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978-1-108-05566-6 - Manual of British Botany: Containing the Flowering Plants and Ferns Arranged According to the Natural Orders

Charles Cardale Babington Edited by Henry Groves and James Groves

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### Manual of British Botany

First published in 1843, this book ran to eleven editions, with two published posthumously. Compiled by Cambridge botanist Charles Cardale Babington (1808–95) over the course of nine years, this was the first comprehensive catalogue of British plants for nearly a century and was conveniently pocket-sized for fieldwork. Babington was by this time the leader in the taxonomical research of higher plants. Providing both the Latin nomenclature assigned at the time and the common English or anglicised name, he divides plants according to the Linnaean natural orders and describes them in great technical detail. A useful glossary is also included to help the reader navigate the descriptions. As demonstrated in *Memorials, Journal and Botanical Correspondence* (also reissued in this series), Babington was a highly esteemed and influential scientist. This is the expanded 1904 ninth edition of his invaluable and enduring compendium.

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# Manual of British Botany

*Containing the Flowering Plants and Ferns  
Arranged According to the Natural Orders*

CHARLES CARDALE BABINGTON

EDITED BY HENRY GROVES

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# MANUAL OF BRITISH BOTANY

CONTAINING THE FLOWERING PLANTS  
AND FERNS ARRANGED ACCORDING TO  
THE NATURAL ORDERS

BY THE LATE  
CHARLES CARDALE BABINGTON

M.A., F.R.S., F.L.S.

*Professor of Botany in the University of Cambridge*

**NINTH EDITION**

ENLARGED FROM THE AUTHOR'S MANUSCRIPTS  
AND OTHER SOURCES

EDITED BY  
HENRY AND JAMES GROVES



LONDON  
GURNEY & JACKSON, PATERNOSTER ROW  
(SUCCESSORS TO MR VAN VOORST)

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*“Quod ad me attinet, ingenue fatear, me in rebus dubiis de specifica differentia numquam consulere Auctores, qui in herbariis plantis multis, sed eos modo, qui in natura plantis multum student. At iis, qui ad præceptas opiniones experientiam suam concinnant et in singulo externæ faciei lusu, neglectis notis essentialibus, formas transitorias vident, parum fido.”—FRIES.*

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## PREFACE

[to the *Eighth Edition*].

IN this work it has been the Author's wish to adopt in all cases those names which have the claim of priority, unless good cause should be shown for a contrary proceeding; and with this object he has carefully examined nearly all the best European Floras, comparing our plants with the descriptions contained in them, and in most cases with foreign specimens of undoubted authenticity. In the adoption of genera and species an endeavour has been made, by the examination of the plants themselves, to determine which are to be regarded as truly distinct,—thus, it is hoped, taking Nature as a guide. Still, let it not be supposed that any claim is made to peculiar accuracy, or that the Author considers himself qualified to dictate to any student of botany; for he is well aware that there are many points upon which persons who have carefully studied the subject form different conclusions from those to which he has been led.

The progress of our knowledge has caused changes in the nomenclature in successive editions of this book and in the Author's views of the value of forms—as species or varieties. The inconvenience of these alterations to all, especially to statistical botanists, is fully admitted; but the Author does not know of any mode by which it can be avoided if each edition is to be brought up as completely as is in his power to the contemporary knowledge of our plants. No alterations have been admitted until careful

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study has convinced the Author that they are required. He may have fallen into error, but has earnestly endeavoured to discover the truth.

Attempts have been made greatly to reduce the number of recognized species found in Britain; but the results obtained seem to be so totally opposed to the teaching of the plants themselves, and the evidence adduced in their favour is so seldom more than a statement of opinion, that they cannot safely be adopted; nor does the plan of the present work admit of a discussion of the many questions raised by them. Also it has been laid down as a rule by some botanists, that no plant can be a species whose distinctive characters are not as manifest in an herbarium as when it is alive. We are told that our business as descriptive botanists is not "to determine what is a species," but simply to describe plants so that they may be easily recognized from the dry specimen. The Author cannot agree to this rule. Although he, in common with other naturalists, is unable to define what is a species, he believes that species exist, and that they may often be easily distinguished amongst living plants, although sometimes separated with difficulty when dried specimens alone are examined. He thinks that it is our duty as botanists to study the living plants whenever it is possible to do so, and to describe from them; to write for the use and instruction of field- rather than cabinet-naturalists; for the advancement of a knowledge of the plants rather than for the convenience of possessors of herbaria: also that the differences which we are able to describe as distinguishing plants being taken from their more minute organs, does not invalidate their claim to distinction. It seems to be our business to decide upon the probable distinctness of plants before we attempt to define them—to make the species afford the character, not the character define the species.



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This volume being intended as a field-book or travelling companion for botanists, it is advisable to restrict the space allotted to each species as much as possible ; and accordingly the characters and observations are only such as appear to be necessary for an accurate discrimination of the plants. Facts relating to their geographical distribution are therefore usually omitted. Synonyms have been almost wholly omitted ; but the plates of the original *English Botany* or some other British plates are quoted. *Syme's English Botany* may well be used by those who desire full descriptions of the plants ; and the plates in that work have often had valuable additions made to those of the old *English Botany*, from which most of them are taken. Localities are only given for new or rare plants ; Mr. Watson's works and the numerous local floras render it unnecessary inconveniently to swell the present volume by their introduction. But in order to convey some idea of the distribution of plants throughout the United Kingdom, the letters E., S., or I. have been appended to the descriptions of such species as have, it is believed, been found in England, Scotland, or Ireland. The descriptions of a considerable number of plants which only occur in the Channel Islands, and are, therefore, not properly parts of the British Flora ; or which, although included in our lists, there is reason to suppose have never been really detected in Britain ; or, although naturalized, have very slender claims to be considered aboriginal natives ; or which are now supposed to be lost by the alterations made in the places where they were found by our predecessors ; are included within [] ; and notices of a few plants concerning which more accurate information is requisite, are distinguished in a similar manner. It is hoped that by this arrangement the truly indigenous species will be clearly distinguished from those which have little or no claim to be considered aboriginal

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or even thoroughly naturalized. The attempt to do this is necessary for two seemingly contradictory reasons, namely:—the great tendency of many collectors to consider native any plant found growing upon a spot where it is not cultivated; and the peculiar scepticism of some of our botanists concerning the claims of many local or thinly scattered species to be admitted as indigenous, even when their distribution upon the European continent is not unfavourable to the belief that they may inhabit Britain. It has been recommended that the descriptions of these excluded species should be placed in an Appendix or even omitted; but as some of them are not unlikely to be observed by collectors, it is more convenient that they should be arranged with their allies. Those who desire to obtain a complete knowledge of the distribution of our plants should consult Watson's *Cybele Britannica*, and Moore & More's *Cybele Hibernica*.

Full characters of the Natural Orders are to be found in most of the best 'Introductions to Botany'; and it has therefore not been considered advisable to give them in detail in the present volume. In his definitions, the Author has endeavoured to point out the characteristic marks, more especially as far as British plants are concerned.

In using this book the student will find it convenient to pay attention to the *italicized* parts of the generic and specific characters, and, if they are found to agree with the plant under examination, then to compare it with the other parts of those characters, and also with those of allied genera and species.

It is most desirable that the students of our native flora should not confine their attention to books published in this country. Owing to such an unavoidable restriction we fell far behind our continental brethren during the earlier part of the present century. A few modern works may be

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named which will assist them in their studies. Koch's *Synopsis Floræ Germanicæ*, ed. 2, and Grenier and Godron's *Flore de France* are strongly recommended,—also, although in a rather less degree, Lloyd's *Flore de l'Ouest de la France*, Brébisson's *Flore de la Normandie*, and Cosson and Germain's *Flore des environs de Paris*, ed. 2. Boreau's *Flore du Centre de la France*, ed. 3, and the scattered papers of M. Alexis Jordan of Lyons are valuable for the study of varieties: for many of their species can claim no higher rank. But, above all, the works of Fries deserve careful study—especially his *Novitiæ Floræ Suevicæ*, with its three *Mantissæ*, and *Summa Vegetabilium Scandinaviæ*. It is necessary to warn students against the very common error of supposing that they have found one of the plants described in a foreign Flora when in reality they have only gathered a variety of some well-known British plant. The risk of falling into such errors renders it necessary to consult such works as those of Messrs. Boreau and Jordan with great caution, lest we should be misled by descriptions, most accurate, indeed, but often rather those of individuals than species. Amongst plants so closely allied as are many of those called species in some continental works, it is scarcely possible to arrive at a certain conclusion without the inspection of authentic specimens.

The Author takes this opportunity of returning most sincere thanks to his botanical friends and correspondents (far too numerous to record by name) for the great assistance they have again rendered to him by the communication of valuable suggestions, observations, and specimens.

The book has been again carefully revised throughout, so as, if possible, to keep pace with the rapidly advancing knowledge of British plants.

As many as possible of the real English names are given. All the genera and species could not be thus named, owing

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to the absence of any recognized English terms which have been applied to them. It does not seem desirable to invent or adopt new English names, known only to botanists, for the few genera which have them not, the Latin name being sufficient in those cases, and better in the original than in an Anglicized form. . . .

It is hoped that those who use this book will favour the author with information of any (even the slightest) addition, correction or alteration that may appear to be necessary, in order that it may be employed in the preparation of a future edition, as it is only through such assistance that the flora of an extensive country can attain to even a moderate degree of perfection.

Cambridge, July 15, 1881.

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PREFACE.

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### PREFACE TO THE NINTH EDITION.

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The primary object of this edition is to publish the notes in the late Author's interleaved copy of the former edition, but some years having elapsed since the last of these entries, it has been necessary to make further additions, so as to include some of the results of more recent work.

At the urgent request of Mrs. Babington we agreed to act as Editors, feeling that it would be a great misfortune if so useful a work—for more than half a century practically the only critical handbook to our Flora—were not republished. Owing to the claims of business and interruptions from other causes there has been a considerable delay in the completion of our task.

Of the late Professor Babington's notes, some were alterations and additions ready for insertion in the book, while others were merely references and memoranda for further investigation. The latter class we have tried to deal with as nearly as possible in the spirit of the rest of the work. It was Mrs. Babington's particular wish that the text as amended by the Author should not be interfered with. Owing to this limitation, we have been unable to make alterations in the treatment of some of the critical genera which might perhaps have been desirable.

Those species and varieties and additional characters and remarks which we have inserted are printed in smaller type, and, where interjected in the text, are included in square brackets. Many varieties recently described or indicated as British we have thought too trivial to

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particularise. We have inserted a few well-authenticated additional localities, but have not attempted any general revision of this part of the work.

In the case of *Hieracium*, the number of species recognized in this country has so greatly increased during the last twenty years, that it has been thought desirable to substitute an entirely fresh account of the genus, and this has been drawn up by Miss Rachel F. Thompson, under the guidance of Mr. F. J. Hanbury, and forms a very valuable addition to the book.

In the somewhat similar case of *Rubus*, Professor Babington having for so many years been the recognized authority on the genus in this country, it was felt that it would not be fitting for his account to be removed from the book, although it was clear that he had intended to rewrite it. It was therefore arranged by the kind permission of the Rev. W. Moyle Rogers to reprint, as an appendix, a conspectus of the groups and species, from that gentleman's admirable '*Handbook of British Rubi*.'

During the past twenty years great changes have taken place in the matter of nomenclature. The publication of the '*Index Kewensis*' and other lesser works bearing on the subject, besides greatly facilitating the study of botanical literature, has demonstrated how imperfectly the laws of priority as regards names have been observed in the past. It is only by a strict observance of these laws that any approach to finality is likely to be reached, and we have therefore adopted the earliest names as far as we have been able to ascertain them, taking 1753 as the starting-point for both genera and species. In doing this we have had to make a large number of alterations in names and authorities.

It has only been possible for us to carry out this work by the kindness of the many friends and correspondents,

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too numerous to mention individually, who have been ever ready to help us with information and by the loan of specimens and books, and this assistance we gratefully acknowledge. We are especially indebted to Mr. F. J. Hanbury for placing his own and the Boswell herbarium entirely at our service, to Mr. Arthur Bennett for his frequent help with specimens and notes, to Mr. J. Britten and Mr. W. P. Hiern for valuable advice and assistance especially in matters of nomenclature, to Mr. E. G. Baker and Dr. Rendle for kind help in referring to books and specimens at the Natural History Museum, to Messrs. A. Fryer and F. Townsend for assistance with *Potamogeton* and *Euphrasia* respectively, and to Messrs. Colgan and Scully for kindly furnishing us with a list of additions to the Irish Flora.

H. & J. G.

London, May 1904.

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#### ERRATA.

- P. 26, line 31, for "RADIC'ULA" read "RADIC'ULA."  
P. 64, line 29, after "533" add "*Cerastium*, L."  
P. 67, line 18, after "viii" read "*Spergularia*, Pers."  
P. 224, line 7, after "*Carduus*" add "*marianus*."  
P. 413, line 23, for "Buchan" read "Buchen."



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## A GLOSSARY

OF

## THE TERMS USED IN THE MANUAL.

- 
- Accumbent*; used to express the application of the edges of the cotyledons to the radicle in the seeds of Crucifers.
- Achene*; a hard dry one-seeded superior pericarp.
- Acicular*; needle-shaped; very slender from a slightly broader base.
- Acotyledonous*; without distinct cotyledons.
- Acuminate*; drawn out into a long point, but with the sides slightly hollowed.
- Acute*; sharp; forming an angle less than a right angle at the tip.
- Adhering*; uniting together of two different parts, as a calyx to an ovary.
- Adnate*; attached throughout their whole length. Adnate anthers have their lobes so attached to the filament. Stipules are often adnate to the petiole by one of their edges.
- Adpressed*; pressed close to any thing.
- Adpressed-serrate*; serrate with the teeth lying closely on each other or to the edge of the leaf.
- Æstival*; produced in summer.
- Æstivation*; the arrangement of the floral organs in the bud.
- Albumen*; nutritious matter contained in the seed to feed the young plant; more correctly called *perisperm*.
- Alternate*; placed successively on the opposite sides of an axis, as in the case of leaves; or opposite to the spaces between the parts of the next whorl in flowers.
- Amplexicaul*; clasping the stem with their base.
- Anastomosing*; veins combining with each other at their ends.
- Annual* plants rise from the seed, flower, and die in the same year.
- Annular*; forming a ring.
- Anterior*; the part of a flower next the bract or in front.
- Anther*; the part of the stamen which contains the pollen.
- Apex*; the end furthest from the point of attachment.
- Apical*; at or relating to the apex.
- Apiculate*; having a very small hard point at the end, usually formed by the tip of the midvein.

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Frontmatter[More information](#)*Apocarpous*; fruit formed of carpels which are quite separate.  
*Approximate*; close together.*Arching*; curved into the form of an arch.*Arcuate*; curved so as to form a considerable part of a circle.*Aril*; an aftergrowth from the placenta or seedstalk surrounding the seed.*Arillode*; an aftergrowth from the lips of the foramen (or terminal opening of seed).*Ascending*; curving upwards into a vertical position.*Asperous*; rough with short raised points.*Attenuate*; narrowing gradually to a point.*Auricled*; having *auricles*, or appendages at the base of the leaves.*Awn*; a long-pointed bristle-like appendage, as the beard of Barley.*Awned*; having awns.*Axil*; the upper angle formed by the union of the stem and leaf.*Axillary*; placed in an axil.*Axis*; the line passing through the centre of any thing; the common stalk of the flowers in a spikelet of Grasses.*Baccate*; pulpy like a berry.*Base*; the end nearest the point of attachment.*Beak*; a long pointed projection.*Bearded*; having long hair like a beard.*Berry*; a pulpy fruit containing several seeds; a true *bacca* when inferior, a *uva* when superior.*Biennial* plants spring from the seed in one year, flower in the following year, and then die.*Bifariouly*; arranged in two rows, one on each side of any thing.*Bifid*; divided halfway down into two parts.*Bipartite*; divided nearly to its base into two parts.*Bipinnate*; when the divisions of a pinnate leaf are themselves pinnate.*Bipinnatifid*; when the divisions of a pinnatifid leaf are themselves pinnatifid.*Biternate*; when the divisions of a ternate leaf are themselves ternate.*Boatshaped*; resembling a small boat.*Bracteoles*; minute bracts.*Bracts*; small leaves somewhat different from the others, seated on the inflorescence.*Bulb*; a leaf-bud with fleshy scales, usually placed underground.*Bulbiferous*; bearing bulbs on its stem.*Bulblike*; resembling a bulb in appearance, but solid.

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## GLOSSARY.

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*Bulbous*; having radical bulbs.*Bulbous* hairs have a round swelling at their base.*Cespitose*; growing in tufts from the root.*Calyx*; the outer whorl of leaflike organs forming the flower, usually green, called sepals.*Capillary*; like very slender threads.*Capitate*; growing in heads or close clusters; having a knob like the head of a pin.*Capsular*; like a capsule.*Capsule*; a dry usually many-seeded seed-vessel.*Carpel*; the divisions of the ovary or capsule: sometimes one carpel forms an ovary, being rolled up so that its edges meet.*Carpophore*; the stalk of the ovary or capsule within the outer whorls of the flower.*Catkin*; a deciduous unisexual spike of crowded flowers in which the perianths are replaced by bracts.*Cauline*; growing from the stem, not radical.*Cellular tissue*; a collection of minute vesicles filled with fluid;*Chaffy*; covered with minute membranous scales.*Channelled*; hollowed somewhat like a gutter.*Cilia*; hairs placed like eyelashes on the edge of any thing.*Ciliate*; with cilia.*Circinate*; rolled up from the top towards the base like a crosier.*Clavate*; clubshaped.*Claw*; the narrow base of a petal.*Clawed*; having a claw.*Cleft*; deeply cut, but not to the midrib.*Clubshaped*; a long solid body which is slender at the base and gradually thickens upwards.*Cluster*; a kind of dense cyme; also the patches of capsules in Ferns.*Cæsious*; with a fine pale-blue bloom.*Cohering*; the attachment to each other of similar parts; as the petals forming a gamopetalous corolla.*Collapsing*; shrinking together. The submersed and much-divided leaves of aquatic plants often collapse into a form like a painter's pencil, when removed from the water.*Columella*; a cylindrical central placenta.*Commisure*; the inner faces of the carpels (mericarps) of Umbellifere, by which they join.*Compound*; formed of many similar parts which ultimately and naturally separate from each other. *A compound umbel* has small umbels on its branches.*Compressed*; when flattened laterally.*Conduplicate*; folded upon each other lengthwise.

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- Cone*; fruit of a fir-tree.
- Conical*; a solid figure narrowing to a point from a circular base.
- Connate*; when two similar parts, as leaves, are slightly connected round the stem.
- Connective*; the continuation of the filament between the cells of an anther.
- Connivent*; converging.
- Constricted*; narrowed at some point as if by the pressure of a string.
- Contiguous* petals touch or overlap by their edges.
- Converging*; their points gradually approaching.
- Convolute*; rolled together lengthwise.
- Cordate*; ovate, acute, with two rounded lobes at the base; like the figure of the heart on cards: a *cordate-based* leaf is of any shape, but has the two lobes at its base.
- Coriaceous*; leathery; firm, dry, tough.
- Corm*; a fleshy bulblike, but solid, not scaly underground stem.
- Corneous*; like horn.
- Corolla*; the whorl of floral leaves between the calyx and stamens, usually coloured, called petals.
- Corymb*; a raceme with the peduncles becoming gradually shorter as they approach the top, so that all the flowers are about on a level.
- Corymbose*; in the form of a corymb.
- Cotyledons*; the seed-lobes, often forming the first leaves of the plant.
- Crenate*; with rounded marginal teeth. When these are again crenate, the whole is *doubly crenate*; not *bicrenate*, which means having two such teeth.
- Crenatures*; the blunt rounded teeth of a crenate leaf.
- Crenulate*; minutely crenate.
- Crested*; having an appendage like a crest.
- Crowned*; having an appendage on the upper side at the base of the limb, as some petals.
- Cruciform*; four parts, as petals, arranged so as to form a cross.
- Crustaceous*; hard, thin and brittle.
- Cuneate*; like a wedge, but attached by its point.
- Cuspidate*; abrupt, but with a point starting suddenly from the middle of its end.
- Cuticle*; the external skin.
- Cylindrical*; nearly in the form of a cylinder.
- Cyme*; inflorescence formed of a terminal flower, beneath which are lateral branches each having a terminal flower and lateral branches again similarly dividing, and so on. A

- globose* cyme has flowers so placed as to form a globose mass. A *scorpioid* cyme produces only the external branch of each pair, except the first.
- Cymose*; arranged in a cyme.
- Deciduous*; falling off.
- Declining*; straight, but pointing downwards.
- Decumbent*; lying on the ground, but tending to rise at the end.
- Decurrent*; when the limb of a leaf is prolonged down the stem below the point of attachment of the midrib.
- Decussate*; opposite leaves, but the successive pairs placed at right angles to each other.
- Deflexed*; curved downwards or towards the back.
- Dehiscence*; the mode in which an organ opens.
- Deltoid*; fleshy with a triangular transverse section.
- Dentate*; with short equilateral triangular teeth. When these are again dentate, the whole is *doubly dentate*, not *bidentate*, which means having two teeth.
- Denticulate*; finely dentate.
- Depressed*; when flattened vertically or at the top.
- Determinate* inflorescence ends in a flower.
- Dicotyledonous*; with two opposite cotyledons.
- Didymous*; formed of two similar parts attached to each other by a small portion of their margin.
- Diffuse*; widely spreading.
- Digitate*; fingered; of several leaves all starting from the top of the petioles.
- Diœcious*; with the sexes on different plants.
- Disk*; a fleshy space from which the stamens and pistils spring, or between them; the central part of a head (capitulum).
- Dissepiments*; vertical plates dividing an ovary into parts; septa.
- Distichous*; arranged above each other in two rows on opposite sides of an axis.
- Distinct*; separate from its neighbours.
- Divaricate*; spreading at an obtuse angle.
- Diverging*; gradually separating.
- Dorsal*; attached to, or on the back.
- Drupe*; a one-celled superior fruit, not bursting, fleshy externally, stony within, containing one or two seeds.
- Echinate*; armed with straight slender prickles like a hedgehog.
- Elliptic*; oval but acute at each end.
- Elongate*; much lengthened.
- Emarginate*; slightly notched at the end.
- Embryo*; the young plant as first seen in the seed.

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- Entire*; not toothed nor lobed at the edge.  
*Epidermis*; the skin.  
*Epigynous*; apparently seated upon the ovary.  
*Epipetalous*; borne on the petals.  
*Epiphytes*; plants growing upon others, but not deriving nourishment from their juices.  
*Equalling*; when the ends of organs rise to the same height even though their relative lengths are different.  
*Equitant*; when a conduplicate organ covers the edges of another similarly folded, and that covers a third, and so on.  
*Erect*; standing nearly perpendicular to that from which it grows, as a seed rising from the base of an ovary; at right angles to its support.  
*Exceeding*; when an organ extends beyond an adjoining organ, but is not necessarily itself longer than it.  
*Excurrent*; extending beyond the edge or point.  
*Exserted*; projecting beyond that which surrounds its base.  
*Extrorse* anthers have the slit by which the pollen escapes directed from the ovary.
- Falcate*; like a sickle.  
*Falling short of*; the reverse of exceeding.  
*Fasciculate*; when several similar parts are collected into a bundle and spring from the same spot; often the developed leaves of an undeveloped axillary branch form a fascicle.  
*Fastigiate*; when all the branches are parallel and point upwards.  
*Feathery*; like a feather in structure.  
*Felted*; tomentose.  
*Fibre*; a hair-like kind of elementary structure.  
*Fibrous*; having many threadlike parts.  
*Filament*; the stalk usually found supporting an anther.  
*Filiform*; like a thread.  
*Flaccid*; weak.  
*Flexuose*; zigzag, usually changing its direction at each joining.  
*Floccose*; with little tufts like wool.  
*Follicle*; an inflated 1-celled carpel, opening by only one suture to which several seeds are attached.  
*Forked*; like a fork of two prongs.  
*Fronid*; the leaflike part of Ferns.  
*Fruit*; the seed-vessel with its ripe contents and any external appendages.  
*Fruit-bearing*; the state of the inflorescence when the fruit is ripe or nearly so, contradistinguished from *flower-bearing*.  
*Fruticose*; shrubby.

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*Fugacious* ; soon falling off.*Funnel-shaped* ; tubular below, but gradually enlarging upwards.*Furcate* ; forked.*Fusiform* ; spindle-shaped ; thick, tapering to each end.*Gamosepalous* ; *gamopetalous* ; when the sepals or petals are joined by their edges so as apparently to form one.*Germen* ; the ovary.*Gibbous* ; swollen on one side.*Glabrous* ; without hairs or other clothing.*Gland* ; a wartlike cellular secreting organ usually raised above the surface.*Glandular* ; having glands.*Glandular-hairy* ; having hairs tipped with glands.*Glandular-serrate* ; having short teeth tipped with glands.*Glaucous* ; green with a whitish-blue lustre.*Globose* ; round like a globe.*Glumes* ; the scales enclosing the spikelet of flowers in Grasses ; the imbricate bracts enclosing the flowers of Sedges.*Glumiferous* ; having flowers covered by glumes.*Granular* ; covered with minute projecting points.*Habit* ; the general appearance of a plant.*Haft* ; a winged leaf-stalk ; the linear part of a spatulate leaf or petal.*Hastate* ; enlarged at the base into two lobes directed nearly horizontally.*Head* ; a close terminal collection of flowers surrounded by an involucre.*Helmet* ; the hooded upper part of a flower.*Helmet-shaped* ; arched and concave like a helmet.*Herbaceous* ; the parts of plants which are not woody ; also organs, or parts of them, of a green colour.*Hermaphrodite* ; having both sexes in one flower.*Hilum* or *hile* ; the mark on a seed which indicates its place of attachment.*Hispid* ; covered with stiff hairs.*Hoary* ; with greyish-white down.*Hooded* ; formed into a hood at the end.*Horizontal* ; spreading at right angles to their support, as leaves on a stem.*Hybrid* ; a mule.*Hypogynous* ; springing from below the base of the ovary and not attached to the calyx.*Imbricate* ; arranged over each other like the tiles of a roof.*Imparipinnate* ; pinnate with a single terminal leaflet.

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*Lanceolate*; narrowly elliptic and tapering to each end.*Lancet-shaped*; shortly and bluntly lanceolate.*Lax*; loosely arranged.*Leaflets*; the subdivisions of compound leaves.*Legume*; a one-celled and two-valved seed-vessel with the seeds arranged along the inner angle, as the pod of a Pea.*Lenticular*; like a doubly convex lens.*Ligulate*; strap-shaped; not very narrow nor long, and with nearly parallel sides.*Ligule*; a membrane at the base of the limb of the leaf of Grasses.*Limb*; the flattened expanded part of a leaf or petal.*Linear*; very narrow and long, with parallel sides until near the end.*Lingulate*; tongueshaped; long, fleshy, convex, blunt.*Lipped*; applied to a corolla or calyx appearing to consist of two lips.*Lobate*; lobed; with large divisions.*Loculicidal*; opening down the back (or midrib) of the carpel.*Lower part* of a floral whorl; that furthest from the main axis; anterior.*Lunate*; shaped like the new moon.*Lyrate*; a pinnatifid leaf with the lobes successively and gradually enlarging from the petiole, and ending in one still larger lobe.*Marcrescent*; fading but remaining in its place.*Medullary*; relating to the pith. Medullary rays are plates of cells which connect the pith with the growing part next to the bark.*Membranous*; of the texture of membrane; thin and flexible.*Mericarps*; the carpels of Umbelliferae.*Midrib*; the large vein extending along the middle of a leaf from its petiole nearly or quite to the other end.*Moniliform*; cylindrical but constricted at regular intervals.*Monocotyledonous*; having one sheathing cotyledon.*Monœcious*; with the sexes in separate flowers on the same plant.*Monosepalous*; *monopetalous*; when the sepals or petals are joined by their edges so as apparently to form one.*Mucronate*; abruptly tipped with a short point of the same texture.*Multifid*; divided into many parts.*Muricate*; covered with short sharp points.*Mono-, di-, &c. andræus*; with 1, 2, &c. stamens.*Mono-, di-, &c. gynous*; with 1, 2, &c. free styles or stigmas.

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[More information](#)*Naturalized*; introduced but propagating itself freely by seed.*Nectary*; an organ which secretes honey.*Netted*; covered with lines connected together like network.*Node*; a point in a stem where a leaf is produced; a joining.*Nut*; a hard dry 1-seeded superior pericarp; also used for a *glans*, a hard dry 1- or few-seeded inferior pericarp not bursting and seated in a cup-like involucre, *e. g.* acorn.*Ob*; in conjunction with terms means inverted; as *obovate* is ovate with the attachment at the narrow end.*Ohlong*; long oval, equally broad at each end.*Ocrea*; a tubular membranous stipule surrounding the stem.*Opaque*; not shining.*Opposite*; when two similar organs grow one on each side of some body; or different organs are opposed to each other with a stem between them.*Orbicular*; nearly round and flat.*Oval*; an ellipse; a figure rounded at each end, not broader at one end than at the other; and about twice as long as broad.*Ovary*; the young seed-vessel.*Ovate*; egg-shaped; a short flat figure (thin like a leaf) rather broader below the middle of its length.*Ovoid*; a solid eggshaped figure.*Ovule*; the young seed.*Palate*; the prominent part of the base of the lower lip which closes the mouth of a ringent corolla.*Pales*; the leaflike parts of the flower of Grasses, enclosing the stamens, pistils, and hypogynous scales.*Palmate*; with lobes spreading like the fingers of a hand from the same point.*Panicle*; a raceme with branching pedicels; hence *paniculate*.*Papilionaceous*; like the flower of a Pea.*Papillæ*; small elongated protuberances.*Papillose*; with small long protuberances.*Pappus*; the crest of the fruit in Composites, formed of the altered limb of the calyx.*Parabolic*; starting from a broad base and gradually narrowing with curved sides to a blunt point, as the divisions of a calyx.*Parallel* veins start several together from the base of a leaf, diverge slightly, then proceed parallel and simple, and converge at the apex.*Parietal*; on the inner surface of an ovary.*Patent*; spreading widely.*Pedate*; palmate of three lobes with the lateral lobes having similar large lobes on their upper edge.

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- Pedicel*; the branch of a peduncle.  
*Peduncle*; flowerstalk.  
*Pellucid*; nearly transparent.  
*Peltate*; when its point of attachment is on the face, not at the edge of a leaf or other organ.  
*Pendulous*; seeds hanging from the top of an ovary.  
*Pentagonal*; with five angles having convex spaces between them.  
*Pentangular*; with five angles and five flat or concave faces.  
*Perennial* plants live several years and flower more than once, usually many times.  
*Perfect* flowers have both stamens and pistils in an efficient state.  
*Perfoliate*; when the leaf completely surrounds the stem so that the latter seems to pass through it.  
*Perianth*; the floral whorls when the calyx and corolla are not distinguishable.  
*Pericarp*; seed-vessel, including adhering calyx if present.  
*Perigynous*; when the corolla and stamens are borne on the calyx but free from the ovary.  
*Perisperm*; the so-called albumen.  
*Persistent*; not soon falling off.  
*Personate*; a gamopetalous two-lipped corolla of which the lower lip is pressed upwards so as to close the opening.  
*Petal-like*; resembling petals in texture and colour.  
*Petals*; the divisions of the corolla.  
*Petiolate*; having a petiole.  
*Petiole*; the stalk of a leaf: *petiolule*; of a leaflet.  
*Phænogamous*; visibly furnished with stamens and pistils.  
*Phanerogamous*; phænogamous.  
*Phyllaries*; the scales or bracts of the involucre of Composites.  
*Pilose*; with scattered rather stiff hairs.  
*Pinnæ*; the segments of a pinnate leaf.  
*Pinnate*; when leaflets are arranged on opposite sides of a common stalk. A leaf is 2- or 3-pinnate when its primary or secondary divisions are pinnate.  
*Pinnatifid*; a leaf deeply cut into segments nearly to the midrib. A 2- or 3-pinnatifid leaf corresponds to a 2- or 3-pinnate leaf.  
*Pinnules*; the segments of a bipinnate leaf.  
*Pistil*; the ovary, style, and stigma taken together.  
*Pith*; a column of cellular tissue in the centre of the stem and branches of Dicotyledons.  
*Pitted*; covered with small depressed spots.  
*Placenta*; the part of the carpel from which the ovules spring.  
*Plane*; flat; also an imaginary flat surface in which things are placed.

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*Plicate* ; plaited.*Plumule* ; the ascending leafy part of the embryo.*Pod* ; a 1-celled and 2-valved seed-vessel with the seeds arranged along the inner angle.*Pollen* ; the dust in the anther.*Polygonal* ; with many angles.*Polypetalous* ; with many separate petals.*Polysepalous* ; with many separate sepals.*Pome* ; a compound fleshy many-seeded fruit, an apple or fruit resembling it.*Pores* ; small, often roundish, holes.*Porrect* ; extending forwards.*Posterior* ; the part of the flower nearest to the axis.*Prickles* ; hardened epidermal appendages resembling thorns, but not woody.*Primordial* ; the first flower of inflorescence.*Procumbent, prostrate* ; lying on the ground.*Prolonged* ; drawn out into a long point, like acuminate, but with no hollowing at the sides.*Pubescence* ; closely adpressed down.*Pubescent* ; with pubescence.*Pulverulent* ; covered with fine powdery matter.*Punctate* ; having minute spots like pin-holes, real or apparent.*Pyramidal* ; nearly in the shape of a pyramid.*Pyriform* ; pear-shaped.*Quadrata* ; squarish.*Raceme* ; a spike with stalked flowers : hence*Racemose* ; flowering in a raceme.*Rachis* ; the central stem of some kinds of inflorescence ; as the stalk common to several spikelets of Grasses ; the stalk of the frond of Ferns above the lowest pinnae.*Radiate flowers* ; those at the margin of a head or other inflorescence which are long and spreading like rays.*Radical* ; springing from just above the root.*Radicle* ; the end of the embryo from which the root grows ; also small roots.*Raphides* ; minute needle-shaped crystals found in the cells of some plants.*Rays* (see *Radiant*) ; parts diverging in a circle from a central point.*Receptacle* ; the dilated top of the stalk bearing the flowers in Composites ; the common support of the parts of a flower.*Reclinate and reclining* ; curved downwards.*Recurved* ; bent moderately backwards.

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- Reflexed* ; bent considerably backwards.  
*Reniform* ; transversely oval, but broadly cordate at the base.  
*Repand* ; with a rather wavy margin.  
*Reticulate* ; forming a network.  
*Retorse* ; directed from the point of an organ.  
*Retuse* ; abruptly blunt with a notch in the middle.  
*Revolvate* ; rolled back, as towards the underside of a leaf.  
*Rhizomatous* ; having rhizomes.  
*Rhizome* ; a prostrate more or less subterranean stem producing roots and leafy shoots.  
*Rhomboidal* ; approaching a quadrangular, not square, figure attached by one of its more acute angles.  
*Ringent* ; a 2-lipped widely open corolla.  
*Rootstock* ; a thick short rhizome or tuber.  
*Rosette* ; a collection of leaves growing close together, like the petals of a double rose.  
*Rosulate* ; arranged in a rosette.  
*Rotate* ; a monopetalous corolla with a short tube and very spreading limb.  
*Rudimentary* ; imperfectly developed.  
*Rugose* ; covered with a network of lines enclosing convex spaces.  
*Rugulose* ; finely rugose.  
*Runcinate* ; where the lobes of leaves are directed towards the base.  
*Runner* ; a prostrate shoot rooting at its end ; a stolon.
- Sagittate* ; like the barbed head of an arrow, the auricles or lobes pointing backwards.  
*Salvershaped* ; a corolla with a long slender tube and flat limb.  
*Sarmentose* ; having a prostrate stem, starting with a very small arch from its root.  
*Scabrous* ; rough like a blacksmith's hand.  
*Scales* ; minute rudimentary leaves ; very small flat semidetached parts of the cuticle.  
*Scape* ; a leafless radical peduncle.  
*Scariosus* ; very thin, dry, and semitransparent.  
*Scorpioid* ; said of the branches of a cyme curved in a circinate manner, and the flowers produced only on the upper side.  
*Secund* ; all turned towards one side.  
*Seed* ; the ovule arrived at maturity.  
*Seedstalk* ; the stalk connecting the hilum of a seed with the placenta.  
*Sepals* ; the divisions of the calyx.  
*Septicidal* ; when a fruit splits through the middle of the septa or partitions.

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*Septifragal*; when a fruit splits by the separation of the backs of the carpels from the septa.

*Septum*; the division of an ovary formed by the inflexed edges of the carpels.

*Serrate*; toothed like a saw.

*Serratures*; teeth like those of a saw.

*Serrulate*; with very small sawlike teeth.

*Sessile*; without a stalk.

*Seta*; a bristle; a bristle tipped with a gland; a slender straight prickle.

*Setaceous*; like a bristle.

*Setose*; bearing bristles or setæ usually ending in glands.

*Sheath*; the lower part of a leaf or its petiole, which forms a vertical sheath surrounding the stem. It is sometimes found alone.

*Silicle*; a silique not four times as long as broad.

*Silique*; a long podlike fruit of Crucifers having its edges connected by an internal membrane.

*Simple*; not compound; not branched.

*Sinuate*; having many large blunt lobes and notches.

*Slashed*; with deep tapering incisions.

*Smooth*; free from all kinds of roughness.

*Sobole*; a creeping underground stem producing roots and leaf-buds at intervals; an underground stolon.

*Soboliferous*; having soboles, or long underground shoots ending in suckers.

*Solitary*; growing singly.

*Spadix*; a succulent spike bearing many sessile closely placed flowers.

*Spath*; a large bract often enclosing a spadix.

*Spathulate*; oblong, with a long linear claw or haft.

*Spike*; a long simple axis with many sessile flowers; hence *spicate* flowers.

*Spikelet*; the small group of flowers in Grasses enclosed within one or more glumes.

*Spine*; a stiff sharp woody persistent thorn.

*Spinous*; furnished with spines.

*Spinulose*; with small, often very minute spines or prickles.

*Spiral vessels*: fine tubes composed of membrane with spirally twisted fibres internally.

*Sporules*; the seedlike reproductive bodies of flowerless plants.

*Spur*; a tubular extension of the lower part of a petal or gamopetalous corolla; a loose prolongation of the base of a leaf beyond its point of attachment.

*Spurred*; furnished with a spur.

*Squarrose*; covered with appendages spreading at right angles or more.