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BOTANICAL CHART;

OR,
CONCISE INTRODUCTION TO THE LINNEAN SYSTEM OF BOTANY.

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A New Edition, Revised, Corrected, and greatly Enlarged.

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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 concise 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. By turning up in Dr. Smith's "Flora Britannica," the Class and Order, the Genera will be found arranged and grouped together into several sections, by certain very obvious marks of distinction. The specific characters follow, arranged in a similar manner. 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."

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 *Radicula* 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*.
- Bulbus*, buds under ground. They may be scaly-coated, net-like, solid, lateral, double, compound, as in *Lilium*, *Allium*, &c.
- Dentatus*, when fleshy branched roots have tooth-like processes. *Coral-rooted Ophrys*.
- Fibrosus*, when the root consists of a number of small fibres. *Poa*.
- Fusiformis*, when spindle-shaped, tapering gradually like the *Carrot*.
- Granulatus*, forming small round bodies, as in *Saxifraga granulata*.
- Horizontalis*, when lying horizontally on the ground, as in *Polypodium*.
- Napiformis*, when the knobs are round like the *Common Turnip*.
- Palmatus*, hand-shaped, divided into three or more longish knobs. *Orchis latifolia*.
- Prenosus*, when the *Caudex* appears as if bitten off, as in *Devil's Bite*.
- 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.
- Squamosus*, when the *Caudex* is covered with scales. *White Lily*.
- Testiculatus*, when two egg-shaped knobs grow together. *Orchis Moria*.
- Tuberosus*, when fleshy knobs adhere to the *Caudex* or to the fibres. *Dropwort*.

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*.

Botanists have enumerated the following kinds of Stems: the

- Caulis*, peculiar to herbaceous plants, the principal stem elevating the leaves, flowers, &c.
- Consertus*, 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 grasses, it may be simple or branched, knotted or knollless, bristle-like, with or without a sheath.
- Dichotomus*, the branches dividing regularly and repeatedly into pairs. *Mistletoe*.
- 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*.
- Petunculus*, the flower-stalk, supporting only flowers.
- Petiolus*, the leaf-stalk, bearing only leaves.
- Scapus*, a stem elevating the flowers only, as in the *Lily of the Valley*, &c.
- Seta*, the stem which bears only the fructification of mosses.
- Stipes*, the stems of ferns, mushrooms, palms, and the pappus of some seeds.
- Surculus*, the stem which bears the leaves of the mosses.
- Truncus*, the main stem or trunk of trees and shrubs.

When Plants want the Stem altogether, they are termed *Plantæ Acaule*.

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.
 - Capitulum*, when a number of flowers stand thick on one stalk, either of a spherical or roundish form, like a head.
 - Corymbus*, when the foot-stalks of a *Racemus* are lengthened out to a flat surface. *Iberis*.
 - Cyma*, a number of branched foot-stalks rising from a common point, as in *Elder*, &c.
 - Racemus*, 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*.
 - Racemus*, when every flower has a short foot-stalk, as in the *Current*, &c.
 - Spadix*, when all the flower-stalks are contained in a *vagina*—peculiar to *Palms*, and some few other plants.
 - Spicula*, when a number of flowers have only one *Calyx*—peculiar to *Grasses*.
 - Spica*, a spike, a number of flowers without foot-stalks sitting on the stem. *Wheat*.
 - Thyrus*, when a panicle is condensed into an ovate form, as in *Priest*.
 - Umbella*, a number of flower-stalks, of one length, issuing from a common centre, like the radii of a circle, as in *Hemlock*, &c.
 - Verticillus* or *Whirl*, when flowers encircle the stem in rings. *Mentha*.
- Peculiar to Mosses.
- Flos Capitiformis*, formed like a little head or sphere.
 - Flos Disciformis*, the flower formed like a star, as in *Polytrichum*.
 - 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.
- Ampula*, a hollow bladder, found at the roots of some water plants. *Utricularia*.
- Annulus*, a thin membrane, like a ring, surrounding the stalk of the fungi.
- Arista*, the awn or pointed beard of some of the *Grasses*.
- Ascidium*, a cylindrical hollow leaf, containing water, sometimes completely covered, opening occasionally. *Nepenthes*.
- Bractea*, floral leaves, situated among the flowers, generally differing in shape and colour from the leaves of the plant. *Orchis*.
- Chirrus*, a tender, twisted, thread-like body, which serves weak plants to clasp other bodies for support. *Vine*.
- Gemma*, the bud which contains the embryo of the leaves and flowers.
- Glandula*, a round body which either secretes or transpires fluids.
- Gongylus*, round hard body in the foot, 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.
- Ligula*, a small transparent strap, situated on the margin of the *vagina*, and at the base of the leaf. *Poa*.
- Ochrea*, a leaf-like body, surrounding the flower-stalks of some grasses.
- Pileus* is the cap or top of a mushroom, supported by the stalk.
- Pilus*, a slender fine body, like a hair, covering some plants.
- Propago* is the bud of mosses, which Linnaeus considers as the seed.
- Ramentum*, small bristle-shaped, brown-coloured, thin leaflets, without order on the stem, as in *Fir*, &c.
- Spina*, a thorn, formed from the woody part of the plant. *Cockspur Thorn*.
- Stipula*, small leaves or scales situated at the base of some of the foot-stalks of leaves. *Vicia*, *Lathyrus*.
- 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; 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,

- Acerasum*, needle-shaped, a rigid linear leaf like the *Pinus*.
- Acuminatum*, when the point is lengthened out.
- Acutum*, acute, when tapering gradually to a point.
- Auriculatum*, ear-shaped, nearly *hastate*, but the lobes rounded and smaller.
- Angulare*, of various angles.
- Avenium*, having no veins.
- Axillare*, when standing at the origin of the branch.
- Anceps*, when a compressed leaf is sharp on both edges.
- Actinaciforme*, shaped like a scymitar, a thick leaf with one side sharp and the other broad.
- Alternata*, when placed alternate.
- Amplexicaule*, when the lobes of a *sessile* leaf embrace the stem.
- Adpressum*, when the upper surface is pressed upwards to the stem.
- Adversum*, when the margin is turned towards the stem.
- Bulatum*, when the parts raised between the veins are like blisters.
- Cordatum*, heart-shaped. *Lamium album*.
- Cuneiforme*, when blunt-pointed, it tapers to the base like a wedge.
- Cuspidatum*, when the *acuminate* leaf ends in a bristle.
- Capillare*, when scarcely any breadth, like a hair.
- Cartilagineum*, when the margin is harder than the disk of the leaf.
- Crenatum*, notched, with small teeth, whose points stand at right angles with the mid rib.
- Ciliatum*, fringed with long hairs, distant from each other.
- Concaevum*, hollow in the middle of the leaf.
- Canaliculatum*, when the mid rib is furrowed or channelled.
- Crispum*, when fuller on the margin than the middle, the former curled.
- Carinatum*, when the mid rib is formed like the keel of a ship.
- Cucullatum*, when rolled up like a hollow cone, or like a sugar paper.

- Caulinum*, when attached to the principal stem.
- Carnosum*, fleshy, when there is a pulpy soft substance, as in *Houseleek*.
- Compressum*, compressed, when a thick leaf is flattened on both sides.
- Conferta*, when so crowded that the stem cannot be seen.
- Connatum*, when opposite *sessile* leaves are closely united at their base into one substance.
- Decurrens*, when the substance of the leaf runs down the stem.
- Dadaleum*, when the apex has a large circuit, but is cut off and ragged.
- Dentatum*, when small distinct separate teeth are placed on the margin.
- Depressum*, when the upper and under surfaces of a fleshy leaf are pressed together.
- Dolabiforme*, when a fleshy leaf is compressed and shaped like an axe.
- Deltoides*, when short and bounded by three broad surfaces, like the letter delta.
- Disticha*, when the leaves stand in two rows, as in *Yew* and *Pitch Fir*.
- Decussata*, when set in four rows, forming a St. Andrew's cross.
- Dependens*, when the base turns to the zenith and the apex to the earth.
- Demersum*, when the leaves are found below water.
- Emarginatum*, when blunt-pointed and notched deeply, a portion taken out.
- Enevium*, 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.
- Erosum*, gnawed, unequally sinuated, as if bitten at the edges.
- Fasciculata*, when the leaves stand in tufts, as in *Larch*, &c.
- Fissum*, cleft, when merely cut into the leaf.
- Flabelliforme*, when shaped like a fan.
- Florale*, when standing close by the flower.
- Gibbosum*, when both surfaces are convex, or seem swelled out.
- Horizontale*, when the upper surface of the leaf makes a right angle with the stem.
- Imbricatum*, when one leaf overlaps another, like tiles on a house.
- Inaequale*, unequal, when one lobe is larger than the other.
- Incurvum*, when bent in at the point towards the stem.
- Lacunosum*, when the surface is hollow between the veins, pitted.
- Laciniatum*, torn, when there are several irregular clefts in an oblong leaf.
- Lanceolatum*, shaped like a spear, gradually narrowing to the point.
- Lineatum*, streaked with depressed but not always parallel lines.
- Lineare*, of equal breadth from the base to the apex, margins nearly straight.
- Lingiforme*, when a compressed leaf is somewhat tongue-shaped.
- Lobatum*, deeply divided into lobes.
- Lunatum*, moon-shaped, like the moon in her third quarter.
- Lyratum*, lyre-shaped, when the extreme segment of any of the two former is large and round.

- 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 veins run in parallel lines from base to apex.
- Obliquum*, when in a direction between horizontal and perpendicular.
- Obtusum*, when the end of the leaf is blunt.
- Opposita folia*, when the leaves are set opposite.
- Orbiculatum*, when the circumference is in all points at equal distances from the centre.
- Ovatum*, egg-shaped, nearly oval, but the diameter greater at the base than at the apex.
- Paleaceum*, when the foot-stalk is attached to the margin.
- Palmatum*, when more than half-way divided into five or six finger-like lobes.
- Panduriforme*, fiddle-shaped, having a deep curve or bay on both sides of an oblong leaf.
- Parabolicum*, a quadrangular figure, with two obtuse and two acute angles.
- Petiolatum*, when a leaf has a foot-stalk.
- Peltatum*, when the foot-stalk is inserted into the disk of the leaf.
- Pinnatifidum*, when the incisures or bays go almost down to the mid rib.
- Planum*, when the upper surface forms an even plane.
- Plicatum*, when the leaf is laid in regular folds.
- Prenosum*, when the point seems as if bitten off.
- Punctatum*, dotted, having dots or points instead of veins or ribs.
- 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.
- Remota*, when separate from one another by considerable interstices.
- Reniforme*, kidney-shaped. *Ground Ivy*.
- Reticulatum*, when the veins are like net-work.
- Repandum*, serpentine, small sinuses without angles on the margin.
- Retusum*, slightly and bluntly notched at the end.
- Revolutum*, when rolled backwards with its point to the stem.
- Rugosum*, wrinkled, when the surface is raised between the veins.
- Runcinatum*, when the incisures of a *pinnatifid* leaf are pointed and bent downwards.
- Sagittatum*, arrow-shaped, the lobes pointed and bent outward like barbs.
- 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.
- Sessile*, when fixed to the stem, and there is no foot-stalk.
- Sinuatum*, sinuated, when shallow bays are cut out of the margin.
- Spinosum*, when set with spines as in the *Thistle*.

- Sparsa*, when they stand thick on the stem, scattered without order.
- Squarrosae Laciniatum*, when the incisures run in every direction, as in the *Thistle*.
- Stellata sive Verticillata*, when several are set star-like round the stem.
- Subulatum*, awl-shaped, a linear leaf sharply pointed.
- Teres*, round, when formed like a cylinder.
- Terna*, when three leaves stand round the stem.
- Tetragonum*, when a long leaf is bounded by four narrow surfaces.
- Triguetrum*, three-sided, when bounded by three narrow long sides.
- Truncatum*, when the point of a leaf is cut off or ends in a straight line.
- Tubulosum*, when hollow within, as in the leaves of the *Onion*.
- Undulatum*, waved, when the margin is bent upwards and downwards.
- Uncinatum*, when a leaf has a hook-shaped appearance.
- Venosum*, when the fibres are branched from the mid rib.
- Verucosum*, warty, having little lumps or warts on the surface.
- Verticale*, perpendicular, forming a right angle with the horizon.

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

- Bigeniatum*, when a divided leaf-stalk bears two leaves at each point.
- Binatum*, when the leaves stand in pairs.
- Bipinnatum*, double pinnated.
- Bitermatum*, when a foot-stalk separates into three, bearing three leaves on each point.
- Conjugato pinnatum*, when a foot-stalk divides, and each pair makes a pinnated leaf.
- Decompositum*, when the primary leaf-stalk divides, each division forming a compound leaf.
- Digitatum*, when the base of several leaves rest on one kindred foot-stalk.
- Digitato pinnatum*, when four or five simply pinnated leaves are fixed to one stalk.
- Patens*, when expanding in a direction nearly horizontal.
- Podatum*, when there is some resemblance to the foot of a bird, as in *Black Hellebore*.
- Pinnatum*, winged, when a series of leaflets, on the same plane, are fixed to one foot-stalk.
- 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.
- Tripartitum*, when the former has two leaves at the division of the principal stalk.
- Triplinnatum*, when several doubly pinnated leaves are fixed to one common foot-stalk.
- Tritermatum*, 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;

THE Parts of Fructification are seven in number—viz. the CALYX, COROLLA, STAMINA, PISTILLUM, PERICARPUM, 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 extended 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

with that Appendage, sometimes met with in Flowers, termed the NECTARIUM.

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 *Discoides*, when the florets are all *Tubular* and of equal length, as in *Tansy*; *semifusculati*, 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 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 empalment or outer covering of the Flower is considered by Linnaeus 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 varied appearances,—

- Abbreviatus, when considerably shorter than the corolla.
Amentum, catkin, chaff-like scales, among the flowers, as in Hazel, Willow, &c.
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.
Caducus, falling off before the flower. Papaver Somniferum.
Calyculatus sive Actutus, a calyx, having a calyx or little cup at the base, as in Dianthus, Dandelion, &c.
Calyptra, a veil, like an extinguisher, as in some Mosses.
Gluma, a husk, the chaff of Oats, Barley, Wheat, and most Grasses.
Deciduous, falling off at the same time with the flower. Tilia Europea.
Denticulatus, when the segments on the margin are not deeper than the fourth of the tube.
Duplex, double, as in Malva, Althea, &c.
Fissus, when the segments are cut down to the middle of the tube.
Integer, entire, not cut on the margin.
Monophyllus, consisting of one leaf. Polyphyllum, consisting of two or more leaves.
Partitus, divided beyond the middle and near to the base.
Persistens, remaining after the flower falls.
Perianthium, when it embraces the flower, as in Primrose, Pink, &c.
Involutum, a cover or fence, when standing round the flower, as in Carrot, Hemlock, &c.
Spatha, a sheath bursting lengthways, and allowing the flower-stalks to put forth, as in Snowdrop, &c.
Volva, a curtain surrounding the stem and attached to the pileus or top of many of the Fungi.

COROLLA.

2d, THE COROLLA—the Wreath, Little Crown, or Blossom—the term given by Linnaeus 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 fine inner bark of the plant, generally consisting of three parts,—viz. tubus the tube, faucis the throat, and 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

- Campulata, gradually widening towards the mouth like a bell.
Difformis, when the tube, after expanding, divides into unequal lobes. Lonicera.
Hypocrateriformis, when the tube is long, and the rim flat and broad like a salver. Phlox.
Infundibuliformis, an obverse cone, flat and turned out at the rim like a funnel. Datura.
Ligulate, when a short tube terminates in a long expansion on one side, like a tongue, as in Dandelion.
Globosa, when, like a sphere, it widens out gradually to the middle. Vaccinium.
Personata, when both segments of a ringent corolla are close shut up, and the stamens and the pistils masked. Snap-dragon.
Rotata, when the tube is very short, and the rim flat like a wheel. Verbascum.
Ringens, corolla having two segments, like the lips of an animal gaping open. Lamium.
Tubulosa, when like a hollow pipe of nearly equal diameter. Red Valerian.
Unilabiata, upper or under lip of a ringent corolla is wanting—one-lipped. Teucrium.
POLYPETALOUS COROLLAS are termed
Caryophyllacea, when five petals are shaped and disposed as in Clove, Pink, &c.
Cruciata, when four petals stand opposite to one another, cross-like, as in Stock, Mustard, &c.
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, Narcissus, Lily, &c.
Malvacea, when five petals are attenuated downwards, so as to unite close at the base, as in Malloes, &c.
Papilionacea, butterfly-shaped, having four petals, the vexillum, carina, and the two alae, as in the Pea.
Rosacea, when the petals are pretty round, and have no claws at the base, like the Rose.

STAMINA.

3d, 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 connection.

The FILAMENT is that part which elevates the Anther, and is described in terms suited to its varied 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.
Compositum, when several filaments bend to one another at their tops.
Cuneiforme, compressed, tapering to a point, wedge-like. Dilatatum, broad, widened out.
Declinata, when, without describing a large circle, they turn downwards.
Geniculatum, bent at the joints like a knee. Incurvum, bent from the middle, bow-like.
Phamosum, feathery—Pilosum, hairy—Nudum, naked—Librum, loose—Connatum, joined.
Pedicellatum, when standing on foot-stalks, as in Sage.
Dundatum, like an awl, thicker below than above, gradually tapering.

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

- Aristata, slender sharp substances, like awns of Barley. Muticus, awnless, beardless.
Adnata, closely attached on both sides to the point of the filament.
Apice dehiscentis, opening at the top. Latere dehiscentis, opening or bursting at the side.
Bifida, cleft, as in the Grapes.
Bilocularis, having two cells. Unilocularis, having only one cell.
Cristata, crested with cartilagenous points on the sides or base.
Dentata, when there are indentations or teeth on the margin.
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.
Linearis, when long, flat, and of equal breadth, strap-shaped.
Planum, when circular, flat on both sides, and attached by the middle.
Reniformis, shaped like the kidney of an animal. Sagitata, shaped like an arrow.
Sessile, sitting, having no filament.
Versatilis, moveable with the wind or any slight cause.

PERICARPUM.

5th, THE PERICARPUM 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 Linnaeus, viz.—the

- Bacca, a berry, pulpy without valves, seeds in the pulp, as in Gooseberry.
Capsula, capsule, a membranous vessel containing the seed, of various shapes and divisions.
Drupe, a pulpy seed-vessel without valves, enclosing a stone, as in Cherry, Plum, &c.
Lignum, a membrane of two valves, seeds fixed to one suture, as in Pea.
Pomum, a fleshy or pulpy seed-vessel, covering a capsule containing the seed, as in Apple.
Siliqua, a long pod with two valves, seeds attached to both sutures.
Strobilus, a set of hard-tiled scales, as in the cone of the Fir.
Willdenow adds the following:—
Lomentum, a two-valved seed-vessel, with cells not opening.
Pepo, a succulent fruit, the seeds attached to the mid.
Samara, a winged fruit, as in Elm.
Theca, a dry fruit, opening with a lid; and Nux, a nut, as in Hazel.

SEMEN.

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

- Ala, a membrane or wing found attached to the back or margin of some seed-vessels.
Arillus, an ill-defined membrane, covering the seed, and sometimes the pericarpium.
Coronula, a little crown or pappus, attached to the seed of the compound flowers.
Corymbum, the little heart, consisting of the rostellum and plumula, the former descends into the earth and becomes the root, and the latter ascends and becomes the stem.
Calyptema, the seed, lying at the junction of germination into leaves.
Hilum, an external scar or mark, indicating the place of the corculum.
Tunica externa, the outer integument or covering.
Tunica interna, the inner integument or covering of the seed.
Pappus, down, a feathery or hairy flying crown on the seeds of most compound flowers.
Capillaris vel Pilosus, when very fine, like hairs.
Paleaceus, chaffy-like scales or small leaves on the top of the seed.
Plumosus, down divided like a feather. Trypogopon.
Sessilis, sitting on the seed without foot-stalk. Stipitatus, supported by a little foot-stalk.
Setaceus, when covered with rigid bristles. Centurea Negra.

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.
Concavum, somewhat elevated in the centre.
Favosum, when pits, like the cells of a honey-comb, 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.
Planum, flat.
Punctatum, when the surface is covered with small punctures.
Scurbiculatum, when there are deep round pits on the surface.
Setaceum, covered with rigid bristles. Paleaceum, set with small leaves or scales.
Tuberculatum, when covered with small round eminences, or warty-like substances.
Varium, when the centre is smooth, and 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 inferum, when the germen is above the calyx or corolla.
Monospermum, one; Disperma, two; Tetrasperma, four; Polysperma, many seeds.
Pedicellatum, when furnished with a foot-stalk.
Sessile, sitting, when the seed-bud has no foot-stalk.

The STYLUS or Shaft may be

- Capillaris, slender, like a hair of equal thickness.
Clavatus, when thicker above than below, club-shaped.
Crassus, gross, when very thick and short.
Deciduous, 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 germen.
Marcescens, first withering, and then falling off. Persistens, when it does not fall off.
Multifidus, many cleft.
Setaeus, slender, but ridged 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 hemispherical and flat under.
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 at the summit.
Penciliforme, consisting of thick close fleshy fibres, like a pencil.
Petaloideum, when it has the appearance of a petal.
Revolutum, the divisions rolled backwards. Spiralis, when rolled up like a watch-spring.
Uncinatum, hooked at the point.

NECTARIUM.

THERE is still another important part 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.
Calcaratum, when shaped like a cockspur, as in March Violet, &c.
Corniculatum, when shaped and crooked like a horn. Delphinium.
Cucullum, a hollow bag or hood, as in Anemone.
Cyathiforme, when formed like a cup, embracing the germen. Narcissus.
Favosum, when honey-combed, or having pits like a honey-comb. Fritillaria.
Fornix, the arch, a small elongation on the tube or throat of the corolla, as in Anchusa.
Glandula Nectarifera, small glands or round bodies giving out honey. Cruciform flowers.
Plicatum, when some part of the corolla is folded inwards. Statica.
Pori Nectariferi, small holes or pores giving out honey, as in Hyacinth.
Staminiforme, an appearance like stamens, as in Parnasia Palustris.
Squam Nectarifera, small scales that secrete honey, as in Ranunculi.

A KEY to the FOUR GRAND DIVISIONS of LINNAEUS' SEXUAL SYSTEM of BOTANY, illustrated by the Indigenous Plants of Great Britain.

Table with 4 columns: I.—CLASSES, II.—ORDERS, III.—GENERA, IV.—SPECIES. Each column contains a list of botanical classifications and their corresponding counts.

Thus I have endeavoured to bring together, and present to the eye at one view, in a more narrow compass than has hitherto been done, nearly all that is essential to be known, towards prosecuting, with success, the study of Practical Botany; and, should this Breviate happen to excite, in any one, a desire to cultivate an acquaintance with this most delightful science, it may become the source of much pleasure to the individual, as the exercise necessary in the pursuit will confirm the health and strengthen the body; while the nice distinctions, requisite in the examination of plants, will sharpen the powers of discernment, and will ultimately improve the mind, by furnishing it with correct conceptions of the beautiful order and regular succession of the different generations of Vegetables, and of the sublimely-simple, yet inflexible laws, imposed by the Creator and Moral Governor of the Universe upon the Third-Day Volume of his Book.

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