. 2 Polygamia Superflua. 3 Polygamia Frustranea.
20. GYANDRIA. The plants of this class bear flowers, with stamens situated on the style, or upon a receptacle stretched out in form of a style which supports both stamens and pistils. There is a preparation of the root of the Orchis Mascula, which is an article of diet, and accounted very nutritious. Dioscorides, and many others since his time, affirm that this root possesses aphrodisiac qualities, and hence one of its names, Satyrion.	1 Monandria. 2 Diandria. 3 Hexandria.
21. MONŒCIA. The Monœcious, or one-house plants, have their stamens in one flower, and their pistils on a seperate flower on the same plant.—the orders are from the number and connexion of the stamens,—besides a number of herbaceous plants, some of the most beautiful and useful of our forest trees belong to this class.	1 Monandria. 2 Triandria. 3 Tetrandria. 4 Pentandria. 5 Hexandria. 6 Polyandria. 7 Monadelphia.
22. DIŒCIA. The Diœcious, or two-house plants, are male and female, the stamens are found in the flowers of one plant, and the pistils in the flowers of another,—the orders are from the number and connexion of the stamens. Some soft-wooded, quick growing plants belong to this class, as the willow, and the poplar.	1 Diandria. 2 Triandria. 3 Tetrandria. 4 Pentandria. 5 Hexandria. 6 Octandria. 7 Enneandria. 8 Monadelphia.
23. POLYGAMIA. The plants of this class have hermaphrodite, and male or female flowers, or both on the same plant. Dr Hull, in his British Flora has arranged and described seven genera in this class. Dr Smith gives only one genus under this head, the essential character of which is given in the column for the genera.	1 Monœcia.
24. CRYPTOGAMIA. The Cryptogameous plants are those vegetables whose parts of fructification are so minute that they are but imperfectly visible to the naked eye. Linnæus divided the plants of this class into four natural orders, viz., Filices, Musci, Algæ, and Fungi. Ray, Dillenius, Micheli, Gmelin, and Hedwig, by their scrutinies into these obscure families, have immortalized their names. 1st Order. *Filices*.—The Filices or Ferns in general push up only one stem, termed a Frond, which in the early stage of its growth is rolled up in a spiral form. They bear their fructification in a spike, in a racemus, or on the under surface of the leaf. The Botrychium is an example of a spike, the Osmunda of a racemus, and the Polypodium bears its fructification on the under surface of the leaf. The fructification (or sori) is arranged in lines or dots; and from their situation and direction, with the presence and manner of opening of a thin covering termed the Involucre, and from being with or without an elastic ring the genera are formed and distinguished. The root of the male Fern has been much celebrated as an Anthelmentic medicine. 2d Order. *Musci*.—The Mosses are a beautiful natural family of very minute plants, whose female parts of fructification are covered by a calyptra, which adheres to the top of the Theca; and, in general, opens transversely. The mouth of the Theca is sometimes naked and sometimes clothed, with a single or double fringe, termed a Periostoma; its divisions are named teeth, and from their number, their being upright or reflected, straight or twisted, triangular, spear, or bristle shaped, blunt or acute, and whither their seeds are smooth or rough, angular or round, the genera are characterized. Some of the mosses are cathartic others emetic. 3d Order. *Algæ*.—The plants in this order have their root, stem, and leaf of one continuous similar piece of matter. They are divided into those which grow on the land and those that grow in the water. Their generic characters are taken from their parts of fructification when these are any way evident, and from the general structure of the plant when these organs escape notice. The Lichen Islandicus is much used by the Icelanders as an article of diet; 4th Order. *Fungi*.—The Fungi consists of plants mostly of a spongy or corklike texture; they are generally of short duration, and bear their seeds in gills or tubes, or attached to fibrous or spongy substances. Their generic characters are taken from the disposition of their seeds, or from their external figure or appearance. The greater number of the Fungi are indigestible poisonous matter, and the edible mushrooms ought to be collected with care.	1 Filices. 2 Musci. 3 Algæ. 4 Fungi.

GENERA.

(Or 1) 1 Salicor'nia Jointed-glasswort. 2 Hippu'ris, Mare's-tail. 3 Zoste'ra, Grass-wrack. 4 Cha'ra, Chara. (Or 2) 5 Callit'riche, Water-starwort.—Contains 14 species, 10 ⊙ and 4 ♃.

(Or 1) 1 Ligus'trum, Privet. 2 Frax'inus, Ash. 3 Circæ'a, Enchanter's-nightshade. 4 Vero'nica Speedwell. 5 Pinguic'ula, Butterwort. 6 Utricula'ria, Bladderwort. 7 Lem'na, Duckweed. 8 Lyco'pus, Gipsy-wort. 9 Sal'via, Sage, or Clary. 10 Cla'dium, Twig-rush. (Or 2) 11 Anthoxan'thum, Vernal-grass.—Contains 38 species, 9 ⊙ 25 ♃ and 4 ♄.

(Or 1) 1 Valeria'na, Valerian. 2 Fe'dia, Corn-salad. 3 Cro'cus, Crocus. 4 Trichone'ma, Trichonema. 5 I'ris, Iris, or Flower-de-luce. 6 Schœ'nus, Bog-rush. 7 Rhynchos'pora, Beak-rush. 8 Cy'perus, Cyperus, or Galingale. 9 Scir'pus, Club-rush, and Bull-rush. 10 Eleocha'ris, Spike-rush. 11 Erio'phorum, Cotton-grass. 12 Nar'dus, Mat-grass. (Or 2) 13 Phal'aris, Canary-grass. 14 Phle'um Cats-tail grass. 15 Alopecu'rus, Fox-tail grass. 16 Knap'pia, Knappia. 17 Polypo'gon, Beard-grass. 18 Mil'ium, Millet-grass. 19 Agros'tis, Bent-grass. 20 Cyn'odon, Dog's-tooth-grass. 21 Digita'ria, Finger-grass. 22 Pan'icum, Panick-grass. 23 A'ira, Hair-grass. 24 Hol'cus, Soft-grass. 25 Hiero'chloe, Holy-grass. 26 Mel'ica, Melic-grass. 27 Sesle'ria, Moor-grass. 28 Glyce'ria, Sweet-grass. 29 Po'a, Meadow-grass. 30 Trio'dia, Heath-grass. 31 Bri'za, Quaking-grass. 32 Dac'tylis, Cock's-foot-grass. 33 Sparti'na, Cord-grass. 34 Cynosu'rus, Dog's-tail-grass. 35 Festu'ca, Fescue-grass. 36 Bro'mus, Brome-grass. 37 Sti'pa, Feather grass. 38 Ave'na, Oat, or Oat-grass. 39 Lagu'rus, Hare's-tail-grass. 40 Arun'do, Reed. 41 Lo'lium, Darnel. 42 Rottbol'lia, Hard-grass. 43 Ely'mus, Lyme-grass. 44 Hor'deum, Barley. 45 Trit'icum, Wheat, Wheat-grass. (Or 3) 46 Mon'tia, Blinks. 47 Holos'teum, Jagged Chickweed. 48 Polycar'pon, All-seed.—Contains 163 species, 45 ⊙ 2 ♂ and 116 ♃.

(Or 1) 1 Dip'sacus, Teasel. 2 Scabio'sa, Scabious. 3 Sherar'dia, Field-madder. 4 Asper'ula, Woodruff. 5 Ga'lium, Bed-straw. 6 Ru'bia, Madder. 7 Ex'acum, Gentianella. 8 Planta'go, Plantain. 9 Centun'culus, Chaff-weed. 10 Sanguisor'ba, Burnet. 11 Epime'dium, Barrenwort. 12 Cor'nus, Cornel. 13 Parieta'ria, Wall-pellitory. 14 Isnar'dia, Isnardia. 15 Alchemil'la, Ladies' Mantle. (Or 2) 16 Buffo'nia. (Or 3) 17 I'lex, Holly. 18 Potamoge'ton, Pond-weed. 19 Rup'pia, Ruppia. 20 Sagi'na, Pearl-wort. 21 Mœn'chia, Mœnchia. 22 Tillæ'a, Tillæa. 23 Radi'ola, Flax-seed.—Contains 65 species, 16 ⊙ 2 ♂ 43 ♃ and 2 ♄.

(Or 1) 1 Myoso'tis, Scorpion-grass. 2 Lithosper'mum, Gromwell. 3 Anchu'sa, Alkanet. 4 Cynoglos'sum, Hound's-tongue. 5 Pulmona'ria, Lung-wort. 6 Symphy'tum, Comfrey. 7 Bora'go, Borage. 8 Asperu'go, Mad-wort. 9 Lycop'sis, Bugloss. 10 Echi'um, Viper's-bugloss. 11 Prim'ula, Primrose, and Cowslip. 12 Cycla'men, Cyclamen. 13 Menyan'thes, Buckbean. 14 Hotto'nia, Featherfoil. 15 Lysimach'ia, Loose-strife. 16 Anagal'lis, Pimpernel. 17 Aza'lea, Azalea. 18 Convol'vulus, Bindweed. 19 Polemo'nium, Jacob's Ladder. 20 Campan'ula, Bell-flower. 21 Phyteu'ma, Rampion. 22 Jasio'ne, Sheep's-bit. 23 Lobe'lia, Lobelia. 24 Impa'tiens, Balsam. 25 Vi'ola, Violet. 26 Verbas'cum, Mullein. 27 Datu'ra, Thorn-apple. 28 Hyoscy'amus, Henbane. 29 At'ropa, Dwale, or Deadly Nightshade. 30 Sola'num, Nightshade. 31 Erythræ'a, Centaury. 32 Samo'lus, Brookweed. 33 Lonice'ra, Honey-suckle. 34 Rham'nus, Buckthorn. 35 Euon'ymus, Spindle-tree. 36 Ri'bes, Currant and Gooseberry. 37 Hed'era, Ivy. 38 Illece'brum, Knotgrass. 39 Glaux, Sea Milkwort. 40 The'sium, Bastard-toadflax. 41 Vin'ca, Periwinkle. (Or 2) 42 Hernia'ria, Rupture-wort. 43 Chenopo'dium, Goosefoot. 44 Be'ta, Beet. 45 Sal'sola, Saltwort. 46 Ul'mus, Elm. 47 Cus'cuta, Dodder. 48 Swer'tia, Felwort. 49 Gentia'na, Gentian. 50 Eryn'gium, Eringo. 51 San'icula, Sanicle. 52 Echino'phora, Prickly-Sampire. 53 Dau'cus, Carrot. 54 Cau'calis, Bur-parsley. 55 Tor'ilis, Hedge-parsley. 56 Anthris'cus, Beaked-parsley. 57 Scan'dix, Shepherd's-needle. 58 Chærophyl'lum, Chervil. 59 Myr'rhis, Cicely. 60 Bu'nium, Earth-nut. 61 Si'um, Water-parsnip. 62 Si'son, Honewort. 63 Cicu'ta, Cowbane. 64 Æthu'sa, Fool's-parsley. 65 Co'nium, Hemlock. 66 Corian'drum, Coriander. 67 Œnan'the, Water-dropwort. 68 Crith'mum, Sampire. 69 Smyr'nium, Alexanders. 70 A'pium, Parsley. 71 Ægopo'dium, Gout-weed. 72 Imperato'ria, Masterwort. 73 Angel'ica, Angelica. 74 Ligus'ticum, Lovage. 75 Me'um, Spignel, or Fennel. 76 Ca'rum, Caraway. 77 Athaman'ta, Stone-parsley. 78 Pimpinel'la, Burnet-saxifrage. 79 Cni'dium, Pepper-saxifrage. 80 Bupleu'rum, Hare's-ear. 81 Hydrocot'yle, White-rot. 82 Seli'num Milk-parsley. 83 Peuced'anum, Sulphur-wort. 84 Pastina'ca, Parsnip. 85 Heracle'um, Cow-parsnip. 86 Tordyl'ium, Hart-wort. (Or 3) 87 Vibur'num, Guelder-rose. 88 Sambu'cus, Elder. 89 Staphy'lea, Bladder-nut. 90 Tam'arix, Tamarisk. 91 Corrigio'la, Strapwort. (Or 4) 92 Parnas'sia, Grass of Parnassus. (Or 5) 93 Stat'ice, Thrift. 94 Li'num, Flax. 95 Sibbal'dia, Sibbaldia. (Or 6) 96 Dro'sera, Sun-dew. (Or 7) 97 Myosu'rus, Mouse tail.—Contains 217 species, 56 ⊙ 23 ♂ 111 ♃ and 27 ♄.

(Or 1) 1 Galan'thus, Snow-drop. 2 Leuco'jum, Snow-flake. 3 Narcis'sus, Narcissus, or Daffodil. 4 Al'lium, Garlic. 5 Fritilla'ria, Fritillary. 6 Tu'lipa, Tulip. 7 Ornithoga'lum, Star of Bethlehem. 8 Scil'la Squill. 9 Hyacin'thus, Hyacinth. 10 Anther'icum, Spider-wort. 11 Narthe'cium, Bog-asphodel. 12 Aspar'agus, Asparagus. 13 Convalla'ria, Lily of the Valley, and Solomon's Seal. 14 Ac'orus, Sweet Flag. 15 Jun'cus, Rush. 16 Lucio'la, Wood-rush. 17 Ber'beris, Barberry. 18 Franke'nia Sea-heath. 19 Pep'lis, Purslane. (Or 2) 20 Oxy'ria, Mountain-sorrel. (Or 3) 21 Ru'mex, Dock and Sorrel. 22 Tofield'ia, Scottish Asphodel. 23 Scheuchze'ria, Scheuchzeria. 24 Triglo'chin, Arrow-grass. 25 Col'chicum, Meadow-saffron. (Or 4) 26 Alis'ma, Water-plantain.—Contains 86 species, 4 ⊙ 81 ♃ and 1 ♄.

(Or 1) 1 Trienta'lis, Chickweed Wintergreen. Calyx 7 leaved, Corolla 7 parted, equal flat. Berry one-celled, dry.—Contains 1 species.

(Or 1) 1 Œnoth'era, Evening-primrose. 2 Epilo'bium, Willow-herb. 3 Chlo'ra, Yellow-wort. 4 Vaccin'ium, Whortle-berry. 5 Menzie'sia, Menziesia. 6 Callu'na, Ling. 7 Er'ica, Heath. 8 Daph'ne, Mezereon. 9 A'cer, Maple. (Or 2) 10 Polyg'onum, Persicaria, Bistort, Knot-grass, and Buckwheat. (Or 3) 11 Pa'ris, Herb Paris. 12 Adox'a, Moschatell. 13 Elat'ine, Waterwort.—Contains 38 species, 9 ⊙ 1 ♂ 15 ♃ and 13 ♄.

(Or 1) 1 Bu'tomus, Flowering-rush. Calyx, Involucre simple, 3 leaved, Cor. 6 petalled, Capsulis 6, seeds many.—Contains 1 species.

(Or 1) 1 Monotro'pa, Bird's-nest. 2 Androm'eda, Andromeda. 3 Arbu'tus, Strawberry-tree, Bear-berry. 4 Pyro'la, Winter-green. (Or 2) 5 Chrysosple'nium, Golden-saxifrage. 6 Saxifra'ga, Saxifrage. 7 Scleran'thus, Knawel. 8 Sapona'ria, Soapwort. 9 Dian'thus, Pink. (Or 3) 10 Sile'ne, Catchfly or Campion. 11 Stella'ria, Stitchwort. 12 Arena'ria, Sandwort. 13 Cherle'ria, Cyphel. (Or 4) 14 Cotyle'don, Navelwort. 15 Se'dum, Stonecrop. 16 Ox'alis, Wood sorrel. 17 Agrostem'ma, Cockle. 18 Lych'nis, Lychnis. 19 Ceras'tium, Mouse-ear-Chickweed. 20 Sper'gula, Spurrey.—Contains 106 species, 20 ⊙ 79 ♃ and 4 ♄.

(Or 1) 1 As'arum, Asarabacca. 2 Lyth'rum, Purple Loosestrife. (Or 2) 3 Agrimo'nia, Agrimony. (Or 3) 4 Rese'da, Rocket. (Or 4) 5 Sempervi'vum, Houseleek.—Contains 7 species, 3 ⊙ and 4 ♃.

(Or 1) 1 Pru'nus, Plum and Cherry. (Or 2) 2 Mes'pilus, Hawthorn and Medlar. 3 Py'rus, Pear, Apple, and Service. 4 Spiræ'a, Spiræa, Dropwort, and Meadow-sweet. (Or 3) 5 Ro'sa, Rose. 6 Ru'bus, Bramble and Raspberry. 7 Fraga'ria, Strawberry. 8 Potentil'la, Cinquefoil or Potentilla. 9 Tormentil'la, Tormentil. 10 Ge'um, Avens. 11 Dry'as, Dryas. 12 Com'arum, Marsh-cinquefoil.—Contains 72 species, 23 ♃ and 49 ♄.

(Or 1) 1 Actæ'a, Bane-berries. 2 Chelido'nium, Celandine. 3 Glau'cium, Horned-poppy. 4 Papa'ver, Poppy. 5 Nymphæ'a, White Water-lily. 6 Nu'phar, Yellow Water-lily. 7 Til'ia, Lime-tree. 8 Cis'tus, Cistus. (Or 2) 9 Pæo'nia, Piony. 10 Delphin'ium, Larkspur. 11 Aconi'tum, Wolf's-bane, or Monkshood. 12 Aquile'gia, Columbine. 13 Stratio'tes, Water-soldier. (Or 3) 14 Anemo'ne, Anemone. 15 Clem'atis, Traveller's-Joy. 16 Thalic'trum, Meadow-Rue. 17 Ado'nis, Pheasant's-eye. 18 Ranun'culus, Crowfoot, or Ranunculus. 19 Trol'lius, Globe-flower. 20 Helleb'orus, Hellebore. 21 Cal'tha, Marsh-marigold.—Contains 60 species, 16 ⊙ 34 ♃ and 10 ♄.

(Or 1) 1 A'juga, Bugle. 2 Teu'crium, Germander. 3 Nepe'ta, Cat-mint. 4 Verbe'na, Vervain. 5 Men'tha, Mint. 6 Glecho'ma, Ground-ivy. 7 Lam'ium, Dead-nettle. 8 Galeop'sis, Hemp-nettle. 9 Galeob'dolon, Weasel-snout. 10 Beton'ica, Betony. 11 Stach'ys, Wound-wort. 12 Ballo'ta, Black Horehound. 13 Marru'bium, White Horehound. 14 Leonu'rus, Mother-wort. 15 Clinopo'dium, Wild Basil. 16 Orig'anum, Marjoram. 17 Thym'us, Thyme. 18 Melit'tis, Bastard Balm. 19 Scutella'ria, Skull-cap. 20 Prunel'la, Self heal, or Slough-heal. (Or 2) 21 Bart'sia, Bartsia. 22 Rhinan'thus, Yellow-rattle. 23 Euphra'sia, Eye-bright. 24 Melampy'rum, Cow-wheat. 25 Lathræ'a, Toothwort. 26 Pedicula'ris, Lousewort. 27 Antirrhi'num, Snap-dragon. 28 Scrophula'ria, Figwort. 29 Digita'lis, Foxglove. 30 Linnæ'a, Linnæa. 31 Sibthor'pia, Sibthorpia. 32 Limosel'la, Mudwort. 33 Oroban'che, Broom-rape.—Contains 87 species, 25 ⊙ 2 ♂ and 60 ♃.

(Or 1) 1 Vel'la, Cress-rocket. 2 Subula'ria, Awlwort. 3 Dra'ba, Whitlow-grass. 4 Alys'sum, Alyssum. 5 Cameli'na, Gold of Pleasure. 6 Lepid'ium, Pepperwort. 7 Hutchins'ia, Hutchinsia. 8 Teesda'lia, Teesdalia. 9 Thlas'pi, Shepherd's Purse. 10 Cochlea'ria, Scurvy-grass. 11 Senebie'ra, Wart-cress. 12 Iber'is, Candy-tuft. 13 Isa'tis, Woad. 14 Cak'ile, Sea Rocket. 15 Cram'be, Kale. (Or 2) 16 Denta'ria, Coralwort. 17 Cardami'ne, Ladies'-smock. 18 Nastur'tium, Cress. 19 Sisym'brium, Hedge-mustard. 20 Barbare'a, Winter-cress. 21 Erysi'mum, Treacle-mustard. 22 Cheirant'hus, Wall-flower. 23 Matthio'la, Stock. 24 Hes'peris, Dame's-violet. 25 Ara'bis, Wall-cress, or Rock-cress. 26 Turr'itis, Tower-mustard. 27 Bras'sica, Cabbage, Turnip, &c. 28 Sina'pis, Mustard. 29 Raph'anus, Radish.—Contains 71 species, 34 ⊙ 13 ♂ 23 ♃ and 1 ♄.

(Or 1) 1 Ero'dium, Stork's-bill. (Or 2) 2 Geran'ium, Crane's-bill. (Or 3) 3 Althæ'a, Marsh-Mallow. 4 Mal'va, Mallow. 5 Lavater'a, Tree-mallow.—Contains 21 species, 10 ⊙ 1 ♂ and 10 ♃.

(Or 1) 1 Fuma'ria, Fumitory. (Or 2) 2 Polyg'ala, Milkwort. (Or 3) 3 Spar'tium, Broom. 4 Genis'ta, Green-weed. 5 Ul'ex, Furze. 6 Ono'nis, Rest-harrow. 7 Anthyl'lis, Kidney-vetch. 8 Pi'sum, Pea. 9 O'robus, Bitter-vetch. 10 Lath'yrus, Vetchling. 11 Vic'ia, Vetch.

SPECIES.

(1) Herba'cea, ⊙ 8,9 sl. m. Procum'bens, ⊙ 8 sl. m. Rad'icans, ♃ 9 mu. s. sh. Frutico'sa, ♃ 8,9 s. sh. ρ.—(2) Vulga'ris, ♃ 5 di. p.—(3) Mari'na, 8,9 sl. w.—(4) Vulga'ris ⊙ 7 mu. di. His'pida, ⊙ 7,8 di. p. Flex'ilis, ⊙ 7,8 di. p. Translu'cens, ⊙ 6,7 p. ρ. Nidif'ica, ⊙ 7,8 sl. w. di. Grac'ilis, ⊙ 9 p. ρ.—(5) Ver'na, ⊙ 4..9 di. p. Autumna'lis ⊙ 6..10 cr. p.

(1) Vulga're, ♄ 5,6 h. th.—(2) Excel'sior, ♄ 4,5 wd. h. Heterophyl'la, ♄ 4,5 h. ρ.—(3) Lutetia'na, ♃ 6,7 mo. sd. pl. Alpi'na, ♃ 7,8 sd. st. pl.—(4) Spica'ta, ♃ 7..9 hi. ch. pa. Hyb'rida, ♃ 7 mt. ρ. Fruticulo'sa, ♃ 7 S. mt. mo. pl. Saxat'ilis, ♃ 7 mt. S. Alpi'na, ♃ 7,8 a. rv. S. Serpyllifo'lia, ♃ 5,6 me. pa. Beccabun'ga, ♃ 7 di. rv. Anagal'lis, ♃ 7 m. di. Scutella'ta, ♃ 7,8 sp. bg. Officina'lis, ♃ 5,6 hi. pa. he. Hirsu'ta, ♃ 6 d. he. S. Chamæ'drys, ♃ 5 me. h. Monta'na, ♃ 5,6 mo. wd. ch. si. Agres'tis, ⊙ 4..9 clt. g. Arven'sis, ⊙ 5 fi. wl. Hederifo'lia, ⊙ 4,5 clt. ws. g. Triphyl'los, ⊙ 4 sa. fi. Ver'na, ⊙ 4 sa. fi.—(5) Lusitan'ica, ♃ 6,7 bg. Vulga'ris, ♃ 5,6 bg. Grandiflo'ra, ♃ 5,6 bg. ς. I.—(6) Vulga'ris, ♃ 7 di. p. Interme'dia, ♃ 7 di. I. S. Mi'nor, ♃ 7 di. m. ρ.—(7) Tris'cula, ⊙ 6 p. Mi'nor, ⊙ 6,7 p. Gib'ba, ⊙ 6,7 p. Polyrrhiz'a, ⊙ 7,8 di.—(8) Europæ'us, ♃ 7,8 p.—(9) Praten'sis, ♃ 7 d. me. Verbena'ca, ♃ 6..10 me. ws. g.—(10) Maris'cus, ♃ 7,8 bg.—(11) Odora'tum, ♃ 5 me. pa.

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