The Kew Plant Glossary

an illustrated dictionary of plant terms

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Illustrations by Juliet Williamson
If language is incorrect, then what is said does not agree with what was meant; and if what is said does not agree with what was meant, what is to be done cannot be completed.
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INTRODUCTION

Every other author may aspire to praise; the lexicographer can only hope to escape reproach, and even this negative recompense has been yet granted to very few. I have, notwithstanding this discouragement, attempted yet another glossary of botanical terms.

These two sentences (with a slightly altered ending) have of course been lifted from the famous lexicographer\(^1\) Samuel Johnson; just as this glossary has been compiled from other works, albeit with a personal touch.

Why write yet another glossary? Because the one I find myself using most of all is my favourite edition of the old Jackson glossary of botanical terms (Jackson, 1928); but that is now a little out of date, and does not have pictures. I also enjoyed compiling, with my colleague Martin Cheek, the glossary for the *Flora of Tropical East Africa* (FTEA) (Beentje & Cheek, 2003; 2377 terms). I thought that slim volume was beginning to resemble my vision of an updated Jackson. But by its terms of reference, it was parochial: it had vegetation terms and geomorphological terms particular to East Africa, and included only terms that had been used in that flora. I have now gone through many more floras, monographs, revisions, other glossaries, text books and so on. This current glossary is still based on that original FTEA glossary, but it has been updated from comments made by users of that FTEA glossary; and it has been expanded by terms I have gleaned from a host of botanical works, as well as by specialist terms for various groups contributed by colleagues. It now has 4144 terms; the definitions have been worded by Martin Cheek and me (for about 2000 terms in Beentje & Cheek, 2003) or by me, with the help of many colleagues and experts (for the additional 2100), but obviously based on the works listed in the bibliography. My goals have been clarity, ease of use and indicating where confusion may arise.

And so this glossary is what I would like to have on my desk when writing a flora or monographic work, and it is intended for people who work with plant descriptions, plant identification keys, floras, monographs, revisions and field guides. It does not include terms on habitat or vegetation types, geomorphology or soil science; it includes only a few terms relating to anatomy, palynology and nomenclature. For wider glossaries of such fields see, for instance: Cutler, Botha & Stevenson (2008) for anatomy, the Hoen website mentioned under ‘websites used’ for palynology, and McVaugh, Ross & Stafleu (1968) for nomenclatural terms.

The format is as follows:

The main glossary includes all descriptive terms used in floras, plant field guides, monographs and revisions, including vague or strange ones (but indicating them as such). It indicates which term is preferred in cases where there are several terms for one definition; of course, these are personal opinions, but I have tried to base them on general usage. I also feel that a plurality of meanings for a single term is not a good thing, because it leads to confusion. The series of articles by Rickett in the *Bulletin of the Torrey Botanical Club* illustrates this point admirably (Rickett 1954, 1955, 1956). Rickett cites the example of his discovering a paper by the German author B. M. Schulze who used definitions

\(^1\) Johnson defined a lexicographer as "a writer of dictionaries; a harmless drudge that busies himself in tracing the original, and detailing the signification of words".
for terms such as elliptic, ovate and oblong completely differently from Rickett himself. “Which raises the interesting question: to what extent are (Americans) able to understand current descriptions in German or by Germans?”. And, of course, vice versa.

After the main glossary, I have included several treatments by subject, with full-page plates. The main text is complete in its own right, but these end pages combine terms within various categories, for ease of comparison and cross-reference. A much more thorough treatment of many more such morphological subject groups, beautifully illustrated, can be found in Bell (2008).

I have omitted the following terms:

- Terms that are both colloquial and very specific, such as acorn or rose-hip.
- Many of the very specialised terms for fruit types of Spjut (1994), many of the very specialised terms for hair types and attributes used by Payne (1978) and many of the terms used in Ellis et al. (2009).
- The Greek or Latin roots of words; for these, one may refer to Radcliffe-Smith (1998). I indicate when a word is Latin in special nomenclatural terms such as nomen novum or auct., but not in Latinised terms such as archegonium.
- Terms that are not in current use and have not been used in the past, say, 50 years; there are many older terms that are no longer used but that appear in old publications. I would advise the reader to use the admirable Jackson (1928) to research these terms. When there are multiple meanings for a single term, though, I do include older ones, as these might otherwise lead to confusion.

It has been suggested to me that I should indicate which terms are ‘recommended terms’. That is not really for me to say! I have indicated which terms I think should not be used, because there are better and simpler terms for them (e.g. adenophorous, monoclinous), and I have omitted terms that I have found in other recent botanical dictionaries but that I thought were hardly ever used these days (e.g. machaerantheroid). The images, plus the block of image plates at the end of this glossary, come close to what I would call ‘recommended terms’ – but only a forum of botanists from many countries could draw up a list of properly agreed-on recommended terms. Some people hate ‘lanceolate’, because it can be ambiguous, others think it is a useful descriptive term; I have indicated and illustrated the different uses, and I indicate what is the current general use.

I would appreciate feedback, for use in possible future editions: additions, suggestions and even criticism; for the latter, I join Kiger and Porter (2001) in asking that you restrict yourself to “constructive criticism — that based on logical analysis, not merely uncritical dedication to parochial quirks or hoary tradition”. Though I do like to mention parochially quirky and hoary terms, to show terms that are used for more than one interpretation!

It should be noted that for many terms, a precise definition is not really possible. This sounds exceedingly tiresome, and it is. However, plant variation forms a continuum, and in many cases, all we can do with our terms is to indicate reference points on this continuum. Intermediate forms exist, and the difference between, for instance, puberulous, pubescent and tomentose, is a gradual rather than an absolute one. This goes for indumentum terms, for leaf shapes, for many concepts in this book. It is not all hopeless, however; there is a real difference between puberulous and tomentose, and the fact that intermediates between such terms exist should not stop us from trying to be accurate! I hope this publication will be useful in such endeavours.
I am very grateful to my advisory panel for comments, suggestions, additions and many improvements:
Loutfy Boulos (Cairo) for suggestions on new terms;
Jeremy Bruhl (Armidale and RBG Kew) for his advice on Cyperaceae terminology;
Aaron Davis (RBG Kew) for enlightening me on some Rubiaceae terms;
Shahina Ghazanfar (RBG Kew) for additional entries and comments on existing ones;
David Goyder (RBG Kew) for comments on specialist terms describing derived subfamilies of Apocynaceae;
Nicholas Hind (RBG Kew) for additional entries and comments on Compositae/Asteraceae and general terms;
James Kalema (Kampala) for helpful comments and suggestions for improvements;
Gwilym Lewis (RBG Kew) for patiently, carefully and painstakingly reading through a draft and suggesting many additions, improvements, corrections and specialist Leguminosae/Fabaceae terms;
David Mabberley (RBG Kew) for additional entries and comments on existing ones;
France Rakotondrainibe (Paris) for helpful comments on fern terms, including additional entries;
Hélène Ralimanana (Antananarivo) for conferring over meanings, and for pointing out vague explanations;
Wolfgang Stuppy (RBG Kew) for comments and suggestions on fruit and seed terminology, which both improved and sharpened definitions;
Mats Thulin (Uppsala) for additional entries and improvements on existing ones;
Bernard Verdcourt (RBG Kew) for good ideas and general suggestions, including much literature;
Juliet Williamson (Hampton and RBG Kew) for pinning me down on vague explanations of terms;
Jeffrey Wood (RBG Kew) for many new terms and improvements to existing entries, especially for Orchidaceae terms;
Daniella Zappi (RBG Kew) for additional entries and comments on existing ones.

In addition to my advisory panel, I would like to thank my wife Juliet Williamson (Hampton and RBG Kew) for her illustrations, without which this would be just another boring little volume.

I am also grateful to the team from the RBG Kew Publishing Department: Chris Beard, Lloyd Kirton and Sharon Whitehead, whose cheerful help and hard work have made this book a reality.
For explanation of botanical Latin terms, see the incomparable Stearn (1973 and later editions); for author abbreviations, see Brummitt & Powell (1992). I have consulted the Flora of Tropical East Africa (all volumes up to December 2008, with authors of forthcoming parts consulted on specialist terms) plus the publications and websites listed below.


BIBLIOGRAPHY AND WEBSITES USED
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http://www.bio.uu.nl/~palaeo/glossary/glos-int.htm Peter Hoen’s glossary of palynology on the University of Utrecht’s website; encompasses many more terms than I have included here. This is based on the excellent Punt et al. (2007). Consulted July 2008.
GLOSSARY

SYMBOLS

° degrees
' feet
" inches
× hybrid
> larger than
≥ larger than or equal to
± more or less
! seen by author
< smaller than
≤ smaller than or equal to
† destroyed
♀ female, pistillate
♂ male, staminate; or sometimes biennial
♀ hermaphrodite
∞ many, too many to be counted easily
μ micrometre, = 0.001 millimetre; μm is now the official format
μm micrometre, = 0.001 millimetre
① annual
② biennial
⑥ annual
④ perennial
♀ tree
§ section

SUFFIXES

-aceous, having the nature of; for example, herbaceous, having the nature of a herb
-ate, having a feature; for example, carinate, with a keel
-carpous, referring to carpels
-escent, becoming; for example, glabrescent, becoming glabrous
-ferous, bearing, producing
-fid, split; bifid, split in two; trifid, split in three
-foliolate, with a certain number of leaflets; trifoliolate, with three leaflets
-form, meaning shaped like, as in dolabriform, shaped like a hatchet
-gonal, with a certain number of angles; for example, hexagonal, with six angles
-gonous, -angled

-jugate, (of leaflets) in pairs; 6-jugate, in six pairs
-merous, the number of parts of a flower, for example, 5-merous: in which the parts are 5, or in 5s
-oid, resembling
-ose, giving adjetival qualities to the noun stem to which it is attached
-partite, divided, usually to about halfway
-pinnate, the number of divisions; /2-pinnate, with the primary divisions themselves divided; tripinnate/3-pinnate, with the secondary divisions themselves divided
-ploid, the number of chromosome sets: haploid, 1n; diploid, 2n; tetraploid, 4n
-sect, cut or divided to the axis, more deeply than -lobed, -fid or -partite
-ulate, a diminutive of the root of the word, for example, mucronulate, bearing a minute mucro
PREFIXES

For more prefixes, see Stearn (1973); of course, terms with their prefixes included are arranged alphabetically in the main section of the glossary (Botanical terms).

a-, away from
ab-, away from
abs-, away from
ad-, towards, to, near
amb-, ambi-, around
ana-, back, against
ante-, before
anti-, against
apo-, from, off, without, separate, away from
bi-, with two...
cata-, downwards, outwards
circum-, around
co-, col-, com-, con-, cor-, together with
contra-, against
de-, downwards, outwards
deca-, ten-
di-, dis-, between, away from
di-, two-
dia-, through
dodeca-, twelve-
ede-, without, missing
endo-, within
epi-, upon, on, over
exo-, on the outside, beyond
extra-, on the outside, beyond
gamo-, united
haplo-, single-
hami-, half
hepta-, with seven...
hexa-, with six...
hyper-, above
hypo-, under, below
infra-, below
inter-, between
intra-, within
meta-, after, behind
mono-, with one...
multi-, many-
ob-, against
octo-, octo-, with eight...
pel, per-, through, very
penta, with five...
peri-, around
post-, after, behind
prae-, before, in front
quadri-, with four...
quinque-, with five...
re-, back
retro-, back
semi-, half
sub-, below, under
super-, above
supra-, above, over
syn-, together with
ter-, with three...
tetra-, with four...
trans-, beyond
tri, with three...
uni-, with one...
ABBREVIATIONS

For author abbreviations after the species name, see Brummitt & Powell (1992).

2n, diploid generation
adnot., annotated on specimen sheet; or a mention of a species, but not as a main heading
aff., (from the Latin affinis), akin to, near to the named taxon; not the same, but clearly related
APG, APG II, APG III (in plant taxonomy) abbreviation of Angiosperm Phylogeny Group, and now used to indicate the system of plant classification published in 2009 (APG III)
auct. (plural auctt.), (from the Latin auctorum), of the author; appended to a name used by a later author in a different sense from the one originally proposed.
Auctt. indicates ‘according to various authors’
auct. non, phrase after a scientific name, meaning the name has been used by one author in the wrong sense, as opposed to ... (, non + original author of name should follow)
C₃, C₄, metabolic pathways for carbon dioxide fixation; C₃ plants tend to do well in areas of moderate temperatures and plentiful water with high carbon dioxide concentration, whereas C₄ plants have a competitive advantage under hot and arid conditions. See also CAM
CaCo₃, calcium carbonate; lime, chalk
CAM, crassulacean acid metabolism, a metabolic pathway for carbon dioxide fixation; CAM plants fix carbon dioxide during the night, and CAM is especially common in plants of hot and arid areas. See also C₃, C₄
cf., used on determinavit slips: compare to, see also
cm, centimetre
comb. nov., (from the Latin combinatio nova), new combination, the specific epithet used with another genus name
d.b.h., diameter at breast height, of a tree trunk
del., (from the Latin delineatus), ‘drawn’, illustrated by
e. descr., (from the Latin ex descriptione), from the description, according to the description
et al., (from the Latin et alii), and others
f., (abbreviation in author citation) (from the Latin filius), son
fil., (abbreviation in author citation) (from the Latin filius), son
fl., flower, flowering
fr., fruit, fruiting
ib., (from the Latin ibidem), the same
ibid., (from the Latin ibidem), the same
i.e., (from Latin id est), that is
ined., (from Latin ineditus), not yet published
iso., isotype
ITS, the internal transcribed spacers of 18S to 26S nuclear ribosomal DNA, characterized by tandem repeat structure and high copy number; typically used in molecular systematics at the species level
km, kilometre
l.c., (from the Latin loco citato), ‘in the place mentioned’
l.s., longitudinal section
leg., (from the Latin legit), collected by (to be followed by name of collector)
m, 1. metre; 2. mile
mis., abbreviation for missus, ‘sent by’
mm, millimetre
MS, (from a) manuscript; unpublished
N, haploid generation
nom., (from the Latin nomen), name
nom. conf., (from the Latin nomen confusum), (in nomenclature) confused name; name based on discordant elements from which it is difficult to select a lectotype. The term was taken out of the Code (see I.C.B.N.) years ago, and is used less and less as such names are increasingly proposed for rejection (see nomen rejiciendum)
nom. cons., (from the Latin nomen conservandum), (in nomenclature) a name, the use of which is officially permitted in spite of its contravention of one or more articles of the Code (see I.C.B.N.)

nom. illeg., (from the Latin nomen illegitimum), (in nomenclature) illegal name; a name that was nomenclaturally superfluous when published (because the taxon and type had already been validly published under another name), or a later homonym of a previously published name

nom. nov., (from the Latin nomen novum), (in nomenclature) name or epithet published as a replacement for an earlier name or epithet, for example, for one which, in a new combination, would not be valid

nom. nud., (from the Latin nomen nudum), (in nomenclature) name or epithet published but without a description or diagnosis, or without a reference to any of these; invalidly published name or epithet

nom. rejic., (from the Latin nomen rejiciendum), (in nomenclature) name or epithet to be rejected, because if applied, it would cause a disadvantageous nomenclatural change. Rejected names are listed in the Code (see I.C.B.N.)

nom. superfl., (from the Latin nomen superfluum), (in nomenclature) superfluous name; a name that, when first validly published, was applied by its author to a taxon so circumscribed as to include the type of another name (which the author ought to have adopted)

n.v., (from the Latin non vidi), ‘I have not seen’; placed after a specimen citation in a publication, if the specimen has not been seen by the author

p.p., (from the Latin pro parte) partly

pH, measure of acidity or alkalinity

q.v., (from the Latin quod vide), see there

rbcl, a plastid gene used in phylogenetics to study relationships

s.l., (from the Latin sensu latu), in the broad sense

s.n., (from the Latin sine numero), without a number

s.s., (from the Latin sensu stricto), in the narrow sense

s.str. (from the Latin sensu stricto), in the narrow sense

sine loc., from the Latin sine loco, ‘without a place’; used for a herbarium specimen without locality information

sp., species (singular)

sphalm., sphalmate, by mistake

spp., species (plural)

ssp., subspecies; subsp., is preferable

subsp., subspecies

syn., 1. syntype(s); 2. synonym

t., (from Latin tabula), figure (usually full-page)

t.s., transverse section

var., (from the Latin varietas), variety

X, placed after a genus name and before a specific epithet, indicating hybrid origin
BOTANICAL TERMS

A

a-, prefix signifying lack of, as in achlorophyllose, lacking chlorophyll

abaxial, the side of an organ that faces away from the axis that bears it; for example, the lower surface of a leaf. OPPOSITE: adaxial

abbreviated, shortened

aberrant, different from the normal

abiotic, not involving living organisms

abnormal, deviating from the rule for that particular taxon; for example, 5 stamens instead of the normal 4

abortion, termination, partway through their development, of parts that are usually present; usually of flowers or fruits

abortive, imperfectly developed, not grown to its normal size or function

abrupt, suddenly, not gradually; the meaning ‘truncated’ given in the Shorter Oxford English Dictionary (Anonymous, 2007) I have not seen used

abruptly pinnate, a pinnate leaf without an odd terminal leaflet; same as paripinnate (the latter preferred)

abscission (also abscissing), (of leaves or leaflets, sometimes on flower or fruit stalks, rarely branches), detaching from the stems that bear them at a predetermined place, the abscission zone

abscission joint, zone of articulation where a leaf or another organ (part) will break off; often swollen and with a constriction groove

acantha, prickle, thorn, spine [vague term, not recommended]

acanthophyll, leaflet of a pinnate leaf modified in the form of a spine [specialist term used in Palmae, see Dransfield & Beentje, 1996]

acarodematia, small pockets in leaves, in the axils of the veins on the abaxial surface, theoretically harbouring mites (Acari); usually contracted to ‘domatia’

acarophytic, (of a plant) harbouring mites

acarpic, without fruit; the more common term is acarpous

acarpous, without fruit

acarulescent, without a stem (preferred term for this is acaulous; the ending -escent implies change)

acaulescent, without a stem, or without a visible stem

accepted, in nomenclature, a name or epithet accepted by an author who adopts it as the correct one

accessory, 1. (of buds) additional to axillary buds, and assuming their function; 2. (of branches) secondary branches; 3. (of fruits) false fruits, conspicuous but without function other than attraction; 4. a fruit (or group of fruits) conspicuous by parts that are not part of the pistil; see also anthocarp; 5. (in fern anatomy) stellar perforation not linked to frond insertion

accrescent, increasing in length or thickness with age (for example, the calyx after flowering)

acclimatised, habituated

acclimatisation, habituation

accommodation, 1. circular or oval lenticels on the outer surface of the tracheids in coniferous wood; 2. an increase in the size of a plant or organ without an increase in age

accumulator, 1. a plant in which the storage of reserve food is a prominent feature; 2. a plant organ which stores reserve food

accumulator, 2. a plant organ which stores reserve food

accessory, 2. (of leaves) a leaf, usually smaller than the primary leaf, that does not photosynthesize [unusual sense, not recommended]

accessory, 3. (of fruits) a fruit (or group of fruits) conspicuous by parts that are not part of the pistil; see also anthocarp

accumbent, lying against (for example, the cotyledons against the radicle)
acephalous, 1. ‘without a head’, used for an ovary without a stigma; 2. also in general, when a head-like structure would be expected but is not present

acerate, acicular, needle-shaped [unusual term]

aceros, needle-shaped, thin-cylindrical with a sharp point; solid/3-dimensional shape, unlike acicular, which is either a plane (two-dimensional shape) or a solid (three-dimensional shape)

acervulus (plural acervuli), 1. in chamaedoroid palms, a group of flowers borne in a line; 2. a small asexual fruiting body that erupts through the epidermis of host plants parasitised by mitosporic fungi of the form order Melanconiales

acetabuliform, shaped like a shallow cup, saucer-shaped [unusual term]

achene, a small dry thin-walled fruit, not splitting when ripe, and containing a single seed

achenetum, an aggregation of achenes [obscure term]

achilary, without a lip [obscure term]

achlamydeous, of flowers, without calyx or corolla

acicula, acicle, a needle-like prickle

acicular, needle-shaped; very narrow, stiff, and pointed (usually said of leaf tips)

aciculate, of surface, with fine lines, as if scratched

acinaciform, scimitar-shaped, thin and curved with pointed apex [unusual term]

acolyte, sterile male flower found with a fertile female flower as a flower pair in the inflorescence of Calamus (specialist term used in Palmae, see Dransfield, 1986)

acquired, used of characters that arise during the lifetime of a plant as a result of environmental (not genetic) influences

acrodal, (of a capsule fruit) dehiscing through terminal fissures [obscure term]

acrodalous, with two or more main veins starting at the base of the leaf, running parallel to the leaf margin and meeting (or almost meeting) at the apex

acrogenic, growing only at the apex of the stem

acrogenous, growing only at the apex of the stem

acrogynous, with female flowers at the apex of the inflorescence. OPPOSITE: basigynous

acropetal(-ous), in the direction of the apex. OPPOSITE: basipetal

acrophyll, in climbing ferns, the mature fronds formed at some distance from the ground. OPPOSITE: bathyphyll

acrosopic, (in ferns) facing towards the apex of the frond

acrosospire, the first sprout of a germinating seed

acrostichoid, (of sporangia) resembling the arrangement in Acrostichum, with the lower/abaxial frond surface completely covered with sporangia

acrotonic, 1. in branching, when the branches near the apex of the plant are the most developed; 2. with new organs developing on or near the apex of existing organs

actinomorphic, with three or more prominent veins from near the base of the leaf, running towards the margin (and sometimes reaching it)
ACTINOMORPHIC–AERIAL LEAVES

actinomorphic, (of flowers) regular, radially symmetric. OPPOSITE: zygomorphic

actinostele, uninterrupted central vascular cylinder with radiating ribs
actinostelic, with an uninterrupted central vascular cylinder with radiating ribs, and without pith
active, in growing condition. OPPOSITE: dormant

aculeate, armed with prickles (as distinct from thorns)

aculei, sharp points, prickles

acumen, a rather abruptly tapering point from an otherwise rounded or obtuse apex

acuminate, tapering to a long tip (usually of leaf tips)

acute, sharp, sharply pointed, the margins near the tip being almost straight and forming an angle of <90°. OPPOSITE: obtuse

acyclic, spiral, not in whorls
adapical, towards the apex [unusual term in botany]
adaptation, organism change that is successful in that it helps the organism cope better with its environment or with changing conditions
adaxial, the side of an organ towards the axis on which it is inserted, (e.g. the upper surface of a leaf). OPPOSITE: abaxial (see there for illustration, page 5)
adenophorous, glandular [old-fashioned term, not recommended]

adenose, glandular [old-fashioned term, not recommended]
adherent, (of different organs) sticking to, attached but not fused
adhesion, (of different organs) attachment (but not fusion)
adjacent-ligular, germination type where the shoot is carried out of the seed within the very short ligule of the cotyledon (specialist term used in Palmae, see Dransfield, 1986)
admedial, (in leaf venation) towards the axis of symmetry of the leaf
admissible, in nomenclature, a name or epithet allowed under the current rules
adnate, attached to, surface to surface; usually said of different organs or structures (e.g. stamen adnate to a petal); see also connate, which is attached to, margin to margin, of similar organs or structures
adnot., annotated on specimen sheet; or a mention of a species, but not as a main heading
adpressed, lying flat for its whole length (e.g. hairs on leaf surface); = appressed, which is preferred
aduncate, twisted, hooked [obscure term, not recommended]
adventitious, 1. (of buds) those produced elsewhere than normal (such as leaf axils, shoot apices) (e.g. those appearing with wounds); 2. (of roots) lateral roots coming from organs other than main root system, such as the stem

adventitious roots

adventive, not native to an area, but growing wild and reproducing
aequi-, equal or similar [old-fashioned spelling for equi-]
aerating, (of roots) rising out of the mud/soil, often covered with corky tissue, as in some mangrove plants
aerial leaves, (in aquatic plants) the leaves that are not submerged or floating
aerial roots, roots emerging from the plant wholly above the ground surface

aerophore, (in ferns) a small projection or swelling along the stipe or on secondary axes, apparently for gas exchange; especially in Thelypteridaceae

aestival, occurring only in early summer

aestivation, the way in which sepals or petals are folded or packed in bud; see also vernation for leaves

aff., (affinis) akin to, near to the named taxon; not the same, but clearly related

afro-alpine, from the upper zone of mountains, above the tree line (in Africa)

agamospecies, group of individuals in which reproduction is almost exclusively by asexual means

agamospermous, producing viable seed without fertilisation having taken place

agamospermy, when viable seed is produced without fertilisation having taken place

agglomerated, densely crowded, but not stuck together

agglutinate, agglutinated, stuck together

aggregate fruit, a term with several meanings; historically synonymous with compound fruit (which is preferred), both defined as being fruits that develop from more than one flower (Spjut & Thieret, 1989). Spjut and Thieret (1989) traced the confusion to Lindley (1832) who reversed the meanings of aggregate and multiple as defined by de Candolle (1813) and earlier by Link and Gärtner. English text books have generally adopted Lindley’s errors, whereas non-English text books have followed de Candolle’s definitions, or have employed other related terms. To avoid further confusion between aggregate and multiple, Spjut and Thieret (1989) recommended the term compound fruit be adopted instead of aggregate fruit for fruits that develop from more than one flower, and that the original and correct meaning for multiple fruit be maintained

aggregated, in a dense mass, the individual parts touching

aggregated into, forming a more complex structure (e.g. racemes aggregated into a panicle)

aggregate species, a super-species, with so much variation that several taxa are thought to be involved

aianthous, flowering constantly [unusual term, not recommended]

alae (singular ala), wings, lateral petals; especially of flowers in Leguminosae/Fabaceae subfamily Papilionoideae

alar flower, a flower borne in the fork of two branches of a dichasium [unusual term]

alate, winged

albumen, storage tissues accompanying the embryo (endosperm and perisperm) [antiquated term]

albuminous, with albumen, the nutritive substance in the seed

alate, (of spore wall) without apertures

alien, plants not native, but introduced and (becoming) established in the wild

aliferous, equipped with wings [unusual term, not recommended]

alkaloids, organic basic nitrogenous compounds with physiological action, found in plants

allantoid, sausage-shaped (mostly used in mycology)

allele, any of a number of codings for a gene; different versions of a gene

alloagamous, fertilised after pollinisation by pollen from another individual. OPPOSITE: autogamous

alloagamy, fertilised after pollinisation by pollen from another individual; cross-fertilisation. OPPOSITE: autogamy

allomorphic, of an unusual form [rare term]

allopatric, of related taxa that do not overlap in geographical range

allopolyploid, a polyploid of hybrid origin, with sets of chromosomes from more than one species

allopolyploid, a polyploid formed from a combination of two genetically different genomes (usually considered to originate from two different species): AABB as opposed to autotetraploid, AAAA

allotropous, (of flower) with nectar available to any visiting insect

alluvial, of areas composed of sand or clays deposited by a river
alpha-taxonomy, α-taxonomy, the most fundamental taxonomy: finding, describing and grouping organisms

alpine, used of plants or vegetation specific to the high mountains above the tree line

alternate, inserted at different levels of the axis; as distinct from opposite; see also spirally arranged phyllotaxy

alternative, in nomenclature, two or more different names or epithets, based on the same type, published by the same author(s) at the same time for the same taxon; such names are not validly published

alternipetalous, alternating with the petals

alternipinnate, of leaflets of pinnate leaves, when they are not opposite

alternisepalous, (of petals) alternating with the sepals

altitude, used to specify the height above sea-level

alveolate, pitted like a honeycomb; similar to fove(ol)ate, but with the depressions angled rather than round

alveolus (plural alveoli), surface cavity(ies) or depression(s)

amber, 1. (colour) brownish yellow; 2. (substance) fossil plant resin; semi-fossilised resin is known as copal

ambiguous, in nomenclature, a name or epithet used in more than one interpretation, so it may indicate more than one taxon

ament, a slender, often pendulous, cylindrical inflorescence with crowded (sub-)sessile unisexual apetalous flowers, falling as a whole after fruiting; also (preferably) called a catkin

amentiferous, bearing catkins

amentiform, resembling a catkin

amorphous, without regular or definite form

amphibious, plants adapted to life both on land and in water

amphicarpic, producing two different kinds of fruits

amphicarpous, 1. producing two different kinds of fruits; 2. applied to a small secondary inflorescence occurring at the base of the culm in certain genera of Cyperaceae, particularly Schoenoplectus

amphidiploid, plant formed from the sexual union of parents with different chromosome sets, forming a tetraploid

amphimixis, adj. amphimictic, reproduction by seed produced by sexual means

amphitropous, ovule with embryo-sac curved and at right angles to its stalk; = campylotropous, which is preferred

amplexicaul, embracing the stem (e.g. the leaf base or stipules extending to the side of the stem opposite to the main blade)

amplexant, of a structure that embraces another [obscure term]

ampliate, enlarged [unusual term]

ampulla, small bladder attached to the roots and underwater leaves of some aquatic plants
ampulliform, swollen in the shape of a flask (e.g. the corolla in Erica)

anadromous, (in ferns) where the first set of veins in each pinna or lobe points towards the apex. Opposite: catadromous

analogous, similar, related in function or shape, but not in origin. Opposite: homologous

anandrous, lacking stamens

antherous, (used of filaments) without an anther

ananthous, without flowers [unusual term]

anastomosing, forming a network; vein branches uniting where they come into contact

anastomosis, union of one vein with another, the connection forming a network

anatomy, internal structure

anatropous, of an ovule, reversed; bent parallel to its stalk so the micropyle is close to the point of funiculus attachment

anauxotelic, parts of inflorescences that do not end in a flower, and which do not grow beyond the flowering region [unusual term]

anchor hairs, hairs with short terminal barbs or grapnel flukes

ancipital, (of stems) with two slight ridges or flanges

ancipitous, 1. (of stems) with two slight ridges or flanges; 2. with two edges and flattened, used in groups where the organ in question is usually round (e.g. leaf, bulb)

androclinium, (of orchid flowers); = clinandrium, which is preferred (see page 29)

androecious, with male flowers growing on some plants, and bisexual flowers growing on others

androecium, a collective term for the male sexual organs, the stamens

androgyne, a stalk carrying both stamens and carpels/ovary above the insertion of the petals

androgyne, bisexual; with female and male flowers in the same inflorescence

androgyne, with male and bisexual flowers on the same plant, but without female flowers

androphyll, a stalk on which the stamens are carried

andro-polygamous, with male and bisexual flowers on the same plant
anemochore, adj. *anemochorous*, a plant distributed or dispersed by wind

anemochory, dispersal of fruit or seed by wind

anemophilous, wind-pollinated

anemophily, pollination by wind

aneuploid, with a chromosome number that is not an exact multiple of the haploid number common in related plants

anfractuose, (of hairs) wavy, twisted together tightly

angiosperm, colloquial term for the taxon Angiospermae or Magnoliophyta, the flowering plants; distinct from the gymnosperms by having the ovules enclosed in a ovary or carpel

angular, with an angle, as where two planes meet; having to do with angles

angulate, angular

angustiseptate, 1. with narrow partitions; 2. with a partition across the narrowest part of the fruit

anisocotylous, with seedling leaves (cotyledons) of different size and/or shape. Opposite: *isocotylous*

anisomerous, with the number of floral organs, e.g. sepals and petals, within different whorls unequal. Opposite: *isomerous*

anisophyllous, having two opposite leaves at a node that are of very unequal size or shape

annotine, annotinal, annotinous, referring to branches of last year’s growth [unusual term]; this year’s growth is hornotine

anisotomous, (of branching) dichotomous, but with one shoot much longer than the other. Opposite: *isotomous*

anisovalvate, (of sporangia) of two unequal halves

annual, completing its life cycle within one year or one growing season; not biennial or perennial

annual shoot, shoot sprouting from the perennial root or stem system and lasting only one growing season

anular, in the shape of a ring; used of any organs arranged in a circle

annulosulcate, (of pollen) with an encircling sulcus

annulus (plural annuli), ring; in ferns, the ring of thick-walled cells involved in opening the sporangium

anomalous, out of the ordinary, unlike others in its group

antenna, slender structure on the pollinium of orchid genus *Catasetum* which, when touched, causes the pollinia to be catapulted out

antepetalous, opposite the petals

antennal, positioned in front of another organ

anterior, opposite a sepal and not alternate with it; = *oppositisepalous*, see also *antisepalous*

ant-galls, inflated, ultimately woody structures from the (usually) fused bases of stipules in some *Acacia* species; hollow, and often inhabited by ants

ant-helium, in grasses, the part of the spikelet carrying one flower, its lodicules and glumes, and sometimes the segment of the spikelet rachis adjoining them

anthelate, with the inflorescence in the shape of an anthela

anthelodium, (in Cyperaceae) inflorescence in which the axes end in spikelets (and not in individual flowers)
anthemy, flower cluster [obscure term]

anther, the part of the stamen containing the pollen

anther appendage, (in Compositae/Asteraceae) the sterile tissue, either apical or basal, of an anther, often of diagnostic value at tribal or generic level

anther cap, (in orchids) enlarged part of the connective covering the top of the anther and the pollinia, falling off when a flower is fully open and thereby uncovering the pollinia; also referred to as operculum

anther collar, (for example, in Compositae/Asteraceae) a region of swollen or otherwise demarcated cells at the apex of the filament(s)

antheridium (plural antheridia), male sexual organ in the gametophyte of cryptogams (female organ: archegonium)

antheriferous, bearing anthers

antherode, remnant of anthers; staminode

antherozoid (plural antherozoa), male motile cells, produced in antheridia

anther sac, pollen container on the stamen

anthesis, time of fertilisation of the flower; time of receptivity of stigma or distribution of pollen; used more loosely for the time when the flower opens

anthocarp, a general term for any fruit with perianth, receptacular tissue or inflorescence parts helping in the dissemination of seed

anthocyanin, pigments in plant cells responsible for red, blue and purple colours

anthophore, elongation of the receptacle, forming a stalk between the calyx and other flower parts (e.g. corolla, ovary, stamens)

anthotaxis, the arrangement of flowers along the inflorescence axis

anti, opposed to, against

anticlinal, perpendicular, at right angles to the surface

anticlockwise, (of growing or overlapping) when seen from above, following a direction opposite to the hands of a clock. OPPOSITE: clockwise

anticous, most distant from an axis, turning away from an axis

antidromous, change of direction in the spiral sequence of leaves

antipetalous, opposite a petal, not alternate with it; see also antepetalous

antisepalous, opposite to a sepal, and not alternate with it; similar to oppositipetalous; see also antipetalous and oppositipetalous

antitropous, (of ovules) with the radicle pointing away from the hilum

antirorse, pointing towards the distal end, upwards or forwards, used of stem hairs and barbs on spines. OPPOSITE: retrorse

antrorsely, upward or forward

aperturate, 1. with an opening, not closed; 2. pollen grain with one or more apertures

aperture, in pollen, any absence of part of the exine

apetalous, without petals

apex, distal end, tip. OPPOSITE: base
APG, APG II, APG III, (in plant taxonomy) abbreviation of Angiosperm Phylogeny Group, and now used to indicate the system of plant classification published in 2009 (APG III)
aphlebia, a narrow, strap-like, very spiny leaflet quite different in form from normal leaflets, found at the very base of the adult sessile leaves of *Eremospatha* and *Laccosperma*. (Termed ‘aphlebia’ because of the superficial similarity to structures of this name in certain Pteridophytes; specialist term used in Palmae, see Dransfield, 1986)
aphyllodic, with lower leaves reduced to scales or sheaths only, as in some Cyperaceae
aphyllous, without leaves
apical, of the apex; also used in the sense of distal (which is preferred)
apical placentation, when the placenta is at the top of the ovary and the ovule(s) hang down from it
apicixed, (of anthers) hanging, seemingly attached at the top
apiculate, ending in an abrupt, short point
apiculum, short, sharp, but not stiff point
apocarp, a single fruitlet of a multiple fruit
apocarpous, a multiple fruit with free carpels, or a simple fruit consisting of a single carpel. **OPPOSITE:** syncarpous
apogamy, species reproducing by asexual means; = apomixis, which is preferred
apolar, in pollen grains, without distinct polarity during meiosis
apomict, a taxon reproducing asexually, either by agamospermy (the production of embryos and seeds without fertilisation) or by vegetative reproduction (e.g. by production of bulblets or plantlets from the leaves or inflorescences, or by fragmentation of the plant, or by producing stolons etc.)
apomictic, of a taxon reproducing asexually (see apomict)
apomyxy, apomixis, the process of asexual reproduction (see apomict)
apomorphy, apomorphic, (of a character in cladistics) derived
apopetalous, with the petals separate, not fused
apophysis, 1. enlargement on the stem or stalk; 2. the part of the cone scale that remains exposed when the cone is closed
apophyte, a native plant that has invaded disturbed land such as abandoned fields
apophytic, indigenous but growing in a human-influenced habitat (mainly a continental European term)
aposepalous, with the sepals separate, not connate
aposporous, (in ferns) where prothalli are formed directly from outgrowths from the frond
apostapetalum, that part of the corolla tube and lobes above the zone with fused/adnate stamens [unusual term]
apostemonous, with the stamens separate from each other [unusual term]
apotropous, anatropous but recurved, so that the raphe faces the placenta/ovary wall and the micropyle faces the base of the funiculus
appendage, attached secondary part; for example, a projection or a hanging part or supplement
appendiculate, with appendage or appendages
applanate, (in vernation) pressed flat against each other
appressed, lying close and flat (e.g. branches or hairs on a stem)
apogamous, reproducing by asexual means
approximate, close to, very similar to
apricot, (colour) orange-pink
apterous, wingless
aquatic, living in water
arable, land used for growing crops

arachnoid, (type of indument) cobwebby, tangled cottony, the hairs in several directions and tangling

araneose, = arachnoid, which is preferred
arborescent, becoming tree-like
archegonium (plural archegonia), female sexual organ in cryptogams and gymnosperms, (male equivalent is antheridium)
arching, bending, like a bow
arctic, in cold climates, above the limits of cultivation; usually applied to high latitudes, inside the Arctic or Antarctic circles

arcuate, curved like a bow

areola (plural areolae), see areole, which is preferred

areolate, with an areole or areoles, divided into distinct spaces by boundary lines

areole (plural areoles),
1. ± circular areas on a surface that are divided from similar areas by a division line such as a vein;
2. usually flat area on each side of some mimosoid legume seeds that is surrounded by the pleurogram;
3. in Cactaceae, the spine-bearing cushion; extremely reduced branches (axillary buds) that usually bear spines, but can also become stems or flowering branches

aril, an appendage partially or completely enveloping the seed, sometimes resembling a third integument, and arising from the hilum, funicle or any other part of the seed coat; this term is sometimes used for any fleshy cup-like structure containing a seed (see arillode)
arillar collar, fleshy organ around the hilum, an outgrowth of the seedcoat (Annonaceae)
arillate, with an aril

arillode, (of seed appendages) false aril, a structure that, like the aril, (wholly or partly) envelops the seed, but unlike the aril does not derive from the placenta or funicle

arilloid, see arillode

arista, a long, bristle-like, pointed axis

aristate, with a long, bristle-like point
aristulate, bearing a small, sharp bristle
armature, general term for the presence of spines, prickles etc.
armcells, (in grass leaves) chlorenchyma cells with cell wall invaginations
armed, with sharp defensive structures
aromatic plants, producing volatile oils with discernible odours
arrested, (of growth) stopped

arrow-shaped, sharply pointed at apex, with two backwards-pointing lobes at base; see also sagittate or hastate
**article, 1.** an individual segment of a fruit constricted at intervals and breaking along these constrictions (e.g. a lomentum);

**2.** the constituent parts of the International Code of Botanical Nomenclature, which governs the application of scientific names in botany. The current Code is the Vienna Code (McNeill et al., 2006)

**articulated,** jointed, with nodes of apparent articulation; see also abscission joint

**artificial classification,** (in taxonomy) a grouping that does not reflect relationships, but is based either on superficial similarities or on only a few characters, such as the number of stamens

**ascending,** curved upwards, growing upward, sometimes indirectly

**ascidiate,** pitcher-shaped or bottle-shaped, such as a hollow tubular leaf

**asidiform,** see ascidiate, which is used slightly more often

**asepalous,** without sepals

**aseptate,** without partitions

**asexual,** sexless, without gender

**ashen,** (colour) pale grey

**assimilatory,** able to convert inorganic substances to plant matter

**aspect,** the direction which a slope faces; also used for the position of a plant community in relation to a climatic factor (sun, wind, moisture)

**asperous,** rough

**asperulate,** slightly rough with small hairs

**asperulous,** slightly rough

**assurgent,** curving upward; spreading at base and then curving upward to become parallel to the axis from which it springs

**astemonous,** without stamens [obscure term]

**astringent,** (taste) making the mouth pucker, bitter

**astylous,** without a style

**asymmetric(al),** with the two sides of the part or organ not equal, with every cut through the middle producing unequal halves. **OPPOSITE:** symmetrical

**atactostele,** stele with many vascular bundles scattered irregularly in the ground tissue

**atavism,** (of a taxon or organ) reversion to ancestral state; reappearance of the presumed ancestral condition

**atomate,** with small resinous dots or glands [unusual term]

**atropous,** not inverted; = orthotropous

**attenuate,** gradually narrowing over a long distance

**atypical,** different from normal

**auct. (plural auctt.),** (from the Latin auctorum) of the author; appended to a name used by a later author in a different sense from the one originally proposed; **auctt.** indicates ‘according to various authors’

**auct. non,** phrase after a scientific name, meaning that the name has been used by one author in the wrong sense, as opposed to ... (, non + original author of name should follow)
auricle, ear-like lobe

auricled, equipped with ear-like structures, usually near the base; = auriculate, which is preferred

auriculate, equipped with ear-like structures, usually near the base

autapomorphic, (of a character in cladistics) derived and unique to a given taxon or monophyletic group

autapomorphy, (in cladistics) a derived character or trait unique to an ingroup, and not present in the outgroup

author, the writer of a book or paper, or (in nomenclature) the person who describes a new taxon

author citation, (in nomenclature) the indication of who first gave the taxon its name

authority, the author of a plant name; cited as such after the plant name, often in a standard abbreviated form

autocarp, fruit produced by self-fertilisation [unusual term]

autochory, dispersal of seeds by the plant itself (e.g. by an explosive mechanism)

autochthonous, of the species of a region, constituting the original flora, native

autogamous, self-fertilisation, when ovules are fertilised after pollination by pollen from the same individual

autogamy, self-fertilisation after pollination by pollen from the same individual. OPPOSITE: allogamy

autonym, (in nomenclature) the name that is automatically created for the group of taxa containing the type when another subgroup of the higher taxon is proposed (e.g. Senecio sect. Senecio)

autophilous, self-pollinating [unusual term]

autophyte, a plant not dependent on humus but forming its own food from carbon dioxide, water and inorganic matter [unusual term]

autopolyploid, a polyploid with three or more sets of chromosomes, all from the same taxon

autotrophic, obtaining its food from carbon dioxide, water and inorganic matter; neither parasitic nor saprophytic

auxotelic, parts of inflorescences that do not end in a flower, and that keep growing beyond the flowering region

available, in nomenclature, name(s) or epithet(s) that are legal for a taxon

awl-shaped, gradually tapering to a sharp thin point

awn, a fine bristle ending an organ (usually in grass flowers)

axil, the angle between the stem and the leaf

axile, 1. belonging to the axis; 2. (of ovule placentation) attached to the axis of the ovary, or to the inner angle of the cells of a syncarpous ovary

axillary, arising in an axil, the point between the stem and the leaf or another organ that arises from the stem

axis, 1. main line of development of a plant or organ; 2. (of inflorescence) the main stem or branch part from which the flowers are produced; 3. (of ovary) the central column or the central part where the inner angles of the cells meet

azure, (colour) blue as the sky on a clear sunny day
bacca, berry; succulent fruit with seeds immersed in the pulp

baccate, berry-like

back bulbs, old orchid plant modules separated and used for propagation

back-crossing, hybrids crossing with one of the parents; the result of such a union is a backcross

bacterial nodules, (of leaves) dark inclusions formed of bacteria (e.g. in Pavetta and some Psychotria (Rubiaceae)); also perhaps in the petals and calyx of some flowers (see idioblasts)

baculate, (of pollen) covered in stick-shaped rods

baculiform, stick-shaped, rod-like

balanoform hairs, (in grasses) microhairs with a broad, blunt apex

balausta, many-celled, many-seeded indehiscent fruit with tough pericarp (such as pomegranate)

balsam, resin mixed with volatile oil

balsamiferous, balsam-producing

balusterform, dilated, referring to the filament collar in members of the tribe Senecioneae in the Compositae/Asteraceae

bamboo, a group of woody evergreen plants in Gramineae/Poaceae; also the woody culm of such plants

banded, marked with colour stripes

banner, the uppermost/posterior petal of a papilionaceous flower. Synonyms: standard (which is preferred) or vexillum

barb, hooked hair or prickle, pointing backwards

barbate, bearded; with a group of long hairs

barbed, with rigid points or bristles pointing backwards

barbel, barbella, one of the stiff trichomes composing a pappus

barbellate, shortly barbed; in Compositae/Asteraceae used of spreading or upward-pointing pappus hairs which have free cell apices shorter than the diameter of the main axis

barbellulate, barbellate with minute hairs or barbs

barbulae, outgrowths on the margin of a seed’s wings or in the throat of the corolla [unusual term]

bark, outermost layer of stems and roots in woody plants; all tissue outside the cambium

barred, marked with closely parallel lines

barrel-shaped, (of 3-dimensional shapes) resembling a barrel, i.e. shortly and broadly cylindrical, but tapering slightly at base and apex

barren, sterile, not producing seed

basal, 1. at or near the base; also proximal;
2. in a phylogenetic tree, a lineage arising near or nearer the base, hence early;
3. of placentation, when the ovules are attached to a central columnar placenta arising from the base of the ovary but not reaching the top

base, usually the point of attachment of any organ

basicidal, (of a capsule fruit) dehiscing through basal fissures

basicolous, growing on, or preferring, ground with basic (high pH) soils [unusual term]

basified, (of anthers) attached to the filament by the base
basinerved, veined from the base [unusual term]
basionym, (in nomenclature) the original name or epithet that has priority when a taxon is transferred to a different group
basipetal(-ous), developing in the direction of the base (away from the apex). Opposite: acropetal
basiphilous, growing mainly on basic (high pH) soils, such as chalky soil or basaltic rock
basiramous, with branches mainly near the base of the plant [unusual term]
basis, the base
basiscopic, (in ferns) towards the base of the frond
basitonic, [obscure term with several meanings] 1. branching type, where the shoots near the base show the greatest development; 2. flowering seasonal shoots which produce no leaves; 3. fruiting surface on the interior of the canopy; 4. in orchids, with the rostellum or viscidium associated with the base of the anther
bast, 1. phloem; 2. fibrous tissues for the purpose of mechanical support
bathyphyll, in climbing ferns, one of the fronds formed near the base of the plant, usually smaller and more dissected. Opposite: acrophyll
bauplan, a German term for the vegetative architectural plan (e.g. the sympodium)
beaded, (of hairs) with regular narrowing and widening, making it look like a string of beads
beak, 1. a slender projection, like the beak of a bird (e.g. persistent style base on fruit); also rostellum; 2. in Compositae, the elongated apex of an achene, beneath the pappus, forming an often slender neck; also rostrum
beaked, with a beak, with a long slender projection; also rostrate
beard, a tuft of long hairs
bearded, of a 3-dimensional object, with a tuft of long hairs on one part
bell-shaped, 3-dimensional shape of a hollow cup-like structure with either parallel sides or gently widening sides, and widening at the mouth; see also campanulate
beltian bodies, food bodies for ants located at the leaflet apices of some species of Acacia
beneath, [term with several meanings] can stand for proximal (lower on the plant) or abaxial (away from the axis, lower surface)
berry, an indehiscent simple fruit with one to many seeds immersed in a fleshy pulp, supported by an endocarp less than 2 mm thick, the pericarp not differentiated internally by a hardened endocarp or airspace (Spjut, 1994); see also drupe
bi-, prefix meaning two- (e.g. bicucullate, with two hoods)
biangulate, with two angles or corners
biarticulate, 1. jointed in two places; 2. (of a loment, a flat legume fruit) with two segments, divided by a sharp constriction of the fruit
biarticulate 2.
biauriculate, with two ear-like appendages
bibracteate, with two bracts
bibracteolate, with two bracteoles
bicalcarate, with two spurs
bicapitate, with two heads
bicarinate, with two keels
bicarpellate, with an ovary made up of two carpels
bicarunculate, with two caruncles
bicolorous, with two colours
biconcave, hollow on two sides
biconvex, domed on two sides; also lenticular

bicorne, with two horns

bicrenate, doubly crenate, with scalloped edges, the lobes of which are again scalloped

bicrurate, very deeply bipartite, almost bisected [obscure and rare term]

bicuspid, with two sharp points

bicuspidate, with two sharp points

bidentate, 1. with two teeth; 2. doubly toothed, when marginal teeth themselves are toothed

biennial, taking two years from seedling stage to maturity, seed-set and death

bifacial, horizontally flattened shape; also used in the sense of two surfaces that are different in texture or colour

bifarious, in two opposite rows, one on each side of the stem; = distichous, which is preferred

biferous, flowering or fruiting twice a year [obscure term]

bifid, divided at the tip in two (usually equal) parts by a median cleft

biflabellate, (of leaves) in two opposite fans

biflorous, with two flowers

bifoliate, with two leaves

bifoliolate, with two leaflets

bifurcate, forked or divided into two sharp branches or prongs

bifurcating, forking, dividing into two sharp branches or prongs

bigeminate, 1. with two orders of leaflets, each order bifoliolate; 2. sometimes used (wrongly) instead of bijugate

bigeneric, of hybrids, produced by plants from different genera

bigibbous, [I have not found this term defined anywhere; it is used in quite a few publications but not illustrated. I assume from the context that it means bulging on both sides]

biglandular, with two glands

biglobular, (of stigma) consisting of two globose parts

bijugate, in a compound leaf, with two pairs of leaflets

bilabiate, two-lipped, as when the parts of a calyx or corolla form two clearly separated projections, usually an upper and a lower, as in Labiatae/Lamiaceae; in Compositae/Asteraceae, a corolla usually with two smaller adaxial lobes and an abaxial lamina with 3 lobes at the apex

bilamellate, consisting of two plates (as in some placentaes)

bilateral, arranged on opposite sides; in pollen, a grain with two vertical planes of symmetry and the equatorial axes of different length

bilobate, two-lobed

bilobed, with two lobes

bilocular, with two compartments, usually of a two-celled ovary

bineate, 1. divided in two, or nearly so; 2. (of leaf) with two leaflets on common petiole; 3. (of leaf) simple leaf almost divided in two; 4. growing in pairs

binary, (in nomenclature) the name consisting of the genus name and species epithet; = binomial, which is preferred

binomial, (in nomenclature) the name consisting of the genus name and species epithet
biometry, the application of statistics to biology; = biostatistics

biostatistics, the application of statistics to biology

biota, the flora and fauna of a region, the collective organisms occurring in a given area (which could be small, or planet-sized)

biotope, the life area of a community of organisms; the same as habitat, but for a whole community of plants and animals

biotype, population in which all individuals share the same genetic make-up

bipalmate, twice palmate, palmately compound

biparous, twice palmate, palmately compound

bipartite, divided in two parts at the apex

bipertalous, with two petals

bipinnate, 2-pinnate, doubly pinnate, divided into pinnae bearing pinnules; i.e. the rachis bearing first-order axes which bear the leaflets; when the primary divisions of a pinnate leaf are themselves pinnate

bipinnate-pinnatifid, 2-pinnate-pinnatifid, bipinnate with the pinnules pinnatifid

bipinnate-pinnatisect, 2-pinnate-pinnatisect, bipinnate with the pinnules pinnatisect

bipinnatifid, 2-pinnatifid, when divisions of a pinnatifid leaf are themselves pinnatifid

bipinnatisect, 2-pinnatisect, when divisions of a pinnatisect leaf are themselves pinnatisect or pinnatifid

biramous, (of hairs) with two equal or unequal branches

bistrostrate, with two beak-like extensions

bisanthelate, (in Cyperaceae) inflorescence branched to two orders, roughly funnel-shaped

biscoctiform, oblong and slightly constricted in the middle [unusual term]

bisect, bisected, divided into two equal parts

bisegmented, partly divided in two

biseriate, 1. in two series or whorls; 2. (of hairs) with two parallel and adjacent rows of cells

biserrate, (of leaf margins) serrate, but with alternating teeth of two different sizes; or when large serrations are themselves serrate

bisexual, having both sexes in the same flower, or in the same inflorescence

bisulcate, with two grooves

bitegmic, of an ovule, with two integuments

biternate, compound ternate, the ternate divisions themselves ternate

biventricose, swollen or inflated on two sides

bladder, a hollow membranous appendage on Utricularia roots, to trap insects

blade, expanded part of leaf or petal

blastochorous, propagating by offshoots or runners; term apparently only used in Germany

blind veinlet, within a network of veinlets, those that run into an areole but end without connecting to others
bloom, fragile, powdery surface layer (e.g. the waxy bloom of a plum)
blossom, flower, or flowers, especially of fruit trees
blotch, irregular spot of colour
bluish, more or less blue, of a blue hue; sometimes incorrectly spelled blueish
blunt, not sharp, ending in a narrow rounded tip
bole, in trees, the part of the trunk below the lowestmost branches; the unbranched part of the trunk
bony, dense and hard
bootstrap analysis, in cladistics, a statistical method to estimate the margin of error
bordered, with the margin a different colour
boreal, far northern, subarctic
borne, carried
boss, knob or knob-shaped protuberance, usually on root, trunk or branch
bostryx, spiral cymose inflorescence in the shape of a ringlet, i.e. in three dimensions, with the lateral branches developing from the same side and in the same plane as the coil
botryoidal, like a cluster of grapes
botuliform, sausage-shaped, long and cylindrical and curved inwards at both ends
brachiate, with paired branches, those of a pair widely spreading, and at right angles to the next pair
brachyblast, short shoot of limited growth (e.g. a spur shoot), usually borne on a long main axis; also a short shoot with persistent successive pairs of stipules and thus appearing thatched
brachystylos, (in heterostylyous flowers) the short-styled morph. OPPOSITE: dolichostylos
brackish, water of some salinity, but of less salinity than sea water
bract, a modified and specialised leaf in the inflorescence, standing below partial peduncles, pedicels or flowers
bracteate subtended by, or beset with, bracts
bracteody, the replacement of floral whorls by bracts [obscure term]
bracteolate, subtended by, or beset with bracteoles
bracteole, a secondary bract, usually smaller than the bracts and always borne above them; a small modified leaf (or pair of modified leaves) borne just below the flower, or anywhere along a pedicel above the bract; often defined specifically as the bract at or near the base of the pedicel [vague term with differing uses] (see bract for illustration)
bracteoliform, bracteole-shaped [obscure term]
bracteose, with many, or showy, bracts
bractiform, with the appearance of a bract
bractlet, tiny bract inserted on the pedicel above the bracteole; see Davis & Rakotonasolo (2001)
branch, a lateral division of the growth axis
branch collar, bulge formed at the base of a branch by the production of overlapping bark layers
branchlet, small branch, the final division of the branching system

breathing root, specialised roots growing upwards from horizontal roots in mangrove or swamp plants, exposed at low tide; usually with lenticels allowing gas exchange.

= pneumatophore

brevisulcate, (in palynology) with the sulcus of the pollen grain very short

bristle, 1. a slender and stiff cylindrical emergence, about the size of a hair;
2. slender stiff continuation of midrib in inflorescence bract

bristly, bearing stiff strong hairs or bristles

brochidodromous, with loop-veined venation; main veins emerging from the midrib at regular intervals, at the margin turning towards the apex and looping to join the next vein upwards

bucciniform, shaped like the end of a trumpet [unusual term]

bud, a meristem (either apical or lateral) in early development or resting stages, with its protective coverings; immature shoot, usually protected by scales or prophyll(s), or immature flower, protected by bracts, bracteoles and/or perianth segments

bud-scales, the coverings of the bud

buff, (colour) dull yellow-brown

bulb, underground storage organ; the bud(s) enclosed by fleshy scale leaves and/or leaf bases

bulbiform, shaped like a bulb, broadly ovoid and tapering distally to a point

bulbil, a small, usually axillary bulb (e.g. in the axil of a leaf) capable of developing into a new plant

bulbiliferous, producing bulbils

bulblet, small bulb or bulb-like structure

bulbose, bulb-like

bulbous, (of hairs) with an inflated base

bulla (plural bullae), 1. (in Cycadaceae) cone scales with ± peltate head; 2. blisters or puckers on surface

bullate, with the surface of the leaf raised in blisters or puckers between the veins, or at the base of scales (in some ferns)

bulliform, bubble-like

bundle, a strand of specialised tissue, variously modified

bundle scar, marking within a leaf scar where the vascular bundle (vein) was broken

bundle-sheath, cylinder of cells surrounding a vascular bundle

burr, 1. rough, prickly envelope of a fruit, formed of cohering prickly bracts, accrescent calyx or pericarp; sometimes spelled bur; 2. woody swelling of trees, usually at the base of the trunk, associated with epicormic shoots

bursicle, in Orchidaceae, a flap- or sheath-like base covering the viscidium

bush, 1. woody plant intermediate between shrub and tree, 3–7 m high and usually multistemmed [not recommended]; 2. low and thick shrub, usually without a distinct trunk [not recommended]; 3. often used in the same sense as shrub [shrub is preferred in this case]; 4. undefined term for dense vegetation [not recommended, bushland seems better]
buttress, mechanical supporting system at the base of a tree, usually a woody fin

buttressed, of the lower trunk of a tree, with buttresses

buzz-pollination, usually of flowers with porate anthers, where the pollen is shaken from the thecae by the vibration of the body of a visiting bee

calcarate, with a spur; (of stamens or anthers) with elongated sterile portions beneath the thecae and extending below the filament insertion point

calcareous, (of soils) containing calcium in the form of chalk or lime

calceiform, (of 3-dimensional structures) slipper or shoe-shaped

calceolate, 1. slipper-shaped, as in the lip of some orchids; 2. in Calceolaria, partially flat, ending in a hollow hooded tip

calcirole, calcicolous, only growing on soils with lime

calcifuge, avoiding soils with lime

calciophile, preferring soils with lime

calcium carbonate, lime, chalk

callose, 1. anatomical term for polysaccharide formed upon injury of parenchymatous tissue and also present in, for example, pollen tubes; 2. hardened, thickened [unusual usage probably in error for callus].
callosity, thickened, raised area

calloused, hard and thick

callus (plural calli), 1. a hard protuberance; 2. wound-covering tissue; 3. in Gramineae/Poaceae, a horny prolongation at the base of the floret or spikelet; 4. thickenings, for example, on the calyx of some Oxalidaceae or on one of the lips of some Orchidaceae

calycanthenous, with a petaloid calyx [obscure term]
calyciflorous, with petals and stamens attached to the calyx

calyx, 1. relating to the calyx; 2. calyx-like

calycline, a row of small leaves or bracts at the base of the calyx [unusual term]
calyculate, having bracts around the calyx, or with an involucre resembling an outer calyx; see epicalyx
**calyculus, 1.** in Rubiaceae, a structure formed from reduced leaves and stipules, which are fused to varying degrees to form a structure often resembling a four-lobed tubular (or cuplike) calyx limb; **2.** in an orchid flower, a small cup or circle of bract-like structures outside of the sepals; **3.** in some Compositae/Asteraceae, a subsidiary circle of small bracts outside a row of involucre phyllaries

**calyptra, a cap- or lid-like covering of flowers or fruits, as in Myrtaceae**

**calyptrate, cap-like (e.g. of petals, when they fall off as a coherent unit)**

**calyx (plural calyces), the outermost whorl of floral organs, often divided into sepals**

**calyx limb, the limb as distinct from the tube in a gamosepalous calyx; the lobes, the expanded, non-joined part**

**calyx tube, the tube (as distinct from the calyx limb) in a gamosepalous calyx; sometimes used for hypanthium** (see illustration for calyx)

**CAM, crassulacean acid metabolism: a metabolic pathway for carbon dioxide fixation; CAM plants fix carbon dioxide during the night, and CAM is especially common in plants of hot and arid areas. See also C₃, C₄**

**cambium, layer of growing tissue that produces new cells, between xylem and phloem**

**campanulate, bell-shaped; with a tube about as long as wide, and a flaring limb**

**campylodromous, (of venation) with several pronounced secondary veins diverging from near the base, curving away and then converging towards the apex**

**canaliculate, 1. with a longitudinal channel or groove; 2. channelled**

**cancellate, with the appearance of a lattice [rare term]**

**candelabra branching, with branches coming from ± one point, curving upwards and reaching ± the same level**

**canalicate, 1. with a longitudinal channel or groove; 2. channelled**

**canalis, stem of large grasses or small palms, slender, hollow and jointed**

**canescent, (of indument) more or less grey or hoary, or becoming so [vague term]**

**canoe-shaped, shaped like a canoe, i.e. shortly canaliculate, but with the ends swept up and not grooved (e.g. of pyrenes in some Rubiaceae)**

**canopy, uppermost layer of vegetation usually of woodland or forest**

**cap, convex removable covering of a part**

**capillary, very slender, hair-like**

**capilliform, very slender, hair-like**

**capitate, 1. head-like; like the head of a pin (e.g. for a stigma); 2. collected into heads of flowers (as in Compositae/Asteraceae or Leguminosae)**

**camptodromous, (of venation) in which the secondary veins curve towards the margin of the leaf but do not form loops**
capitellate, diminutive of capitate
capitiform, 1. head-like, like the head of a pin (e.g. for a stigma); 2. collected into heads of flowers (as in Compositae/Asteraceae) [unusual term]; = capitulate, which is preferred
capitulescence, an aggregation of capitula as found in the Compositae/Asteraceae, usually simply referred to as an inflorescence

capitulum (plural capitula), a compact cluster of ± sessile flowers; the capitulum may be surrounded by specialised bracts, the involucre
capreolate, with tendrils [obscure term]
capsule, a dry dehiscent fruit composed of two or more united carpels, opening by valves, slits or pores
carina, 1. keel: long narrow ridge over the length of a flat or curved surface; 2. keel formed by the two lower petals in papilionoid flowers in Leguminosae/Fabaceae, these usually partly united or adherent
carinate, with a long narrow ridge over the length of the surface; = keeled
cariniform, see keel-shaped (which is preferred)
carmine, (colour) a shade of red
carnivorous, plants that trap animals and derive some or most of their minerals from digesting them
carnose, fleshy
carpel, 1. the basic unit of the female sexual organ; 2. one of the cells or locules of the syncarpous ovary; 3. the female sporophyll
carpellate, possessing carpels
carpet-forming, creeping or staying very low, and forming a continuous layer over a large area
carpodium, the modified gynoecium in the sterile flowers of Typha, usually club-shaped
carpopodium, in Compositae/Asteraceae, a basal callus to the achene composed of receptacular tissue
cartilagineous, hard and tough, but slightly bendy (cartilaginous is the preferred spelling)
cartilaginous, hard and tough, but slightly bendy (preferred spelling)
caruncle, an outgrowth of the outer seed integument, near the hilum; usually small and fleshy, and associated with animal dispersal; also called a strophiole, but a strophiole is an outgrowth from the raphe, whereas the caruncle is next to the micropyle (Bell, 2008)
carunculate, with a caruncle
caryopsis, the fruit in Gramineae/Poaceae, a small dry thin-walled fruit, with the single seed fused to the pericarp; a type of achene
castaneous, chestnut-coloured: a dark glossy brown or reddish brown
catadromous, in ferns, with the first set of veins in a pinna in a basal direction. Opposite: anadromous
cataphyll, 1. scale leaf; 2. scale-like leaf
catkin, a slender, often pendulous, cylindrical racemose or spicate inflorescence with crowded (sub)sessile unisexual apetalous flowers, falling as a whole after fruiting; = ament(um)
catkinate, resembling a catkin [not recommended]
caudate, abruptly ending in a long tail-like tip or appendage; very protracted, excessively acuminate
caudex, 1. classically, the axis of a plant, consisting of stem and root; 2. latterly, especially in Euphorbiaceae, used as an enlarged storage organ at soil level, composed of the swollen stem or root, or both

caudiciform, formed like a caudex, enlarged or swollen

caudicle, 1. (in Euphorbiaceae) small stem at (around) ground level, arising from rootstock, from which annual stems arise; 2. (in Orchidaceae, derived subfamilies of Apocynaceae) a stalk connecting the pollen-masses; 3. in an orchid flower, a slender, mealy or elastic extension of the pollinium, or a mealy portion at one end of the pollinium, produced within the anther (Dressler, 1993)

cauliferous, borne on a stem

cauliflorous, bearing flowers and fruits on the stem or trunk

cauliflory, production of flowers from older wood

caulicoid, borne on a stem

caulinary, having to do with the stem [unusual term]

cauline, arising from, or inserted on, the stem

cautical, burning in taste or on the skin

cavity, small, narrow hollow

cavus (plural cavi), (of spore wall) indentations, hollows

cecidium, plant gall caused by insects or fungi

cell, 1. the cavity or cavities of an ovary or fruit containing the ovules or seeds; 2. the pollen-sac of an anther, an anther lobe or theca; 3. the fundamental, minute unit of all plant construction

cell tissue, a grouping of one or more types of cells that together carry out a specific function; a level of complexity between cells and organs

cell wall, closed membrane around the cell, often thickened by deposits

cenanthy, absence or suppression of stamens and pistils in a flower [unusual term]

central spine, (in cacti and similar succulents) the spine in the middle of the areole or spine shield, often larger or with a different colour from the others, the radial spines

centrifugal, developing from the middle outwards

centrifugal, developing from the margin towards the middle

centripetal, extending from the margin towards the middle

centropetal, facing the centre (e.g. of grooves in the phalanges of Pandanus inflorescences) [rarely used]

centrospermous, belonging to the old order Centrospermae, now the Caryophyllales

cereals, grasses of which the seeds are used as human food

cerise, (colour) light, bright red

ceriseous, (of flowers) nodding, drooping

cespitose, see caespitose (which is the preferred spelling)

cfr., compare to, see also (used on determinavit slips)

chaffy, like small papery scales

cephalium (plural cephalia), 1. in Cactaceae, structure of woolly hairs and bristles at the stem apex, on which the flowers appear; 2. in Pandanaceae, compound fruiting head composed of semi-fused fruits

cephalous, headed; as in monocephalous, one-headed

ceraceous, waxy, either in appearance or in colour (very pale whitish cream)

cereals, grasses of which the seeds are used as human food

cerise, (colour) light, bright red

cernuous, (of flowers) nodding, drooping

cespitose, see caespitose (which is the preferred spelling)

cfr., compare to, see also (used on determinavit slips)

chaffy, like small papery scales

chalaza, part of an ovule where the body joins the envelope

chalazal end, the base of the nucellus, opposite the apex of the cotyledon(s)
chamaephyte, in Raunkiaer’s system, a plant whose growing point survives adverse seasons as a resting bud at or near ground level.

chambered, of pith, mostly hollow but with regular transverse walls.

channelled, with a groove running along its length.

character, single technical difference, used to distinguish taxa.

character state, any of the alternative forms or values a given character can have (e.g. present or absent; alternate, opposite or whorled).

character weighting, a tariff applied to determine which characters are most important in establishing putative relationships.

chartaceous, thin and stiff, like paper.

chasmogamous, pollinated when flowers are open. Opposite: cleistogamous.

chasmogamy, condition of being pollinated when flowers are open.

chasmophyte, chasmophytic, growing in rock crevices or on rock faces in narrow ravines.

chestnut, (colour) reddish brown.

chim(a)era, plant or part of plant with cells of two genetically different types, by mutation or by grafting.

china blue, (colour) pale blue.

chiropterophilous, pollinated by bats.

chiropterophily, pollination by bats.

chlorenchyma, photosynthetic tissue in leaf or stem.

chlorophyll, the green pigment in plant cells that makes photosynthesis possible.

chlorophyllous, containing chlorophyll.

chloroplast, small body in plant cells containing chlorophyll, in which starch is formed by photosynthesis.

chlorosis, yellowing of green tissue due to lack of chlorophyll, often associated with nutrient deficiencies or other stresses.

choripetalous, with the petals free.

chorisepalous, with the sepals free.

chorology, study of geographical distribution of plants.

chromatographic method, technique used to separate and identify plant chemical compounds.

chromosomes, minute bodies in the cell nucleus that bear genetic information.

cicatricose, scarred.

cilia (singular cilium), marginal hair(s).

ciliate, bearing a fringe of hairs along the margin.

ciliolate, fringed with very small hairs.

cincinnate, in the shape of a cincinnus.

cincinnus, 1. inflorescence with flowers appearing alternately to the right and left of one side of the sympodial axis; scorpioid cyme; 2. inflorescence where each successive flower arises in the axil of a bracteole on the preceding flower stalk [ambiguous term, both definitions are widely accepted].

cinereous, ash-coloured, pale grey.

cinerous, ash-coloured, pale grey (cinereous is the preferred term).

cinnabar, (colour) vermilion, blood-red.

cinnamon, (colour) yellowish-brown.

circinate, coiled inwards upon itself (preferred spelling is circinate).
circinnate, coiled inwards upon itself (as the young leaves of ferns, hooks of some climbers, leaves of Drosera)

circinnotropous, condition of ovules or seeds where the funicles are long and curled, and where the curvature of the ovule or seed against the funicle is pronounced; in such ovules, the funicle encircles the ovule more or less completely (e.g. in Cactaceae, Plumbaginaceae) (Stuppy, pers. comm.)
circular, round (in two dimensions)
circumferential, around the edge of a circle
circumflexed, bent round

circumscissile, opening by a slit running around the circumference or equator, and with the upper part coming off like a lid

circumscription, the description setting apart one taxon from another, enumerating all the differences
cirrate, bearing a cirrus
cirrhose, with tendrils; = cirrose
cirrhous, with a narrow spiral tip that is a continuation of the midvein [unusual term]
cirriferous, bearing tendrils
cirriform, resembling a tendril
cirrose, with tendrils; = cirrhose; both terms are valid, as the root term is cirrus or cirrus

cirrus (plural cirri), barbed whip-tip extension of leaf midrib (specialist term in Palmae, see Dransfield, 1986)
cladode, single node or internode of stem or branch that is flattened and expanded to serve the functions of a leaf; see also phylloclade

cladodromous, in venation, with secondary veins spreading and repeatedly branching themselves, becoming indistinct before reaching the margin

cladogram, in cladistics, 2-dimensional tree diagram showing relationships between taxa that are based on shared character states
cladophyll, a branch taking on the form and function of a leaf; = phylloclade
cladophyll, a tubular structure subtending the inflorescence in some Cyperaceae
cladotrophic, shedding branches with leaves attached
cladotomy, the falling, or shedding, of branches or leafy twigs
clambering, climbing without the aid of tendrils or twining stems

claret, (colour) deep purple-red

classing, (base of leaf) almost surrounding, touching the stem closely on two sides; see amplexicaul

class, taxon below kingdom and above order (e.g. dicotyledons, monocotyledons)
classification, ordering of taxa in specialised categories (such as species or family) based on perceived relationships

clathrate, pierced with holes, like a lattice

clavate, club-shaped; thickened towards the end (see club-shaped)
clavellate, diminutive of clavate: like a minute club, thickened at the end

clavi, (in clavi) [name published] in the key

claviform, club-shaped; = clavate, which is preferred

clavuncle, clavuncula, in Apocynaceae, an enlarged stigma of which the sides and lower surface are the receptive zone; usually coherent with anthers
**claw**, the narrow proximal part of a flat organ (e.g. of a petal); see also **unguiculate**

**clawed**, with a very narrow part near the base, but more distally with an expanded blade

**clay**, very fine particles of mineral rock, smaller than both sand and silt

**cleft**, divided almost to the middle; often used for split or lobed in a less specific way

**cleistogamous**, with self-fertilisation occurring within the unopened flower (as in *Viola*); this type of flowers are usually smaller than chasmogamous flowers. **OPPOSITE**: **chasmogamous**

**climax**, most developed vegetation type possible in a particular site; usually in equilibrium with environment, end of a succession series, stable vegetation

**climber**, a plant that grows upwards by attaching itself to other structures which it uses as supports; by contrast, a **scrambler** does not attach itself to its supports

**clinal variation**, a series of morphological forms that gradually change over an environmental gradient

**clinally**, of characters that vary along an environmental or geographical gradient

**clindium**, (in an orchid flower) the anther bed; that portion of the column under, or surrounding, the anther

**clonotype**, an unofficial term indicating material that is vegetatively propagated from the plant from which the type was made

**cloned**, growing in tight groups, the bases of the individual plants touching; also **caespitose** (which is preferred) or **tufted**

**cluster**, a tight group

**cm**, centimeter

**coalesce**, grow together

**coalescent**, partially, irregularly and superficially joined

**coarctate**, closely pressed together

**coat**, the successive layers of a bulb

**coating**, a close, dense thin layer formed on the surface of an organ either by disintegration of part of that organ or by an exudate

**coaxillary**, co-axillary, running with the main axis but separate from it,

**cob**, the spike of maize, especially at the fruit stage

**cobwebby**, cobweb-like, with thin threads or filaments, usually entangled

**coccus** (plural **cocci**), one of the separate parts of a lobed capsule (e.g. in Euphorbiaceae) or of a schizocarp

**cochlear**, (of flower buds) imbricate, with one member completely inside, and one member completely outside and enveloping all others

**cochleate**, spiral, like the shell of a snail
**Code**, the usual abbreviation for the International Code of Botanical Nomenclature, which governs the application of scientific names in botany. The current Code is the Vienna Code (McNeill et al., 2006)

c**o-dominants**, the most common species occurring in a site or vegetation type

c**oelospermous**, hollow-seeded

c**oenocarp(lum)**, a fruit grown from a whole inflorescence, such as a jackfruit or pineapple

c**oenocarpous**, fruiting with a **coenocarpium**

c**oenosorus**, (in ferns) a group of **sori** that have coalesced so as to look like a single large one

c**oetaneous**, (of structures) maturing at the same time

c**oeval**, of or belonging to the same age or generation

c**oherent, cohering**, attached to each other (among similar organs)

c**ohort**, a group of individuals produced from one parent by vegetative reproduction; see also **apomict**

c**oiled**, rolled up, like a spring, upon itself

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**coleoptile**, in monocotyledons, the sheath that protects the emerging shoot while it grows through the soil

**coleorhiza**, in grasses, sheath that protects the embryonic root or radicle (see drawing for **coleoptile**)

**collar**, 1. in general, an encircling band; 2. the part of the plant on the boundary of underground parts and above-ground parts; 3. free portion of floral tube, above the casing and below the neck; 4. junction between sheath and blade of a leaf

**collateral**, 1. cotyledons equal in seed (as opposed to superposed); 2. bud lateral to axillary bud; 3. (of seeds in Annonaceae) side by side

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**collecting hairs**, (for example, in Compositae/Asteraceae) hairs on the style that collect pollen that is discharged from the anthers

**colleter**, multicellular glandular hair-like structure found associated with petioles, stipules and sepals

**colliculate**, covered in small rounded protuberances; minutely hilly

**colpate**, (of pollen) possessing a wall with ± linear apertures

**colporate**, (of pollen) possessing a wall with compound apertures: linear in the outer wall, rounded in the inner wall

**colpus**, (in pollen) an oblong-elliptic aperture

**colubrinoid**, snake-like

**columella**, persistent central axis around which the fruit locules are arranged

**column**, 1. (in orchids) the adnate styles and stamens forming a solid central body; 2. the tube of connate anther filaments (e.g. in Malvaceae); 3. (in grasses) the lower twisted part of the awn

**column foot**, (in an orchid flower) a ventral extension at the base of the column, the lip is attached at its tip

**columnar**, in the form of a column or pillar

**coma**, a tuft of long hairs at one (or both) end(s) of a seed; seed appendage to aid wind dispersal
comb. nov., (from the Latin *combinatio nova*) new combination, the specific epithet used with another genus name

commensalism, form of symbiosis in which one organism profits and the other neither profits nor is harmed

commissure, the place of joining (e.g. the faces of joining carpels)

common name, a local popular name, as opposed to the scientific name; vernacular name

common petiole, the main leaf-stalk in compound leaves; technically, petiole on its own is sufficient

common receptacle, receptacle supporting more than one organ

community, a group of plants within a common environment

comose, bearing a tuft, or several tufts, of hair

compact, closely packed together

compacted, (of soils) pressed together, made dense

comparium, group of individuals able to interbreed and produce viable offspring; = syngameon, which is preferred

compatible, able to fertilise each other

complanate, flattened

complete, with all the parts belonging to it, as expected

complicate, folded upon itself

component, those parts belonging to a complicated structure (e.g. branches of an inflorescence)

compound, 1. the opposite of simple; composed of several similar parts; 2. of an inflorescence, where there are two orders of branching, i.e. first order and second order; 3. of fruit, derived from more than one flower

compound spike, inflorescence made up of spikes

compound umbel, an umbel of umbels

compressed, flattened (especially laterally)

compressed-trigonous, three-sided, but distinctly flattened and thus appearing to be two-sided

compression wood, reaction wood found on lower side of branches and inclined tree trunks

concave, hollow, as the inside of a bowl.

OPPOSITE: convex

concensus tree, in cladistics, the hierarchical summary of topological information from several or many cladograms

conceptacle, in ferns, the fruit case of a sporocarp

[unusual term]

conchiform, shaped like the shell of a bivalve mollusc such as a mussel

[unusual term]

concolorous, (of different sides of a leaf) of one and the same colour. OPPOSITES: discolorous

concrecent, growing together

condensed, dense (of inflorescence)

conduplicate, folded together lengthwise with the upper surfaces closely parallel and facing each other (e.g. unfolding leaves). OPPOSITES: reduplicate

cone, 1. (shape) a symmetrical 3-dimensional shape with the base a circle, the sides straight and narrowing to a point at the apex;

2. the fruit of a gymnosperm with the scales overlapping (properly a strobilus), and hence any inflorescence or fruit with overlapping scales

cone scale, scale of the fruit of a gymnosperm, of which the form is often useful in identification

conferted, (of leaves) closely packed or crowded together

conflorescence, a compound inflorescence, consisting of two or more part-inflorescences, in which the main axis does not end in a flower, but the axes of the branches do [obscure term]

confluent, coming together and merging

confocal, used for two main veins that both emerge at the base of the leaf

conform, (of terminal fern pinnae) of the same shape as the others
congener, another species within the same genus
congeneric, belonging to the same genus
congested, crowded
conglomerate, clustered
conglutinate, as if glued together
conical, cone-shaped (see cone for illustration)
conjugate, coupled, connected

connate, 1. united, used when structures or organs of the same kind are joined margin to margin (e.g. connate petals); see also adnate; 2. (of leaves) where a pair are united at base

connective, the part of a stamen between and connecting the anther cells, distinct from the filament; sometimes called the filament extension between the thecae

connivent, two or more parts that are separated at the base but come together (but are not fused) distally

conocarpium, a multiple fruit, of many fruits on a common receptacle, as in a strawberry
conoid, cone-like
conoidal, somewhat cone-shaped

conserved, (nomen conservandum, nom. cons.) (in nomenclature) a name, the use of which is officially permitted despite its contravention of one or more articles of the I.C.B.N.

conspecific, belonging to the same species
conspicuous, standing out, clear
constricted, (abruptly) narrowed
contiguous, 1. without an interruption; 2. adjacent and touching
continuous, not interrupted

contorted, of sepals or petals in the bud when each overlaps its neighbour on one side, and is overlapped by its neighbour on the other side

contracted, (of inflorescences) when narrow and dense
contractile root, root that can shorten so as to keep the bulb, corm or rhizome at a particular level
contraligule, membranous, ligule-like structure in Cyperaceae at the apex of the leaf-sheath on the side of the culm facing away from the leaf-blade
contrary, in the opposite direction

convex, with a rounded surface, like the outside of a bowl. Opposite: concave

convolute, in flower bud aestivation meaning rolled in the length and overlapping, each segment enveloping the next, like a closed umbrella

copal, semi-fossilised tree resin
copious, much, a lot, abundant
coppery, (colour) shiny brownish red
coppice, (verb) to cut back to near ground level at regular intervals; 2. (noun) vegetation in which trees or shrubs are regularly cut to ground level, but resprout after cutting
coppice shoot, new branches arising from a cut-back trunk or from the lower trunk (often with foliage different from normal foliage)
cordate, 1. (of the base of a leaf) deeply notched so the whole base has a slight heart-shape; 2. sometimes used for the shape of the whole leaf, which is then ovate with a notched base and an acute apex
cordiform, shaped like a heart in two or three dimensions
cordulate, (of leaf base) a little cordate [unusual term, to be avoided]; = subcordate, which is preferred

coriaceous, leathery, tough

cork, protective tissue replacing the epidermis in the older parts of some plants, this tissue is elastic and impervious to liquids

corky, with the consistency of cork

corm, short underground swollen stem, a storage stem

cormel, a new corm produced from a parent corm

cormlet, diminutive of corm, a solid, bulb-like stem, usually underground

corneous, with a horny texture

corniculate, bearing one or more little horn(s)
cornute, horned, spurred

corolla, the second whorl of floral organs, inside or above the calyx and outside the stamens, consisting of free petals or of a joined tube and petal lobes

corona, 1. a series of appendages on the corolla or on the back of the stamens, or at the junction of the corolla tube and the corolla lobes; often united in a ring (e.g. in Passifloraceae); 2. a crown-shaped pappus (in some Compositae/Asteraceae)

coroniform, crown-shaped
corpusculum, organ linking translator arms (and pollinia) in a pollinarium (derived subfamilies of Apocynaceae, Orchidaceae)
correct, (in nomenclature) name or epithet that, when applying the I.C.B.N., is the proper one for a taxon
corrugated, wrinkled regularly and longitudinally
cortex, 1. bark or outer layer [antiquated term]; 2. (anatomical) region of tissue between the epidermis or bark and the vascular cylinder
cortical, of the bark
corticate, with a cortex or bark
corymb, a more or less flat-topped, racemose (indeterminate) inflorescence in which the branches or the pedicels start from different points but all reach to about the same level
corymbiform, shaped like a corymb
corymbophore, (in Compositae/Asteraceae) the leafless stalk of a inflorescence [obscure term]
corymbose, adjective of corymb
cosmopolitan, (of distribution) occurring all over the World
costa, 1. a rib, often of a leaf, pinna or leaflet, sometimes used for midrib; 2. (in ferns) the major axis of a pinna
costal, (of veins) those that run between the primary veins; ‘major secondaries’ (see Ellis et al., 2009)
costapalmate, a basically palmate leaf in which the petiole extends into the lamina as a well-defined ‘axis’, the costa, which effectively divides the lamina in two (specialist term in Palmae, see Dransfield, 1986)
costule, midrib of a fern pinnule
cotyledon, seed-leaf
cotyliform, of a lobed structure: cup-shaped with a short broad tubular base and an erect limb [unusual term]
coumarin, chemical that smells of freshly cut grass
counter-clockwise, (of growing or overlapping) when seen from above, in a direction opposite to that of the hands of a clock. OPPOSITE: clockwise
couplet, (in an identification key) term for two opposing possible choices
cover crop, plants grown to combat soil erosion
crasedium, a fruit that breaks up (either with the valves separating as a single unit or breaking into separate articles) to leave the suture as a persistent rim or replum
craspedodromous, with the veins running directly from the midrib to the leaf margin and ending there
craspat, rather thick [unusual term, not recommended]
crassinucellate, (of ovules) with a thick nucellus up to the time of embryo-sac formation. OPPOSITE: tenuinucellate
crateriform, shaped like a goblet, with a narrow tubular base and a concave hemispherical upper part
creamed, (colour) white with a faint tinge of yellow
creeper, plant with stems running along the ground and rooting at intervals
creeping, growing along the ground and rooting at intervals
cremophilous, growing on cliffs [obscure term]
cremocarp, dry fruit consisting of two single-seeded carpels, which at maturity splits into two mericarps (as in certain Umbelliferae/Apiaceae)
crenate, of margins, notched with regular, rounded symmetrical teeth
crenellate(d), with alternating projections and indentations, with right angles between the two
crenulate, of margins, with small crenate teeth
crescentic, curved and thinner at either end than in the middle; shaped like a young moon
crest, an elevated, irregular ridge
crested, with an elevated, irregular ridge
crevices, narrow fissures or splits in rock or bark
cribrose, cribriform, pierced with many holes, like a sieve [old-fashioned term]
crimped, 1. pleated; 2. sometimes used to include crumpled, but crimped is more regular
crimson, (colour) deep red with a slight tinge of purple
crine, with a tuft of hairs [unusual term]
crispate, curled or ruffled, e.g. of a leaf margin
crisped, curled; = crispate
cristate, with a crest, a narrow band of stiff hairs or a narrow irregular ridge
cristulate, with a small crest [unusual term, not recommended]
critically endangered, term in an IUCN Red List for plants that are on the brink of extinction, see IUCN definitions for precise explanation
crop, plants grown for commercial purposes
cross, hybrid
cross-fertilisation, fertilisation by pollen from another individual
crossing, interbreeding of closely or distantly related individuals
cross-pollination, transfer of pollen between different plants
cross-vein, a short second or third vein that runs between veins of one order higher
crowded, close together
**crown**, 1. in trees, the cluster of branches and leaves borne at the top of the trunk, or the shape formed by the uppermost and outermost leaves; 2. (in cycads) the apex of the trunk or stem, usually covered with protective bracts [not recommended]; 3. the part of the stem at the surface of the ground.

**crownshaft**, a column of leaf sheaths tightly enclosing the developing leaves, forming a pseudostem at the tip of the stem (specialist term used in Palmae, see Dransfield, 1986).

**crozier-shaped**, shaped like a bishop’s crozier, i.e. with the apex coiled in one plane, like young ferns.

**cruciate**, cross-shaped: with four parts forming a symmetric cross.

**cruciform**, shaped like a cross.

**crumpled**, folded irregularly.

**crustaceous**, of brittle texture.

**cryptic**, not obvious, hidden.

**cryptocotylar**, with the cotyledons hidden, remaining within the seed coat. OPPOSITE: **phanerocotylar**.

**cryptogam**, plant without stamen, pistil and true seed, but reproducing sexually.

**cryptophyte**, in Raunkiaer’s system, plant with a growing point that survives adverse seasons as a resting bud below the surface of either ground or water.

**crystal**, a mineral solid, usually with regular angles and faces.

**ctenoid**, with regularly spaced protuberances, like a comb; = **pectinate**, which is preferred in botany.

**cucullate**, hooded (used especially for small organs).

**cucullus**, 1. (in derived subfamilies of Apocynaceae), corona hood; strictly, only those species with lobes resembling a hood should be regarded as possessing a cucullus; 2. (in the U.S.A.) used to describe the staminal corona lobes of Asclepias.

**cuff**, (in Gramineae/Poaceae) the sleeve-shaped part where the lower glume margins almost meet.

**culm**, stem of a grass or sedge.

**cult.,** cultivated.

**cultigen**, plant or taxon known only in cultivation.

**cultivar**, a cultivated variety of a species.

**cultivated**, grown by humans in a modified environment.

**cultrate**, shaped like a knife blade [unusual term, not recommended].

**cuneate**, (of a base of a flat object) tapering gradually, wedge-shaped.

**cuneiform**, wedge-shaped, attached by the narrow end.

**cupula**, cup-like structure at the base of fruits, formed by the dry, enlarged floral envelope; see also **cupule**, which is preferred.

**cupular**, cup-shaped.

**cupulate**, 1. bearing a cupule; 2. cup-shaped with ± truncate edge, not lobed.

**cupule**, cup-like structure at the base of fruits, formed by the dry, enlarged floral envelope.
cupuliform, cup-shaped

curl, (of hairs) with several bends, tortuous

curvinerved, with curved parallel veins

cushion, 1. (of habit) plants many and close together, forming a dense rounded mass; 2. (of flowers) swollen axis on which several flowers are borne

cusp, sharp, rigid point

cuspidate, abruptly tipped with a sharp rigid point

cuticle, layer on the outer walls of the epidermis composed of cutin, a fatty, water-repellent material

cv., cultivar, a variety known only in cultivation

cyatheoid indusium, with a cup-shaped indusium completely surrounding the receptacle

cyathiform, shaped like a drinking cup; = cupuliform

cyathium (plural cyathia), (in Euphorbiaceae) the cup-shaped involucre with the flowers inserted on it, the whole slightly resembling a single flower

cyathophyll, the bracts enveloping a cyathium in Euphorbiaceae [obscure term]
cyclic, arranged in whorls (usually of foliar or floral structures)
cylindric(al), like a cylinder, i.e. long and narrow with a circular cross-section

cymba, woody boat-shaped bract enveloping the inflorescence, as in some palms [unusual term]
cymbiform, boat-shaped

cyme, 1. a sympodial inflorescence in which the central flower opens first, growth being continued by axillary buds arising below this central flower; 2. sometimes used for a compound, more or less flat-topped inflorescence [imprecise and not recommended]; 3. compound dichasium (Rickett, 1955); 4. flat-topped cluster, with idea of centrifugal flowering grafted on, as in Linnaeus (Rickett, 1955); 5. ‘upside-down’ raceme of American textbooks; see also subcategories helicoid cyme, scorpioid cyme (Rickett, 1955).
cymose, (adj.) with a cyme
cymosely branched, with the branches arranged as in cymes

cymule, a small cyme

cynarrhodium, fruit such as a rose-hip, consisting of a cup formed of the calyx tube and receptacle and containing achenes

cypreiform, shaped like a cowrie-shell [unusual term]
cypsel, an anthocarp with longitudinally oriented awns, bristles or similar structures, as in Dipsacaceae and Compositae/Asteraceae

cystolith, (anatomical) mineral concretion

cytological, relating to the study of cells or cell life history

dasyphyllous, with very hairy leaves [unusual term, not recommended]
d.b.h., (of a tree trunk) diameter at breast height
decaploid, with ten sets of chromosomes

deciduous, falling seasonally, losing all its leaves for part of the year, not evergreen

decinate, bent or curved downwards, then curving upwards at the tip

decomound, 1. more than once compound or divided [unusual term]; 2. in Cyperaceae, applied to an inflorescence in which there are three or more orders of branching

decorticated, with the bark removed

decumbent, lying on the ground, but with the distal part upright

decurrent, extending downwards; said of leaf or stipule edges when they continue down the stem as wings or raised lines, or of pinnae when the pinna base is extended down the rachis

decurved, curved downwards and outwards, but not coiled

decussate, used of opposite organs (e.g. leaves), when alternate pairs are at right angles to each other

definite, 1. (of shoot growth) in which the axis terminates in an inflorescence; 2. (of a cymose inflorescence) in which the axis terminates in a flower

deflected, bent downwards

deflexed, bent abruptly downward

deflorate, past the flowering state

defoliate(d), of which the leaves have been shed

dehiscent, dehiscing, splitting; opening spontaneously when ripe, as of fruits and anthers

dehiscence, mode of opening (of a fruit capsule or anther)

dehiscent, dehiscing, splitting; opening spontaneously when ripe, as of fruits and anthers

del., from the Latin delineatus meaning 'drawn', illustrated by

delimitation, (in taxonomy) circumscription of a taxon plus statement on its difference from nearby taxa

deliquescent, 1. branching so that the stem is lost in the branches, to form a crown of branches of similar dimensions. OPPOSITE: excurrent; 2. becoming semi-liquid, as in some perianth parts

deliquescing, changing to a liquid from a solid state, melting away

deltate, shaped like an equal-sided triangle

deltoid, shaped like an equal-sided triangle; delttate is preferred, the -oid ending being more usual for 3-dimensional shapes
deme, group of individuals of a taxon; population unit; a whole terminology (topodeme, ecodeme, plastodeme, syngamodeme etc.) has been built on this term (see Davis & Heywood, 1963, Heslop-Harrison, 1967) but has not become prevalent in the literature.
dendritic, tree-like; for example, dendritic hairs are branched like a tree
dendrogram, tree diagram reflecting perceived relationships between taxa
dendroid, shaped like a tree, with a thick basal part and narrowing branches
dentate, prominently toothed with acute symmetrical projections pointing outwards (usually of margins; see also serrate, crenate)
dentation, the degree of incision of the margin
denticle, small tooth
denticulate, finely toothed
depauperate, impoverished, of much lesser stature than normal
dependent, hanging down
deposits, secondary growths on the cell wall
depressed, ± flattened from above downwards or at least at the top
derived from, ± evolved from and slightly different to another taxon or another structure
descending, gradually going downwards
description, a statement of the characters and measurements of a taxon; see also diagnosis, which lists the differences from other taxa
desert, habitat in which rain only comes very occasionally, with hardly any visible vegetation
determinate, 1. (of shoot) with finite growth, either ending in an inflorescence or with the growing tip aborting; = sympodial;
2. (of inflorescences) main axis ending in a flower, the lateral branches (if any) following this pattern; = centrifugal, basipetal
determinavit, det., identified by
development, gradual growth of organ or plant
dextrorse, in a spiral from left to right (as seen from the side or from above). OPPOSITE: sinistrorse
diadelphous, in two bundles (usually said of stamens, particularly in Leguminosae/Fabaceae), often 9 + 1, but can also be 5 + 5; see also monadelphous
diagnosis, short description concentrating on differences from another taxon (or group of taxa)
diagonal, at an angle
dialycarpous, bearing fruit composed of separate carpels [unusual term]; = apocarpous, which is preferred
dialypetalous, with separate petals [obscure term, not recommended]; = apopetalous, which is preferred
dialysepalous, with separate sepals [obscure term, not recommended]; = aposepalous, which is preferred
diandrous, with two stamens
diaphanous, with the light showing through, translucent
diaspore, reproductive portion of a plant, such as a seed, fruit or fragment of fruit, that is dispersed and may give rise to a new plant
dichasial cyme, synonymous with dichasium
dichasium, 1. a peduncle bearing a terminal flower and two bracteoles, which subtend lateral stalked flowers (simple dichasium);
2. a compound dichasium repeats this branching pattern on the lateral axes
**Dichlamydeous,** differentiated into sepals and petals [unusual term]

**Dichogamous,** bisexual, but with one sex maturing earlier than the other (i.e. stamens and pistil not mature at the same time)

**Dichogamy,** state of sexes not developing at the same time

**Dichopodium,** sympodial branch system that is made up of successive parts of a dichotomising branch system, of which only one of each pair of branches forms part of the main axis

**Dichotomous,** forking, dividing into two equal branches

**Dichotomous key,** identification key that gives two alternative choices, each of which leads to the next couplet of choices or to the name of the taxon being ‘keyed out’

**Dichotomy,** forking, dividing in two

**Diclesium,** small dry indehiscent single-seeded fruit (or achene) enclosed within a free but persistent perianth envelope [unusual term]

**Dichlinous,** with all flowers unisexual, thus stamens and ovaries are in separate flowers; see also dioecious

**Dicotyledon,** flowering plants of which the embryos have two seed leaves

**Dictyostelic,** (anatomical) relating to a vascular cylinder with large overlapping leaf gaps

**Didymous,** 1. in pairs; 2. divided into two lobes; 3. (of anthers) two-lobed with a very short connective

**Didynamous,** (of stamens) in two pairs of unequal length

**Differentiation,** development into more than one form or into a more specialised form

**Diffuse,** loosely spreading

**Diffuse-parietal,** with ovules scattered over the inner carpel wall

**Digamous,** with flowers of two different sexual ‘types’: male and female, female and bisexual or male and bisexual

**Digestive zone,** that part of a carnivorous plant where the trapped insects decompose and where the nutrients are assimilated

**Digitate,** 1. like fingers; 2. (of a compound leaf) when the leaflets diverge from the same point; = palmate

**Dimonous,** with two angles

**Digynous,** with two separate carpels or styles

**Dihedral,** having two plane faces, or contained by these, as in some seeds

**Dilated,** expanded, widened

**Dilation,** widening

**Dimerous,** with flower parts in sets of two

**Dimidiate,** divided into two parts, but with one part small so that only the other one seems present

**Dimorphic,** with two different shapes or forms

**Diplochlamydeous,** with the perianth in two whorls [obscure term]

**Dioecious,** with unisexual flowers, the male and female flowers on different plants; with male and female plants

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diplecolobous, (of cotyledons in a seed) folded twice, transversely [obscure term]
diploid, (2n) with twice the haploid (n) (somatic) number of chromosomes
diplostemonous, (of stamens) 1. with twice as many stamens as petals. OPPOSITE: haplostemonous; 2. in two whorls, the outer alternate with the petals, the inner opposite the petals. OPPOSITE: obdiplostemonous
diplotegium, a pyxis derived from an inferior ovary [obscure term]
diporate, (of pollen) with two rounded apertures
disarticulating, 1. falling apart into its constituent parts (e.g. of a lomentum); 2. separating at a point of articulation or an abscission joint
disc or disk, a flat plate-shaped object; disk is the preferred spelling in botany except in the case below, and where describing the general shape
disc floret, (in Compositae/Asteraceae) the actinomorphic or sometimes bilabiate florets in the centre of the capitulum

**disciform**, (in Compositae/Asteraceae) a capitulum with outer filiform florets and inner disc florets

discoid, 1. like a disc or plate: orbicular, with some thickness and parallel faces and with a rounded margin; 2. (in Compositae/Asteraceae) applied to a flower head without ray florets (i.e. with only disc florets)

**discolorous**, with two different colours (e.g. the upper surface of a leaf dark green, the lower surface white); = bicolorous; OPPOSITE: concolorous

discontinuity, state with different characters, non-continuous, with a clear disjunction in variation

discrete, separate, individual
disintegrating, falling apart into its constituent parts

disjunct, (plant geography) with widely separated distribution areas

disjunction, separation

disk, 1. an enlargement of the floral receptacle or ovary that secretes nectar or displays stamens, usually ring- or cup-shaped; 2. (in Cyperaceae) three-lobed structure occurring at the base of the nutlet in Scleria and Diplacrum; 3. the lip in orchids and sometimes the removable part of the rostellum projection (viscidium)

dispermous, with two seeds only

dispersal, the movement of propagation units such as seeds away from the parent plant by mechanical means such as wind, animals etc.

disposition, arrangement

dissected, divided into segments

dissemination, distribution of ripe seeds

dissemnule, any part of the plant used in distribution: seed, fruit, part of fruit or any other part that can grow plantlets

**dissepiment**, a partition in an ovary or fruit; = septum, which is preferred

dissilient, bursting apart, as in some ripe fruits [unspecific term, not recommended]

dissimilar, unlike

distal, 1. furthest from the place of attachment (e.g. the tip is the distal part of a leaf). OPPOSITE: proximal; 2. in pollen, that part of the grain facing opposite the centre of the tetrad during meiosis
**distant**, where phyllaries in Compositae/Asteraceae are not overlapping but free. **OPPOSITE:** imbricate (Stearn, 1973)

**distension**, swelling

**distichous**, in two opposite rows, one on each side of the stem

**distinct**, separate from other parts in the same series, free

**distribution**, the geographic occurrence of a plant taxon

**disulcate**, (of pollen) with two sulci or grooves

**dithecous**, (of anthers) with two cells or chambers

**diurnal**, occurring or flowering in the day-time (as opposed to **nocturnal**)

**divaricate**, spreading wide

**divergence**, gradual separation

**divergent**, gradually spreading, but less so than **divaricate**

**divided**, of a structure that is not entire, but split into two or more subunits (e.g. a leaf may be variously divided into lobes or leaflets). **OPPOSITE:** **entire**

**dolabrare**, like an axe-head; the more usual term is **dolabriform**

**dolabriform**, hatchet-shaped; like an axe, with a narrow cylindrical base and an abruptly widened head, bigger on one side of the head. (Payne (1978) describes it as “like the head of a pick, with two divaricate or opposed terminal branches”, which implies equal and narrow arms)

**dolichostylous**, (in heterostylous flowers) long-styled. **OPPOSITE:** **brachystylous**

**domatium** (plural **domatia**), small cavities, usually in the lower-surface axils of the leaf veins but sometimes on stem or root, that are often linked to the presence of ants or mites; see also **acarodomatia** but domatia is the preferred term

**dominant**, the most common and/or prominent plant species in a site or vegetation type

**dormant**, not active, awaiting a stimulus to fulfil a function

**dorsal**, 1. literally ‘regarding the back’; 2. upper in regard to the lamina surface; = **adaxial**, which is preferred; **OPPOSITE:** ventral, abaxial; 3. in Orchidaceae, the dorsal sepal is the upper one (in non-resupinate flowers)

**dorsifixed**, of anthers, when the connective is attached between the base and apex of the filament; see also **medifixed**

**dorsiventral**, with two surfaces, upper (dorsal) and lower (ventral)

**dorsiventrally**, of a solid structure, with a distinct division into lower/abaxial and upper/adaxial surfaces

**down**, soft thin hairs

**downy**, covered in, or equipped with, soft thin hairs
**DREPAHNIUM–ECTOZOOCHORY**

**drepantium**, a sickle-shaped cyme in one plane, branching always to the same side

**drip-tip**, the drawn-out tip of a leaf or leaflet from which water can drip

**drooping**, bent downwards but not quite vertical

**dropper**, a shoot from a bulb or corm that grows downwards and produces new bulbs or corms at its apex

**drupaceous**, like a drupe, with the character of a drupe or producing fruit like a drupe

**drupe**, a stone fruit (e.g. plum, cherry), a fleshy indehiscent fruit with the seed(s) enclosed in a stony endocarp

**drupecetum**, an aggregation of drupelets

**drupel**, in multiple fruits, the single constituent drupes

**duct**, an elongated tube

**duplex**, (of hairs) eglandular hairs found on achenes of Compositae/Asteraceae, each hair composed of two parallel cells, such hairs are also called twin hairs or *Zwillingshaare* in German

**duplicate**, 1. double; 2. twin; 3. folded twice; 4. multiple specimens from a single herbarium gathering, irrespective of whether the source was one plant or more than one

**dusky**, dark-coloured

**dwarf**, of small size when compared to its nearest relatives

**dyad**, 1. in palms, a pair of flowers; 2. of pollen, a pair of coherent pollen grains shed as a unit

**dye**, colouring substance extracted from plants, minerals or animals

**e-**, prefix meaning without or missing

**e.descri., ex descriptione**, from the description, according to the description

**ebracteate**, without bracts

**ebracteolate**, without bracteoles

**ecalcarate**, without a spur; for example, used to describe the anthers of Compositae/Asteraceae, which lack spurs

**ecalyculate**, without a calyculus

**ecarunculate**, without a caruncle

**ecaudate**, (in Compositae/Asteraceae) without a sterile tail to the anther

**eccentric**, one-sided, out of or away from the centre; = excentric

**echinate**, 1. with small projections tapering from a broad base to a ± sharp apex; 2. densely covered with rigid hairs or small prickles

**echinulate**, with tiny spines; diminutive of echinate

**eciliate**, without cilia (unusual term)

**ecodeme**, group of related individuals of a particular taxon that occur within a specific kind of habitat [unusual term], see deme

**ecology**, the study of the interaction of organisms with each other and with their environment

**ecotype**, individuals occupying a particular habitat and forming an interbreeding population which differs genotypically from other such populations, i.e. a locally adapted population of a widespread species

**ectocarp**, outermost layer of pericarp; = epicarp

**ectotroph**, mycorrhizal fungus forming a layer outside the root; see also endotroph

**ectozoochory**, dispersal of plants by the exterior of animals (e.g. seeds on fur or on feet)
edaphic, relating to soil conditions

dentate, without teeth

edged, when patch of one colour is bordered by another colour

effectively published, (in nomenclature) published in printed matter generally available to botanists (see I.C.B.N. art. 6; McNeill et al., 2006)

efflorescence, the season of flowering

effuse, loosely spreading (used of inflorescences in Caryophyllaceae)

efoliate, without leaves

e glandular, without glands

elaiosome, oily appendage on seeds, often (?always) serving as a food-body for ants or other insects which then disperse the seed

elaminate, without a blade [unusual term]

elater, a cell or cell structure that reacts to changes in humidity with a change in shape, and thereby assists in the dispersal of spores; elaters can be either on the spore (e.g. in *Equisetum*) or in the sporangium

eligulate, without a ligule

elipsoid, a 3-dimensional shape that is elliptic in the vertical plane

ellipsoid, 1. broadest at the middle with two equal rounded ends;
2. Linnaeus, de Candolle and Lindley, used this term as being synonymous with oval;
3. The mathematical definition is “a plane figure with the sum of its distances to two fixed points being constant”; 4. The *Taxon* article on plane shapes (Systematics Association Committee for Descriptive Biological Terminology, 1962) adds to this a length/width ratio of between 1.5–2, with other ratios having adjectives such as ‘narrowly’, ‘broadly’ etc.

elodeoid, growth form in aquatic plants, rooted at the bottom with long shoots, totally submerged

elodeoid

elongate(d), stretched, long

elongating, lengthening

emarginate, (of apices) with a distinct sharp notch; see also residue

emargination, notch

embryo, the rudimentary plant contained in the seed, consisting of cotyledon(s), radicle and plumule

embryotega (plural *embryotegia*), a disc-like callus near the hilum of a seed that detaches during germination

emend., from the latin *emendavit* meaning ‘he changed it’; usually referring to the re-delimitation of a taxon by an author whose name follows

emergences, multicellular projections from a surface

emergent, coming out of, arising from

emersed, rooting under water but with the part under discussion raised above water level

enation, 1. outgrowth of one organ from another; 2. epidermal outgrowth (Lawrence, 1951)

endangered, (in conservation terms or Red Data lists) in danger of extinction; for a precise definition in a global sense, see IUCN definitions

endemic, 1. native to; 2. (when used with ‘to’) restricted to, unique to, not naturally found elsewhere (e.g. “endemic to Mt Hanang” means occurring only on Mt Hanang and nowhere else). The term is meaningless unless a native area or habitat is specified.

endemism, restriction of distribution to one particular area or habitat

decocarp, the innermost layer of a multi-layered fruit wall (e.g. the the stone or putamen in a drupe)

dend dermis, innermost cell layer of stem and root cortex

endogenous, originating from the inside of a cell or a plant

endophytic, growing within another plant [unusual term]

endosperm, the food-storage tissue within a seed that commonly surrounds the embryo, absent from the seeds of some species if absorbed during development; = albumen; see also perisperm
endotesta, (of a seed coat) with the mechanical part in the inner layer of the outer integument
endotroph, mycorrhizal fungi within the roots; see also ectotroph
endozoochorous, endozoochory, dispersal of plants through the interior of animals, through ingestion and excretion of fruit or seed
ensate, ensiform [unusual term]

ensiform, sword-shaped; long and narrow, ending in a sharp point [preferred term]

entire, 1. not divided; 2. (of margins) smooth, unbroken by serrations, teeth or other irregularities

entomophilous, dependent upon insects for pollination
entomophily, pollination by insects
environment, the total of surrounding conditions that may influence a plant
eophyll, in palm seedlings, the first leaf with a blade
epaleaceous, without paleae
epaleate, lacking receptacle scales
epappose, without pappus
epedunculate, without a peduncle
epetiolate, epetiolulate, without a petiole, sessile
ephemeral, 1. short-lived annual plant; 2. soon disappearing or remaining for a very short time
epiblast, (in grasses) 1. the first and not-developing leaf of the plumule; 2. the rudimentary second cotyledon

epicalyx, a group/whorl of bracts below the flower that resembles an extra calyx (e.g. in Hibiscus)

epicotyl, the young stem above the cotyledons

epicarp, the outermost layer of a multi-layered fruit wall

epichil(e), (of orchid flowers) the terminal part of a lip that is divided into two or three distinct parts

epichilium, epichil(e) [unusual term]
epicormic, (of shoots) arising from the trunk of a tree, often with foliage different to foliage of the crown
epicortical, outside the bark

epicolyl, the young stem above the cotyledons

epidendroid, member of the orchid subfamily Epidendreae, which includes the Dendrobieae
epidermal, having to do with the outermost layer of cells
epidermis, the outermost layer of cells
epigean, (of germination) above ground; 2. (especially of cotyledons) spreading on or just above the ground surface; see also hypogeal
epigenous, growing on the surface of an organism
epigeous, on or just above the ground, used especially of cotyledons; = epigeal
epigynous, (of flowers) when the sepals, petals and stamens are apparently inserted higher than the ovary.

epilithic, growing on rocks

epimatium, (in Podocarpaceae) swollen appen
dage of the ‘seed’ scale complex

epinastic, with the upper/adaxial surface growing faster than the lower/abaxial side, the whole structure becoming recurved to revolute

epipeltate, 1. of any stalked structure, but especially leaves or stamens, in which the base of the organ is on the upper face and the stalk is attached to the abaxial surface [unusual and confusing term]; 2. (of anthers) dorsifixed, versatile and introrse

epipetalous, (usually referring to stamens) united with the petals, often appearing as if implanted on the petals

epiphyllous, 1. growing epiphytically on or from the leaf (e.g. epiphyllous mosses); 2. an inflorescence growing from the leaf (as in Phylloclinium, Flacourtiaceae)

epiphyte (adjective epiphytic), plant growing on and attached to another plant without deriving nourishment from it

epipodium, the first internode of an inflorescence above the prophyll

epipetalous, winged, with a single terminal wing [unusual term]

episepalous, borne upon the sepals

epistemonous, attached to, or inserted upon, the stamens

epithelium, a layer of cells lining internal plant cavities that may secrete resins or gums

epithet, the second part of the scientific name, the species-identifying part (e.g. in the name Pteridium aquilinum the ‘aquilinum’ part is the specific epithet)

epitropous, anatropous ovule with its raphe turned away from the axis when ascending, facing the axis when suspended

epitype, a specimen that is chosen for its completeness to support a fragmentary holotype

epizoochorous, epizoochory, dispersal of plants by the exterior of animals (e.g. seeds on fur or on feet)

eponym, a name honouring a person (though not necessarily repeating the subject’s name)

eprophyllate, 1. without a prophyll; 2. without subtending bracteoles [used rarely in Cyperaceae and Juncaceae]

epulvinate, (of petiole) without a thickening

equator, in pollen, the border of the proximal and distal parts

epitype

ep civilizations, used in spheres or globe-like shapes to denote the area between the lower (or proximal) and upper (or distal) halves, halfway up and all around

epulvinate, (of petiole) without a thickening

equivalent, equal-sided

equinocital, with flowers opening at a regular time of day

epiphyte

eracemose, 1. not part of the raceme; 2. without a raceme [not a favoured term]

eramous, 1. without branches, 2. with an unbranched stem [unusual term]

erect, upright

erecto-patent, between spreading and erect

eremean, from regions with low irregular rainfall [unusual term]

ericaceous, related to, or resembling, plants of the heath genus Erica (e.g. ericaceous leaves are short and very narrow)

ericoid, 1. typical of a heathland plant; 2. with small needle-like leaves
erose, irregularly toothed, eroded, appearing as if nibbled

erostrate, without a rostrum/apical beak on the achene (in Compositae/Asteraceae)

escape(d), plants that have become established in the wild outside their natural distribution area by spread from (garden) cultivation

esculent, edible by humans

estipitate, without a stalk, sessile

estipulate, without stipules

estrophiolate, without a caruncle or strophiole (appendage to the seed coat)

etario, etaerio, multiple fruit composed of achenes, follicles, berries or drupes [etaerio is the more common spelling]

et al., from the Latin et alii meaning ‘and others’

ethnobotanical(al), relating to plants used by ethnic groups or tribes

ethnobotany, the documentation and study of the use of plants by human cultures

etiolated, with long internodes and without green colour because of the absence of light

eucamptodromous, with a main vein and secondary veins branching off it, these secondaries gradually arching upwards inside the margin and becoming indistinct before reaching the margin, and also linked by small tertiary cross-veins

eudicot, eudicotyledon, one of the major clades of Angiosperms, a large part of the ‘classical’ Dicotyledons

eutrophic, (of substrate) rich in minerals. OPPOSITE: oligotrophic

evanescent, soon disappearing, remaining for a very short time, falling early

evergreen, retaining its leaves throughout the year. OPPOSITE: deciduous

everolute, turned back, unfolded

evolutionary, adj. 1. of evolution, the cumulative change in characters of a population or taxon over time; 2. descent with modification

ex, (in nomenclature) used in author citations, as in ‘Beentje ex Sebsebe’, when the first person mentioned has proposed a name, but not validly published it, and the second person mentioned has validly published the name, citing the first person

ex-, prefix meaning without or missing

exalate, without wings or wing-like appendages

exalbuminous, (of seeds) without endosperm, i.e. with the embryo occupying the whole space within the testa

exarillate, without an aril

exasperate, with a rough surface or with hard projecting points

exauriculate, without auricles

excavated, hollowed out

excentric, off-centre, not in the centre; = eccentric

excurrent, 1. running through to the apex and beyond, as a mucro; 2. (in ferns) veins from the midrib of a pinna or pinnule running towards the base of the sinus between the lobes of that pinna or pinnule, usually joined by lateral veins from other vein groups; 3. with the stem remaining in the centre, the other parts around it. OPPOSITE: deliquescent

excurved, curved away from the central part [unusual term, not recommended]

exfoliating, coming off in large, thin-layered flakes

exindusiate, (in ferns) without a membrane covering the sorus

exine, the outer wall of a pollen grain (the inner wall being the intine), the sculpturing and internal layering of the exine usually provide useful taxonomic characters

exmedial, (in leaf venation) away from the axis of symmetry of the leaf

f., (abbreviation in author citation) from the Latin filius meaning ‘son’

face, (of an organ) the surface which is upper or inner [vague term, upper/lower or inner/outer surface being preferred]

facial, having to do with one of the surfaces
facades, general aspect of plant or vegetation type

facultative, (of life form or habitat requirement) occasional or incidental, as opposed to obligatory or necessary. OPPOSITE: obligate

falcate, curved like a scythe or sickle

falciform, sickle-shaped

fall, in iris, one of the outer perianth segments which is narrow at the base but expands into a broad pendulous blade

fallow, (of cultivated land) resting, without crops for a season or two

false indusium, (in ferns) the reflexed frond margin covering the sorus

false vein, (in ferns) a line across the lamina surface where surface cells are elongate, giving the appearance of a vein but not connected to real veins with vascular tissue

family, higher taxonomic unit composed of one genus or several/many related genera, usually clearly separated from other families

farinaceous, 1. mealy, resembling flour, 2. surface covered with small white particles

farinose, covered with a meal-like powder

fasciated, 1. very flattened; 2. (in stems) abnormally flattened and widened

fascicle, a cluster of similar organs (e.g. leaves or flowers) arising from more or less the same point

fascicled, in bundles or close groups

fasclicules, sterile fascicles (e.g. in the stamens of some Guttiferae/Clusiaceae)

fasciculate, (of erect branches) in close bundles, see fastigate

fastigate, (of branches) erect and closely parallel, ‘bundled’, and coming from a common point

faucal, having to do with the throat of the corolla or calyx [unusual term, not recommended]

fauces, the throat of the corolla or calyx [unusual term, not recommended]

faux, upper part of the throat of a calyx or corolla

faveolate, (of a surface) pitted like a honeycomb; = foveolate, which is more commonly used

favose, (of a surface) pitted like a honeycomb; = foveolate, which is more commonly used

favulariate, (of a surface) finely ribbed, the ribs separated by zig-zag furrows [obscure term]

fawn, (colour) light yellowish-brown

felted, (of indumentum) matted, with intertwined hairs, resembling felt

female flower, flower with functional female parts but without (or with only rudimentary) male parts

fenestra (plural fenestrae), opening(s) or window(s) at base of a staminal tube (e.g. in many papilionoid legumes)

fenestrate, with open or translucent areas, like windows

fenestration, with translucent areas, like windows

fern, flowerless plants with leaves bearing spores that give rise to tiny sexual prothalli, which produce fern plantlets

fern ally, rather vague group of plants near ferns and like ferns in having alternate generations, the main generation producing spores (e.g. Isoetes, Lycopodium and Equisetum)

ferrugineous, ferruginous, rust-coloured; ferruginous is the preferred spelling

fertile, 1. capable of giving rise to the next generation; 2. bearing flowers or fruit

fertilisation, the result of pollen reaching the egg cell, leading to the fusion of gametes to produce a new individual of the same species
**Fibonacci series**, a mathematical series of numbers first formulated by Indian scientists but popularised by Leonardo ‘Fibonacci’ of Pisa in 1202. Each number in the series is formed by adding up the previous two: 1, 2, 3, 5, 8, 13, 21…. Spiral leaf arrangements, the spiral packing of flowers in large heads, the spiral arrangement of cone scales, and the spirals of pineapple carpels all seem to follow the Fibonacci spiral, which gets wider every quarter turn by a changing factor related to the ratios of consecutive terms in the Fibonacci sequence.

**fibre**, 1. lignified elongated cells or groups of cells in wood other than vessel or parenchyma elements; 2. wood elements in general

**fibrillate**, 1. with fibres; 2. with a lined appearance

**fibrillose**, with many fine fibres

**fibrous**, composed of, or including, fibres

**fibro-vascular veins**, (in anatomy) mixed vessels and fibres

**fiddlehead**, (in ferns) the coiled immature leaf with apex at the centre; = crozier

**fide**, from the Latin ‘with faith’, used when quoting another person’s observation; according to

**fig**, the fruit (really a syconium) of *Ficus* species; also used to indicate a whole plant of *Ficus*, as in fig-tree

**fil.**, (abbreviation in author citation) from the Latin *filius* meaning ‘son’

**filament**, a stalk that bears an anther, usually distinct from the connective

**filamentous**, 1. formed of thin fibres; 2. thread-like

**filantherous**, (of stamens) with distinct filament and anther(s)

**filiform**, slender, thread-like

**filter bridge**, (in plant distribution) barrier that some but not all organisms can cross, such as a strait, mountain or different climate

**fimbriae**, slender, hair-like processes

**fimbriate**, (of margins) bordered by rather broad hair-like processes (as distinct from hairs or slender spines), fringed; see **fimbriae for** illustration

**fimbriolate**, bordered by very fine and very slender hairs or hair-like processes

**fissile**, easily splitting, tending to split

**fission**, splitting

**fissure**, deep and narrow split

**fissured**, cracked with deep splits (usually used of bark)

**fissuring**, splitting so as to cause deep longitudinal cracks

**fistular**, (of stems) cylindrical and hollow

**fistulose, fistulous**, cylindrical, hollow and closed at both ends; fistulous is the more common spelling

**flabellate**, fan-shaped

**flabelliform**, fan-shaped

**flaccid**, limp, drooping

**flagellate**, whip-like: long, tapering and supple

**flagelliflorous**, with flowers and fruit among the leaf litter, on slender shoots coming from a tree trunk (as, for example, in some Annonaceae and Flacourtiaceae)
flagellum (plural flagella), 1. (in Araceae) shoot with long slender internodes and reduced leaves; 2. a sterile inflorescence modified as a climbing organ in the form of a barbed whip, found only in some species of Calamus (specialist term used in Palmae, see Dransfield, 1986)

flaking off, coming off in flat, irregularly shaped pieces

flange, ring-like projection on the outside or inside of a cylinder or rounded shape

flavones, natural yellow plant colouring chemicals

flesh, the soft part, as the flesh of a melon

fleshy, succulent, swollen largely because of a high water content

flexible, bending easily but springing back to original shape

flexuose, flexuous, sinuous, bent alternately in different directions; flexuous is preferred

flocose, covered with woolly tufts of hairs that rub off easily

flocculent, flocculose, with small tufts of woolly hairs

Flora, a book listing and describing the plants in an area

flora, the plants occurring in a certain area

floral, belonging to the flower(s)

floral bract, (in Cyperaceae) a membranous scale-like structure in the spicoid-type inflorescence unit, each of which subtends a male flower comprising a single stamen only; the lowermost two floral bracts usually have a keel and are opposite

floral cup, the enlarged basal part of a flower bearing the calyx, corolla, stamens and gynoecium; = hypanthium

florescence, 1. flowering, blossoming; 2. the flowering period

floret, 1. small flower; 2. (in Compositae/Asteraceae) a single flower; 3. (in Gramineae/Poaceae), the flower plus its bracts (lemma and palea)

floricane, flowering and fruiting stem (e.g. in Rubus) (horticultural term)

floriferous, bearing flowers

florigerous, (of bracts) subtending the (clusters of) flowers

flower, an axis bearing one or more pistils (a pistillate flower) or one or more stamens (a staminate flower) or both (a perfect flower), often with parts to make it more functional or more attractive to pollinators (e.g. sepals, petals or rewards such as nectar)

flowering eye, point of emergence from the stem of the inflorescence

flush, simultaneous emergence of young leaves or flowers on trees and large shrubs

fluted, (of cylindrical objects such as stems) with alternating longitudinal rounded ridges and grooves

fodder plant, crop plant grown for animal feed

foetid, stinking

foliaceous, leaf-like

foliage, the leaves of plants

foliar, having to do with the leaf

foliolate, leaved

foliation, the process of forming leaves [unusual term]

foliolate, with leaflets

foliole, leaflet, a division of a compound leaf

foliosus, leafy

follicetum, an aggregate of follicles, representing the outcome of an apocarpous multi-pistillate gynoecium [unusual term]

follicle, a pod arising from a single carpel, opening along the inner (adaxial) suture to which the seeds are attached

follicular, adjective meaning of a follicle

foramen, the opening into the ovule [old-fashioned term, not recommended]; = micropyle

foramate, (of wood) pitted with small holes

forb, herbaceous plant less than 2 m tall, excluding grass-like plants, usually annual, usually covered in leaves (no bare stem) [rather vague term, not recommended]
fork, branching point

forked, separating into two parts from a common base

form, 1. slight variant; = forma; 2. shape

forma, 1. form, a group of plants within a species differing slightly (usually by a single character) from the main population but not sufficiently to be considered a variety or subspecies; 2. a group of plants occurring sporadically throughout the species’ geographical range

fornicate, 1. arched; 2. with scale-like appendages

fornix, small arched scale

fossulate, with small grooves

founder effect, the fact that small isolated groups of immigrants do not represent the complete gene pool for their species and hence may show genetic drift

fovea, small pit

foveate, pitted

foveolate, minutely pitted, with small depressions

fr., 1. fruit; 2. fruiting

fractiflex, zig-zag

frag., (of type) a fragment or small part

frass, insect damage on herbarium specimen, small plant debris or excrement produced by insects

free, not attached to other parts, neither adhering nor united

free-basal placentation, ovules attached to a freestanding axis arising from the base of a unilocular ovary and not reaching the top

free-central placentation, ovules attached to a freestanding axis in the centre of a unilocular ovary

frequency, number of occurrences per area

fringed, bordered by hair-like appendages; = fimbriate

frond, leaf (lamina + petiole) of ferns or palms

fructescence, the time of maturity of the fruit

fructification, fruiting

fruit, the seed-bearing organ, with or without adnate parts

fruitlet, a part of the fruit that functions as a separate seed-dispersing unit; examples are cocci, mericarps or follicles

frutescent, 1. with the characters of a shrub; 2. becoming shrubby
frutex, a woody plant without a trunk [outdated term]

fruticose, with the characters of a shrub, shrubby

fruticulose, like a small shrub [unusual term, not recommended]; = fruticose

fugaceous, fugacious, falling off early; fugaceous is the preferred spelling

fulvous, (colour) yellow, tawny

functionally male, used when both female and male parts are present in the flower but only the male parts are in working order

fungiliform, mushroom-shaped, with a relatively thin cylindrical stalk and a much wider cap [unusual term, not recommended]

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funicle, the stalk of the ovule or seed attaching it to the placenta, seed stalk

funicular, deriving from the funicle

funiculus, the stalk of the ovule or seed attaching it to the placenta; seed stalk; = funicle, which is preferred

funnel-shaped, funnel-form, proximally tubular, abruptly widening to a wider distal part; = infundibuliform

furcate, forked with sharp terminal lobes

furfuraceous, scurfy, with small soft scales

furrowed, (of bark) with longitudinal grooves or channels

furry, with dense long hairs; = pubescent

fuscous, dusky brown, dark grey-brown

fused, joined together into a whole

fusiform, thick but tapering towards both ends; = spindle-shaped

fuscoid cells, somewhat fusiform, spindle-shaped

galbule, galbulus, (in the fruit of Juniperus, Ephedra or Cupressus) a modified cone that becomes fleshy and berry-like as it matures

galeate, hollow and domed

gall, a monstrous growth of part of the plant resulting from puncture by a parasitic insect, bacteria, fungi or eelworm mites; often containing insect larva(e) and then often characteristic in shape according to the insect and the plant species involved

galled, with galls, affected by a gall-forming organism

gamete, unisexual body, unable to give rise to an individual plant until joined with another gamete to produce a zygote

gametophyte, the generation that bears the sexual organs in seed plants, pteridophytes and mosses

gamopetalous, with joined petals

gamophyllous, with leaves (or less correctly, perianth segments) connate by their edges

gamosepalous, with joined sepals

geitonogamy, where the flowers of a plant are fertilised by pollen from another flower on the same plant

geminate, in pairs

gemma, adventitious bud on a fern frond (on a stipe or in a pinna axil) that can develop into a plant
gemmate, (in pollen) outer surface with processes that are constricted at the base and with a diameter the same as or greater than the height

gemmiferous, 1. bearing gemmae, 2. bearing buds
gene, hereditary factor, unit of inheritance, a long strand of DNA
gene flow, changes in gene frequency caused by genes coming in from another breeding population
gene pool, all of the genetic potential of a breeding population

genera, plural of genus
generation, 1. complete age group; 2. in ‘alternation of generations’, the regular succession of sexual and asexual phases in ferns
generic, pertaining to a genus
generitype, in nomenclature, the type of a genus
gene sequencing, analysis of the chemical structure of a gene
genetic drift, tendency of a gene to vary randomly without the influence of natural selection
genetically controlled characters, traits pertaining to genes; inherited traits
geniculate, bent like a knee

genodeme, group of related individuals of a particular taxon differing from others genotypically [unusual term]; see under deme
genome, 1. the genetic chromosomal complement of an organism or cell; 2. the circular DNA molecules found in plastids and mitochondria
genotype, the total of the genes inherited from the parents and passed on to progeny
genotypic, (of characters) influenced by genes, as opposed to by the environment; see also phenotypic
genus (plural genera), Linnean group containing related species (usually of similar appearance) and bearing the same first name of the binomial

geocarpic, geocarpous, with fruits that mature underground, fruits that are developed from aerial flowers are pushed into the ground as they ripen (e.g. in Arachis, the peanut)
geophilous, on, or from, the ground

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geophilous, on, or from, the ground

glabrescent, becoming glabrous or nearly so

1. smooth and without hairs, scales or other trichomes; 2. nowadays often used for without hairs/trichomes alone.

glabrate, sword-shaped, long and narrow with an acute apex [obscure term]

gland, a secretory area or mass on the surface, either embedded or ending a hair

1. covered with glands or with a zone of secretion-producing tissue

1. (of a leaf or other organ) covered with glands that are sunken into the surface, and which usually show when held up to the light

1. resembling the husk of a grain; 2. a bract that appears to be a glume but is not [obscure term]

1. round, spherical

1. like a sphere in shape

1. small round 3-dimensional bodies

1. barbed bristle

1. beset with barbed bristles

glomerate, compactly clustered, collected into a dense group or head

glomerulate, ?diminutive of glomerate (glomerate is much more widely used)

glomerule, a dense cluster of (sub)sessile flowers or of small capitula

glomerulescence, a dense cluster of glomerules, as sometimes found in Compositae/Asteraceae [obscure term]

glomeruliform, shaped like a glomerule

1. resembling the husk of a grain; 2. a bract that appears to be a glume but is not [obscure term]

glomerulous, glanduligerous, bearing glands

1. resembling the husk of a grain; 2. a bract that appears to be a glume but is not [obscure term]

1. the bract(s), usually occurring in pairs, at the base of a grass or sedge spikelet

1. covered with a sticky substance

gnarled, twisted, mis-shapen

Gondwana, 1. great southern supercontinent that began to break up about 100 million years ago and that included South America, Africa, Arabia, India, Antarctica, Australia and New Zealand; 2. Indian word, meaning ‘land of the Gond’ (so Gondwanaland is a tautonym). See Laurasia.

gonophore, (in flowers) an elongation of the axis beyond the calyx and corolla that bears stamens and ovaries

gourd, a fleshy many-seeded fruit of one carpel with parietal placenta (as in Cucurbitaceae)

gradation, gradual change

grade, 1. group of plants (or animals) that are similar in some features but that do not necessarily form a phyletic group, especially an unnatural, or polyphyletic, group; 2. a set of organisms that have reached a similar stage in a recognisably progressive evolutionary trend

grade into, gradually change from one state to another
grain, 1. general term for the fruit of cereals (grasses cultivated for food); 2. a small, rounded body (e.g. about the shape and size of a grain of rice)
graminaceous, relating to grasses or grain-bearing plants
granite, rock type: intruded igneous crystalline rock
granular, granulate, 1. (of a surface) covered with small grains; 2. (of a substance) consisting of, or mixed with, small grains
granules, small amorphous, grain-like particles
granulose, composed of grains
grapnel, (in climbing plants) an anchor-shaped (sub)terminal structure of three or more hooks or flukes
gravitropism, modern term for geotropism, specifying that gravity is the force involved in the growth of a plant (or part of a plant) towards the ground/downwards
gregarious, growing in groups and locally dominant
gregarious blooming, flowering of plants together at a fixed interval after a climatic stimulus, e.g. in some orchids such as Dendrobium crumenatum and Flickingeria spp., or in some Acanthaceae such as Mimulopsis species
grex, a group of hybrids of the same parentage
grooved, with long narrow indentations; see also sulcate

ground tissue, tissue other than vascular tissue, i.e. pith, cortex and mesophyll
growing point, 1. the apex of the growing stem; 2. the place where cell division takes place
growth, increase in size by cell division or by cell expansion
growth form, vegetative condition grouping similar habit types; examples are trees, shrubs and herbs
growth ring, annual or seasonal rings of growth that can be seen in wood
grumous, with small clustered grains [unusual term]
gullet, interior of a conical orchid flower, which the pollinator enters, as in most dendrobiums
gum, hardened exudate from a wounded stem or leaves that is soluble in water; see also resin
guttation, secretion of water from a plant, producing drops of water from glands at leaf margins or leaf tips
gymnogrammoid, (in ferns) with the sori arranged along the veins of the lamina and without indusia
gynosperm, seed plants in which the ovules or seeds are not enclosed in an ovary (e.g. cycads, ginkgo, gnetums, yews and conifers)
gynaeandrous, (in Cyperaceae) with male and female flowers on the same spike or spikelet, the female above the male
gynaecium, see gynoecium, which is the preferred spelling
gynandrium, structure with stamens attached to the pistil, (partly) fused androecium and gynoecium
gynandrous, stamens being partially united with pistil
gynobase, enlarged receptacle on which the pistil is inserted
gynobasic, when the style rises apparently from the base of the ovary (as in Labiatae/Lamiaceae) rather than from the apex
gynodioecious, (of a species) with some plants bearing only bisexual flowers and others female flowers
gynoecium, the female element of a flower, the pistil(s) (gynoeicum is the preferred spelling)
gynomonoeious, with female and bisexual flowers on the same plant
gynophore, a stalk carrying the ovary (formed by elongation of the receptacle) (e.g. in Capparaceae)

gynostegium, 1. an unspecified covering of the gynoecium; 2. (of orchid flowers) (misapplied, in the sense of gynostemium) the column of an orchid, the male and female parts combined [not recommended]; 3. (in more derived subfamilies of Apocynaceae) a compound structure comprising the staminal column and the stylar head

gynostemium, (in orchids) column formed by the junction of androecium and gynoecium

gypsophilous, growing on limestone

habit, general appearance of vegetation (e.g. erect or sprawling, herbaceous or woody)

habitat, the normal environment or vegetation type in which the plant grows

haft, (in Iris) the lower and usually narrower part of the 'fall' or standard perianth segment

hair, an outgrowth of the epidermis consisting of one or more elongated cells; a type of trichome, as are bristles and scales

hairy, 1. indument type where individual hairs are visible; 2. a rather vague term describing indumentum needing modifiers such as 'sparsely' or 'densely'

half-inferior, partly below and partly above the level of attachment of the perianth and stamen; partially embedded in, or surrounded by, the receptacle

halophilous, salt-loving

halophyte, halophytic, 1. plant adapted to living in saline habitats; 2. plants with seeds that can germinate in salt water

hamate, hooked at apex

hamulate, with small hooks

hapaxanthic, with a single flowering period, dying after flowering and possibly fruiting; = monocarpic; OPPOSITE: pleonanthic

haploclammydeous, with the perianth in a single whorl or spiral [obscure term]

haploid, with one set of chromosomes

haplopetalous, with petals in one series [unusual term]

haplostemonous, with stamens equal in number to petals; = isostemonous

haptera (singular hapteron), adhesive-secreting disc-like holdfasts, root-like structures attaching the thallus of plants such as Podostemaceae to their rocky substrate

hardwoods, wood from non-coniferous trees (as opposed to coniferous tree wood, softwood)

hardy, able to withstand unfavorable conditions

harmomegathy, change of shape in response to change in hydration level

hastate, (of a leaf-base) with two ± triangular lobes pointed outwards; see also sagittate

hastula, a small flange of tissue found on the abaxial and/or adaxial face where the lamina joins the petiole in most palmate and costapalmate leaves (specialist term used in Palmae, see Dransfield, 1986)

haulm, the stem in beans, peas, potatoes and grasses [old-fashioned term]

haustorium (plural haustoria), the sucker of a parasitic plant by which the parasite anchors itself into the host plant

head, short dense inflorescence, capitulum

heartwood, the innermost and oldest dead wood in a tree, usually distinct in colour and properties from the outer sapwood

heath, community of low woody shrubs with small, narrow leaves

hebecarpous, with pubescent fruit [unusual term, not recommended]

hebecladous, with pubescent branches [unusual term, not recommended]
hebegynous, with pubescent pistil [unusual term, not recommended]

hebepetalous, with pubescent petals [unusual term, not recommended]

helically, coiled like a spring

helically twisting, spiralling in three dimensions

helicoid, spiralling in three dimensions; see helically twisting

helicoid cyme, inflorescence growing in a spiral, branching always in the same direction

heliophyte, plants adapted to full sun; see sciophyte

heliotrope, (colour) light purple

heliotropic, turning towards the sun or towards light

helm-like, shaped like a helmet, i.e. hollow and vaulted (e.g. some orchid petals)

helophyte, 1. herb with basal parts in water or mud and upper parts aerial; 2. (in Raunkiaer’s system) a plant with a growing point that survives adverse seasons as resting bud in marshy ground

hemianatropous, half-anatropous, the ovule axis at 90° to the stalk

hemicellulose, a type of carbohydrates in the cell wall

hemicyryptophyte, (in Raunkiaer’s system) a plant with a growing point that survives adverse seasons as resting bud at or near the level of the soil, as in tussocks and rosettes

hemi-epiphyte, epiphytic for one stage of its life cycle but rooted in the soil during another stage. A primary hemi-epiphyte begins life as an epiphyte and later becomes rooted in soil, whereas a secondary hemi-epiphyte begins life rooted in soil and later becomes an epiphyte.

hemiparasite, a plant that germinates without a host plant but which thereafter becomes dependant on a host

hemispherical, in the shape of half a sphere or globe

hemitelioid, (of indusium) not completely surrounding the receptacle base

hemitropous, short for hemianatropous: half-anatropous, the ovule axis at 90° to the stalk

heptamerous, with parts in groups of seven

herb, plant without a persistent woody stem above ground

herbaceous, 1. an annual herb or a herb with annual stems from a perennial root; 2. with the texture of a herb, soft and pliable

herbarium, a collection of dried plants or parts of plants

herbarium label, a piece of paper glued to the herbarium sheet, on which information is written or printed listing the collector, the place and date of collection, and details of the dried plant in its original state, sometimes including local names and uses

herbarium sheet, a piece of stiff paper on which parts of dried plants are glued or mounted with thread or gummed slips

herbarium specimen, a single herbarium sheet complete with dried plant parts and label

herkogamy, separation in space between stigma(s) and anthers

hermaphrodite, bisexual plant with stamens and pistil in the same flower

hesperidium, a fleshy berry with a leathery rind, the fleshy part divided into segments (like an orange) and multiple seeds, each with a hard testa
heteroblastic, 1. of differing development; for example, of pseudobulbs in *Graphorchis*, with only one internode elongated and the remaining basal ones very short; 2. with juvenile and mature leaves of very different shape and size

heterocarpous, heterocarp, with fruits of more than one kind (e.g. in Compositae/Asteraceae where the achenes of ray florets may have a different shape from those of disc florets)

heterocarpalous, (in Compositae/Asteraceae) with two kinds of capitula [unusual term]

heterochlamydeous, with the perianth divided into a distinct calyx and corolla

heterochromous, (in Compositae/Asteraceae) with the ray florets of one colour and the disc florets of another colour

heterocotylous, see anisocotylous, which is preferred

heterogamous, with two kinds of flower; for example, in Compositae/Asteraceae with heads comprising central, usually bisexual, disc florets and marginal, unisexual or neuter, ray florets; see also homogamous

heterogeneous, 1. not uniform, of several kinds; 2. (in nomenclature) used to indicate that specimens originally described as a single taxon really belong to different taxa

heterogamous, with flowers on different plants differing in the relative length of pistil and stamens

heteromerous, with parts differing in number (e.g. with 4 calyx lobes but 5 petals)

heteromorphic, heteromorphous, 1. with variation in normal structure; 2. with organs differing in length (e.g. both long and short styles); 3. with more than one kind of flower in a single species of plant

heteromyctrotroph, a plant that obtains its nourishment from organic matter rather than from photosynthesis, hence not usually green; = saprophyte, heteromycotroph

heterostylous, of a species with flowers of two or more types each having styles of different lengths

heterotroph, a plant that obtains its nourishment from organic matter rather than from photosynthesis, hence not usually green; = saprophyte, heteromycotroph

heterotypic synonym, (in nomenclature) synonym based on a type different from that of other synonyms; also known as a taxonomic or subjective synonym. Two or more heterotypic synonyms remain synonymous only as long as their respective types are considered to belong to the same taxon. See also: homotypic synonym

heuristic, concerned with the process of looking at a problem and working out the solution

hexagonal, 6-angled

hexagynous, with six pistils
hexalobate, with six lobes
hexamerous, with flower parts in sixes
hexandrous, with six stamens
hexaploid, with six sets of chromosomes
hilar, pertaining to the hilum

hilum, the scar left on the seed from its attachment point to the placenta

hip, (in *Rosa*) the ‘false fruit’ developed from the swollen hypanthium
hippocrepiform, horseshoe-shaped

hirsute, with rather coarse stiff hairs

hirtellous, softly or minutely hirsute or hairy

hispid, with long stiff hairs or bristles, more sharply bristly than hirsute. Many, but not all, early authors (including Linnaeus) also thought the hairs of hispid plants to be fragile

hispidulous, minutely hispid

hoary, covered with a thin white or grey pubescence resembling frost

holo., holotype, 1. (in nomenclature) a single specimen (usually all the material on one herbarium sheet, possibly part of a sheet or a single specimen spread over several sheets, sometimes an illustration) representing the nomenclatural type of the name of a taxon; 2. a specimen used to assign a name to a taxon in cases of ambiguity; 3. the voucher specimen of a name

homochlamydeous, with a perianth of similar segments, i.e. not clearly divided into calyx and corolla parts

homochromous, (in Compositae/Asteraceae) with ray and disc florets the same colour

holo-epiphyte, an obligate epiphyte, completing its life cycle on the host plant

holophyte, a plant producing its own food through photosynthesis, i.e. neither a saprophyte nor a parasite

homoblastic, (of orchids) having pseudobulbs of several internodes. OPPOSITE: heteroblastic

homogamous, with all flowers of the same kind; see also heterogamous

homogeneous, uniform, of one kind. OPPOSITE: heterogeneous

homogonous, with all pistils and stamens of similar length

homologous, similar in origin and structure but not necessarily in function. OPPOSITE: analogous

homology, (in cladistics) similarity owing to a common ancestor

homomorphic, with only one kind of flower in a single species of plant

homonym, (in nomenclature) identical names for different taxa (of which only one name can be correct)

homophyllous, (of a plant or species) with leaves of one kind, as opposed to heterophyllous (see under that term)

homoplasy, (in cladistics) convergent evolution but independent origin, with a shared character that is similar but not derived from a common ancestor

homosporous (in pteridophytes) with spores of one kind. OPPOSITE: heterosporous

homostylic, of a species with flowers with styles (and usually stamens) uniformly positioned; = homostylos, which is preferred

homostylous, of a species with flowers with styles (and usually stamens) uniformly positioned; = isostylous, OPPOSITE: heterostylous

homotypic synonym, (in nomenclature) synonym based on the same type as another synonym; also known as an obligate, objective or nomenclatural synonym. The synonymy of the two names is not a matter of taxonomic opinion but absolute. See also heterotypic synonym

honey, sweet secretion from glands or nectaries that is processed by bees

honeyguides, streaks or blotches of colour leading to the glands or nectaries secreting the nectar

hood, 3-dimensional shape with the sides and apex curved inwards; see also cucullus
hooded, forming a hood; see also cucullate; see hood for illustration

hook, a slender process with a curved or bent part at the tip

horned, with a horn, a tapering 3-dimensional structure resembling an elongated cone but often curved

hornotine, hornotinal, hornotinous, of this year’s growth [unusual term]; see also annotine

horseshoe-shaped, shaped like the shoe of a horse, i.e. like the letter “U” with the ends curved inwards; = hippocrepiform

hort., when placed after a taxon name indicates the use of that name in horticulture

host, the plant on which a parasite grows, and from which the parasite derives its food

humifuse, spread out over the ground; = procumbent, the more usual term

humus, organic matter resulting from the decomposition of plants and/or animals and/or their products

husk, outer covering of fruits or seeds [vague term]

hyaline, almost transparent

hybrid, a cross between two species

hybrid swarm, population showing characters of both parent species in varying balance

hybrid-derivative, an individual or population derived from hybrids between two taxa

hybridisation, crossing between two different species

hydathodes, water-glands, organs extruding water or fluid

hydrochory, dispersal of disseminules or diaspores (i.e. seeds, fruits, other floating or water-borne parts) by water

hydrogamous, (of flowers) with pollination effected by water, as in Najadaceae

hydrogeophyte, in Raunkiaer’s system, plant with growing points surviving adverse season as resting buds underwater

hydrophilous, 1. pollination effected by water; 2. used for ‘water-loving’ in general [this use not recommended]

hydrophyte, in Raunkiaer’s system, plant with growing points surviving adverse seasons as resting buds underwater and in mud/underground

hydrophytic, adapted to permanently flooded or waterlogged conditions

hygrophilous, moisture-loving, growing in wet or damp sites

hygrophyte, 1. plant adapted to permanently damp (not wet) conditions, aquatic plant; 2. submerged or floating water plant, spending the adverse season on the bottom of a pond, river or lake

hygroscopic hairs, hairs that react to the presence or absence of water by movement, or by turning slimy

hypanthodium, inflorescence with enlarged, fleshy receptacle bearing the flowers on its surface; can be almost circular and hollow with a small opening (as in Ficus) or slightly concave (as in Dorstenia)
hypanthium, cup-shaped extension of the floral axis (i.e. the receptacle), enlargement of the basal part of the flower, seemingly bearing calyx, corolla, stamens and surrounding the ovary, solid or tubular, believed to be formed out of the fused bases of the calyx, corolla and stamens; sometimes imprecisely called a floral tube

hyphae, individual filaments of a fungal body

hyphodromous, with a single main vein, all other venation absent or invisible

hypochil, hypochile, hypochilium
(in an orchid flower) the basal part of a lip that is divided into two or three distinct parts; see also mesochile, epichile

hypocotyl, (in a seed or seedling) that part of the main axis below the junction of the cotyledons but above the radicle

hypocrateriform, with slender tube and abruptly widening limb; see salver-shaped, which is preferred

hypodermal, beneath the epidermis

hypodermis, layer of cells immediately below the epidermis

hypog(a)eous, under the earth’s surface; = hypogean

hypogean, hypogeous
(of germination) under the earth surface; cotyledons remaining underground and non-photosynthetic.
OPPOSITE: epigeal

hypogynium, 1. (in Cyperaceae), stalk-like constricted basal part of ovary; 2. hardened dics at base of achene

hypogynous, (of flowers) the sepals, petals and stamens inserted on the receptacle below and free from the ovary, the ovary thus being superior

hyponastic, with a downward-curved shape as a result of uneven growth

hypopodium, 1. the portion of stem below the first leaf on a shoot, between the shoot base and the first node, or below the prophyll of an inflorescence; 2. the stalk of a carpel; 3. the stalk of an achene in Compositae/Asteraceae

hypsophyll, bract or bracteole, a reduced or scale leaf associated with the inflorescence [obscure term]

hysteranthous, (of leaves) produced or developing after the flowers
ib., ibid., from the Latin *ibidem*, meaning ‘the same’


I.C.N.C.P., International Code of Nomenclature of Cultivated Plants: set of rules on the naming of cultivated taxa such as hybrids

**iconotype**, (in nomenclature) type based on an illustration that accompanies or forms the protologue

**idioblast**, a cell that differs from the surrounding ones in shape, size or function

i.e., from the Latin *id est*, meaning ‘that is’

**illegitimate**, (in nomenclature) a name or epithet that is validly published but does not conform to article 6.4 of the Code

**imbricate**, 1. overlapping like tiles; 2. (in aestivation) with the parts of a flower overlapping like tiles

**imbricate-quincuncial**, (in aestivation) a type of imbricate aestivation, with two pieces completely external, two completely internal, and one with one margin overlapping and one margin overlapped

**immersed**, sunk completely into

**imparipinnate**, unevenly or odd-pinnate, i.e. pinnate with a single terminal leaflet; see also *paripinnate*

**imperfect**, (of flowers) with one of the usual parts (e.g. stamens) absent

**impervious**, impassable to fluid

**implexed**, (of hairs) entangled, which is preferred

**inaequilateral**, with the two sides unequal; **inequilateral** is the preferred spelling

**inaperturate**, (of pollen) without an opening or aperture

**inappendiculate**, without an appendage

**inarticulate**, not jointed, continuous

**inbreeding**, producing offspring by self-fertilisation or by crossing of parents that are very close genetically. OPPOSITE: **outbreeding**

**incanous**, covered in soft white hairs

**incertae sedis**, from the Latin meaning ‘of uncertain seat’, i.e. of unclear taxonomic position

**incipient**, beginning

**incised**, cut rather deeply, this term is intermediate between *toothed* and *lobed*

**inclinate**, bent downward [unusual term]

**inclining, inclined**, bent down at an angle from the horizontal

**included**, not protruding from the surrounding structure or organ. OPPOSITE: *exserted*

**incomplete**, missing some essential part

**inconspicuous**, not very clear

**incrassate**, 1. thick, stout; 2. (of a pollen grain) with thickened margins around the aperture(s)

**incrassated**, made stout [unusual term]

**incrustation**, coating of mineral (non-organic) matter

**incubously**, inserted obliquely so that the distal part covers the base of the next one up (e.g. of leaves on a stem)
incumbent, lying on and closely parallel to (e.g. cotyledons with the radicle against the surface as in some Cruciferae/Brassicaceae)

incurred, bending inwards

indefinite, 1. numerous, but not counted exactly; 2. (of shoot growth) continuous

indehiscent, (of fruits) not splitting open

indented, marked with a dent or sharp impression

indeterminate, 1. (of a shoot) capable of ± indefinite extension; 2. (of an inflorescence) with the lower or outer flowers opening before the upper or inner ones, and with the floral axis continuing to grow indefinitely

indicator (usually followed by ‘species’), any plant or taxon that is thought to show a condition of the environment (e.g. a copper indicator or an indicator of human disturbance)

indigenous, occurring naturally in the area

indigo, (colour) deep blackish-blue (from the dye obtained from Indigofera species)

indument, indumentum, any covering of hairs or scales; indumentum is the preferred term

induplicate, 1. (in sepals or petals) the margins folded inwards but not overlapping; 2. (in palms) V-shaped in cross-section

indurate, indurated, hardened

induration, hardened part

indurescent, becoming hardened

indusium, 1. (in ferns) a thin flap of tissue covering the sorus when young (and sometimes also when old); 2. a cup covering the stigma (as in Goodeniaceae)

ined., placed after a taxon name to mean ineditus, ‘unpublished’

inequilateral, with the two sides unequal

inermous, unarmed, without spines or thorns

inferior, 1. usually with reference to an ovary that has the calyx above it; 2. rarely of other flower parts that are inserted below the ovary [not recommended]

inflated, thin, slightly transparent, swollen as if blown up with air, bladdery

inflexed, bent or curved inwards

inflorescence, the part of the plant that bears the flowers, including all its bracts, branches and flowers, but excluding unmodified leaves

infra, below, beneath

infra-axillary, below, not at, the axil

infrafoliar, borne on the stem below the leaves (e.g. in palms where the inflorescence is borne below the leaves). OPPOSITE: interfoliar

infrageneric, (of taxa or variation) below the rank of genus

inframedial, below the middle

infrapetiolar, borne on the stem below the petiole

infraspecific, (of taxa or variation) below the rank of species (e.g. subspecies, variety, form or race)

infrastaminal, below the stamens

infrastipular, below the stipules
**infructescence**, 1. the part of the plant that bears the fruits, including all its bracts, branches and fruits, but excluding unmodified leaves; 2. (in Compositae/Asteraceae) the cluster of fruits derived from an inflorescence

**infundibular, infundibuliform**, funnel-shaped, i.e. abruptly widening from a narrow cylindrical part to a wider distal part; infundibuliform is the preferred term

**ingroup**, (in cladistics) the group being studied

**in litt.**, from the Latin *in litteris*, meaning ‘in correspondence’

**innate**, (of anthers) attached by the base to the apex of the filament

**innovation**, 1. new shoot, which eventually becomes separate from the parent as its lower part dies; 2. a branch or shoot that carries on further growth of the plant without becoming detached

**inrolled**, (of leaves or petals) with the margins rolled inwards; = involute

**in sched., in schedula**, on a label

**insectivorous**, describing plants that derive (part of) their nutrition from insects that they have captured; term now replaced by *carnivorous*, signalling that these plants capture not only insects but other animals as well

**insect-pollination**, fertilisation of flowers effected by the transfer of pollen to stigma by insects

**inserted**, placed in

**insertion**, place or mode where one body is attached to another larger one

**in sicc**, ‘in a dried state’, used to indicate possible differences between a dried specimen and fresh plant material

**in situ**, ‘in place’, in the natural position, relating to plants in the wild as opposed to in cultivation

**integument**, 1. the covering of an organ; 2. 1–3 outer cell layer(s) of an ovule that enclose the nucellus

**inter-, (prefix meaning) in between**

**inter**, between

**interaxillary**, between the axils

**intercalary**, (of growth) taking place between apex and base (but not at apex or base)

**intercalated**, inserted, placed between

**intercarinal**, between keels or ridges

**intercostal**, between the ribs, between the veins of a leaf

**intercrossing**, cross-fertilisation

**interfertile**, 1. fertility between species; 2. (of hybrids) fertility between hybrid and parent or between hybrids

**interfoliar**, 1. between two opposite leaves; 2. (in palms) when the inflorescence is borne among the leaves. OPPOSITE: *infrafoliar*

**intergeneric hybrid**, hybrid between species of two different genera

**intergradation**, the process leading to *intergrades*

**intergrade**, specimens that occur on the boundary of one taxon and show characters intermediate with another taxon

**interlocular**, in between the locules of the ovary

**intermediate**, standing in between two groups and somewhat resembling both

**internodal**, between nodes

**internode**, the part of the stem between two nodes
interpetiolar, placed between the petioles of opposite leaves, characteristic of stipules in many Rubiaceae

interpetiolar ridge, ridge or crest on the node between opposite or whorled leaves

interrupted, with a break in continuity or symmetry

interspecific hybrid, hybrid between two species of the same genus

interspersed, scattered among

interstaminal, between the stamens

interstice, part, interval; 1. usually referring to small air spaces; 2. (in Araceae) a flowerless part on the spadix

intine, inner layer of the wall of a pollen grain

intra-, (prefix) on the inside of, within

intrafloral, within the flower

intramarginal, within or near the margin

intrapetiolar, between the petiole and the stem, as in the stipules of some Melianthaceae and Erythroxylaceae

intraspecific, between the petiole and the stem, as in the stipules of some Melianthaceae and Erythroxylaceae

intransitive, inserted between stamens and ovary, or within the stamens

intravaginal, (of shoot) growing within the enveloping sheath

intraxylary, (in anatomy) within the xylem or wood vessel bundle

intricate, (in branching) dense, tangled

introduced, non-native species, brought in by man. OPPOSITE: native

introgression, introgressive hybridisation, incorporation of genes from one species into the gene pool of another species

introrse, (of anthers) opening inwards, towards the centre of the flower

intrusive, pushing or projecting into another organ

invaginated, enclosed in a sheath

invagination, enclosing in a sheath

invalid, (in nomenclature) a name or epithet that may be effectively published but is not in accordance with Articles 32–45 (or for hybrids, H9) of the I.C.B.N.

invasive, (adjective) a non-native plant taxon intruding into, and spreading in, areas to which it is foreign

inverted, with the apex in the opposite direction from normal, upside down

invested in, clothed in

involucellate, with an involucel

involucel, a secondary involucre at the base of a single branch of a compound umbel

involucellular, with an involucel

involucelate, with an involucel

involucrall bract, (in Compositae/Asteraceae) one or more of the bracts surrounding the capitulum and forming the involucre; = phyllary

involucrate, with an involucre (a cluster of bracts)

involucrate, a series of bracts (the phyllaries), usually close together and appressed, below or around a compact head of flowers (as in Compositae/Asteraceae); see involucrall bract for illustration

involute, (of leaf margins) rolled inwards and upwards towards their upper/adaxial surface. OPPOSITE: revolute

iridaceous shaped like an Iris leaf, i.e. long, narrow and acute

iridescent, many-coloured, with rainbow sheen

iridiform, (of leaves) resembling an Iris, with a flat leaf whose two folded halves have fused so that the vascular bundles point both ways

irregular flowers, those of which the parts of the calyx or corolla are dissimilar in size or shape (i.e. asymmetrical or zygomorphic flowers)
isadelphous, with diadelphous stamens, with numbers in each bundle the same

isandrous, 1. with the number of stamens equal to the number of petals or sepals [unusual term]; 2. with stamens of equal length

iso., isotype

isobilateral, with structurally similar upper and lower surfaces

isocotylous, with seedling leaves (cotyledons) of the same size or shape. OPPOSITE: anisocotylous

isodiametric, 1. with an equal diameter in all directions (e.g. of venation); 2. roughly spherical or round

isilateral, with structurally similar upper and lower surfaces

isolation, prevention of crossing between taxa

isomerous, with equal numbers of parts in successive floral whorls (e.g. equal numbers of sepals, petals and stamens). OPPOSITE: anisomerous

isoneo., isoneotype, duplicates of the neotype

isophyllous, with leaves of one kind. OPPOSITE: anisophyllous

isopol, (in pollen) those grains where the two halves are similar

isostememonous, with as many stamens as petals; = haplostemonous

isostylous, see homostylous, which is preferred

isosyn., isosyntype, (in nomenclature) a duplicate of a syntype

isotomous, (of branching) dichotomous, with ± equal shoots. OPPOSITE: anisotomous

isotype, (in nomenclature) duplicates of a holotype; parts of a single gathering

isovalvate, (of sporangia) with the two halves of equal size

isthmus, narrowed part connecting two wider parts

ITS, the internal transcribed spacers of 18S–26S nuclear ribosomal DNA, characterised by tandem repeat structure and high copy number; typically used in molecular systematics at the species level

joint, a zone of articulation, where a part of an organ (e.g. a leaf or part of an inflorescence) will break off, often swollen and with a constriction groove

jointed, with nodes of apparent articulation; see joint for illustration

jugate, joined in pairs

julaceous, bearing catkins [obscure term]

juvenile, young, early form

karyology, 1. describing the chromosomes; 2. the study of the cell's nucleus

karyotype, the appearance of the chromosome set

keel, 1. (in subfamily Papilionoideae of Leguminosae/Fabaceae), the two often partially united lowest/anterior petals that conceal the sexual parts; 2. narrow longitudinal ridge sticking out from a rounded surface, like that on the bottom of a boat

keeled, bearing a ridge along the middle (like the keel of a boat)

keiki, from the Hawaiian, meaning 'baby'; (in orchids) a distal vegetative branch of the main stem, which ultimately grows roots and separates

key, plant identification method using opposing choices

khaki, (colour) dull brownish yellow

kidney-shaped, in the form of a curved short fat cylinder with rounded ends

kingdom, as in the plant kingdom, the taxon including higher plants, ferns, mosses and green algae

klastotype, (donated) fragment of type [unusual term]
kleptotype, (stolen) fragment of type [unofficial term]

km, abbreviation for kilometre

knee root, breathing root or pneumatophore, where the horizontal root forms a loop that emerges at low tide

label, a piece of paper glued to a herbarium sheet, on which are written or printed details of the collector and place and date of collection, and a description of the dried plant in its original state; sometimes local names and uses are included

labelliform, lip-shaped

labellum, 1. the lowest petal of an orchid, usually larger and different in shape from the two lateral petals; 2. the larger of the three petaloid stamens in the flowers of Cannaceae

labiate, with lips, i.e. when a calyx or corolla is divided into two major parts, an upper and a lower

labium, 1. the lip of a labiate corolla; 2. (in Isoetes) a flap of tissue on the inner surface of the leaves above the sporangium, often covering the base of the ligule

lacerate, irregularly lobed at the margin, as if torn

laciniate, cut into slender lobes or drawn-out teeth

lacinula, tiny lobe

lacrymiform, tear-shaped, i.e. ovoid with a narrowing apex [obscure term]

lactiferous, latex-bearing; the preferred spelling is laticiferous

lacunate, lacunose, perforated with holes [unusual terms]

laesura, the arm of a fissure or scar of a spore

laevigate, (of a surface) smooth, as if polished

lageniform, bottle-shaped, urn-shaped

lamella (plural lamellae), thin plate, membrane

lamelliform, with thin plates stacked on top of or next to each other

lamelllose, with thin plates stacked on top of or next to each other

lamina, expanded part or blade of leaves or petals

laminate, (in leaves) with an expanded blade (as opposed to with a grass-like leaf)

laminula, tiny blade

lanate, with long dense curly interwoven matted woolly hairs

lanceolate, narrowly ovate and tapering to a point at the apex. (This term has been interpreted in several ways; some 60 years ago German and Dutch authors used it to denote what we now call oblanceolate. In the illustration, a depicts the current interpretation, b Linnaeus’ and c Lindley’s)
lanose, woolly, with interwoven long woolly hairs; = lanate, which is the more common term

lanuginose, woolly, with long and inter-woven hairs; = lanate, which is the more common term

lanulose, minutely woolly

latent, resting, dormant, non-active

lateral, on or at the side or margin; for example, lateral leaflets, those flanking the central leaflet, or lateral sepals in Orchidaceae

lately, on or at the side or margin

latex, milky juice, often sticky

laticiferous, latex-bearing

latiseptose, with broad partitions

latrose, 1. (of anthers) opening sideways or laterally, not inwards; 2. (general) turned sideways, i.e. not towards or away from the axis

latrorsely, towards or along the sides

Laurasia, supercontinent combining northern continents, formed as a result of the breakup of Pangaea about 200 million years ago

lax, loose, open, distinct from each other. OPPOSITE: congested

layer, 1. ecological term denoting the horizontal divisions of a high vegetation structure (e.g. tree layer, shrub layer, field layer (herb layer), ground layer (mosses and liverwort layer)); 2. also an anatomical term, but outside the scope of this glossary

layered, (of crown) with several parallel whorls or layers of branches

l.c., from the Latin loco citato meaning ‘in the place mentioned’

leaf, chlorophyll-bearing lateral outgrowth from stem

leafless, without leaves

leaflet, one (expanded) part of a compound leaf

leaf litter, layer of dead leaves on the ground

leaf scar, mark on twig or branch where a leaf has fallen off

leaf sheath, part of leaf stalk that envelopes the stem and runs concurrently with it for some distance

least concern, IUCN Red List term for plants that are in no particular danger of extinction; for precise definition, see IUCN definitions

lecto., lectotype, (in nomenclature) the type chosen by a later author when the protologue indicates no holotype; a lectotype must be chosen from among the specimens mentioned in the protologue

leg., from the Latin ‘legit’, ‘collected by’ (to be followed by name of collector)

legitimate, (in nomenclature) name or epithet that is validly published and in accordance with the I.C.B.N.

legume, 1. the fruit pod of the Leguminosae/Fabaceae, derived from a single carpel, usually (though with many exceptions) opening along a suture into two halves, usually dry; 2. colloquial term used by botanists for any member of the Leguminosae/Fabaceae
lemma, the outermost of two bracts enclosing the grass flower; see also palea

lens, (on seed) lateral depression or bulge, mainly in Leguminosae/Fabaceae, most evident in subfamily Papilionoideae, an area of weakness, sometimes partially open, where water initially penetrates the otherwise impenetrable testa

lenticellate, with lenticels

lenticels, corky eruptions on bark that allow gas exchange

lenticular, a 3-dimensional body that is circular in section and convex on both sides

lentiform, shaped like a lentil, convex on both sides and with a circular circumference

lepidote, clothed on the surface with small scales

leptocaul, (of habit) with slender, highly branched stems. OPPOSITE: pachycaul

leptomorph, (of rhizomes) long, thin and extending ± indefinitely

leptophyll, leaf size class proposed by Raunkiaer (1934): smaller than 25 mm²

leptosporangiate, (in pteridophytes) with sporangia derived from one superficial cell (not from a group of cells)

leuco-anthocyanins, natural colouring agents in plants giving white and blue-red colour

liana, liane, woody climber, supported by other vegetation

lianescent, (of shrubs) with climbing branches behaving like lianas

ligneous, woody

ligniferous, (of branches) forming wood but not producing inflorescences

lignified, referring to a herbaceous structure that has become woody

lignotuber, woody swelling at the base of the plant below or just above the ground, from which new shoots can develop through adventitious buds if the top of the plant is damaged; common in areas that are regularly burnt

ligulate, 1. strap-shaped, narrow and with parallel sides; 2. with a ligule; 3. (in Compositae/Asteraceae inflorescences) denoting the presence of florets with a ligule

ligule, 1. a distal projection of the leaf sheath; 2. (in fern allies) a small triangular organ on the adaxial side of the fertile leaf-base in Isoetes and Selaginella; 3. (in Compositae/Asteraceae), the 5-toothed strap-shaped floret type typical of the tribe Lactuceae, but also found in other tribes

liguliform, strap-shaped, said of rather small organs

lilac, (colour) pale purple

limb, 1. the upper, usually expanded, flat part of the calyx or corolla (especially if united into a tube below); 2. a large branch
limbate, bordered, used especially when the margin has a different colour [unusual term]

limen, floral disk (e.g. in Passifloraceae) [unusual term]

limicolous, growing in mud

line, (old measurement) 1/12 of an inch, 2.12 mm (except the Paris line, which is 2.32 mm)

linear, narrow and much longer than wide, with parallel margins. The current interpretation differs from that of Lindley (see image).

lineate, marked with thin parallel lines

lineolate, marked with fine lines

linguiform, tongue-shaped

lingulate, tongue-shaped

lip, 1. one of the two divisions of a gamosepalous calyx or a zygomorphic corolla that is divided into an upper (posterior) and lower (anterior) portion (see bilabiate); 2. (in orchids) labellum or lowest petal, usually larger and different in shape from the two lateral ones

lithophyte, plant growing on rock

lithophytic, (of a species or plant) growing on rock

littoral, growing along the sea or lake shore

loam, soil composed of sand and clay in roughly equal proportions, often with organic matter

lobate, see lobed

lobe, 1. a division to about halfway of any organ; 2. a part of the calyx or corolla that is distinct from the lower, united/fused part

lobed, 1. divided into lobes; 2. a rounded margin split in two or more sub-divisions

lobulate, with small lobes

lobule, small lobe

loc. cit., from the Latin loco citato, 'in the place mentioned'

locellate, divided into small compartments, as in a cavity divided into smaller sub-cavities

locule, see locule, which is preferred

loculus, see locule, which is preferred

locular, with cavities or compartments, usually of ovaries and fruits: unilocular meaning one-celled; bilocular, two-celled

locule, see locule, which is preferred

locust, (in Cyperaceae, Gramineae/Poaceae) elongated or reduced axis with 1—many glumes, each glume subtending a bisexual or unisexual flower; = spikelet, which is preferred
lodicules, (in Gramineae/Poaceae florets) minute scales between the lemma and fertile flower parts, possibly representing the perianth

lomentaceous, 1. bearing a lomentum; 2. resembling a lomentum

lomentum (also loment), a flat fruit, common in Leguminosae/Fabaceae, constricted between each seed and falling apart at the constrictions into single-seeded units

long shoot, shoot, usually a main axis or extension shoot, with long internodes. OPPOSITE: short-shoot or spur shoot

lorate, strap-shaped

lozenge, diamond-shaped with rather elongated sides

l.s., abbreviation of longitudinal section

lumen (plural lumina), 1. (of spore wall) the space bounded by reticulations; 2. (of cells) the space within the cell walls

lumping, (in taxonomy) taking a broad view and making many previously described taxa into synonyms. OPPOSITE: splitting

lunate, half-moon-shaped

luniform, (of a 3-dimensional shape) resembling a crescent moon [unusual term]

lunulate, diminutive of lunate [not recommended]

lustrous, shiny

lyrate, lyre-shaped, pinnately lobed proximally but with a large rounded terminal lobe

lyriform, see lyrate

M

m, 1. metre; 2. mile (in which case mi. would be preferable)

macrophyll, leaf size class proposed by Raunkiaer (1934): between 18,226 and 164,025 mm²

macropodal, (of embryo) with an enlarged hypocotyl forming the larger part of the whole embryo

maculate, with spots

magenta, (colour) dark purplish red

malacophyllous, with fleshy leaves

male, staminate. OPPOSITE: female, pistillate

malleate, as if hammered, with many shallow circular depressions [rare term]

mallee, 1. growth form in which several main stems sprout from a lignotuber; 2. a vegetation type that occurs in semi-arid areas of southern Australia

Malpighian hair, short T-shaped hair with the base stalk attached somewhere near the middle of the upper part and tapering towards the ends [unusual term]; = T-shaped hair, which is most commonly used, biramous hair

mamillate, mammillate, with nipple-like processes

mammate, conical, with a rounded apex

mammiform, conical, with a rounded apex

mangrove, 1. coastal swamp of the tropics that is regularly inundated by tidal salt water; 2. a tree species adapted to swamps like this (e.g. with breathing roots)

manicate, with a hairy covering that is so dense and interwoven that it can be peeled off in one

marcescent, (of leaves or corolla) remaining attached to the plant after withering, not abscissing

margin, edge or boundary
marginal, at or near the edge
defined margin that is distinct
marginate, with a well-
from the other part(s)
marginated, with a well-
defined margin that is distinct
from the other part(s)
marginicidal, dehiscent by the separation of united
carpels, a kind of septifragal
marine, growing in the sea
maritime, associated with the sea or coast
marmorate, with coloured veins, as in some marbles
maroon, (colour) dark red
massula (plural massulae), 1. hardened frothy mucilage enclosing the microspores in heterosporous plants; 2. (in orchids) pollen mass
mat-forming, 1. low-growing plants growing so close together that they form a continuous ground cover; 2. prostrate and rooting at the nodes (in which case a single plant can form a mat)
matt, matte, dull, not shiny. OPPOSITES: shiny, glossy
matted, closely intertwined, forming a carpet
maturation, ripening
mature, (of a fruit) said when fully grown and ripe, ready to distribute seeds. OPPOSITE: unripe
mature, with many small grains, as of flour
median, situated in the middle
medifixed, (of hairs or anthers) attached at or near the middle
medullary ray, (anatomical) plates of tissue (usually parenchymatous) radiating through the vascular cylinder from the pith to the cortex
medusiform, with a central head and many radiating branches
megaphyll, 1. leaf size class proposed by Raunkiaer (1934): larger than 164,025 mm²; 2. nowadays often used for all leaves that are not microphylls
megaspore, the larger-sized spores (as opposed to microspores) in heterosporous plants, the spores that produces female gametes.
megaspore, growth form from which the megasporangia of Azolla are produced
megaspore, 1. spore-bearing megasporangia; 2. (in gymnosperms) one of the ovule-bearing scales in the female cone
membranaceous, thin and semi-transparent
membrane, thin, film-like, flexible, often translucent
membranous, like a membrane: flexible and thin, usually also translucent; = membranaceous is more common in botany
mentum, (in an orchid flower) a chin-like extension at the base of the flower, composed of the variably united column-foot, lip and lateral sepals
mericarp, seed-containing parts of a fruit that do not form a single unit and that each derive from a carpel, these parts usually dehisce independently from each other when ripe
mericarpic, pertaining to mericarps
mericarpid, the nutlets in some Boraginaceae [rare term]
meristele, portion of the stele received by each leaf on a monostelic stem
meristem, (anatomical) undifferentiated tissue capable of division
mesic, with moderate growing conditions, without extremes of moisture or (in common usage) of temperature
mesocarp, the middle layer of a multi-layered fruit wall, often distinguished as such when fleshy or succulent
mesochil, mesochile, (in an orchid flower) the midportion of a lip that is divided into three distinct portions; mesochilium is a less common spelling
mesocotyl, stem-like tissue connecting the seed and the base of the coleoptile
mesophyll, 1. the undifferentiated chlorophylllose parenchyma occurring below the epidermis usually of a leaf or stem; 2. leaf size class proposed by Raunkiaer (1934) and modified by Webb (1959): between 4501 and 18,225 mm²
**mesophyte**, plant adapted to living in normal conditions that are neither very wet nor very dry

**mesophytic**, vegetation adapted to normal conditions, avoiding both very wet and arid conditions

**mesotesta**, middle part of the outer integument of the seed

**metabolism**, constructive chemical changes in a living cell

**metandry**, condition in which the stigma is receptive before pollen from that individual is released

**micro-**, prefix, meaning minutely (e.g. microvesiculate, with minute vesicles)

**micro-climate**, very local climatic condition, restricted to a particular habitat (e.g. rock crevices)

**microgranulate**, (of a surface) minutely granulate

**microphyll**, 1. leaf size class proposed by Raunkiaer (1934): between 226 and 2025 mm²; 2. the leaves of Lycopodiopsida (clubmosses) with a single unbranched vascular vein

**micropunctate**, with minute dots or translucent glands

**micropyle**, (in the ovule) an opening in the integuments through which the pollen-tube may enter the seed and through which the radicle usually emerges during germination

**micospecies**, species described based on minute differences, often used in apomictic taxa such as Taraxacum or Rubus

**microsporangium** (plural microsporangia), a sporangium that produces microspores

**microspore**, the smaller-sized spores in heterosporous plants (as opposed to megaspores), the spores that produce male gametes

**microsporocarp**, the growth form from which the microsporangia of Azolla are produced

**microsporophyll**, a specialised leaf bearing only microsporangia

**midrib**, the main vascular supply and support structure of a simple leaf-blade or leaflet, a continuation of the petiole, running the full length of the leaf

**mineralised**, of organic material impregnated with mineral

**minute**, very small

**mis.**, abbreviation for missus, meaning ‘sent by’

**misapplied**, (in nomenclature) name applied to a taxon that does not include the type of that name

**mitriform**, cap-shaped and ending in a point, as in the mitre of a bishop

**mm**, millimetre, 1/10th of a centimetre

**modified**, changed in shape or function

**module**, (of orchids) a set of components that may be duplicated as parts of a larger unit, as in the sympodial architecture of the Dendrobieae, whose module (usually determinate) includes rhizome segment, roots, stem, leaves, and inflorescences

**monad**, (of pollen) solitary pollen grain, as opposed to tetrad or polyad

**monadelphous**, (of stamens) in one bundle and connate by the filaments (e.g. in Malvaceae)

**monandrous**, with one stamen

**monanthous**, one-flowered

**moniliform**, like a string of beads, cylindrical and constricted at regular intervals, nearly the same as torulose, but that is slightly more irregular or slightly flattened

**monocarp**, annual or other plant that flowers and fruits only once, then dies

**monocarpic**, flowering (and possibly fruiting) only once, then dying. **OPPOSITE**: polycarpic

**monocarpous**, with a single carpel

**monochasial**, adjective of monochasium

**monochasium**, inflorescence with a terminal flower and one bracteole subtending a lateral flower; for compound monochasium, in which the lateral part branches further, see cincinnus
monochlamydeous, (of a flower) having one whorl of perianth segments (i.e. only the calyx or only the corolla)

monoclinous, with stamens and pistil in the same flower [unusual term, not recommended]; = bisexual

monococcosus, of fruits that are normally several-lobed, with but a single lobe or unlobed, usually by abortion of all but one carpel

monocolpate, (of pollen grains) with a single groove

monocotyledon, a plant with a single seed-leaf (see hypogeal germination for image), a natural group also characterised by lack of secondary xylem, the presence of parallel veins and trimerous flowers

monocyclic, in one whorl

monodynamous, with one stamen much larger than the others

monocious, with all flowers bisexual, or with male and female flowers on the same plant

monogeneric, with a single genus in the family

monograph, a treatment that is definitive, comprehensive and, ideally, exhaustive for (usually) a genus; in contrast to a floristic work (e.g. for a genus) that is restricted to a geographical area and does not usually involve all the species of a genus (unless of course that genus is restricted in area); a revision is somewhere between the two

monolete, (of spore wall) with a single linear aperture

monomeric, formed of a single member or unit

monomorphic, of one type only, not of several types

monophyletic, descended from a common ancestor and including all the descendants from that ancestor

monopodial, branching system with the main axis growing indefinitely at the apex, secondary shoots may develop below the growing point. Monopodial inflorescences are generally known as racemose, and include racemes, panicles and (by contraction of the rachis) the true umbel and the corymb; sympodial inflorescences are generally known as cymose and include the monochasium, the dichasium, cincinnus and false umbel

monopodium, a single main axis, with lateral branches

monospecific, consisting of a single species

monostelic, (of a stem) with a single stele

monostichous, in one row [unusual term]

monostylous, with one style

monosulcate, (of pollen) with a single sulcus (furrow-like aperture)

monotelic, (of inflorescences) where each lateral branch ends in a flower; see also polytelic

moнощетча, with a single anther cell

monothecous, with a single anther cell

monotypic, 1. (of genera) containing only one species; = monospecific. 2. (of family) containing only one genus; = monogeneric

monstrous, monstrosity, large aberrations or deviation in shape or structure of flowers or fruits that make these organs disfunctional

montane, pertaining to mountainous regions

morphological, based on shape

morphology, external form and appearance of organisms or organs; see also anatomy

mosaic, non-homogeneous distribution of species or communities

motile, actively moving

mottled, with spots or blotches of a different colour

mouth, the part where a tubular organ (such as the corolla) opens up into the lobes, the uppermost part of the tube

MS., (from a) manuscript; unpublished

mucilage, slime or jelly-like excretion, chemically composed of high molecular weight carbohydrate

mucilaginous, slimy

mucro, a short sharp terminal point

mucronate, ending abruptly in a short stiff point
mucronulate, ending in a very short stiff point

multi-, many-

multi-access, (of a key) not using a fixed starting point and a series of couplets, but allowing several possible starting points and lacking couplets

multicellular, with more than one cell

multicipital, with many heads from the root crown [unusual term]

multicolpate, (of pollen) with many colpi (linear apertures)

multifid, split into many lobes

multiplanar (of divided leaves) with the lobes or divisions held in several planes

multiple fruit, 1. fruit formed from a whole inflorescence, often incorporating bracts, such as pineapple, hop or mulberry; 2. fruit derived from a gynoecium with more than one carpel

multiseriate, (of a structure) arranged in many rows (e.g. ovules on a placenta)

muri, (of spore wall) ridges

muricate, rough with short hard pointed protuberances

muriculate, minutely muricate

muriform, resembling courses of bricks; with brick-like markings, mostly employed for epidermal cell shapes [unusual term]

murus, (in pollen) the ridges separating the empty spaces

muscariform, shaped like a brush or broom, with an axis that bears at its apex a series of thin slender appendages [unusual term]

mutation, a change in genetic material, often resulting in a character change (e.g. a morphological or chemical change) in a taxon or subset of a taxon

muticous, blunt, without a point

mutualism, association between two organisms that is beneficial to both

mycorrhiza, symbiotic fungi in or on the roots

mycorrhizal, with symbiotic fungi in or on the roots

mycotrophic, refers to vascular plants that obtain some or all of their nutrition from the substrate through mycorrhizal fungi

myophilous, being pollinated by flies

myrmecochorous, dispersed by ants

myrmecochory, dispersal of seeds or other diaspores by ants

myrmecomatia, (of domatia) believed to be visited or inhabited by ants

myrmecophilous, (of plants) with an affinity for ants, sometimes with specialised structures thought to harbour or feed ants

myrmecophyte, any plant associated with ants

myxogenic, referring to hairs that swell on contact with water, producing a slime- or jelly-like excretion

n, haploid generation, as opposed to 2n, the diploid generation

nacreous, with a pearly sheen

nadir, lowest point

naked, 1. (of stem) without leaves; 2. (of rhizome) without scales; 3. (of flower) without calyx or corolla

naked pollinia, (of orchids) pollinia which lack caudicles and other elements of the pollinarium, as in Dendrobieae and Bulbophyllinae

nanophyll, leaf size class proposed by Raunkiaer (1934): between 25 and 225 mm²

napiform, (of roots) shaped like a turnip, i.e. broadly ovoid and tapering to a point
napoid, shaped like a turnip, i.e. broadly ovoid and tapering to a point

nascent, in the act of being formed

native, undoubtedly indigenous, species occurring naturally in a given area. Opposite: introduced

natural, unchanged by humans

natural selection, anything tending to produce inheritable change between one generation and the next, with favorable changes becoming more common and unfavorable changes becoming less common

naturalised, non-native, introduced species that has become established and reproduces freely

naucum, fleshy part of a stone fruit or drupe [unusual term, not recommended]

navicular, boat-shaped, like the bow of a pirogue or canoe

naviculiform, boat-shaped, like the diatom genus Navicula

near axillary, on reduced shoots in an axillary position (specific term used in Rubiaceae)

neck, junction of stem and root [unusual term, not recommended]

necrotic, (of tissue) dead, often associated with dark coloration

nectar, sweet fluid extruded by glands as an attractant to pollinators

nectar guides, lines or blotches of colour that lead to the nectar-providing zones of the plant

nectarial, nectar-producing

nectariferous, with nectar

nectary (plural nectaries), organ(s) in which nectar is formed. (Formerly used incorrectly for organs not necessarily forming nectar, such as spurs)

negative geotropism, tendency to grow away from the earth’s centre, straight upwards

neo., neophyte, 1. a newly introduced plant; 2. a naturalised alien [not recommended]

neoteny, of plants thought to show juvenile characteristics, presumed to be evidence of arrested development

neotropics, the tropical part of the American continents, i.e. central Mexico and the Caribbean islands to N Chile, Paraguay and S Brazil

neotype, (in nomenclature) type specimen chosen when the original type has been destroyed, or is untraceable after serious searching, and no original material exists from which a lectotype can be chosen; a neotype should resemble closely the protologue description and come from the same area if at all possible

nervation, see venation, which is preferred

nerve, see vein, which is preferred

nervose, prominently veined

nested, (in phylogeny) said of a taxon or clade located within another clade

nest fronds, (in ferns) sterile leaves that catch litter

nest leaves, (in ferns) sterile leaves that catch litter

net-veined, when the smaller veins are connected, forming a pattern like the meshes of a net; = reticulate, which is preferred

neuter, sexless, without stamens or pistils

nidulent, embedded in a cavity [unusual term, not recommended]

nitid, shiny

nitrogen-fixation, the process by which bacteria (less often other organisms) convert atmospheric nitrogen into organic compounds that can be taken up by plants

nocturnal, at night (as in flowers opening in the night)

nodal, relating to the node
**nodding**

bending and pointing downwards

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**node**

the area of a stem where a leaf is attached or used to be attached; see also internode

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**nodiferous**

bearing nodes or producing nodes [obscure term]

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**nodose**

knobbly

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**nodular**

with little knobs or knots

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**nodulation**

forming of nodules on roots

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**nodule** 1. small knob on a root containing nitrogen-fixing bacteria; 2. small swellings on a leaf (petiole, midrib, lamina or margin) that contain bacteria

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**nom.** from the Latin *nomen*, meaning ‘name’

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**nom. conf., nomen confusum** (in nomenclature) confused name, a name based on discordant elements from which it is difficult to select a lectotype. This term was taken out of the I.C.B.N. years ago and is used less and less as such names are increasingly proposed for rejection (see *nomen rejiciendum*)

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**nom. cons., nomen conservandum** (in nomenclature) name whose use is officially permitted in spite of its contravention of one or more articles of the I.C.B.N.

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**nom. illeg., nomen illegitimum** (in nomenclature) illegal name, a name that was nomenclaturally superfluous when published (because the taxon and type had already been validly published under another name) or a later homonym of a previously published name

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**nom. nov., nomen novum** (in nomenclature) name or epithet published as a replacement for an earlier name or epithet; for example, as a replacement for a name that would not be valid in a new combination

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**nom. nud., nomen nudum** (in nomenclature) 1. name or epithet published but without a description or diagnosis, or without a reference to any of these; 2. invalidly published name or epithet

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**nom. rejic., nomen rejiciendum** (in nomenclature) name or epithet to be rejected, if applied it would cause a disadvantageous nomenclatural change. Rejected names are listed in the I.C.B.N.

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**nom. superfl., nomen superfluum** (in nomenclature) superfluous name, a name that when first validly published was applied by its author to a taxon circumscribed so as to include the type of another name (which the author ought to have adopted)

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**nomenclatural type** (in nomenclature) the element (specimen or illustration) with which the name of the taxon is permanently associated

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**nomenclature** the usage or application of names in plant taxonomy

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**non-resupinate** (of orchids) flowers lacking the usual twist of the stem or pedicel attached to the ovary that positions the lip below

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**notate** with spots or lines, these often coloured

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**notched** with a nick or cut from an otherwise entire edge

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**nothogenus** hybrid genus produced by crossing (plants from) two different genera, indicated by a multiplication sign before the name (e.g. × *Amarygia*)

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**nothospecies** hybrid species produced by crossing two species from the same genus, indicated by multiplication sign before the species epithet (e.g. *Fallopia × bohemica*) and often with the parent species then given in brackets (genus species × genus species)

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**nothotaxon** unit of classification for hybrids, e.g. nothospecies or nothogenus

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**notomorph** hybrid form

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**notophyll** leaf size class proposed by Raunkiaer (1934) and modified by Webb (1959): between 2026 and 4500 mm²

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**novum** see **nom. nov.**

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**nucamentaceous** with a one-seeded indehiscent nut-like fruit [obscure term]

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**nucellus** the central part of the ovule, inside the integuments, containing diploid maternal tissue that gives rise to the haploid tissue of the female gametophyte
nucleotide, a chemical compound consisting of a heterocyclic base, a sugar, and one or more phosphate groups, these compounds form the structural units of DNA

nudum, see nom. nud.

numerous, many, more than ten

nut, a one-seeded indehiscent fruit with a hard dry pericarp (the shell) that is derived from a one-loculed ovary

nutant, nodding; see nodding for illustration

nutating, the revolutions of the growing tip

nutlet, 1. a little nut; 2. (in Cyperaceae) hardened, usually minute, one-seeded fruit, the surface of which may be smooth to variously patterned and a diagnostic character for many species. Often called an achene in literature on Cyperaceae

n.v., from the Latin non vidi, ‘I have not seen’, placed after a specimen citation in a publication if the specimen has not been seen by the author

nyctanthous, flowering at night

nyctinastic, the pressing together of leaves or leaflets at night to reduce transpiration

nyctitropic, the turning or positioning of leaves or leaflets at night (as in many Leguminosae/Fabaceae species)

ob-, (prefix) 1. against; 2. (in botany) usually indicating “the other way round from the usual”: ovate is egg-shaped, obovate is egg-shaped with the attachment point at the base and the widest part near the top

obclavate, club-shaped, with the thicker end near the attachment point

obcompressed, flattened parallel to the longitudinal axis [vague term]

obconical, conical with the narrow part near the base and the wide part near the apex

obcordate, heart-shaped, with the narrow end near the base and the wider, notched end near the apex

obcuneate, obversely wedge-shaped

obcylindric, cylindric but widening slightly towards the apex [not recommended as a cylinder has parallel sides]

obdiplostemonous, with the stamens in two whorls, twice as many as the petals, and the outer series of stamens opposite to the petals

oblanceolate, narrowly obovate and tapering to a point at the apex

oblately, (of a globose shape) flattened at the poles, like an orange

oblimate, (of a life form or habitat requirement) restricted to this life form or habitat and not occurring as or in any other. OPPOSITE: facultative

oblique, 1. (in leaves) when the two sides of the leaf are unequal near the base; 2. (in an ovary) when the ovary is at an angle to the symmetric plane

obvoid, a 3-dimensional shape with short parallel sides and rounded ends, as if composed of two hemispheres linked together by a short cylinder [unusual term]

oblong, (of a plane shape) longer than broad, with the margins parallel for most of their length. (There is confusion about this term: many authors seem to regard it as including rounded ends; about as many others (including the authoritative 1962 Taxon article on plane shapes) only mean the term to include ‘quite a bit longer than wide’ (Taxon specifies 1.5–2× as long as wide))
OBOVATE–OLIGOCARPOUS

**Obovate**, egg-shaped (2-dimensional) with the broadest part near the apex

**Obovoid**, egg-shaped (3-dimensional), with the broadest part towards the apex

**Obpyriform**, (of a 3-dimensional shape) like an inverted pear, i.e. with the broadest part proximal

**Obreniform**, kidney-shaped with the point of attachment at the rounded side not in the sinus

**Obsolescent**, almost obsolete, used for non-functional parts of organs

**Obsolete**, not apparent, no longer used, rudimentary

**Obtriangular**, (of a 2-dimensional shape) like an inverted triangle, i.e. with the narrowest part proximal

**Obtrullate**, obverse of trullate, shaped like a bricklayers trowel

**Obturator, 1.** small body of tissue attached to the pollen mass in Orchidaceae and derived subfamilies of Apocynaceae; 2. = *caruncle* (as used by Hooker); 3. process of ovary wall descending towards the micropyles (as in *Plumbago*)

**Obtuse**, (of an apex or base) not pointed, blunt, ending in an angle of between 90–180°

**Obverse**, turned towards, the side facing. **Opposite:** reverse

**Obvolute**, overlapping [obscure term]

**Ocellate**, with a spot like an eye (usually a zoological term)

**Ochraceous, (colour) see ochreous**

**Ochrea, ocrea**, from the Latin for ‘greave’, a piece of armour for the shin; preferred spelling is ocrea

**Ochreate**, with an ocrea

**Ochreous, (colour) ochre-coloured, a light brownish yellow**

**Ocrea, 1.** (of a leaf sheath) an extension beyond the petiole insertion (e.g. in palms); 2. a tubular stipule sheathing the stem (e.g. in *Polygonum*)

**Ocrete**, with an ocrea

**Odd-pinnate**, leaf with uneven number of leaflets and ending in a terminal leaflet; = *imparipinnate*

**Odorous**, smelling, producing a smell

**Offset**, a lateral shoot used in propagation

**Offsetting**, producing a lateral shoot for propagation purposes

**Offshoot**, lateral shoot from the main stem

**Oleaginous**, oily

**Oleo-resin**, natural mix of a resin and an essential oil that forms a balsam or turpentine

**Oligandrous**, with few stamens

**Oligocarpous**, with fewer than the usual number of fruit
oligomeric, with fewer than the usual number of parts

oligophyllous, with few leaves or leaflets

oligospermous, with few seeds

oligostemonous, with few stamens [very obscure term]

oligotrophic, (of substrate) poor in minerals.  
**Opposite:** eutrophic

olivaceous, (colour) olive-green (which is preferred)

olive, (colour) dark yellow-green

ombrophyte, adapted to living in areas of very high rainfall [obscure term]

one-internode, (of orchids) pseudobulbs appearing to have only a single swollen internode, the other internodes, which are highly compressed, are more distal and have one or more leaves and inflorescences

ontogeny, development of an individual through various stages

opaque, not translucent

op. cit., from the Latin opere citato, 'in the work cited before'

**operculate,** with a lid

**opercule, operculum,** a lid or cover, as in the flower of *Eucalyptus* or in a circumscissile fruit

opposite, 1. (of leaves and branches) when two are borne on the same node but on diametrically opposed sides of the stem; 2. (of other organs) when placed, for example, in front of the petals instead of alternating with them

oppositipetalous, placed before a petal

oppositisepalous, placed before a sepal

optimal, the most advantageous condition(s) for an organism or function

**orbicular,** 1. (2-dimensional) flat with a circular outline; 2. (more correctly) (3-dimensional) globose, in the shape of a sphere

order, (in nomenclature) a taxon below class and above family

organ, any definite part of a plant structure (e.g. a cell, a leaf)

organelle, a small organ within the cell (e.g. a chloroplast)

organism, individual living system (e.g. a single plant)

orientation, relative position, place

orifice, opening, mouth

ornamental, cultivated for decoration rather than as a crop

ornamented, (of pollen) with sculpturing on the surface (e.g. spines, tuberculae, reticulations or granules).  
**Opposites:** psilate, smooth

ornithophily, pollination by birds

orophilous, growing on mountains, below the tree-line

orophyte, plant growing on mountains, below the tree-line

orthographic error, (in nomenclature) an unintentional mis-spelling of the scientific name in the original description of a new taxon

orthostichy, an imaginary line through a ± vertical row of organs along an axis [unusual term]

orthotropic, (of shoot) vertical; distinct from plagiotropic

orthotropous, (of ovule or seed) with a straight axis, the base of the nucellus proximal, the micropyle distal

osmophore, floral organ producing fragrance substances

osseous, bony
ossiculus, the hard pit of a stone fruit, = pyrene, which is preferred

ostiolar, of the mouth (e.g. ostiolar bracts are those at the ostiole of a Ficus fruit)

ostiole, mouth; for example, the aperture at the apex of a fig (the compound fruit of species of Ficus)

outbreeding, producing offspring by cross-fertilisation. OPPOSITE: inbreeding

outcross, cross in which pollen from one plant fertilises another plant

outgroup, (in cladistics) a group that is not included in the group under study and which is used for comparative purposes. OPPOSITE: ingroup

oval, broadly elliptic [not recommended]

ovary, 1. the ovule-bearing part of the gynoecium; 2. the (usually enlarged) part of the pistil that contains the ovules and eventually becomes the fruit

ovate, egg-shaped (2-dimensional), about 1.5 x as long as broad, with the wider part below the middle

void, egg-shaped (3-dimensional), with the broad part below the middle or nearest the base

ovulate, (in gymnosperms) said of scales bearing ovules

ovule, the immature seed in the ovary before fertilisation, comprised of funicle, chalaza, inner (tegmen) and outer (testa) integuments, nucellus and embryo sac

ovuliferous, bearing ovules; for example, applied to scales in a female cone in gymnosperms

ovulode, sterile structures on the placenta

pachycarpous, with a thick fruit wall

pachycaul, pachycalous, thick-stemmed and sparsely branched (e.g. Cycas or Encephalartos), often used of bottle-shaped trunks; pachycaul is the preferred term. OPPOSITE: leptocaul

pachymorph, used for rhizomes that are short and fat and which terminate distally in a vertical culm

pachyphyllous, with thick leaves

paedomorphic, with some traits that were previously seen only in juveniles retained in the adult; less commonly spelled pedomorphic

palaeotropical, found in the tropics of the Old World, i.e. Africa and Asia

palate, the projection on the lower corolla lip near the throat of many zygomorphic bilabiate flowers (as in Lentibulariaceae)
pale, see palea, which is preferred

palea (plural paleae), 1. (in Compositae/Asteraceae) one of the chaffy scales or thin often colourless bracts amongst the flowers on the receptacle; 2. (in Gramineae/Poaceae) the inner of the two bracts enclosing the floret

paleaceous, 1. chaffy, chaff-like in texture; 2. covered with small erect weak scales

paleola, a small palea

palinactinodromous, compound actinodromous, with three or more prominent veins from near the base of the leaf running towards the margin (and reaching or not reaching it), and with these main veins again branching [unusual term]

palisade, fence-like, with a horizontal row of vertical shapes

pallid, pale

palm, (as a measurement) 3 inches, or 7.5 cm

palman, (in palms) the central undivided part of a fan leaf

palmate, (in lobed or compound leaves) when all lobes or leaflets originate from one central point (as fingers originate from the palm of the hand); = digitate. (Lindley (1832) uses this term only for palmately lobed; Hickey & King (2000) use it only for palmately divided; Stearn (1973) specifies it to mean 5-lobed; generally it can mean either lobed or divided)

palmately veined, when the main veins of a leaf originate at one point and spread from there; see also pinnate

palmatified, cut to a palmate form, the divisions reaching about the middle

palmatilobed, (of plane shapes) lobed, the lobes radiating from a central point like the fingers of a hand

palmatipartite, lobed and hand-shaped, the lobes occupying more than half of the leaf

palmatisect, lobed and hand-shaped, the lobes almost extending to the base

paludal, growing in marshy or swampy areas [rarely used term]

paludicolous, growing in swamps or marshes [rarely used term]

palynology, study of pollen grains
**Pandurate–Parapatric**

**pandurate,** fiddle-shaped, i.e. oblong to elliptic but constricted at the mid-point

**panduriform,** see pandurate, which is preferred

**Pangaea,** supercontinent combining all continents, which split up about 300 million years ago

**panicle,** an inflorescence in which the main axis has several lateral branches, each of which is branched; (more specifically) an inflorescence in which both the main axis and any lateral branches are indeterminate (i.e. racemose or monopodial). (Linnaeus used this term in the sense of ‘a sparse inflorescence variously divided’, and this definition (if it can be called that) lasted until de Candolle introduced the ‘racemose’ concept)

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**pannose,** with a texture like felt, with densely matted long hairs

**pantoporate,** (of pollen grain) with rounded pores all over the surface

**pantropical,** (of a taxon) occurring in all the tropical regions of the world

**papery,** with the texture of paper, thin, flexible and only slightly stiff

**papilionaceous,** 1. shaped like a pea-flower, with a large posterior petal, two lateral petals, and two often connate lower petals; 2. (belonging to the Papilionoideae/Faboideae) a subfamily of Leguminosae/Fabaceae

**papillole,** bearing many small soft nipple-like projections

**papillole,** bearing many small soft nipple-like projections

**papillulose,** with minute nipple-shaped projections

**pappus,** a series of bristles, hairs or scales round the base of the corolla and later around the apex of the fruit (as in Compositae/Asteraceae)

**papillate,** with papillae, with soft small protuberances

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**papulose,** with pimples or small pustules

**papyraceous,** papery; with the thickness or consistency of paper

**parabolic,** (of leaf) ovate-oblong or ovate, obtuse and contracting below the apex [rarely used term]

**paracladia,** 1. subsidiary branches that follow the pattern of main branches; 2. units of repeated branching patterns

**parallel,** (of veins) all running in the same direction at fairly close intervals

**parallel,** (of veins) all running in the same direction at fairly close intervals

**parallel evolution,** the evolution of a similar feature in two or more groups, not necessarily guided by similar life-styles or habitats

**parallelodromous,** (of venation) with two or more large veins originating at the leaf base and running parallel to each other throughout most of the leaf length, converging near the apex

**parapatric,** (of distribution) with ranges that do not overlap but are adjacent

**parapatric,** (of distribution) with ranges that do not overlap but are adjacent
paraphyletic group, (in phylogenetics) a group of organisms that contains the most recent common ancestor shared with the group under study but not all of its descendants

paraphyllidium (plural paraphyllidia), a degenerate leaflet at the base of the pinna or rachis, immediately contiguous to its pulvinus (e.g. in Mimosa)

paraphysis (plural paraphyses), (in pteridophytes) sterile hairs or filaments among the sporangia within a sorus

parasitic, living on, and deriving nourishment from, another organism (the host)

parastichy, the spiral imaginary line connecting organs along a stem or axis [unusual term]

paratext, (irregularly) helical aestivation where the innermost segment is immediately adjacent to the outermost segment (Weberling, 1992)

paratype, (in nomenclature) a specimen mentioned in the protologue other than holotype, isotype or syntypes, i.e. the remnant specimens without official status but mentioned in the protologue

parenchyma, (in anatomy) soft tissue consisting of cells with thin walls

parietal, placentation in which the ovules are attached to the inner surface of the outer wall of a (usually) one-celled syncarpous ovary; see also axile placentation

paripinnate, evenly pinnate, terminated by a pair of opposite leaflets; see also imparipinnate

parsimony, (in cladistics) the principle that the phylogeny requiring the least number of character changes is most probably correct

parthenocarpy, with fruit developing without fertilisation of the ovule, with seedless fruit

parthenogenesis, parthenogenetically, with seeds developing without fertilisation having taken place; see also apomixis, apomictic

partial inflorescence, (in Cyperaceae) primary branches of an inflorescence

partim, partly

partite, cleft or divided, but not quite to the base

patelliform, shallowly disc-shaped, shaped like a knee-cap, round and thick, concave on one side and convex on the other [rarely used term]

patelloid, circular with a rim

patent, spreading, held at 90° from the subtending axis; sometimes used for ‘shiny’ but that is for leather, not for botany!

pathological, diseased

patulous, spreading, expanded [unusual term]

paxillate, with very closely parallel venation running from the midrib to the margin at a slight angle [unusual term]

peach, (colour) pinkish orange

pearl bodies, food bodies for ants, found especially in many legume species, which encourage ants to defend the plant against herbivores

pectinate, like a comb, with very close, narrow and parallel divisions

pedate, close to palmate, but the side lobes or divisions further lobed or divided successively, one from the other, thus not all arising from the same point; = pedatilobed

pedate-laciniate, minutely dissected at the margin with the narrow lobes almost free but joined at the base

pedatifid, with pedate division, the lobes shallow

pedatilobed, side lobes lobed, i.e. divided but not to the midrib; = pedate
pedatipartite, with pedate division, the lobes almost free
pedatisect, side lobes divided almost to midrib

pedicel, 1. the stalk of an individual flower in an inflorescence; 2. (in Gymnospermae) used as the stalk of a scale [not a recommended usage]; 3. (in pteridophytes) the stalk supporting the sporangium; 4. (in Compositae) applied to the stalk of individual capitula when plants bear several capitula in their inflorescences; 5. Linnaeus used peduncle for 'the stem bearing flowers and fruit' and pedicel for any 'branch of the peduncle' [old-fashioned usage]

pedicellate, (of flowers) stalked
pedomorphic, with some traits that were previously seen only in juveniles retained in the adult; more commonly spelled paedomorphic

peduncle, 1. (of an inflorescence) the lower unbranched part or stalk, as distinct from the rachis; 2. the general name for a flower stalk bearing either a solitary flower, a cluster or the common stalk of several pedicellate or sessile flowers. (I prefer to keep peduncle for the unbranched common stalk of the inflorescence, with branches called first-order branch (or partial-peduncle), second-order branches etc.; and the main axis above the peduncle called just that or the rachis; 3. (in gymnosperms) the stalk which supports the cone; 4. [old-fashioned usages] Linnaeus used peduncle for 'the stem bearing flowers and fruit' and pedicel for any 'branch of the peduncle'; De Candolle used peduncle and pedicel in the same sense, but employed peduncle for parts nearer the base of the inflorescence, and pedicel for those nearer the top!

peduncular bracts, empty bracts borne on the peduncle between the base of the peduncle and the first inflorescence branch
pedunculate, (of inflorescences) stalked

peel, (of an outer layer) to detach in flexible strips or sheets
peeling, coming away in strips

peg, stalk of ovary or fruit when this is formed from the ovary itself, and not from other flower parts

pelicle, thin skin or membrane
pellucid, translucent, not quite transparent but with some light coming through when held up to the light (e.g. of gland dots in leaves of Rutaceae)
peloric, abnormally regular or symmetrical, when the usual condition is irregular

pelta, scale or bract attached at the middle [unusual term]

peltate, round and attached at or near the centre (e.g. of a leaf with the petiole attached to the blade not by the margin)

pelviform, shallowly cup-shaped [unusual term, not recommended]

pendant, hanging

pendent, hanging; = pendant or pendulous, which are more usual

pendulous, hanging

penicillate, 1. with a tuft of hairs at the end; 2. brush- or pencil-shaped, i.e. long and narrow with a tuft of hairs at the end

penniform, (of venation) with the veins in a pinnate pattern, i.e. branching off from the midrib at an angle at intervals
penninerved, with the veins in a pinnate pattern, i.e. branching off from the midrib at an angle at intervals

pentacyclic, (of a floral unit) with the parts in fives; = pentamerous (or 5-merous), which is preferred

pentadelphous, with the stamens in five bundles (old-fashioned term)

pentagonal, 5-sided

pentagonal, 5-sided; = pentagonal (or 5-merous), which is preferred

pentamerous, (of a flower) with its constituent parts in multiples of five

pentandrous, with five stamens

pepo, (fruit type) inferior fruit of the Cucurbitaceae, berry-like with a hard rind (exocarp) and parietal placentalation

peponiform, shaped like a pepo, resembling a pepo

per-, intensifying prefix in Latin compounds; for example, in persimilis, meaning 'very alike'

percurrent, running through the entire length

perennate, 1. lasting throughout the year or from one season to the next; 2. self-renewing by lateral shoots from the base

perennating, surviving the most difficult season (e.g. the dry season), lasting the whole year through or from one season to the next

perennial, living for several to many years, as opposed to annual or biennial. (Sometimes restricted to non-woody plants)

perfect, (of flowers) with both male and female parts

perfoliate, when the stem passes through the blade of a leaf or through a basally connate pair of leaves

perforate, (of pollen exine) punctured by numerous holes

pergaseous, pergamentaceous (of endocarp) like parchment or thick paper; = chartaceous, which is preferred

perianth, collective term for the calyx and corolla; see also perigon

perianth segment, one of the parts of the two floral whorls, calyx and corolla, used especially when these two whorls are quite similar

perianth tube, the lower united part of the perianth

pericarp, 1. the wall of the ripened ovary, divisible into epicarp, mesocarp and endocarp when a distinction between the three can be made; 2. fruit wall, sometimes includes the seed (e.g. Linnaeus' use of 'pericarpium'); 3. the fleshy layer (united ectocarp and mesocarp) surrounding the stony endocarp in Commiphora

periclinal, parallel to another structure (mainly used in cell division)

periclinium, (in Compositae/Asteraceae) the involucre surrounding the common receptacle of the capitulum; = involucrum, which is preferred

periderm, loosely synonymous with the living bark, the outermost layer of stems and roots (the dead bark is known as rhytidome) consisting of the cork or bark cambium, the phellogen, from which is produced the phellem (from the outer surface) and the phelloderm (from the inner surface)

perigon, term used for perianth in Monocots, when there are no clearly differentiated whorls

perigoniate, adjective of perigon

perigonium, 1. see perianth (which is preferred); 2. specialist term used in Typhaceae, for example, perigonal hairs, hairs deriving from the perigonium

perigynium, (in Cyperaceae) a membrane or sac enclosing the female flower and later the fruit

perigynous, when the sepals, petals and stamens are carried up around the ovary on a hypanthium
peripheral, on the edge
periphery, outside edge
perisperm, food storage tissue of some seeds formed from the nucellus, i.e. the layer outside the endosperm
perispore, membrane surrounding the spore
perpendicular, at right angles to the axis of its attachment
persistent, remaining in place, not falling off. Opposites: caducous (falling early) and deciduous (falling seasonally)

personate, with the throat of a bilabiate corolla nearly closed by a projection from the lower lip

perula (plural perulae), scale on a leaf bud
perulate, (of buds) covered in scales

petal, a single, usually free, unit of a completely divided corolla or second floral whorl (keel petals in many papilionoid legumes are partially fused/united along their lower margins)

petaliferous, bearing petals
petaline, referring to the petals
petalody, a condition in which flower parts such as stamens assume the shape of petals
petaloid, 1. formed or coloured like a petal; 2. (of stamens) without filament/anther distinction, but like a petal with marginal microsporangia
petalostemonous, with the stamens fused to the corolla

petiolate, with a leaf stalk, not sessile

petiole, leaf stalk, the basal and usually narrowly cylindrical part of the leaf which carries the vascular bundles and is intermediate in position between stem and blade

petiolate, resembling a petiole, but with thin strip of lamina running alongside midrib [obscure term]
petiolulate, with a petiolule, not sessile

phalange, 1. bundle of structures fused together (e.g. stamen filaments); 2. (in Pandanaceae) cluster of partly fused drupes or carpels falling off as a unit

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phanerocotylar, with the cotyledons visible outside the seed coat. Opposite: crypticotylar
phanerogams, 1. flowering plants; 2. seed plants; 3. plants in which stamens and/or pistils are developed

phanerophyte, in Raunkiaer’s system, a plant with growing point that survives adverse seasons as a resting bud well above the ground
**phellem**, cork, layer formed on the outside of cork cambium on stem or root; the outer tissue layer of the phelloderm

**phelloderm**, thin layer formed on the inside of cork cambium on stem or root, containing waxy layers against liquid loss

**phellogen**, cork cambium, inner layer of stem or root forming phellem/cork on its outside and phelloderm on its inside

**phenetics**, **phenetic classification**, grouping based on morphological similarity

**phenology**, (abbreviated from phenomenology) study of the timing of recurring natural phenomena, e.g. flowering times, fruiting times

**phenotype**, the physical characteristics of an organism, influenced by both inherited (genetic) and environmental factors

**phenotypic**, (of characters) influenced by both environment and genes; see also **genotypic**

**phloem**, (anatomical) the main tissue with food-transporting function in vascular plants

**phoranthium**, (in Compositae/Asteraceae) the receptacle of the capitulum [obscure, old-fashioned term]

**phorophyte**, a plant, usually a tree, that supports an epiphyte

**phraeatophyte**, a plant with deep roots that obtain much of the water needed by the plant from groundwater

**phylad**, a phylogenetic line, essentially equal to a clade

**phyllary** (plural **phyllaries**), (in Compositae/Asteraceae) one or more of the bracts surrounding the capitulum and forming the involucre; **= involucral bract(s)**

**phyllchnium**, (in Casuarinaceae) the ridge of a branchlet segment

**phyllocline**, portion of stem or branch (several nodes and internodes) flattened and expanded to serve the functions of a leaf; see also **cladode**, which is a single node/internode

**phyllode**, a laterally flattened photosynthetic blade; for example, in many Australian *Acacia*, the expanded petiole, with the rachis and pinnae (of an otherwise bipinnate leaf) undeveloped or underdeveloped or falling early

**phyllodic leaf base**, petiole that takes on the functions of a leaf, being flattened and leaf-like

**phyllomorph**, (in Gesneriaceae) a leaf blade and its petiole, but the petiole with more elaborate morphology including the ability to produce other phyllomorphs or inflorescences; phyllomorphs are capable of growth over more than one season and may lose their distal end but keep growing at the base

**phyllopodic**, with blade-bearing leaves only at the base of the plant

**phyllodium**, (in ferns) small outgrowth of rhizome to which the leaf is attached, the portion of the stipe that remains attached to the rhizome

**phyllotaxy**, arrangement of leaves on a stem or branch

**phylogenetic**, relating to ancestral history

**phylogenetic tree**, (in cladistics) the 2-dimensional grouping of taxa according to assumed common ancestries

**phylogeny**, **phylogenetic classification**, type of classification based on evolutionary relationships, as deduced, for example, from morphological, chemical and DNA characters

**phylogram**, tree-like diagram depicting relationships; **= dendrogram**, or **cladogram**, which is a more technical cladistic term

**phylum**, the taxonomic rank below Kingdom and above Class, e.g. Pteridophyta or Anthophyta

**physiological**, based on function and physiology, relating to the science of plant (parts) function and processes

**phytochemical**, referring to plant chemicals
**phytomere**, (in grasses) a segment of the shoot that includes an internode together with the leaf and a portion of the node at the upper end of the internode, and a bud and portion of the node at the lower end

**pigmented**, coloured

**pileiform**, shaped like a cap

**pileus**, (in Pandanaceae fruits) the upper (stigmatic) part of the phalange or part-fruit

**piliferous**, bearing hair(s) [rather vague, not recommended]

**piliform**, shaped like, or resembling, a hair

**pilose**, hairy with short thin hairs (density is not specified with this term!); sometimes incorrectly used for having any kind of hair-covering

**pilosulose**, with minute straight hairs [unusual term, not recommended]

**pin-eyed flowers**, (in dimorphic flowers) the long-styled flower with relatively short stamens. **OPPOSITE**: thrum-eyed

**pinna, pinnae**, (particularly used in ferns) leaflet of a pinnate leaf, or first division of a pinnate leaf where this division is itself divided into leaflets

**pinnate**, divided into a central axis and several lateral ribs or leaflets (like a feather)

**pinnatipartite**, pinnately divided to about halfway

**pinnatifid**, pinnately lobed, the lobes shallow. (Often used just for pinnately lobed without any specific depth to the lobes)

**pinnatilobate**, with lobes arranged in a pinnate manner, pinnatilobed

**pinnatilobed**, pinnately divided, with unspecified depth of division; see also **pinnatifid**, **pinnatipartite**, **pinnatisect**

**pinnatisect**, pinnately divided almost to the midrib

**pinnatifid**, pinnately lobed, the lobes shallow. (Often used just for pinnately lobed without any specific depth to the lobes)

**pinnatilobate**, with lobes arranged in a pinnate manner, pinnatilobed

**pinnatilobed**, pinnately divided, with unspecified depth of division; see also **pinnatifid**, **pinnatipartite**, **pinnatisect**

**pinnatisect**, pinnately divided almost to the midrib

**pinninerved**, pinnately veined [obscure term]

**pinnipalmate**, mostly with pinnate venation, but with the first pair(s) of veins much more distinctive than the others [uncommon term]
pinnule, in a bipinnate leaf, a second-order pinna, the first-order segment of a pinna

pioneer, species colonising new environments (e.g. after clear-cutting, volcanic eruptions or fire) and starting a plant succession

pisiform, shaped like a pea; better to say ‘shaped like a small globe’

pistil, 1. (in apocarpous flowers) the unit of separate carpel, style and stigma (Bell, 2008, Hickey & King, 2000); 2. (in syncarpous flowers) the whole gynoecium (Bell, 2008, Hickey & King, 2000); 3. the female organ of a flower, consisting when complete of ovary, style and stigma (Jackson, 1928)

pistillate, 1. female; 2. flower with only female organs

pistillode, pistillodium, a rudimentary sterile pistil

pit, a small hollow or depression

pitcher plant, carnivorous plant, with a trapping mechanism of a deep hollow tube-like leaf partially filled with liquid, which eventually dissolves the trapped insects

pith, spongy tissue, usually at the centre of stem or branch

pithy, with spongy tissue

pitted, with small depressions

placenta, the part of the ovary to which the ovules or seeds are attached, sometimes raised or thickened

placentation, disposition of the placenta within the ovary

plagiotropic, (of shoots) lateral branches, ± horizontal or at an angle from the vertical; see also orthotropic, with vertical branches

plane, flat, level, even

plano-convex, flat on one side, convex on the other

plantlet, small plant formed on the leaf of a ‘mother’ plant

plant taxonomy, the science whose practitioners (find), describe, classify, identify and name plants

pleated, with parallel folds, folded like a fan along many ribs

plecostele, (in Lycopodium) protostele which in tranverse section appears as alternating bands of xylem and phloem

pleiocarpic, flowering and fruiting more than once in its lifetime. Opposite: hapaxanthic, monocarpic

pleiochasium, (of inflorescence) where each main axis of a cyme produces more than two branches

pleiomorphic, 1. with many forms; 2. (of hybrids) with two or more distinct variants

pleonanthic, (of a stem) where flowering is not followed by death (specialist term used in Palmae, see Dransfield, 1986). Opposite: hapaxanthic

plesiomorphic, plesiomorphic, (of a character) ancestral, primitive

pleurid, water gland, usually occurring in pairs on the column of some orchid flowers

pleurogram, U-shaped or elliptic fracture line on the lateral faces of some mimosoid legume seeds, which surrounds the areole
plexus, network, usually said of veins or vascular bundles

pliate, with parallel folds, pleated

pliatesial, pliestesial, living several years before flowering and then, once having flowered, dying [unusual terms]; see also hapaxanthic, monocarpic

ploidy levels, relating to the number of chromosome sets

plumose, 1. softly feathered; 2. like bristles which have fine hairs or cell ends on each side, wider than the axis itself; 3. Stearn (1973) defines this very precisely as having the free cell ends at least three times as long as the seta rachis is wide

plumule, the shoot bud of the embryo

plumulose, a little plumose [unusual term]

pluricipital, many-headed, as in a rootcrown or a branched swollen stem [unusual term, not recommended]

plurilobate, with many lobes.

plurilocular, with several locules

pluriovulate, (of placentae, carpels or ovaries) with many ovules

pluriseriate, having several rows

pneumatophore, erect (breathing) root protruding above the soil, encountered especially in mangroves

pod, 1. a general term for a dry dehiscent fruit with a firm outer layer enclosing a hollow centre with one or more seeds; 2. a legume formed of a single carpel; 3. a siliqua, two-celled and divided by a thin partition

podarium, (in cacti or other succulents) a modified leaf base functioning as the photosynthesising organ

podocarp, a stem or stalk bearing the fruit [unusual term]

poikilohydrous, with its water content determined by the surrounding atmosphere, becoming dormant in the dry season after losing most of its water, rehydrating when water becomes available again

polar, relating to the poles, or top and bottom ends, of a ± round organ

polar view, (in pollen) a grain viewed with the polar axis facing the observer, i.e. at right angles to the equator

pollard, cutting of tree trunks or branches at regular intervals to harvest, dwarf or shape the tree

pollen, powder-like fertilising agent carried in the anthers of phanerogams [preferred term]; = microspores

pollen grain, multicellular structure containing a single set of chromosomes that produces the male sperm cells of seed plants

pollen-mass, pollen-grains cohering into a single body (pollinium)

pollen-sac, the stamen-chamber in which pollen is formed

pollinarium, 1. (of asclepioid or orchid flowers) the complete set of pollinia from one or more anthers; 2. (in some more derived subfamilies of Apocynaceae) complete set of pollinia plus the corpusculum and translator arms; 3. (in orchids) viscidium, or viscidium and stipe, or the whole structure of pollinia, caudicles, stipes etc.; when there are two viscidia, each half of the set might be termed a pollinium

pollination, the transfer of pollen from anther to stigma

pollinator, agent effecting the pollination

polliniferous, bearing pollen
pollinium (plural pollinia), pollen-grains cohering into a single group and distributed as such (e.g. in derived subfamilies of Apocynaceae and Orchidaceae)

polyad, (of pollen) group of more than four pollen grains
polyadelphous, with stamens united in three or more bundles; see also monadelphous, diadelphous
polyandrous, with many stamens
polyanthous, with many flowers, especially within a common envelope or involucule
polycarpic, fruiting many times, not dying upon its first fruiting. OPPOSITE: monocarpic
polycephalous, plants (sometimes growing in clumps) with many flower-heads (sometimes from individual branches) [vague, not recommended]
polychasium, a cyme in which each axis produces more than two lateral branches
polygamy, bearing bisexual as well as either male or female flowers
polygamous, with male, female and bisexual flowers on the same plant
polygonate, 2-dimensional shape with many corners
polygynous, with many styles

polyhedral, polyhedrous, (of a 3-dimensional structure) with many faces or sides; polyhedral is the more common spelling
polymeric, with many parts in each series
polymorphic, (of a taxon or organ) with several forms, variable
polypetalous, (of flowers) with the petals free from each other. OPPOSITE: gamopetalous
polyphylectic, (of a taxon) of mixed evolutionary origin, sharing more than one common ancestor
polyphyllous, with many leaves or leaflets
polyplaid, with many leaves or leaflets
polyplody, the state of having three or more sets of chromosomes
polybotryal, with leaves arranged in several rows
polystichous, with leaves arranged in several rows
polytelic, (of inflorescences) where branches do not end in a flower; see also monotelic
polytome, divided into more than three parts or branches [unusual term]
polytrichous, with many hairs, densely hairy [unusual term]
pome, (in Rosaceae) indehiscent simple fruit in which the receptacle or hypanthium has enlarged to enclose the ripened ovary
population, all individuals of a particular species in a given area, in theory all of these can interbreed
porandrous, with anthers opening by pores [unusual term]
porate, 1. pollen grain with one or more pores (i.e. pori); 2. (of anthers) opening by small hole(s) or pore(s)
porcellaneous, smooth, shiny, semi-transparent, white and thin, i.e. like porcelain
pore, small hole, usually used of anthers (when these open by an apical hole) or of the outer wall of pollen grains
poricidal, opening by pores

porose, forming a continuing series of pores

porrect, pointing upwards at a slight angle from the vertical

porous (plural pori), (in pollen) a circular or slightly elliptic aperture

post-anthetic, after flowering is over

posterior, at or towards the back, next or towards the main axis. **OPPOSITE:** anterior

posticus, in position nearest to the axis; = posterior, which is preferred

pouched, with bag-like hollow

p.p., from the Latin pro parte, meaning ‘partly’

praefloration, see prefloration, which is the more usual spelling

praemorse, (of the apex of a plant) ending abruptly, as if bitten off, i.e. with a ragged end

praesertim, (sometimes used in taxonomic notes) chiefly, especially

precocious, appearing or developing early, often used of flowers which appear before the leaves

prefloration, the way in which flower parts are arranged in bud; = aestivation

prehensile, clasping, grasping

pre-Linnaean, said of books or plant names published before 1 May 1753, when Linnaeus’ *Species Plantarum* is considered to have been published

premorse, see praemorse, which is the preferred spelling

prickle, 1. a sharp outgrowth from the epidermis, detachable without tearing the organ; 2. (in cycads) reduced leaflet towards the base of the rachis with two or more spinose lobes or teeth

primary, 1. (adjective) first, in order of development or sequence; 2. (noun) (plural primaries) first-order branch; 3. (of vegetation) original, before human interference

primocane, the first season’s shoot of a biennial woody stem [unusual term, used more in horticulture]

primordium, (plural primordia) a part or organ in its earliest, almost undeveloped, condition

primrose, (colour) strong pale yellow

prior, earlier

priority, (in taxonomy), the principle that the first name legitimately published and available takes precedence, other names for the same taxon become synonyms

prismatic, shaped like a prism, a long solid with flat faces separated by angles

probract, small, often glandular, foliar structures present at the base of the peduncle in Cucurbitaceae

process(es), any small projecting parts

procumbent, leaning over or reclining, often to the extent of lying along the surface of the ground or over other vegetation, but not creeping (i.e. rooting at the nodes)

produced, brought forward

profuse, with a great many, rich
progeny, offspring

prolate, (of a globose shape) drawn out towards the poles

prolepsis, growth of a bud from a dormant stage into a lateral shoot [unusual term]

proleptic, growing into a lateral shoot from a dormant stage

proliferation, the production of off-shoots (i.e. lateral shoots for propagation)

proliferous, with adventitious buds on the leaves or on the flowers (rarely roots), such buds being capable of rooting and forming separate plants

prominent, jutting out beyond another part

prominulous, slightly prominent [obscure term]

prone, lying flat, with the upper face downwards

propagation, multiplication of plants by seed or by vegetative means

propagule, any vegetative or sexual structure (other than a seed) giving rise to a new plant, e.g. a broken-off part that sprouts

pro parte, (of a taxon name) partly (for example, used when discussing only part of a series of specimens cited for one taxon in a publication)

prophyll, 1. (in Gramineae/ Poaceae and Cyperaceae) the 2-keeled hyaline leaflet at the base of, and on the upper/adaxial side of, side branches; 2. (in palms) the bract at the base of the inflorescence enveloping the inflorescence in bud; 3. one or two of the first leaves of a lateral branch, different from the other leaves on that branch [old-fashioned and now unusual use]

prop root, root growing out of the lower stem or branch and into the soil; = stilt root

prostelic, when an axis consists of a single concentric bundle

prostrate, lying flat

protandrous, (of a flower) shedding pollen before the stigma is receptive, i.e. first functionally male and afterwards functionally female

protandry, stamens releasing pollen before the stigma in the same flower is receptive

proterandrous, old spelling of protandrous

proteranthous, producing flowers before the new leaves sprout, or after the leaves have fallen

proteranthy, flowers developing when the plant is leafless

proterogynous, old spelling of protogynous

prothallus, (in pteridophytes) a small green plant bearing the sexual organs, resulting from the germination of a spore

protocorm, the ephemeral structure resulting from the germinated orchid seed and from which the first true shoot and root differentiate

protogynous, (of a flower) with the stigma receptive before the anthers open, i.e. first functionally female and afterwards functionally male

protologue, (in nomenclature) the original description of a taxon; more correctly everything associated with a name at its valid publication, i.e. description or diagnosis, illustrations, references, synonymy, geographical data, citation of specimens, discussion, and comments

protostele, stele without central pith (see actinostele). OPPOSITE: siphonostele
protracted, drawn out
protruding, sticking out, exserted
protuberant, bulging out

protype, (in nomenclature) meaning a specimen that because of its completeness supplants a fragmentary holotype [unofficial and unusual term]; the official epitype is better, meaning a specimen that because of its completeness supports a fragmentary holotype

provisional, (in nomenclature) name or epithet not accepted by its author at the time of its publication

proximal, nearest to the point of attachment, basal.  
OPPOSITE: distal

pruinose, covered with a waxy, frost-like powder or bloom, as on a plum

psammophyte, plant growing in sand or sandy soils

pseudanthium (plural pseudanthia), (in Euphorbiaceae or Cornus) an inflorescence consisting of several reduced flowers, the whole resembling a single flower

pseudaril, resembling an aril but attached to an endocarp (which encloses the seed) not to the seed (e.g. in Commiphora (Burseraceae))

pseudo-, 1. seemingly; for example, pseudo-axillary means seemingly (but not really) axillary; 2. a prefix denoting a resemblance to another state or organ

pseudoaxillary, (of inflorescences) initiated in a terminal position but placed axillary by the continued development of lateral relay axes or meristems (e.g. as in Hydnophytum (Rubiaceae))

pseudobilabiate florets, florets in the Compositae/Asteraceae whose corollas possess a single adaxial lobe and an outer 4-lobed limb (e.g. in the subfamily Barnadesioideae)

pseudodichotomy, where regular sympodial branching takes place but with the apical meristem regularly aborted or forming a temporary structure such as an inflorescence; see also false dichotomy (Bell, 2008)

pseudogglomerule, used by Katinas (1996) to describe forms of inflorescence in which individual inflorescence branches terminate in glomerules [unusual term]

pseudolongiflorus, a flower that has a long and narrow corolla

pseudomonomerous, appearing to consist of one member but actually consisting of several (e.g. a gynoeceum with a number of carpels)

pseudopetiole, slim proximal portion of a leaf with narrow or incurled edges that resembles a petiole

pseudoraceme, 1. not a true raceme, an inflorescence of reduced cymes (these often reduced to a single flower); 2. (in orchids) specialised leafless apical portion of the stem bearing inflorescences (found in some species of Dendrobium sections Aporum and Strongylo)
pseudoscape, a false scape, with some leaves actually on the stem (a true scape is leafless, with all leaves in a basal rosette)

pseudostamine, with pseudostaminodes

pseudostaminode, (in Amaranthaceae) appendage found between the filaments that is not a modified stamen

pseudostem, ‘false’ stem consisting of leaf sheaths or leaf bases, the apical meristem remaining at ground level (as in Musaceae)

pseudostipule, (in compound leaves) the lowermost leaflet if and when it is very close to the stem and the leaf insertion point

pseudoterminal, looking as if terminal but really axillary; for example, a pseudoterminal bud is formed where a lateral bud replaces a terminal bud that is damaged or lost

pseudotermicillate, appearing whorled or verticillate but not actually so

pseudowhorl, leaves arranged one per node, but the nodes so short and close together so as to give the impression of a whorl of leaves

psilate, (of pollen) without sculpturing on the surface. OPPOSITE: ornamented

pteridophyte, a fern or fern-ally; member of a group of plants with alternating generations, the main generation producing spores

pterocarpous, with winged fruit

pterocaulous, with winged stem [unusual term]

pterospermous, with winged seed

ptyxis, leaf folding within the bud; aestivation is similar but for sepals and petals; = vernation

puberulent, minutely pubescent, the hairs hardly visible to the naked eye

puberulous, with a rather dense covering of very short soft hairs

pubescence, hairyness, indumentum [not recommended (see next entry)]

pubescent, with dense fine, short, soft hairs; downy. (This term has been used in various ways, sometimes meaning any kind of hair covering)

pulp, juicy or fleshy tissue of a fruit [imprecise, not recommended]

pulverence, minute powdering

pulverulent, as if dusted with powder

pulvinate, with a pulvinus (i.e. a swelling) mostly on the petiole (either proximal, distal, or both)

pulviniform, cushion-shaped [unusual term]

pulvinulus, swollen part of the stalk of an individual leaflet in a compound leaf, similar to pulvinus

pulvinus (plural pulvina), swelling on the petiole (either proximal, distal or both) that functions to permit leaf movement

punctae, small dots, glands or depressions
punicate, doted, marked with dots or translucent glands

punctiform, shaped like a point or dot
punctulate, marked with minute dots, depressions or glands
pungent, ending in a rigid sharp point
purpurescent, 1. tinged with purple; 2. turning purple
pusticulate, with minute blisters [unusual term]
pustulate, with slight elevations, like pimples or blisters
pustule, pimple, blister
pustuliform, shaped like a blister
pustulose, see pustulate, which is the more usual form
putamen, the hard endocarp of a stone fruit, a hard layer around the seed; = endocarp, which is preferred
putative, suggested, probable
pyramidal, shaped like a pyramid, usually said of inflorescences that are narrow proximally and widen out gradually, the distal part being more or less flat-topped (so really shaped like an inverse pyramid)

pyrene, (of a fruit) the stone, the seed plus a hard layer of endocarp (often sculptured) surrounding the seed

pyriform, pear-shaped (as in the fruit of Pyrus (Rosaceae))

pyrophyte, perennial plant growing in regularly burned areas, usually showing morphological and/or physiological adaptations to these habitats, usually appearing after the annual fires and before the first rains

pyrophytic, growing in regularly burned areas
pyxidate, with a pyxis [unusual term]
pyxidium, (of a capsular fruit) with circumscissile dehiscence (as in Sphenocleaceae)

pyxis, capsule with circumscissile dehiscence, the top coming off like a lid

quadrangular, with four angles

quadrate, almost square in form
quadri-, prefix meaning with four- or in fours
quadrid, cleft in four to about the middle
quaquaversal, directed or bending in every direction [unusual term]
quaternary veins, tiny veins branching off from tertiary veins
quaternate, in fours
quinaria veins, tiny veins branching off from quaternary veins
quinate, growing together in fives (e.g. five leaflets from the same point as in some Rosaceae)

quincuncial, (of aestivation) two parts exterior, two interior, the fifth with one margin interior and the other exterior

quinque-, prefix meaning with five- or in fives
quinquelobate, with five lobes
**quinoquepartite** | deeply divided into five parts
---|---
**quoad** | as regards (e.g. used when discussing only one of a series of cited specimens)
**q.v.** | from the Latin *quod vide*, meaning ‘which see’, a reference to something mentioned elsewhere in the text

**race, 1.** a strain of a species with certain characters fixed genetically; 2. used more loosely to mean a form with certain characters

**raceme, a monopodial inflorescence in which the flowers are borne on pedicels along a central axis, with the terminal flowers being the youngest and last to open. There are many different types of racemes; the spike and the spadix are racemes in which the flowers are sessile**

**racemiform** | in the form or shape of a raceme

**racemose** | in the form of a raceme, resembling a raceme

**racemule** | in a compound raceme or umbellate inflorescence, a second-order raceme

**rachides, plural of rachis, see there**

**rachilla, rhachilla, 1.** (in Gramineae/Poaceae) axis of spikelet; 2. the ultimate flower-bearing axis of an inflorescence (specialist term used in Palmae) [not recommended]

**rachis, rhachis** (plural rachides, rhachides), 1. (in compound leaves) that part of the main axis distal to the petiole that bears the leaflets; 2. (in inflorescences) that part of the main axis distal to the peduncle that bears the flowers

**radial, in a circle or cylinder, going from the centre to the margin in a straight line. OPPOSITE: tangential**

**radial spine** | (in cacti and similar succulents) the spines on the edge of the areole or spine shield, often smaller or with a colour different to the central spine

**radial symmetry** | symmetric from a central point, as opposed to bilateral symmetry

**radiant** | (in Compositae/Asteraceae, especially in the tribe Cardueae), referring to capitula in which the inner hermaphrodite disc florets are surrounded by outer enlarged, sterile disc florets

**radiate, 1.** spreading from, or arranged round, a common centre; 2. (of flowers) radially symmetric; 3. (in flower-heads of Compositae/Asteraceae) with ray flowers on the outside and disc flowers on the inside

**radiating** | spreading outwards from a central point

**radiation** | (in evolution) development of several species from an initial colonial event, speciation

**radiatisect, cut in a radiate manner, the cuts spreading like the spokes of a wheel**

**radical, (of leaves) arising so close to the base of the stem as to appear to come from the root; as opposed to cauline leaves, which grow from the stem**
radicant, (of stem or leaves) rooting
radicicolous, living on or in roots, sometimes used of flowers growing directly from a rootcrown [unusual term]

radicle, the first root arising from the germinating seed; see also plumule

radiosymmetry, (in pollen grains) more than two vertical planes of symmetry
rambling, climbing in a rather lax manner, usually lacking lianescent characters such as tendrils or twining stems
rameal, relating to branches, belonging to branches [unusual term]
ramentaceous, possessing thin chaffy scales
ramentum (plural ramenta), 1. thin chaffy scales on (leaf) epidermis; 2. (in palms) thin elongate scales with ragged margin
ramet, an individual of a clone
ramification, branching

ramiflorous, (of a tree or shrub) flowering on the branches but below the leaves

ramiflory, flowering and fruiting on thicker part of branches
ramigerous, ‘bearing branches’, (of bracts) subtending the branches of the inflorescence
ramose, with many branches
ramuligerous, bearing on little branches
range, the region over which a taxon is distributed naturally
rank, a vertical row on the axis

raphe, a ridge of tissue (the continuation of the funicular bundle) connecting the hilum (i.e. seed attachment point) to the chalaza; also spelled rhaphe but raphe is preferred

raphides, (in anatomy) bundles of needle-shaped crystals of calcium oxalate

rapiform, (of underground parts) shaped like a turnip, obovoid and rounded at the apex, tapering downwards

ratoon, stem sprouting from the root of a cropped plant (as in sugarcane)

Raunkiaer's system, system for categorising plants according how they survive the adverse (either cold or dry) season. See plate 28.

ray, 1. one of the radiating branches of an umbel; 2. (in Compositae/ Asteraceae) the limb of a ray floret

ray floret, the zygomorphic florets of the margin of a head (capitulum) of the Compositae/ Asteraceae when different from those of the centre (or disc) florets

rbcL, the plastid gene used in phylogenetics to study relationships
recaulescence, the fusion of a leaf or part of the leaf with the stem
recaulescent, (of a leaf or part of a leaf) fused with the stem
| **Receptacle, 1.** | the expanded part at the end of the flower stalk on which the organs of a flower (i.e. sepals, petals, stamens and carpels) are inserted; 2. (in species with compound heads) also used for the expanded part of the head-stalk that bears the collected flowers (e.g. in Compositae/Asteraceae or Dipsacaceae) |
| **Receptacle** | ![Image](image1.jpg) |
| **Receptive** | (of style or stigma) prepared to receive pollen for pollen tube growth and fertilisation |
| **Reclinate** | turned or bent downwards (e.g. the fruiting pedicels of some Utricularia) |
| **Recipinate** | (of leaf venation) with the secondary veins running in a straight line from midrib to leaf margin, and ending at the margin in a small protuberance |
| **Recumbent** | bent back until the apex is below the base |
| **Recurved** | bent or curved downward or backward; see reclinate for illustration |
| **Reduced** | subnormal in size or number |
| **Reduplicate, 1.** | (in aestivation) doubled back, the edges valvate and reflexed; 2. (in leaflets of palms), Λ-shaped in cross-section |
| **Reflexed** | curved backwards or downwards at a sharp angle |
| **Refringent** | (of cells in surface tissue) refracting light |
| **Refuge, refugium** | (plural refugia), a region where the climate was relatively stable in a time of climatological changes elsewhere, so that many species were able to survive in that specific area while they disappeared elsewhere |
| **Regeneration, 1.** | process in which dead or older plants are replaced by younger ones of the same species or vegetation type; 2. vegetative growth on a single plant after wounding or amputation of part(s) |
| **Regma** | capsular fruit with three or more cells that breaks open when ripe (specialist term usually restricted to Euphorbiaceae) |
| **Regular** | radially symmetrical, actinomorphic |
| **Rein** | (in palms) a narrow marginal strip on a pinnate leaf that is usually shed when the leaf unfolds |
| **Rejiciendum nomen** | name or epithet that has been rejected by a decision of an official committee under the International Code of Botanical Nomenclature |
| **Relic** | remnant |
| **Relict distribution** | distribution restricted but formerly much more widespread |
| **Relict species** | species which were formerly widespread but now occupy only small areas |
| **Relief** | differences in elevation and slope on the earth surface |
remote-ligular, germination type in which the shoot apex is carried out of the seed in the elongated ligule of the cotyledon (specialist term used in Palmae, see Dransfield, 1986)

remote-tubular, germination type in which the shoot apex is carried out of the seed in the elongated sheath of the cotyledon (specialist term used in Palmae, see Dransfield, 1986)

reniform, kidney-shaped

reophyte, plant adapted to fast-flowing water; rheophyte is the preferred spelling

repand, when the margin is uneven or wavy, with shallow undulations not so deep as for sinuate margins

replicate, (of leaf bud) with the leaf margin is folded back in bud (as in *Galanthus*)

replum, 1. a frame-like placenta from which the valves fall away in dehiscence (e.g. the persistent sutures of the craspedium in *Mimosa*); 2. (in Cruciferae/Brassicaceae) partition between the locules of fruits

reproduction, increase; 1. asexually, from one individual; 2. sexually, from two individuals

reproductive, (of parts) concerned in reproduction, in sexual increase

resin, hardened exudate from wounded stem or leaves that is soluble in alcohol but not in water

resin thread, elastic, sticky threads apparent upon breaking a leaf or petiole and pulled between the broken parts

resinous, with the scent or consistency of resin

resupinate, (of flowers) upside down, or seemingly so

retained, (in nomenclature) name or epithet whose use is continued

reticulate, 1. net-veined, when the smallest veins of a leaf are inter-connected like the meshes of a net; 2. (taxonomic relationship) complex and many-stranded; 3. (in pollen) with a network of ridges and empty spaces in between

reticulation, network

reticulodromous, (of venation) with a single main vein, the secondary veins running towards the margin, branching again and again and becoming minute, indistinct and net-veined near the margin; like cladodromous, but with the veins less distinct near the margin

reticulum, network of veins

retinacle, retinaculum, 1. (in Apocynaceae) the zone by which the anthers adhere to the style head or stigma; 2. (in Orchidaceae) the gland attached to the pollinia (more correctly called the viscidium); 3. outgrowth of seed funicle which holds the seed to the fruit (as in Acanthaceae)

retrorse, said of marginal spines, barbs, stem hairs or any protuberances that are bent abruptly backward or point towards the proximal part of the organ; = pointed downwards or recurved; OPPOSITE: antrorse

retrorsely, turned backward, turned downward

retuse, notched, with a rounded indentation (usually said of an apex); see also emarginate, with a sharp notch

revision, a taxonomic study of a group of taxa
revolute, rolled or curled over backwards, towards the abaxial surface. Opposite: involute

rhachides, plural of rhachis; rachides is the preferred spelling

rhachilla, axis of grass spikelet; rachilla is the preferred spelling

rhachis, see rachis, which is the preferred spelling

rhaphes, ridge of tissue connecting the base of the nucellus with the placenta; raphe is the preferred spelling

rheophyte, plant adapted to fast-flowing water, usually with long slender leaves

rhipidium, sub-umbellate cluster, fan-shaped cyme, the lateral branches developing in one plane, alternately in opposite directions, with the main axis appearing zig-zag (mainly in Iridaceae)

rhizobium (plural rhizobia), soil bacterium that fixes nitrogen

rhizocarpic, plant with roots that are perennial but stems or shoots that are annual [unusual term]

rhizogenic, producing roots [unusual term]

rhizoid, 1. a hair (often branched) serving as a root; 2. thread-like rootlets in pteridophytes; 3. small root-like organs (e.g. coming from the base of the inflorescence in Utricularia)

rhizomatous, possessing an underground stem

rhizome, underground stem, distinguished from root by its nodes, buds or scale-like leaves

rhizophore, specialised part of the stem bearing rhizoids (as in Selaginella)

rhizosphere, the rootball, the root system with its immediate surrounding substrate

rhizotaxy, the arrangement of roots on a plant [unusual term]

rhombic, (of plane shapes) in the shape of an equilateral parallelogram (generally excluding the square), lozenge-shaped

rhomboid, rhomboidiform, 1. (of leaf shape) rhombic-like, nearly square with the petiole at one of the acute angles; 2. (of 3-dimensional shape) 4-angular, with the angles obtuse

rhytidome, layer of dead bark external to the living bark (which is called periderm)

ridged, with a ridge or elevated line

rigid, stiff

rim, margin, edge

rimose, (of bark) full of cracks, crevices or fissures

rind, outer layer, implying a thick and tough layer

ringent, (in a 2-lipped corolla) with the lips gaping and widely separate [unusual term]

riparian, of river banks or lake shores

ripe, mature, complete for its function

rivulose, marked with narrow, wavy, irregular lines

robust, strong, thick, vigorous

root boss, (in palms) swelling at the base of stem from which the roots arise

root-crown, 1. the place where the root changes into the stem at ground level; 2. sometimes the hairy or bracteate apical part of the perennial rootstock where the annual shoots are burned or grazed off
rootlet, 1. narrow root; 2. branch of a root

root nodules, small rounded bodies on the roots, usually containing bacteria that fix nitrogen from the air

root sucker, shoot arising from adventitious buds on root

root tuber, thickened part of root

rootstock, 1. underground stems and/or roots, often perennating [imprecise term, not recommended]; 2. rhizome, dorsiventral stem on or below ground sending out rootlets and distally leaves

roridulate, with a covering of small waxy plates, and therefore appearing moist [unusual term, not recommended]

rose, (colour) pink or light crimson [vague term, not recommended]

rosette, a circle of tightly packed leaves, a basal rosette is at ground level, spreading from a stem with short internodes at that point

rostellate, ending in a small beak

rostellum, 1. (in orchid flowers) a shelf- or beak-like projection on the orchid column, derived from the median stigma lobe, that separates the fertile stigmatic surface from the anther, thereby preventing autogamy and aiding in gluing the pollinia to the pollinator; 2. persistent stylar base on fruit; 3. a slender projection, like the beak of a bird

rostrate, beaked

rostrum, beak-like extension

rosulate, 1. with the leaves in a circle at the base of the stem; 2. with a leaf-rosette

rotate, wheel-shaped, usually of a corolla with a very short tube and spreading lobes

rotund, 2-dimensional shape between oblong and rounded in outline, nearly round

rotundate, (plane shape) between oblong and rounded in outline; = rotund, which is preferred

rounded, (usually of the base or apex of a plane shape) smoothly curved, without abrupt angles

ruderal, from the Latin rudus, meaning ‘old rubbish’, growing in waste places

rudimentary, small and non-functional, arrested at an early stage of development

rufescent, becoming reddish

rufous, (colour) reddish (various shades)

rugae, wrinkles, folds

rugose, 1. wrinkled; 2. (more strictly) covered in reticulate lines, with the spaces in between convex
rugula, (in Acanthaceae) a channel-like structure on the inner surface of the upper lip, holding the style in place

rugulate, (in pollen) with an irregular pattern of ridges and empty spaces

rugulose, somewhat wrinkled

ruminate, (of seeds) showing intrusions into the endosperm usually by the infolding of the inner layer of the seed coat

rumination, (of seeds) the intrusions into the endosperm usually by the infolding of the inner layer of the seed coat(s)

runcinate, pinnatifid with the lobes pointing towards the base

runner, an elongating lateral shoot, giving rise to a new individual at its end (which may give rise to more runners)

rupestral, growing on rocks or walls

rupicolous, growing on or among rocks

rupturing, breaking, bursting

russet, (colour) reddish-brown

salient, projecting forwards, spreading, divergent at an acute angle from the bearing structure

saline, salty, containing sodium chloride

salver-form, see salver-shaped, which is preferred

salver-shaped, (of a calyx or corolla) with a slender tube and an abruptly widening limb of free petal or sepal lobes spread flat; = salver-form, but salver-shaped is preferred

samara, a dry indehiscent fruit with a wing (longer than the seed-bearing part) developed to one side (as in Acer pseudoplatanus, the sycamore)

samaroid, resembling a samara, although the wing may surround the seed chamber

sapling, a very young tree

carpophyte, plant that obtains some or all of its nutrition from the substrate through mycorrhizal fungi; more accurately known therefore as an achlorophyllous mycotroph or a heteromycotroph; readily identifiable by lack of leaves and usually by the absence of chlorophyll

saprophytic, obtaining all nutrition from decaying matter

sapwood, new living outer wood, as distinct from the heartwood

sarcocarp, succulent fleshy part of a stone fruit or drupe [old-fashioned, rarely used term]

sarcotesta, fleshy layer developed from the outer seed coat

sarment, see runner, which is preferred

sarmentose, 1. with long thin runners or rhizomes; 2. (of lianas) with long whip-like branches
savanna, savannah, dry area of grassland with isolated trees

saxatile, (of plants or species) living on rocks [uncommon term]

saxicolous, (of plants or species) growing on rocks

scabrous, slightly rough; = scabridulous, which is preferred

scabrate, rough to the touch, with small pointed protrusions; = scabrid

scabrid, (of indument) rough to the touch, usually from the presence of minute stiff hairs

scabridulous, (of indument) minutely scabrid

scabrous, rough to the touch, with small pointed protrusions; = scabrid

scalariform, with ladder-like markings

scale, 1. a small peltate scarious disc; 2. reduced leaf, usually sessile and scarious and seldom green, see also perula or bract [not recommended]; 3. cone scale, one of the overlapping structures (reduced leaves) on the cone or fruit of a gymnosperm; 4. nectary scale, outgrowth of carpel in flowers where nectar is produced (especially in Crassulaceae); 5. degree of size reduction or magnification in illustrations

scallopéd, notched with regular rounded teeth; = crenate, which is preferred

scandent, climbing. (Some authors use it for climbing without twining or the use of tendrils; I prefer it as a general term for climbing)

scape, a leafless flower- or inflorescence-stalk arising from ground level, naked peduncle

scapiform, resembling a scape, a stem without leaves with flower(s) at the top

scapigerous, bearing a scape

scapose, with a scape, bearing a scape; said of herbs that have a basal rosette and an inflorescence rising from the centre of the rosette on a leafless stalk

scar, mark left on stem by a fallen leaf, or on seed by separating from fruit

scarious, thin and dry, not green; also spelled scariose

scarlet, (colour) vivid red with a touch of yellow

scented, perfumed, smelling sweetly

schizocarp, fruit splitting into its carpellary constituents or one-seeded portions (i.e. mericarps)

schizocarpic, schizocarpous, adjective of schizocarp

sciaphyte, adapted to life in shade; the more common spelling is sciophyte

scientific name, (in nomenclature) (for species) binomial, name composed of the genus name followed by a specific epithet, as opposed to a vernacular or common name. Other scientific names are those for families, orders, classes, and various other taxonomic groups

scimitar-shaped, curved and with a sharp apex widened to one side

sciophyte, adapted to life in shade

scleranthium, small dry thin-walled fruit or achene enclosed in hardened calyx tube [unusual term]

sclereid, cell with lignified, pitted wall

sclerenchyma, thick-walled lignified cells

sclerenchymatous, (of endocarp) composed of thick-walled cells

sclerified, (of organs) having become fibrous, i.e. having developed sclereids
scleromorph, plant with leaves that are hard and usually thick and fibrous

sclerophyll, 1. tough leathery leaf; 2. plant with such leaves, adapted to areas with low water availability

sclerophyllous, (of taxa or vegetation) with small leathery leaves with thick cuticles; usually an adaptation to dry conditions or low water availability

sclerotic, hardened, stony in texture

scobiform, resembling sawdust

scobina, (in some grasses) the rachilla of the spikelet when it has a flexuous, toothed appearance [unusual term, not recommended]

scopiform, shaped like a broom, with several closely set upward-pointing stems

scorpioid, 1. a one-sided cymose inflorescence, coiled so as to resemble a scorpion's tail; 2. a two-sided cymose inflorescence, coiled so as to resemble a scorpion's tail, with single flowers alternating right and left; 3. a zig-zag inflorescence with branches developed alternately on opposite sides of the rachis; = cincinnus, which is not recommended

scrambler, plant growing upwards supporting itself on other vegetation or on objects but not twining or attaching itself; see also twiner, climber

scrambling, growing upwards through other vegetation or objects but not twining

scree, loose particles of rock or stones, detached from parent rock by weathering

scrobiculate, minutely pitted or grooved

scrofulous, with many small scaly bodies, easily flaking off

scurf, small scales on the epidermis

scurfy, covered with small scales, like dandruff

scutate, (of scales) shield-shaped, round and slightly bulging [unusual term]

scutellate, round and slightly convex, like a saucer

scutelliform, (in orchid flowers) shaped like an oval dish [specialist term]

scutellum, (in grasses) a shield-shaped structure between embryo and endosperm

scythe-shaped, thin, curved and sharp at apex; = falcate, which is preferred

sebaceous, fatty, or with the appearance of fat

secondary 1. not primary, subordinate; 2. (vegetation) type following disturbance or destruction of original (primary) vegetation

secondary peduncle, used by some to indicate the first-order branches of an inflorescence [not recommended]

secreting, producing or excreting by glands or glandular cells

secretion, plant fluid (or substance therein) excreted by glands or glandular cells

secretory canals, internal channels holding secretion

sectile, (in an orchid flower) the condition in which soft, granular pollinia are subdivided into small packets, these usually connected by elastic material (Dressler, 1993)

section, infrageneric taxonomic rank, used for major divisions of a genus

seculate, sickle-shaped, narrow and strongly curved with a sharp apex

second, (of, for example, leaves on a stem) all directed to the same side

seed, the structure produced from a fertilised ovule by which all seed plants reproduce, consisting of an embryo and usually a seed-coat, with endosperm; reproductive part of a fruit; the integumented megasporangium

seed coat, the outer coat of the seed, usually split into two layers: testa and tegmen

seed leaf, cotyledon

seedling, juvenile plant recently arisen from the seed

segetal, growing spontaneously on agricultural land

segment, 1. (in palms) a division of a palmate or costapalmate leaf blade; 2. (in ferns) the ultimate segment, i.e. the smallest division, of a compound frond
**Segmentiform–Septum**

**Segmentiform**, shaped like a segment of an orange (unusual term in Euphorbiaceae)

**Segregate**, a taxon split off, or removed, from another taxon

**Segregating**, splitting off

**Selection**, anything tending to produce inheritable change between one generation and the next

**Self-fertilizing**, (of a flower) fertilised by its own pollen

**Selliform**, saddle-shaped, compound-curved, convex from front to back and convex from side to side [unusual term]

**Semi-**, (prefix) half-

**Semi-amplexicaul**, (of a leaf base) when the auricles extend to the other side of the stem but without meeting

**Semicarpous**, with ovaries partly fused but styles and stigmas separate

**Semi-circular**, half-circular

**Semicraspedodromous**, venation in which the secondary veins coming from the midrib branch just inside the margin, one of the branches ending at the margin, the second joining the next secondary vein

**Semilunar**, crescent-shaped

**Seminal**, usually related to the seed

**Semperflorous**, with flowers appearing throughout the year

**Senescent**, aging, growing old, not able to reproduce any more

**Senile**, past maturity, aged and about to die

**Sensitive**, (of leaves or flowers) reacting to touch with movement (e.g. as the rachis and leaflets of Mimosa pudica)

**Sensu auct., sensu auctt.**, as used by the cited author, but specifically excluding the original meaning

**Sensu lato**, in a broad sense, usually in the application of a name to an aggregate species in which some authors might recognise several more narrowly delimited species (see also **sensu stricto**)

**Sensu stricto**, in a narrow sense

**Sepal**, a single part of the outermost whorl of floral organs, the calyx; usually green, protecting the corolla in bud

**Sepaloid**, resembling a sepal

**Sepia**, (colour) dark brown

**Septate**, divided by one or more partitions

**Septenate**, growing together in sevens (e.g. seven leaflets from one point)

**Septicidal**, when a ripe capsule splits along the lines of junction of the carpels, i.e. along the septa, the fruit valves remaining attached and not falling off (see also **septifragal**)

**Septifragal**, (of fruit) dehiscent along the septa (the junction of the carpels) with the valves falling off and a persistent central axis/columella remaining (see also **septicidal**)

**Septum** (plural **septa**), partition of fruit or ovary; = **dissemination** (but septum is preferred)
**sequencing genes**, analysis of strands of DNA so that the genes and their positions are identified

**seral**, a temporary or developing vegetation type forming a stage in succession

**serial bud arrangement**, with the buds arranged vertically one above the other in the axil of a leaf. **OPPOSITE**: **collateral bud arrangement** (buds arranged horizontally)

**sericeous**, silky, with closely appressed soft straight hairs and with a shiny silky sheen

**series**, subdivision below the rank of genus and above the rank of species

**serotinous**, retaining seeds within a cone or fruit until the passing of a fire releases them

**serotiny**, seeds staying within a cone or fruit until the passing of a fire releases them

**serrate**, toothed like a saw, with regular acute and angled teeth pointing towards the apex

**serried**, close together in rows or ranks

**serrulate**, minutely serrate

**sessile**, without a stalk, attached directly

**seta** (plural **setae**), a bristle or stiff hair

**setaceous**, bristle-like, narrow and stiff

**setiferous**, bearing bristles

**setiform**, bristle-shaped

**setose**, beset with bristles

**setula** (plural **setulae**), **setule**, small bristle, small hair

**setuliferous**, beset with small hairs

**setulose**, beset with minute bristles

**sexual system**, Linnaeus' arrangement of plants by the position and number of sexual organs

**shade leaves**, those leaves adapted to low light. **OPPOSITE**: **sun-leaves**

**shaggy**, with long rough and coarse hairs

**shagreened**, (of a surface) with minute nodules, like sharkskin

**shale**, a fine-grained sedimentary rock, stratified and easily splitting into thin layers

**sheath**, a tubular organ enveloping another organ; (in grasses or palms) the tubular part of the leaf enveloping the stem

**sheathing**, 1. enveloping and enclosing; 2. with a sheath

**shield**, (in gymnosperm cones) the outermost part of a cone scale, the part that remains exposed when the cone is closed; = **apophysis**
**SHOOT–SINUATE**

**shoot**, 1. an elongating stem, usually near the apex of the plant and sometimes used for the main axis; 2. (in sympodial orchids) a continuation of the rhizome

**short-shoot**, condensed shoot with short (and sometimes few) internodes bearing leaves (and/or flowers and fruits) in seeming clusters, usually on the main axis or on a long (i.e. extension) shoot; = brachyblast

**shrub**, 1. self-supporting woody plant branching at or near the ground or with several stems from the base; 2. [less correctly] used for plants with a single stem but then ‘quite short’ (<2 m) or plants with a single stem but with side-branches starting close to the base. (A difficult term — Lawrence says “a descriptive term not subject to strict circumscription”)

**shrublet**, undershrub, small shrub

**sigmoid**, S-shaped, curved in one direction and then changing direction to curve in the other

**silica**, silicon dioxide (quartz)

**silica bodies**, crystals of silica occurring inside cells

**siliceous**, containing silica

**silicle, silicula** (plural **siliculae**), **silicule**, a short siliqua, but less than three times as long as wide

**siliqua** (plural **siliquae**), a fruit divided into two cells by a thin partition, opening by two valves which fall away from a frame on which the seeds are borne; more than three times as long as wide (e.g. in Cruciferae/Brassicaceae)

**siliquiform**, shaped like a siliqua (used in Capparaceae)

**simple**, 1. (of leaves) not divided into leaflets. OPPOSITE: compound; 2. (of inflorescences) with only one order of branching; 3. (of fruits) resulting from the ripening of a single ovary, as opposed to compound fruits (which are derived from more than one flower)

**simple cyme**, an inflorescence with pedicels of equal length

**sine desc.**, from the Latin *sine descriptio*, ‘without a description’; (in nomenclature) used for a scientific name published without any description, and hence invalid

**sine loc.**, from the Latin *sine loco*, ‘without a place’; used for a herbarium specimen without locality information

**sinistorse**, towards the left (when viewed from the front) (e.g. in climbing stems). OPPOSITE: dextrorse

**sinker**, 1. shoot growing downwards from a bulb or corm and producing a new bulb or corm at its apex; 2. (in parasitic plants) an outgrowth of the haustorium that grows into the tissues of the host plant

**sinuate**, with an uneven margin that has rather deep rounded sinusoidal undulations
sinuose, = wavy or sinuate, which are preferred
sinuous, = wavy

**sinus**, 1. recess between the teeth or lobes of a margin; 2. angle formed by the basal lobes of a leaf

siphonostelic, (of a stele) with a central column of pith surrounded by a hollow vascular cylinder of xylem and phloem

sister groups, (in phylogenetics) two groups of species that are each others closest relatives, i.e. traceable to a single dichotomy

sister species, two species resulting from a single speciation event

skeleton, structure that remains after an organ has been destroyed by rotting, erosion or corrosion

skin, thin outer covering [vague term]

s.l., from the Latin *sensu lato*, meaning ‘in the broad sense’

slash, a cut with a sharp instrument (e.g. panga, parang, machete or bush knife) inflicted on the trunk of a tree, which may give additional characters for identification (latex, colour of underbark etc.)

**slate blue**, (colour) blue-grey

**slender**, long and thin

smooth, 1. opposite of rough; 2. opposite to hairy [unusual now but common in older publications]

s.n., from the Latin *sine numero*, meaning ‘without a number’

sobol(e), an underground vegetative shoot with roots at intervals, a creeping underground stem producing roots and buds; sobole is the preferred spelling

**soboliferous**, producing shoots from ground level, clump-forming; usually applied to shrubs or small trees

softwood, wood from conifers

soleiform, slipper-shaped or almost like an hourglass, i.e. two ovals joined by a narrower part [obscure term]

**solenostele**, 1. a type of stele with a central core (of pith) surrounded by rings of phloem, xylem and phloem again (= amphiploic siphonostele); 2. a type of siphonostele with leaf gaps not very large and not overlapping

solid, 1. opposite of hollow; 2. free from cavities

**solitary**, (usually of stems) single, not in clusters. **OPPOSITES: clustering, suckering, in fascicles**

somatic (chromosome number), (2n) with twice the haploid number

**sorophore**, (in pteridophytes) specialised sporangia-bearing organs on leaf margins [obscure term]

**sorosis**, fleshy multiple fruit arising from the ovaries of many different flowers (as in mulberry, breadfruit or pineapple)

**sorus** (plural **sori**), (of pteridophytes) structure bearing or containing groups of sporangia

sp., species (singular)

**spadix**, unbranched inflorescence with fleshy or thickened axis in which the flowers are (partly) sunken (as in Araceae)

span, (old measurement) about 22.9 cm or 9 inches [old-fashioned term]

**spathaceous**, resembling, or with the function of, a spathe (e.g. large bract(s) enclosing the flower(s))

**spathe**, a large sheathing bract, usually either the prophyll or a peduncular bract, surrounding the inflorescence or spadix
spathella, 1. (in Podostemaceae) a closed membranous sac enveloping the immature flower; 2. lemma or sometimes glume [old-fashioned usage, not recommended]

spathoole, (in Gramineae/Poaceae) 1. the bladeless sheath subtending the inflorescence; 2. the modified leaf sheath encasing part of the inflorescence

spathulate, shaped like a small spatula: oblong, with an extended basal part; spatulate is the preferred spelling

spathuliform, see spatulate, which is preferred

spatulate, shaped like a small spatula: oblong, with an extended basal part

speciation, evolution into a new species

species, Linnaean unit of plant classification; group of populations of similar morphology and constant distinctive characters, thought to be capable of interbreeding and producing offspring

specific epithet, in scientific names, the part that follows the genus name; for example, in Bellis perennis the first name with the capital is the genus name, the second name without a capital the specific epithet

specimen, dried plant or part of a plant in a herbarium, or any plant (part) collected for study

speciose, species-rich (which is preferred)

spermatophyte, seed plant; member of the Angiospermae or Gymnospermae

sphalm, sphalmate, by mistake

sphaldfoid, 3-dimensional shape, like a sphere

spheral, shaped like a sphere

sphingophily, pollination by hawk moths (sphingid or sphinx moths)

spicate, (of the inflorescence) spike-like; unbranched, the flowers (seemingly) borne directly on the axis

spiciform, resembling a spike

spicoid, the ultimate inflorescence unit in Cyperaceae tribes Hypolytreae and Chrysitricheae, with a much-reduced axis and appearing like a flower. It comprises 2–12 floral bracts, each subtending a male flower. The whole structure is terminated by a female flower, thus making it determinate

spicoid bract, (in Cyperaceae) a glume-like bract which subtends the spicoid

spiculate, covered in minute spines

spicule, 1. small needle-like structure; 2. very small spike; 3. fine, fleshy, erect point (Lindley, 1848); 4. Bentham’s term for an interpinnal seta

spike, 1. a racemose inflorescence with the flowers alternate and sessile along a common unbranched axis, flowers single or (less precisely) in short clusters; 2. (in Cyperaceae) an aggregation of spikelets or spicoids, sometimes the whole structure is similar in appearance to a spikelet

spikelet, (in Cyperaceae and Gramineae/Poaceae) structure of two sterile bracts (the glumes) with a small axis and a number of florets (each consisting of lemma, palea and flower)

spination, covering of spines [unusual term, not recommended]

spindle-shaped, (of a 3-dimensional structure) straight, tapering from a wider middle towards both ends; = fusiform, which is preferred

spidly, thin

spine, a sharp-pointed, hardened structure derived from a leaf, stipule, root or branch, but always originating from the vascular or woody part. (Thorn is derived from a reduced branch, pointed structures from the epidermis are called prickles)
spinescence, spininess
spinescent, ± spiny, ending in a sharp point

spine-shield, horny pad from which the spines stick out (e.g. in *Euphorbia*) [unusual term]

spiniform, spine-shaped, thorn-like

spinose, with spines (mostly used for leaf margin)

spinous, with spines

spinule, a very small spine

spinulose, (of pollen exine) with small spines

spiny, armed with spines

spirally arranged, (of organ arrangement) in a spiral or ascending coil along an axis; for example, leaves on a stem with one (alternate) leaf per node

spiracle, minute coiled threads in some seed coats that uncoil when moistened

spirlobal, (of cotyledons) closely parallel and folded once, with the radicle lying against the surface

split, divided nearly to the base

splitting, (in taxonomy) taking the narrow view and describing many taxa as separate entities. OPPOSITE: lumping. (The respective botanists are called splitters and lumpers)

spongiosé, spongy, soft

sporangiophore, 1. the part of the fertile leaf carrying the sporangium; 2. (in *Equisetum*) peltate organ bearing sporangia

sporangium (plural sporangia), (in pteridophytes) a sac or capsule containing spores

spore, a cell capable of developing into a gametophyte; analogous to a phanerogam seed

sporocarp, (in pteridophytes) stalked fruit case containing sporangia or spores

sporogenous (of tissue) spore-producing

sporophyll, (in pteridophytes) specialised leaf that bears spores

sporophyte, (in pteridophytes) diploid (usually) plant that produces spores

spp., species (plural)

spreading, (of habit) loose, not erect, at ± right angles to the axis

spur, 1. a tapering projection, usually short and curved; 2. a short shoot of the stem bearing leaves and/or flowers and fruit; 3. (in flowers) a slender hollow extension (usually) of the perianth, often containing nectar

spurred, bearing a hollow slender projection or extension

spur shoot, a short, compact branch usually lateral to the main axis, with very short internodes, bearing leaves and/or flowers and fruit; = brachyblast or short shoot
**Squamate–Stemonozone**

**squamate**, scaly, with small scales or bracts [unusual term, more widely used in zoology]

**squamellum**, a broadened bristle or scale-like unit (e.g. the pappus in Compositae/Asteraceae)

**squamiform**, shaped like a scale

**squamose**, covered with scales (which can be attached either at one end or by a central stalk)

**squamula**, **squamule** (plural **squamulae**), small scale; for example, the small scales around and below the ovary (possibly perianth remnants) in Cyperaceae or Gramineae/Poaceae

**squamulose**, covered with small scales

**squarrose**, 1. rough, with tips of scales/bracts etc. projecting outwards; 2. (in shrubs and trees) with the branches at ± right angles to the stem

**s.s., s. str.**, (from the Latin *sensu stricto*) in the narrow sense

**ssp.**, abbreviation for subspecies, but ‘subsp.’ is less confusing because *spp.* is the abbreviated plural form of ‘species’

**stalk**, any support of an organ that has some length

**stalked**, with a stalk, not sessile, attached to another organ by a narrow cylindrical part

**stamen**, the male organ of a flower, the male sporophyll, consisting of a stalk (filament) bearing the connective and container(s) (anthers) that bear the pollen

**staminate**, 1. (of flowers) bearing stamens; 2. (of plants or flowers) male

**staminodal/staminodial**, (adj.) of the staminode

**staminode**, **staminodium**, a sterile or abortive stamen, usually much smaller than a stamen and not bearing pollen

**staminophore**, a band of tissue around the apex of the hypanthium on which the stamens are inserted (e.g. in *Eucalyptus*)

**standard**, the large upper/posterior petal (outside in the bud) of a papilionaceous corolla. (Note that in a resupinate papilionaceous flower the standard is lowermost, functioning as a landing platform for pollinators);

= *vexillum* or banner petal

**stapetalum**, the length of corolla tube with fused or adnate stamens [unusual term]

**stat. nov.**, name or epithet with a new rank; for example, moved from species to variety, or vice versa

**stele**, (in anatomy) the part of a plant axis made up of the primary vascular system and its associated ground tissue

**stelidium**, (of orchid flowers) the teeth of the column (in *Bulbophyllum*)

**stellate**, star-shaped, with numerous arms radiating outwards (e.g. stellate hairs)

**stelliform**, star-shaped; = *stellate*, which is preferred

**stellulate**, diminutive of stellate: small and star-shaped

**stem**, the main axis of a plant, bearing roots, leaves and/or flowers

**stemonozone**, a tube formed by the fusion of petals and stamens (as in Mimosoideae of the Leguminosae/Fabaceae) but free from the calyx
stem succulent, a plant with a thickened fleshy stem that is used to store water

stenopetalous, with narrow petals [unusual term, not recommended]

stereome, (in Compositae/Asteraceae) a central sclerified part of the phyllary that may be entire or divided in two

stereomorphic, radially symmetric; = actinomorphic, which is preferred

sterigma, the small woody protuberance on conifer branches on which one or more needle leaves are inserted [unusual term]

sterile, 1. (used of sexual parts, such as anthers) barren, not functional; 2. (of botanical specimens) lacking flowers and fruits

stigma, the pollen receptor on the gynoecium, which may be either sessile on the ovary or on top of the style or style arms

stigmatic, relating to the stigma

stigmatic knob, 1. knob-shaped stigma; 2. style-head on which a stigma sits

stigmatic surface, that part of the style/pistil receptive to pollen

stigmatose, 1. provided with stigmas; 2. with conspicuous stigmas

stilt roots, lateral roots from the lower (proximal) part of the stem that reach the ground and support the plant (e.g. in Rhizophora); = prop roots

stinging hair, a tubular hair filled with liquid which, upon breaking, ejects the irritant liquid (e.g. in Urtica and Laportea)

stipe, stipes (plural stipites),
1. (of palms) an individual stem or trunk of a clustering palm;
2. (of ferns) the leaf stalk of a frond; 3. the stalk inside the flower or fruit that supports the carpel(s) or gynoecium;
4. (of orchid flowers) a pollinium stalk, possibly derived from the anther;
5. (in Cyperaceae) short, narrowed extension to the base of the nutlet

stipellate, with stipels

stipitate, supported on a special stalk, i.e. not on a petiole, pedicle or pedicel

stipitiform, shaped like a stalk or a long narrow cylinder [unusual term]

stipular, relating to the stipule

stipular spines, spines on the stem at the base of the leaf that are modified stipules

stipulate, with stipules
stipule, leaf-like, spine-like or scale-like appendages of the leaf, usually in pairs at the base of the petiole

stipuliform, shaped like a stipule [vague term, as stipules come in many shapes]

stock, see rootstock [imprecise term]

stolon, 1. vegetative shoot spreading along the surface of the ground and rooting at the nodes, where it may give rise to new plantlets; 2. (in Cyperaceae) a thin underground branch arising from the rhizome or base of the culm, each stolon terminates in an aerial shoot

stoloniferous, 1. bearing stolons; 2. with runners or propagative shoots rooting at the tip to produce new plants; see stolon for illustration

stoma (plural stomata), pores in the leaf epidermis used primarily for transpiration

stomatal subsidiary cells, additional modified cells lying outside the guard cells of stomata

stomium, zone of dehiscence; for example, on a sporangium or on an anther

stone, hard endocarp of a drupe; = putamen

stool, base of the plant producing new shoots or stems each year

stool shoot, 1. a shoot or new stem/branch emerging from (near) the base of the plant, especially when the stem has been cut; 2. several stems arising from the same root

storey, layer of rain-forest or other forest where vegetation seems to be layered (e.g. understorey, mid-storey or canopy)

stragglng, growing irregularly and untidily

stramineous, (colour) straw-like, straw-coloured, very pale dull yellow

strap-shaped, narrow, with straight margins; = ligulate or lorate

stratified, growing in distinct horizontal layers

stria, slightly sunken stripes or lines

striate, with parallel longitudinal grooves

striation, a fine groove

strigillose, with small, sharp, straight bristles, hispidulous

strigose, with sharp stiff hairs lying ± parallel to and close to the surface. (The meaning of this term has varied over time. To Linnaeus, it meant the same as hispid; De Candolle regarded it to mean hair-like scales; but since Lindley (1832) the definition as given here is common)

strigulose, with short stiff hairs lying close to the surface

strobilarte, (of inflorescences) when resembling a cone by being covered in imbricate scales

strobiliform, cone-shaped

strobilus (plural strobili), 1. an inflorescence largely made up of overlapping scales; 2. (in pteridophytes and gymnosperms) spore-bearing spike covered in imbricate reduced leaves, the cone scales

strophiolate, with strophiöles
**strophiule**, an aril or outgrowth of the outer seed integument near the hilum, glandular or fleshy and associated with animal dispersal. (Also called a caruncle, but a strophiule is an outgrowth from the raphe whereas the caruncle is next to the micropyle; see also elaiosome)

**struma**, cushion-like swelling (mostly used in mosses)

**strumose**, covered with small swellings

**stunted**, (of habit) of less than normal stature, dwarfed, smaller than normal

**stylar**, relating to the style

**style**, the part of the gynoecium between the ovary and the stigma, often slender and sometimes lacking when the stigma sits on the ovary

**style-arms**, branches of the style

**styloid**, elongated single crystals of calcium oxalate found as inclusions of cells (e.g. in the leaves of some Rubiaceae)

**stylodium**, 1. stigma branch; 2. used by Dahlgren & Clifford for separate styles [unusual term]

**stypoideum**, (when more than one style is present) a structure just above the ovary or ovaries composed of the connate proximal parts of the styles (e.g. in Umbelliferae/Apiaceae)

**sub-**, (prefix) 1. nearly, almost; 2. below, under

**subacute**, almost acute

**subclass**, (in taxonomic hierarchy) a division of a class (family names end in –idae)

**subcordate**, slightly notched, but not as much as cordate

**subequiaxe**, polar axis of pollen ± equal to equatorial diameter

**suberose**, corky

**subfamily**, subdivision of family, placed in rank between family and tribe (subfamily names end in –ideae)

**subgenus**, subdivision of genus

**subinvolucral bracts**, (in Compositae/Asteraceae) bracts surrounding or subtending an involucre

**subligneous**, ± woody

**submerged**, under water

**subopposite**, almost, but not quite, opposite

**subquadrat**, ± square

**subradiate**, (in Compositae/Asteraceae) a heterogamous capitulum with the outer ray florets small and not exceeding the phyllaries

**subscapose**, almost scapose, with leaves in a rosette at ground level and a single flowering stalk, but not quite (e.g. with a few leaves on the stalk)

**subsessile**, nearly sessile, with a very short stalk
subshrub, small shrub with partially herbaceous stems

subsp., subspecies; the alternative contraction ssp. is not recommended

subspecies, subdivision of species, each subspecies being geographically or ecologically isolated from each other and with fewer distinguishing characters than demarcate a species; often used merely in a hierarchical sense of being between a species and a variety

subspicate, almost like a spike, but with all or some flowers with short stalks

substrate, material in which a plant is growing or to which it is attached

subtended, (usually followed by “by”) axillary to another organ below the organ under discussion

subtending, standing below and close to another organ (as a bracteole to a flower)

subterete, almost terete

subterminal, 1. just below the apex; 2. (in Rubiaceae) used more precisely to mean overtopped once or a few times by the development of new meristematic growth

subterranean, underground

subtribe, taxonomic rank below tribe and above genus (subtribes names end in –inae)

subtruncate, almost truncate

subulate, awl-shaped, like a stout needle tapering to a fine point

subumbellate, almost umbellate

succession, series of changes in plant communities (leading to a stable climax) or part of a cycle

succose, juicy, sappy [obscure term]

succulent, 1. (adjective) juicy, pulpy; 2. (noun) a plant with thick, fleshy and swollen stems and/or leaves, adapted to dry environments (e.g. Aloe, Cactaceae or Stapelia)

sucker, a shoot arising below ground from the roots some distance from the main stem

suckering, producing suckers

suffrutescent, like a subshrub, somewhat shrubby

suffrutex, 1. subshrub; 2. often, more specifically, a plant producing annual shoots from a woody subterranean base (see also pyrophyte)

suffruticose, (adject.) as a suffrutex

suffused, spread throughout with colour

sulcate, grooved, furrowed

sulcus, groove

sun leaves, those leaves adapted to intense light. Opposite: shade-leaves

super, above

superfluous, (in nomenclature) name for a taxon for which an earlier legitimate name already exists

superior, (of an ovary) 1. when the sepals, petals and stamens are inserted below the ovary; = hypogynous; 2. when the receptacle bearing the calyx, corolla and stamens is expanded into a hypanthium

superposed, (of buds, ovules or corms) borne immediately above one another on the same axis
**supervolute**
(in leaf bud folding) with one margin rolled within the other

**supinate**
leaning backwards with the face up [unusual term]

**suppressed**, 1. not clear; 2. vestigial but presumed to have been present in ancestors

**supra**
above

**supra-axillary**, growing above an axil, not in it

**suprafoliar**, above the leaves

**surculose**, producing suckers or runners from the base

**surcurrent**, extending upwards; for example, said of pinnae when the pinna base runs part way up the rachis

**suspendor**, the group of cells that pushes the embryo down into the developing endosperm

**suture**, the line of a junction or seam of union, commonly used of the line of opening of a carpel; dorsal suture (outer or anterior) thought to represent the midrib of the carpellary leaf; ventral suture (inner) thought to represent the united margins on which the ovules and placentas are borne; a completely dehiscent legume fruit has only one all-round suture, although the upper and lower margins are often referred to as the upper and lower suture

**syconium** (plural **syconia**), (in Moraceae) the compound fruit(s); for example, the hollow-centred fruits of *Ficus*

**syllepsis**, growth of a bud into lateral shoot without a resting period

**symbiont**, individual living in symbiosis with an individual of another taxon

**symbiosis**, living together of dissimilar organisms, either to mutual advantage or without advantage

**symbiotic**, relating to symbiosis

**symmetric(al)**, able to be divided into equal halves with any cut made. **OPPOSITE**: asymmetric, where every cut through the middle produces different halves

**sympatric**, (of two or more taxa) living in the same area. **OPPOSITE**: **allopatric**

**sympetalous**, (of a flower or taxon) having the petals united; = **gamopetalous**

**symphysis**, the union or connection of like parts (e.g. petals) [unusual term, more common in human anatomy]

**symplesiomorphies**, (in cladistics) shared ancestral characters

**sympodial**, of a sympodium, without a single main stem

**sympodial module**, a sympodial branching system

**sympodium**, with a discontinuous main axis, where the stem is made up of a series of superposed branches, these imitating a single main axis; with each new shoot developing from an axillary bud on the previous shoot unit; stem whose growth is continued not by the main stem but by lateral branches; sympodial inflorescences include the dichasium, rhipidium, cincinnus and false umbel

**syn.**
1. syntype; 2. synonym

**synandrium**, an androecium with the anthers cohering

**synandrodium** (plural **synandrodia**), (in Araceae) used for compressed sterile flowers [most unusual term, probably derived from synandrium]

**synangium**, 1. (in pteridophytes) compound structure with several locules, each bearing spores; 2. less often used for fused fruits in higher plants

**synanthous**, with flowers and leaves appearing simultaneously; see also **hysteranthous**

**synapomorphy**, synapomorphic, (in cladistics) with one or more shared derived character states that identify and define a monophyletic taxon
synicalthium, see synflorescence, which is preferred

carp, a multiple fruit produced by the adhesion of the fruits from several flowers (as in *Morus*)

**syncarpous**, (of a flower) with united carpels. **OPPOSITE:** apocarpous

**syncolpate**, pollen grain with anastomosing colpi, these forming spirals, rings etc.

**syndrome**, a group of features found together

**synema**, staminal tube [unusual term, not recommended]

**synflorescence** 1. (in general) a compound inflorescence, composed of a terminal inflorescence and one or more lateral ones, or a group of inflorescences in a globose or subumbellate arrangement; 2. (in Compositae/Asteraceae) a compact arrangement of capitula within a common (secondary) involucre

**synflorescence polytele**, the inflorescence system in which the inflorescence axes fail to terminate in flowers [obscure term]

**syngameon**, group of individuals able to interbreed and produce viable offspring

**syngenesious**, with anthers fused but filaments free [unusual term]

**synoecious**, with female and male flowers or organs in the same inflorescence

**synonym**, (in nomenclature) a surplus scientific name, belonging to a taxon which already has a valid name; where two or more names are applied to the same taxon they are called synonyms but only one of these can be correct — usually this is the oldest (principle of priority) but the correct name may be a conserved or non-rejected name; there are two kinds of synonyms (see homotypic and heterotypic synonym)

**syntepalum**, a tube formed by the coherence of some sepals and petals and split along one side (e.g. in Musaceae)

**synsepalum**, structure formed by two or more joined sepals

**synstapetalum**, the length of corolla tube with fused or adnate stamens [unusual term]

**syntype**, (in nomenclature) one of several collections mentioned in a protologue, where no holotype has been indicated

**synusia** (plural *synusiae*), a unit of a community composed of life-forms associated in growth or habitat (sometimes mis-spelled synusium)

**systematics**, science of classification based on natural relationships and study of the variation and evolution of taxa, a more specific term than taxonomy

**t**, (from Latin *tabula*) figure (usually full-page)

**tailed**, (of anthers) with proximal appendages

**tangential**, (in a cylinder) parallel to the main axis, at right angle to the radius. **OPPOSITE:** radial

**tannin granules**, hard dark-brown granular inclusions found in some cells

**tapering**, gradually narrowing

**tapetal**, relating to tapetum

**tapetum** 1. (in pollen) innermost layer of cells of the pollen sac wall that nourish the developing pollen grains; 2. membrane in spore-generating area of ferns

**taproot, tap-root**, the primary root, going straight down
tardily, slowly, reluctantly

tautonym, (in nomenclature) a scientific species name in which the specific epithet repeats the generic name, not allowed in botany but allowed in zoology (e.g. *Apus apus*, the swift)

tawny, (colour) dull brownish-yellow
	taxon, a general term denoting a named group of any rank (e.g. variety, species or plant kingdom)

taxonomist, a scientist practising classification

taxonomy, classification, ordering into groups according to relationships; plant taxonomy is the science whose practitioners (find), describe, classify, identify and name plants

teeth, (of dentate, serrate and crenate leaf margins) small sharp protuberances

tegmen, inner seed coat (the outer one is the testa); this term was used by Corner and has been widely taken up

tegumen, inner seed coat (the outer one is the testa)

tendril, slender coiling structure derived from branch, leaf or inflorescence and used in climbing

tenuiexinous, (of pollen) with a thin exine

tenuinucellate, (of ovules) with a thin (e.g. one-cell layer) nucellus until embryo-sac formation. OPPOSITE: crassinucellate

tenuous, thin, narrowed, weak, fine

tepal, a division of the perianth, i.e. a sepal or petal, used especially when it is unclear which is which

teratological, (of an organ) abnormal, concerning monstrosities

terate, 1. circular in cross-section (usually of a cylindrical structure lacking grooves or ridges); 2. sometimes taken to mean cylindrical and tapering gently at one end, but this is incorrect

tergminate, ‘thrice twin’, 1. with three pairs of leaflets; 2. compound leaf with three pinnae, each of these consisting of a pair of leaflets [obscure term, not recommended]

terminal, 1. at apex of part under discussion; 2. (of inflorescences) ending the axis, as opposed to axillary

ternate, 1. arranged in a whorl or cluster of three; 2. = ternate-trifoliate

ternate-pinnate, when three pinnate leaflets are borne at the summit of the main petiole

ternate-trifoliolate, with three leaflets attached to one point

ternatisect, (of a 2-dimensional structure) divided in three to the base

terracotta, (colour) brownish or dull orangish-red

terrestrial, on or in the ground

tertiary, 1. (adj.) third-order, one order down from secondary; for example, tertiary venation of a leaf or leaflet; 2. (noun) (plural tertiaries) side-branches of the main branches

tessellate(d), (of surfaces) with markings in squares or rectangles (as on the petals of *Fritillaria*)
testa, the outer coat of the seed (the inner coat is the tegumen)

testal, (adj.) of the testa

tetra-, (prefix) four-
tetrad, group of four pollen grains (formed from a single pollen mother-cell) that are released from the anther as one unit (e.g. in Drosera)

tetradynamous, with four long stamens and two short ones (as in Cruciferae/Brassicaceae)

tetragonal, with four angles in cross-section

tetragonous, four-angled

tetrahedral, shaped like an equal-sided pyramid

tetrahedriform, shaped like a tetrahedron, with four faces, each face triangular; pyramidal

tetramerous, (of a flower) with the constituent parts in whorls of four

tetrandrous, with four stamens

tetragonal, with four angles

tetraploid, with four complete sets of chromosomes

tetramerous, with four wings

tetrasporangiate, (of anthers) four-celled

textured, the way a structure feels to the touch

thalamus, 1. receptacle; 2. (in Compositae/Asteraceae) disc; 3. calyx (as in Linnaeus) [old-fashioned term]

thalloid, in the form of a thallus

thallus, vegetative structure not clearly divided into stem and leaf (as in Lemna)

theca (plural thecae), the locule(s), usually two, of an anther

therophyte, (in Raunkiaer’s system) plant with growing point surviving adverse season in the form of seeds

thigmotaxis, response to mechanical stimulus, either by movement (as in Mimosa pudica) or by growth (as in stems or tendrils of climbing plants)

thorn, 1. short pointed woody structure derived from a reduced branch; 2. often applied (wrongly) in a looser sense for any sharp structure on a branch, but see prickle, spine

throat, (of tubular flowers) part where the corolla-tube widens into the mouth, the apical part of the corolla tube immediately below the mouth

thrum-eyed flowers, (in dimorphic flowers) short-styled flower with only the stamens visible in the corolla throat. OPPOSITE: pin-eyed
thyrse, 1. a mixed inflorescence with the main axis a raceme and secondary axes in the form of cymes; 2. a compact panicle of ± cylindrical form

thysiform, shaped like a thyrse

thyrroid, like a thyrse

tiller, a sucker or branch from the base of the stem

timber, wood used in construction and carpentry

tissue, the material formed by cells of similar origin and character

tomentellous, shortly tomentose

tomentose, densely covered in short soft hairs, somewhat matted. (This term has been used (incorrectly) in various ways: sometimes it seems to stand for any kind of hairyness)

tomentulose, delicately tomentose, somewhat tomentose

tomentum, a felt-like covering of downy hairs

tooth, small pointed projection, usually triangular

topocline, a gradient in character(s) over the geographical range; a cline in respect to geographical factors

topodeme, (du Rietz) group of related individuals of a particular taxon occurring within a specific geographical area; see under deme [unusual term]

topology, (in cladistics) the layout of the cladogram

topotype, (in nomenclature) not a true nomenclatural type but a specimen collected later than the date of publication of the taxon name in question from the type locality or from the area from which the species was described

top-shaped, (3-dimensional shape) inversely conical

toroid, (2-dimensional shape) in the shape of a torus, a ring-shaped cylinder

torose, cylindrical with spaced contractions

tortuous, twisted in different directions

torulose, 1. cylindrical; 2. cylindrical and laterally compressed, with contractions or swellings at irregular intervals, nearly the same as moniliform (which is more regular). (Torulose has been used (incorrectly) for regularly spaced contractions)

torus, 1. ring-shaped cylinder; 2. the receptacle of a flower, usually used when part of the receptacle is swollen into a distinct cushion (as in many Ochnaceae)

trabeculate, having the appearance of minute girders or crossed beams [rare term]

trace, strand of vascular tissue connecting a leaf with the stem

trailer, 1. prostrate plant that does not root; 2. (less correctly) plant with long branches hanging down from trees

trailng, (habit) prostrate on the ground, but without rooting

transect, a linear plot in which vegetation is sampled

transitional forms, between one and the other, where change takes place

translator, structure in the more derived subfamilies of Apocynaceae, formed from secretions from the styrilar head, which facilitates the transport of pollen (as tetrads or pollinia). In Asclepiadoideae and Secamonoideae, the two or more pollinia are physically linked by the translator; in Periploceidae, pollen or pollinia are deposited onto the translator
**translucent**, letting some light through, not quite transparent

**transversally**, see **transversely**, which is the preferred spelling

**transverse**, 1. at right angles to another organ; 2. used for anther opening when the slits are at right angles to the anthers’ long axis; = **explanate**; 3. (of sections) at right angles to their length

**traverse section**

**transversely**, lying crosswise, at right angles

**trapeziform**, (of a plane shape) with four sides, two of which are parallel

**tree**, perennial woody plant with secondary thickening, with a clear main trunk. (The distinction between tree and shrub is fluid, but generally accepted to be dependent on the single trunk, and on height, a tree being at least 2–3 m tall)

**tree layer**, upper layer of vegetation in forest or woodland; = **canopy**

**triad**, 1. (in Gramineae/Poaceae) used for groups of three spikelets in *Zonotrichie*; 2. (in palms) a group of three florets, the central female, the flanking ones male; 3. (in Amaranthaceae) a cluster of three flowers, a fertile one flanked by two sterile ones

**triandrous**, with three stamens

**triaperturate**, (of pollen) with three openings

**tribe**, taxon ranking above genus and below family

**tricarinate**, with three keels

**trichome**, hair, bristle, prickle or scale; an epidermal outgrowth of diverse form, structure and function but without vascular tissue

**trichosclereids**, type of branched sclereid, with hair-like branches extending into intercellular spaces

**trichotomocolpate**, (of pollen) a 3-slit aperture

**trichotomous**, 3-forked, branched into three

**tricolporate**, (of pollen) with three compound apertures with pores in furrows

**tricuspidate**, with three short sharp points

**tricussate**, with leaves in whorls of three, each one alternating with the ones at the node above and below

**tridentate**, 3-toothed

**trifid**, split in three

**trifoliate**, with three leaves; often used incorrectly for the next entry

**trifoliolate**, with three leaflets

**trifurcate**, split into three equal branches

**trigamous**, with female, male and bisexual flowers on the same plant or in the same head [unusual term]

**trigger hairs**, sensitive hairs which, when touched, set off a mechanical reaction

**trigonous**, obtusely 3-angled

**trijugate**, 1. in a compound leaf: with three pairs of leaflets; 2. sometimes used (incorrectly) for ‘compound with three orders of leaflets, each order bifoliolate’

**trilete**, (of spore wall) with a 3-radiate scar

**trilobate**, with three lobes
trilocular, of a gynoecium, with three chambers or locules

trimerous, in threes (e.g. describing a flower with three sepals and three petals etc.)

trimonoecious, with female, male, and bisexual flowers on the same plant

trioecious, with male, female and bisexual flowers on different plants

tripartite, 1. divided into three parts; 2. consisting of three parts

triphyllous, with three leaves

tripinnate, compound three times, the pinnae pinnate and the pinnules pinnate

tripinnatifid, three times divided, the pinnae pinnate, the pinules lobed with the lobes shallow

tripinnatipartite, three times divided, the pinnae pinnate, the pinnules lobed with the lobes moderately deep

tripinnatisect, three times divided, the pinnae pinnate, the pinnules lobed with the lobes deep

triplicate, in three

triploid, with three sets of chromosomes in each cell, 3n

tripterous, 3-winged

triquetrous, with three sharp angles

triradiate, with three arms

tristichous, arranged one above the other in three vertical rows

tristylos, with flowers on different plants having three style lengths

trizono colpate, (of pollen grains) having three colpi (groove-like apertures) aligned longitudinally, equidistant around the equator

trochlea, ring-shaped structures on the androgynophore of Passifloraceae [specialist term]

tropism, bending in reaction to some stimulus (e.g. growing towards the light is phototropism)

tropophyte, xerophytic during part of the year but meso- or hygro-phytic during the growing season; a plant adapted to conditions in which droughts alternate with wet periods

trullate, trulliform, shaped like a brick-layers’ trowel

truncate, ending abruptly in a more or less straight line, as if cut off

trunk, the main axis of a tree from the roots to where the crown branches: the base, plus the bole, plus the axis of the crown
truss, group of flowers or fruits growing on a single stalk [horticultural term]

tryma, a simple anthocarpous fruit that is dispersed by movement or splitting of the calyx, hypanthium or involucre (Stuppy, pers. comm.)

t.s., abbreviation for transverse section (straight across)

T-shaped hair, hair with a base stalk attached to an upper part, which is held at right angles to the base stalk and ± parallel to the surface from which the base stalk sprouts

Tuft domatia, (of domatia) resembling tufts of hairs (as in some Rubiaceae)

tufted, growing in tight groups; for example, the bases of the individual plants touching; = caespitose, clumped or tussocky

tufted grasses, grasses growing in compact clumps

tumble-weed, whole plant that breaks off from its roots and is blown about by the wind, thereby scattering or distributing its seeds

tumescent, slightly swollen, swelling

tumid, inflated, swollen

tundrA, flat or nearly flat area without trees in the subarctic regions

tunic, 1. coat of a bulb, consisting of dead leaf bases and axillary buds; 2. a swollen root or branch of a root acting as a reserve store of nourishment or water (root-tuber)

tunicate, with sheathing, concentric layers

tunicated bulb, a bulb covered with concentric enveloping coats (as in an onion)

turbinate, top-shaped, obconical and narrowed towards the point

turgescent, becoming turgid or inflated

turgid, slightly swollen

turion, 1. detachable vegetative buds; 2. a scaly sucker or shoot from the ground (as in Asparagus); 3. resting bud, bud resting during adverse season

tussock, compact clump of grasses or grass-like plants

tussock grass, grass growing in compact clumps

twig, 1. a small branch or shoot; 2. more precisely, the current year’s shoot

twiner, (of a climber) supporting itself by the main or lateral stems coiling around a structure or another plant

two hairs, eglandular hairs found on achenes of Compositae/Asteraceae, each hair composed of two parallel cells, also called duplex hairs or Zwillingshaare in German

twining, (of a plant or organ) coiling around a structure or another plant

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**Type**, (in plant taxonomy) an anchor to the identity of a name: 1. an element, usually a herbarium specimen, on which a species name is based; 2. species on which a genus name is based; 3. genus on which a family name is based.

**Type locality**, (of a taxon name) the locality from which the type specimen was gathered.

**Type species**, the type of a genus.

**Type specimen**, see type.

**Typification**, assigning a type to a new taxon.

**Typotype**, a specimen upon which an illustration was established; an informal but useful term coined by Stearn (1973) (Linnaeus based quite a few of his descriptions of species on the only material that he had seen of such species: an illustration published elsewhere).

**Ubiquitous**, where?; used when present whereabouts of a specimen are unknown.

**Umbel**, a (racemose or indefinite) inflorescence with branches arising from more or less the same point on a common peduncle. (In a simple umbel, each ray terminates in a flower; in a compound umbel, each ray itself bears an umbel, the latter being called a partial umbel).

**Umbellate**, with umbels.

**Umbellet**, a secondary (ultimate) umbel within a compound umbel.

**Umbelliferous**, bearing umbels.

**Umbelliform**, in the shape of an umbel.

**Umbellule**, diminutive of umbel.

**Umbilicate**, navel-like, with a small central hollow or depression.

**Umbo**, a small blunt protuberance (e.g. in the centre of a cone scale).

**Umbonate**, ± round and bearing a small boss or elevation in the centre; see umbo for illustration.

**Umbonulate**, with, or ending in, a very small boss or elevation [unusual term].

**Umbraculate, umbraculiform**, anything that provides shade, like an umbrella or a tree canopy.

**Unarmed**, without spines or prickles.

**Uncinate**, hooked at the apex or tip.

**Uncinulate**, with minute, strongly hooked hairs.

**Understorey**, sub-canopy layer(s) of vegetation in forest or woodland; usually denoting shrub and small tree layer.

**Undulate**, (of a margin) wavy.

**Unguiculate**, (of a sepal or petal) clawed, narrowed into a petiole-like base.

**Uni-**, (prefix) “with a single ...”; for example, unibracteolate means with a single bracteole.

**Unicellular**, with a single cell (e.g. of hairs). Opposite: multicellular.

**Unicostate**, with a single main rib or vein, no other veins visible.
unifacial, (of leaf) 1. oriented edgewise to the stem; 2. with upper edge derived from upper surface, the other parts (most of the upper and all the lower surface) derived from the morphological underside of the leaf

uniflorous, with a single flower

unifoliate, 1. with a single leaf; 2. sometimes used (wrongly) to stand for unifoliolate [see below]

unifoliolate, a compound leaf reduced to a single leaflet, as adduced by the lamina being articulated with the petiole or by the existence of a pulvinus at the apex and/or base of the petiole

uniform, of one shape or form, all ± similar

unijugate, (of a compound leaf) with a single pair of leaflets

unilateral, one-sided: all the organs developed on one side or all the organs turned to one side (see also secund)

unilocular, with a single locule or cavity

uninodal, of one node

uniovulate, (of carpels or ovaries) with a single ovule

uniparous, (in branching) with only a single axis produced at each branching point (as in some cymes: can result in a zig-zag cyme or in a scorpoid one)

uniseriate, in a single whorl or series

uniseptate, with a single partition

unisexual, (of flowers) having only male parts or only female parts

unitegmic, with a single covering to the ovules. OPPOSITE: bitegmic

unithecate, (of anther) with a single anther cell; = unithecous or monothecous; OPPOSITES: bithecate or dithecous

unithecous, with a single anther cell; = monothecous

unpublished, (in nomenclature) usually refers to a name that occurs only on a herbarium sheet or in an unpublished manuscript, and therefore invalid

urceolate, urn-shaped, with a swollen tube contracted near the top and then slightly expanded in a narrow rim

urceolus, resembling a small urn or pitcher

urticant, see urticating, which is preferred

urticating, with stinging hairs (like an Urtica)

utricular, bladder-shaped (e.g. of fruit)

utriculate, 1. having bladders; 2. bladder-like

utriculiform, shaped like a small cavity or sac, like the rootlet traps in Utricularia [unusual term]
vaginate, sheathed

validly published, (in nomenclature) published according to the I.C.B.N., Articles 32–45

valleculae, the grooves between the ribs of Umbelliferae/Apiaceae fruits, where the vittae are often to be found

vallecular canal, a resin canal opposite a longitudinal sulcus in the achenes of Compositae/Asteraceae

valleculate, with grooves

valvate, (of sepals or petals in bud) meeting exactly at the margins without overlapping

valve, one of the parts produced by the splitting of a capsule or pod when ripe

valvular, relating to valves [unusual term]

valvule, (in grasses) the upper bract in each grass floret; = palea (which is preferred)

var., (abbreviation) see variety

variable, not constant in appearance

variant, term used for one aspect of the variation of a taxon which lacks a formal nomenclatural status

variation, minor difference

variegated, (of leaves) irregularly coloured with two or more colours

variety, (from the Latin varietas) infraspecific taxon below the rank of subspecies and above that of form with one or several distinguishing characters, not geographically disjunct from other conspecific taxa (see also subspecies)

varnished, (of surface) shiny

vascular, referring to the xylem or phloem or both

vascular bundle, a strand of specialised tissue that conducts water or nutrients within the plant

vascular cylinder, the central ‘cord’ of vascular tissue

vascular plants, those plants which possess vessels, i.e. Spermatophytes and Pteridophytes

vascular system, the network of specialised cells that conduct through the body of a plant both water (in xylem tissue) and assimilated products (in phloem tissue)

vascular tissue, tissue consisting mostly of strands or vessels, as opposed to cellular tissue

vector, animal serving as a means of delivery of pollen or disease organisms

vegetative, 1. non-sexual; 2. associated with root, stem and leaf

vegetative apomixis, form of apomixis in which plants reproduce vegetatively through bulbils, stolons, runners etc.

vegetative propagation, asexual reproduction, reproduction not through seed and fruit but by bulbils, runners, plantlets, stolons etc.

vein, strand of vascular tissue in a flat organ, often visible on the surface

veinlet, small vein

vein reticulum, the net-like pattern formed by veins

velamen, (of roots of some epiphytes) the one or more layers of spongy cells on the outside

velar, (of caruncle) shaped like a hanging curtain [rare term]

velum, (in Isoetes) the membrane covering the sporangium

velutinous, velvety, with very short dense indumenta, soft to the touch

velvety, (of indumentum) resembling velvet, i.e. with a soft, close-cut pile

venation, the arrangement of the veins of a leaf (for ease of reference divided into primary (midrib/main vein), secondary veins and tertiary venation)

venose, with veins

venous, like a vein

venulse, with small veins
vent, slit in side of a corolla-tube that is not continued to the apex (e.g. in Loranthaceae)

ventral, synonymous with the abaxial or lower surface: abaxial is technically more precise, whereas lower surface is easier to understand

ventricose, 1. fat, swollen; 2. swollen or bulging unequally on one side (usually near the middle)

venule, small vein

vergens (ad), similar to, quite close to

vermiform, shaped like a worm: cylindrical and rather thick, bent in different places

vermilion, scarlet, brilliant red approaching orange

vernacular name, name of a plant in any language, locally used name as opposed to scientific name

vernation, folding of leaves in bud (aestivation is similar but for sepals and petals); = ptyxis

vernicifluous, causing a varnish-like sap to flow [obscure term]

vernicose, with a very shiny surface, as if varnished

verruca, wart, small conical bump

verrucate, verrucose, warty, with little excrescences or bumps (verrucose is preferred)

verrucula, small wart

verruculose, warty with very small bumps

versatile, (of anthers) as if hinged on the filament; sometimes, but not always, the same as medifixed; sometimes said of orchid lips (as in Bulbophyllum)

verticil, a whorl or arrangement of more than two similar parts in a circle at the same level; often used of structures that are not usually whorled

verticillaster, (of an inflorescence) a false whorl, consisting of two opposite cymes (as in Labiatae/Lamiaceae)

verticillate, (of leaves) in a whorl, i.e. several arising at the same node, arranged regularly around the stem; see verticil for illustration

vesicant, causing blisters

vesicle, small bladder or cavity

vesicular, 1. covered with little blisters (most widely used in this sense); 2. bladder-like

vespertine, functioning in the evening (e.g. flower opening)

vessels, water-conducting cells of the xylem

vestibulum, (in pollen) cavity inside a porus

vestigial, as a remnant, a very small version of an organ or organ part, appearing not to serve its original function

vestite, clothed or covered

vestiture, anything on or arising from a surface that makes it non-glabrous: hairs, scales, papillae, glands etc.
**vexillary stamen**, upper stamen in diadelphous papilionaceous flower (formula usually 9+1 stamens), which is free or partially attached

**vexillum**, the uppermost or posterior petal of a papilionaceous flower; = standard (which is preferred) or banner

**viable**, (of seed) capable of germination

**vicariant**, taxa descended from a common ancestor but now occurring in disjunct parts of the world, often occupying the same niche

**vicariant event**, mode of speciation in which a barrier, such as water or mountains, divides members of a species, the vicariants then evolve separately

**vide**, see, refer to

**vigorous**, strong

**villose, villous**, with long soft weak hairs (villose is preferable but seems to be used only rarely)

**villus, 1.** small projection; 2. (more specifically) long soft unmatted hair

**vimineous**, with or resembling long flexible shoots [unusual term]

**vinaceous**, (colour) purplish red

**vine**, climbing herbaceous or woody plant with small stem diameter; = climber, which is preferred

**violet**, (colour) bluish purple

**virescent**, becoming green

**virgate, 1.** long, slender and stiff, branched; 2. twiggy

**viscarium**, (in orchids) sac of glue, part of the rostellum in the dendrobiums, that fixes pollinia to a vector

**viscid**, sticky

**viscidium** (plural **viscidia**), (of orchid flowers) the gland to which the pollinia are attached

**viscin threads**, the sticky substance forming threads that unite some pollen grains, associated with pollination by butterflies and moths

**viscous**, glutinous, very sticky

**vitta** (plural **vittae**), aromatic oil tubes in the fruit of some Amaranthaceae and Umbelliferae/Apiceae

**vittate**, equipped with vittae (in Amaranthaceae) [unusual term]

**viviparous**, bearing living young; for example, when the seeds germinate on the parent plant or where plantlets are produced from the edges of leaves

**viz.,** from the Latin *videlicet*, meaning 'namely'

**volatile**, (of secreted oils) quickly evaporating, disappearing

**volute**, rolled up (involute, rolled inwards; revolute, rolled outwards)

**voucher**, (herbarium) specimen kept as a reference for a plant which has been used for other purposes (e.g. DNA study, seed trials or medicinal work)

**vulnerable**, (in conservation or Red Data lists) threatened in its survival; for precise definition, see I.U.C.N. definitions

**vulviform**, like a cleft with projecting edges [rare term]
wart-like, shaped like a small irregular dome

wax, a fatty product on leaves, fruit or stem

weed, weedy, plant thriving in disturbed habitat and disliked by speaker/writer; a plant perceived to be in the wrong place

whippy, long, thin and bendy

whorl, a set of similar organs arranged in a circle around a central axis; = verticil

whorled, arranged in a circle around a central axis (e.g. leaves around a stem)

wild, spontaneous, not cultivated or introduced

wilt, become limp

wind-pollinated, pollen distributed by air (as opposed to insect-pollinated, water-pollinated etc.)

wing, 1. lateral petal of a papilionoid flower; 2. a flattened extension to any organ, e.g. leaf rachis or fruit margin

winged, (of a 3-dimensional body) with flattened to blade-like ridges on either side

winter bud, hibernating incipient shoot that is protected by scales

withered, (of non-woody plant parts) dried out

withering, diminishing in volume and becoming brown and wrinkled while dying

woody, made of wood or wood-like tissue

woolly, with dense matted long curled hairs; = lanate

X

x, placed after a genus name and before a specific epithet to indicate hybrid origin

xeric, of dry areas

xenogamy, where flowers are pollinated with pollen from another plant (within the same species)

xeromorphic, with adaptations for low water availability

xerophile, xerophyte, plant adapted to growing and reproducing in areas with low water availability

xerophilous, xerophytic, adapted to growing and reproducing in areas with low water availability

xylar, relating to the xylem, the wood elements of the vascular bundle

xylem, the woody element of the vascular bundle, its basic function is to transport water and some nutrients through the plant

xylocarp, hard woody fruit; fruit enclosed in hard woody capsule

xylopodium, hard, woody tuberous thickening of the root
zig-zag, with short bends from side to side

zonation, the sequence of vegetation types in three dimensions (not in time); for example, bands of vegetation at different altitudes of a mountain in response to differences in temperature and rainfall, or in a mangrove forest owing to various salinity levels

zonoaperturate, (in pollen) grain with apertures in equatorial zone: may be zonocolpate, zonocolporate, zono- (or zona-)sulcate or zonoporate

zoochory, distribution by animal vector, either external on the coat or legs (ectozoochory) or internal, through the gut (endozoochory)

zoophilous, adapted for pollination by animals

zygomorphic, with bilateral symmetry, i.e. either side of an (imaginary) central line being a mirror image of the other

zygomorphous, with bilateral symmetry, i.e. either side of an (imaginary) central line being a mirror image of the other; = zygomorphic, which is preferred.
Plate 1. Three-dimensional shapes
Plate 2. Two-dimensional shapes
Plate 3. Two-dimensional shapes: base and apex

- acute
- attenuate
- acuminate
- caudate
- cuspidate
- mucronate
- apiculate
- rounded
- obtuse
- truncate
- retuse
- emarginate
- incised
- bilobed
- bifid
- praemorse
- cuneate
- attenuate
- obtuse
- rounded
- subcordate
- cordate
- truncate
- hastate
- sagittate
- cuneate
- asymmetrical
- oblique
Plate 4. Two-dimensional shapes: margins
Plate 5. Division and branching
Plate 6. Division and branching
Plate 7. Arrangement and direction

- Alternate
- Alternate and distichous
- Opposite and distichous
- Alternate and spirally arranged: sinistrose (left)
- Alternate and spirally arranged: dextrorse (right)
- Opposite and decussate
- Fascicled
- Equitant
- Secund
- Whorled
Plate 8. Arrangement and direction: folding and overlapping
Plate 9. Arrangement and direction: position and shape
Plate 10. Surfaces

glandular  punctate  bullate  verrucose
vesicular  foveate  foveolate  colliculate
areolate  striate  aciculate  echinate

terete  corrugated  furrowed/grooved/sulcate  winged  angular  canalicate
Plate 11. Surfaces: indument

1. arachnoid
2. hirsute
3. hispid
4. lanate
5. pilose
6. puberulous
7. puberulent
8. pubescent
9. scabrid
10. sericeous
11. strigose
12. tomentose
13. villous/villose
14. floccose
Plate 12. Surfaces: hairs and scales
Plate 13. Stems and roots
Plate 14. Stems and roots: stem position, direction, buds and growth
Plate 15. Stems and roots: shoots, outgrowths
Plate 16. Leaves
Plate 17. Leaves: venation

- parallel-veined
- pinnately veined/penninerved
- anastomosing
- anastomosing and reticulate
- 3-veined from base
- palmately veined
- flabellate
- pedate
- palmate
- rectipinnate
- compound rectipinnate
- paxillate
- craspedodromous
- acrodromous/campylosteliate/parallelodromous
- brochidodromous
- camptodromous
- cladodromous
- catadromous
- anadromous
Plate 18. Inflorescences
Plate 19. Inflorescences

Key:
- female flower
- male flower
- bisexual flower

Plant monoecious and flowers bisexual
Plant monoecious and flowers male or female

Plant dioecious
Flowers either male or female

Plant polygamo-dioecious
Flowers bisexual or male or female

Plant gynodioecious

Plant androdioecious

Plant andromonoecious

Plant gynomonoecious
Plate 20. Flowers
Plate 21. Flowers
Plate 22. Flowers: placentation, ovule direction
Plate 23. Fruits and seeds
Plate 24. Fruits and seeds
Plate 25. Specialised terms for selected groups: ferns
Plate 26. Specialised terms for selected groups: Compositae/Asteraceae
Plate 27. Specialised terms for selected groups: grasses, sedges

Plate 28. The Raunkiaer system
**COLOUR TERMS**

Note: colours are notoriously difficult to describe, as they form a continuum and there are innumerable shades. This means that there is a lot of confusion and misinterpretation. The following chart has been included to help with some of the more common colour terms. If you have access to the web, try http://en.wikipedia.org/wiki/List_of_colors

The chart colours have been chosen based on a variety of sources: the Royal Horticultural Society colour chart; Kornerup & Wanscher’s (1967) *Methuen Handbook of Colour*; the Wikipedia list of colours cited above; and the advice of Lucy Smith, Laura Pearce and Nicholas Hind. It was interesting to see that while some colours are well-defined, others are not: fawn, russet and sepia interpretations varied between charts, books and people.

caesious, variously defined as pale blue-grey or pale blue-green; castaneous, chestnut-coloured: a dark glossy brown/reddish brown; ceraceous, very pale whitish cream; cinerous, see cinereous, which is preferred; dusky, dark-coloured; ferrugineous, rust-coloured, ferruginous is preferred; iridescent, many-coloured with rainbow sheen; nacreous, with a pearly sheen; ochraceous, see ochreous; olivaceous, olive-green, which is the preferred term; rose, vague term which can mean pink or light crimson; rufous, reddish (various shades)

<table>
<thead>
<tr>
<th>Colour</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>amber</td>
<td>brownish yellow</td>
</tr>
<tr>
<td>apricot</td>
<td>orange-pink</td>
</tr>
<tr>
<td>aquamarine</td>
<td>pale blue</td>
</tr>
<tr>
<td>ashen</td>
<td>pale grey</td>
</tr>
<tr>
<td>azure</td>
<td>blue</td>
</tr>
<tr>
<td>beige</td>
<td>very pale creamy brown</td>
</tr>
<tr>
<td>buff</td>
<td>dull yellow-brown</td>
</tr>
<tr>
<td>burgundy</td>
<td>dark red</td>
</tr>
<tr>
<td>carmine</td>
<td>a dark dull red</td>
</tr>
<tr>
<td>cerise</td>
<td>light, bright clear red</td>
</tr>
<tr>
<td>cerulean</td>
<td>blue</td>
</tr>
<tr>
<td>chestnut</td>
<td>reddish brown</td>
</tr>
<tr>
<td>china blue</td>
<td>pale blue</td>
</tr>
<tr>
<td>cinereous</td>
<td>ash-coloured, pale grey</td>
</tr>
<tr>
<td>cinnabar</td>
<td>vermilion, blood-red</td>
</tr>
<tr>
<td>cinnamon</td>
<td>yellowish brown</td>
</tr>
<tr>
<td>citrine</td>
<td>dull greenish yellow</td>
</tr>
<tr>
<td>claret</td>
<td>deep purple red</td>
</tr>
<tr>
<td>cobalt</td>
<td>deep blue</td>
</tr>
<tr>
<td>coppery</td>
<td>shiny brownish red</td>
</tr>
<tr>
<td>coral</td>
<td>light pink</td>
</tr>
<tr>
<td>cornflower</td>
<td>deep blue</td>
</tr>
<tr>
<td>cream</td>
<td>white with a faint tinge of yellow</td>
</tr>
<tr>
<td>crimson</td>
<td>deep red with a slight tinge of purple</td>
</tr>
<tr>
<td>COLOUR TERMS</td>
<td>Colour Swatch</td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td><strong>emerald</strong>, light bright green</td>
<td><img src="#" alt="Green" /></td>
</tr>
<tr>
<td><strong>fawn</strong>, light yellowish brown</td>
<td><img src="#" alt="Brown" /></td>
</tr>
<tr>
<td><strong>ferruginous</strong>, rust-coloured</td>
<td><img src="#" alt="Reddish Brown" /></td>
</tr>
<tr>
<td><strong>fulvous</strong>, yellow, tawny</td>
<td><img src="#" alt="Yellow" /></td>
</tr>
<tr>
<td><strong>fuscous</strong>, dark greyish brown</td>
<td><img src="#" alt="Brown" /></td>
</tr>
<tr>
<td><strong>heliotrope</strong>, light purple</td>
<td><img src="#" alt="Purple" /></td>
</tr>
<tr>
<td><strong>indigo</strong>, deep blackish blue</td>
<td><img src="#" alt="Blue" /></td>
</tr>
<tr>
<td><strong>ivory</strong>, off-white with a hint of yellow</td>
<td><img src="#" alt="White" /></td>
</tr>
<tr>
<td><strong>khaki</strong>, dull brownish yellow</td>
<td><img src="#" alt="Yellow" /></td>
</tr>
<tr>
<td><strong>lavender</strong>, pale blue-purple</td>
<td><img src="#" alt="Purple" /></td>
</tr>
<tr>
<td><strong>lemon</strong>, bright yellow with a hint of green</td>
<td><img src="#" alt="Yellow" /></td>
</tr>
<tr>
<td><strong>lilac</strong>, pale purple</td>
<td><img src="#" alt="Purple" /></td>
</tr>
<tr>
<td><strong>magenta</strong>, dark purplish red</td>
<td><img src="#" alt="Red" /></td>
</tr>
<tr>
<td><strong>maroon</strong>, dark red</td>
<td><img src="#" alt="Red" /></td>
</tr>
<tr>
<td><strong>mauve</strong>, pale purple</td>
<td><img src="#" alt="Purple" /></td>
</tr>
<tr>
<td><strong>ochre(ous)</strong>, light brownish yellow</td>
<td><img src="#" alt="Yellow" /></td>
</tr>
<tr>
<td><strong>olive</strong>, dark yellow-green</td>
<td><img src="#" alt="Green" /></td>
</tr>
<tr>
<td><strong>peach</strong>, pinkish orange</td>
<td><img src="#" alt="Orange" /></td>
</tr>
<tr>
<td><strong>periwinkle</strong>, very pale blue</td>
<td><img src="#" alt="Blue" /></td>
</tr>
<tr>
<td><strong>pink</strong>, pale light red (slightly vague)</td>
<td><img src="#" alt="Pink" /></td>
</tr>
<tr>
<td><strong>primrose</strong>, strong pale yellow</td>
<td><img src="#" alt="Yellow" /></td>
</tr>
<tr>
<td><strong>purple</strong></td>
<td><img src="#" alt="Purple" /></td>
</tr>
<tr>
<td><strong>russet</strong>, reddish brown</td>
<td><img src="#" alt="Brown" /></td>
</tr>
<tr>
<td><strong>saffron</strong>, yellow-orange</td>
<td><img src="#" alt="Orange" /></td>
</tr>
<tr>
<td><strong>sage</strong>, grey-green, as in the leaves of <em>Salvia officinalis</em> (sage)</td>
<td><img src="#" alt="Green" /></td>
</tr>
<tr>
<td><strong>scarlet</strong>, vivid red with a touch of yellow</td>
<td><img src="#" alt="Red" /></td>
</tr>
<tr>
<td><strong>sepia</strong>, dark brown</td>
<td><img src="#" alt="Brown" /></td>
</tr>
<tr>
<td><strong>slate blue</strong>, blue-grey</td>
<td><img src="#" alt="Blue" /></td>
</tr>
<tr>
<td><strong>stramineous</strong>, straw-coloured, very pale dull yellow</td>
<td><img src="#" alt="Yellow" /></td>
</tr>
<tr>
<td><strong>tawny</strong>, dull brownish yellow</td>
<td><img src="#" alt="Brown" /></td>
</tr>
<tr>
<td><strong>terracotta</strong>, brownish or dull orangish red</td>
<td><img src="#" alt="Red" /></td>
</tr>
<tr>
<td><strong>ultramarine</strong>, dark blue</td>
<td><img src="#" alt="Blue" /></td>
</tr>
<tr>
<td><strong>vermilion</strong>, orange-red</td>
<td><img src="#" alt="Red" /></td>
</tr>
<tr>
<td><strong>vinaceous</strong>, purplish red</td>
<td><img src="#" alt="Purple" /></td>
</tr>
<tr>
<td><strong>violet</strong>, bluish purple</td>
<td><img src="#" alt="Purple" /></td>
</tr>
</tbody>
</table>