Glossary of terms used in mycology

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The aim of this document is to collect together, in one place, a range of terms that are potentially going to be encountered at some point when working through books, keys and research articles.

Many of these terms are going to be familiar to the seasoned mycologist but could potentially be off-putting to a newcomer to the field. I have also included abbreviations as these can be both hard to decipher and vital to understanding the piece being read.

For me one of the most frustrating elements of using a glossary was to look up a definition of a word only to discover that the answer included several more words that I didn't understand. To which end I have endeavoured to simplify the language used and have placed in brackets the meaning of any possibly complex words that are essential to the definition.

This is a work in progress and is almost certainly going to be lacking the very term you are trying to look up, to which end I would be grateful for any additions, suggestions or amendments that the reader feels need to be made. Contact me via email at sharedmeanings@outlook.com

The information contained within this glossary has been gleaned and adapted from a wide range of sources. Regional variations have been included due to the geographical range covered by many of the books and research articles in common usage.

In common with many fields of study, Mycology is evolving at a rapid pace and with that development of our understanding of the world of fungi comes an equally evolving vocabulary. For various reasons we can easily find ourselves dipping into some of the less up to date books thereby encountering terms which are not part of our current mycological vocabulary, for this reason I have included some of the less frequently used and even obsolete terms.

This is quite a long document laid out in alphabetic order. To make searching for a term easier in the main glossary the start of each letter section can be found quickly by doing a search for the capital letter with three dots after it e.g. searching for P… will take you directly to the section containing those words starting with P.

The primary purpose of this document is to enable the user to look up a term that they have encountered and want to find out what it means and this is covered in Part one: Main glossary.

There are occasions though when it would be useful to be able to look up a particular term to use to support a description that you wish to share with others, to which end in Part two I have placed sections containing terms that are all in the main glossary, but grouped together relating to a particular aspect of fungi identification and description.

Many aspects of fungi identification require the use of a microscope and this brings with it a whole range of additional terminology. I have therefore also included terms relating to the type of microscopy used in fungi ID.

Contents

Part one

Main Glossary

Term	Meaning
±	More or less
A...	
Abaxial	Of or relating to the side or surface facing away from the axis of an organ, such as the lower surface of a leaf, or the surface of a spore facing away from the basidium (spore-producing cell of a basidiomycete)
Abbe condenser	A microscope condenser is a lens located below the stage and is usually movable up and down. It has an iris type aperture to control the diameter of the beam of light entering the lens system. By changing the size of the iris and moving the condenser lens toward or away from the stage, the diameter and focal point of the cone of light that goes through the specimen can be controlled allowing the light to be concentrated on the subject, particularly useful for high powered objectives which require concentrated light
Abhymenial	The sterile upper surface of an effused-reflexed or pileate (cap shaped) crust, opposite to the spore producing surface
Abjection	The separation of a spore from the fruitbody or basidia by the action of the fungi
Abjunction	The cutting off of a spore by a septa
Abscission	Separation, as of conidia (an asexually formed fungal spore) from a conidiophore (hypha upon which conidia develop)
Abscission zone	A specialised layer of tissue formed that allows the organ to be shed by abscission when it is ripe
Absorb	To obtain food by taking up water and dissolved substances across a membrane; this is how fungi operate. This is also called osmotrophic nutrition. cf. ingest
Acantha	A sharp pointed process; a spine
Acanthocyte	A spiny cell produced on a short branch from the vegetative mycelium of *Stropharia* species
Acanthohyphidia	Modified terminal hyphae in the hymenium (fertile surface) that are cylindrical to clavate (club shaped) with spiny outgrowths giving a bottle-brush appearance
Acanthocystidia	Cystidia with short apical branches giving an antler-like appearance, covered with apical protuberances.
Accrescent	Increasing in size with age
Accumbent	Lying or leaning against something
-aceae	The suffix added to the stem of a generic name to form the name of a family
Acerose	Long, straight and pointed at both ends
Acervular conidioma	A flat, covered, spore-producing structure developed by Coelomycetes; often under the cuticle or dermis of plant tissue. the covering is of host material, and splits open

	when the spores are mature
Acervuli	Plural of acervulus
Acervulus	A flat, covered, asexual spore-producing structure developed by Coelomycetes; often subcuticular or subepidermal in plant tissue, the covering is of host material, and splits open at spore maturity
Acetocarmine	A stain used in microscopy to show up spore walls and basidia, consisting of carmine dissolved in acetic acid
Achromatic Lens	When light goes through a lens, it is bent or refracted. Some colours refract more than others and as a result, will focus at different points, reducing resolution. This is a lens that is designed to limit the effects of chromatic and spherical aberration. Achromatic lenses are corrected to bring two wavelengths, typically red and blue, into focus on the same plane. The most common type is composed of two individual lenses made from glasses with different amounts of dispersion. The lens elements are mounted next to each other, often cemented together, and shaped so that the chromatic aberration of one is counterbalanced by that of the other
Acicular	Shaped like a needle
Achlorophyllous	Lacking chlorophyll
Acrasieae	Class containing a single order, Acrasiales, and about a dozen species. The vegetative phase of these slime moulds consists of myxamoebas (amoeba-like cells) that group together ultimately to form a fruiting (reproductive) structure
Acrid	With a peppery, burning taste
Acropetal	A pattern of apical growth produced in succession towards the apex. Chains of conidia (an asexually formed fungal spore) in which the youngest conidium is at the tip of the chain
Acrophysalidic	Consisting of connective hyphae and abundant, large terminal inflated elements
Acropleurogenous	Conidia (an asexually formed fungal spore) developing at the tip and along the sides of the conidiophore (specialized hypha upon which conidia develop)
Actino-	A prefix that indicates a radial form
Active transport	The pumping of a substance across a cellular membrane from a point of lower concentration to one of higher concentration; requires energy
Aculeate	Having narrow spines; such as the spores of *Laccaria* which are round and have narrow spines on the outer wall
Aculei	Small pointed spines
Acuminate	Tapering off to a point
Acute	Tapering to a sharp point, converging edges making an angle of less than 90°
Acutocystidia	Cystidia with a pointed apex
Acyanophilous	A chemical reaction where there is no distinct darkening of cell walls in cotton blue
Adaxial	Of or relating to the side or surface facing towards or nearest to the axis of an organ,

	such as the upper surface of a leaf
Adder-patterned	An irregular zig-zag pattern on the stipe (stem) of a fungus caused by the tearing of the veil or other outer layer of tissue during growth
Adherent	Volva closely attached to the stipe base
Alternate host	The second host of those rusts that are heteroecious (spending different stages of the life cycle on different, usually unrelated hosts). The alternate host is the one which does not bear the sexual state of the rust
Anamorph	Non fertile or immature stage of a fungus
Ad-	A prefix meaning near or towards. Also meaning added to
Adnate	Gills or tubes, attached to the stipe over all or most of their total depth
Adnate	Attached to the substrate, relating to the fruitbody of resupinates (a fungus that lies flat on the substrate with its hymenium outermost and its sterile surface facing the substrate)
Adnate-emarginate	Gill attachment which has a more tenuous attachment than sinuate, but is still not free
Adnexed	Gills or tubes, tapering in depth toward stipe so that the attachment is narrow
Adpressed	Pressed closely to the surface
Adventitious	Unexpected, by chance, random. A structure produced in an abnormal position
Adventive	Introduced accidentally
Aecia	Cup-like pustule structures of some rust fungi that contains chains of aeciospores
Aecidium	The cupulate (cup-like) fruiting body borne upon the mycelium of certain fungi commonly parasitic upon plants of the Compositae, Lamiaceae, Leguminosae, and Ranunculaceae families
Aecio-	Prefix meaning cup
Aeciospores	The dikaryotic (two nuclei, one from each parent) `transfer' spores of Uredinales (Rust fungi), which are formed on the alternate host in macrocyclic rusts (Rust fungi which produce all the 5 developmental stages), but can infect only the primary host, a binucleate spore produced in an aecium
Aecium	Cup-like pustule structure of some rust fungi that contain chains of aeciospores
Aequi-hymeniiferous	Hymenium (fertile area) having basidia (spore-producing cell) which mature evenly all over the surface of each lamella (gill); c.f. inaequi-hymeniiferous
Aerial	Of the air; growing or borne above the surface of the ground
Aerial mycelium	Hyphal elements growing above the agar surface.
Aero-aquatic fungi	Pond-inhabiting fungi that produce elaborate bubble-trap propagules that float at the water surface of stagnant ponds and quickly colonise leaves that fall onto the water, then ‘condition’ them in near-anaerobic conditions at the bottom of the pond. cf. amphibious fungi
Aerobic	Requiring a supply of oxygen for the process of cellular respiration that takes place in the presence of oxygen gas to produce energy from food. cf. Anaerobic Respiration which is a process which takes place in the absence of oxygen

Aerobiology	The study of fungal and other propagules spores in the case of fungi residing in the atmosphere.
Aethalium	A rather large, sometimes massive, generally cushion-shaped fructification of some Myxomycetes
Aff. (affinis)	With affinity to others, akin to; often used for a provisionally recognized but unnamed taxon considered close to that name, perhaps a hybrid or extreme variant
Agar	A gelatinous material derived from certain marine algae. It is used as a base for bacterial culture media used in mycology and bacteriology and as a stabilizer and thickener in many food products
Agaric	Any of numerous mushrooms having an umbrella shaped cap with gills or tubes below supported by a stem, chiefly belonging to the order Agaricales
Agaricus	A genus of mushrooms containing both edible and poisonous species
Agaricoid	Resembling an Agaricus. Also used in a broader sense as having an umbrella like cap with gills and stem beneath,
Agglutinated	Stuck together as if glued, often used in reference to hyphae
Akaryote	Has cells without a nucleus. A phase in the life cycle of the Plasmodiophorales during which the nucleoplasm loses its affinity for stains
-ales	Suffix to the stem of a generic name or descriptive name to indicate that it applies to a taxon of the rank of order
Aleurioconidia	Plural of Aleurioconidium
Aleurioconidium	A thallic conidium released by lysis (dissolution or destruction of the supporting cell)
Algae	Anyone of a group of primitive chlorophyll containing mainly aquatic eukaryotic (having cells with a nuclei surrounded by a nuclear membrane) organisms lacking true stems and roots and leaves
Alkaloids	Nitrogen-containing organic compounds produced by plants; physiologically active in vertebrates; many have a bitter taste and some are poisonous
Allantoid	Sausage shaped referring to spores regardless of their quotient
Alternation of generations	Succession of haploid (having only one set of chromosomes) and diploid (having two sets of chromosomes, one from each of the parents) thalli (body of a fungi) in the life cycle, the haploid phase is the dominant phase
Alutaceous	Pale tan to light leather coloured
Alveolae	Describing small hollows or pits in the surface of a spore, cap or stipe,
Alveolate	Describing the surface of spore, cap or stipe, being pitted, having small hollows in the surface
Alveoli	Pit-like depressions which are lined with the hymenium in *Morels*
Amanitins	See amatoxins; the cause of most fatal mushroom poisonings
Amatoxins	Cyclic octapeptides found in some species of Amanita & Galerina that are extremely toxic to humans
Ambrosia fungi	wood-inhabiting fungi Symbiotic with wood-wasps and wood-inhabiting beetles; the

	fungi feed the larvae, and the adult insects disperse the spores
Ameroconidium	A one-celled conidium.
Amerospores	Single celled spores
Amoeboid	Without a cell wall or a definite shape, moving and feeding by means of pseudopodia (temporary cytoplasmic protrusions)
Ammonium hydroxide	(NH 4 OH) Used in microscopy for mounting, also good for flushing excess stain from samples by flushing through by putting a drop of 10% ammonia at one edge of the cover slip and touching the opposite edge with a scrap of tissue
Amorphous	Lacking physical form or shape
Amphibious fungi	Specialized stream-inhabiting, leaf-colonizing fungi which have aquatic anamorphs (asexual stages) often producing conidia (asexual spores) having four principal radii of symmetry (tetraradiate), and emergent or terrestrial teleomorphs (sexual stages)
Amphitic	Hyphae stuck together as if glued
Amphimitic	A hyphal system consisting of generative (basic hyphae of unlimited growth) and binding hyphae (branching hyphae originating from generative hyphae)
Ampullae	Small structures that are flask-shaped
Ampullate	Swollen
Ampulliform	Shaped like a flask, swollen before narrowing further up
Amygdaform	Describing the shape of spores, almond shaped, i.e. with a broad base and narrower apex
Amygdaliform	Describing spores that are almond shaped, i.e. with a broad base and narrower apex
Amygdaloid	As Amygdaliform
Amylase	Any of a group of enzymes that catalyse the hydrolysis of starch and glycogen or their intermediate hydrolysis products
Amyloid	Chemical reaction, turning blue, grey or black when stained with Meltzer's or Lugol's reagent, cf. dextrinoid
Anaerobic	Living or occurring in the absence of free oxygen, most fungi are aerobic
Analogous	Similar in function but not in structure and evolutionary origin
Anamorph	Asexual fruiting body of a fungus, in contrast to teleomorph, the sexual fruiting body
Anastomising	Gills, or hymeneal ridges, running together to form a vein like network
Anastomosis	Vein-like elements that have branched and re-joined, can be applied to spore ornamentation also to hyphae
Angiocarpic	A fruiting body with the hymenium (fertile surface) at first exposed, but later covered by an in curved cup margin and/or excrescences from the stem. Spore producing structures that mature whilst retained inside the fruitbody and not expelled relating to Gasterocarp (a sterile peridium enclosing the fertile gleba) development
Angiocarpous	Describing a sporocarp (fungal fruitbody) that is closed at least until the spores are

	mature
Angiocarpy	A type of development of the fruitbody in which at some stage the developing hymenium is situated in a closed cavity
Annellation	Any addition reaction in which one ring is attached to another
Annellide	A conidiogenous cell (cell that gives rise to conidia) that produces conidia in succession, each leaving a ringlike collar on the cell wall when released in basipetal succession (oldest conidium is at the apex and the youngest is at the base)
Annelloconidia	Plural of Annelloconidium
Annelloconidium	A conidium produced by an annellide.
Annular zone	Ring-like band on stem where partial vale was originally attached, often indicated by a change of colour or texture or by a deposit of spores
Annulus	Ring of tissue on a mushroom stipe (stem) left by a torn partial inner veil The location of the annulus and the form that the it takes are important identification features
Antheridium	The gametangium (male sex organ) of algae, fungi and bryophytes
Antibiotic	A diffusible substance produced by one microorganism that is damaging to others, thereby conferring a competitive advantage on the producer
Aphyllophorales	An obsolete taxonomic category which included crust fungi, polypores, coral fungi, and others, but excluded puffballs
Aphyllophoroid	Resembling basidiomycetes which lack lamellae e.g. bracket, hydnoid, club and coral fungi
Apical	Occurring at or near the apex (top)
Apical apparatus	A specialized structure found in the tips of many unitunicate-inoperculate (single skinned and lacking a lid) asci, acting as a valve or sphincter that controls the forcible expulsion of ascospore
Apical ring	Another term for Apical apparatus
Apiculate	A descriptor for a basidiospore having a well defined apiculus
Apiculus	Tiny projection on a spore where it is or was attached to the sterigma. Also called the Hilar appendix
Aplanate	Describing the cap, flattened or horizontally expanded
Aplanetic	Nonmotile
Aplanospore	A nonmotile spore
Apo-	Prefix meaning open, e. g. apothecium – open disk-like ascoma
Apochromatic Lens	Apochromatic lenses have better correction of chromatic and spherical aberration than the much more common achromatic lenses. They are designed to bring three colours into focus in the same plane typically red, green and blue and are also corrected for spherical aberration at two wavelengths, rather than one as in an Achromatic lens

	The resulting quality is significantly higher than an Achromatic lens and this is reflected in their price
Apothecia	Plural of apothecium
Apothecium	Cup-shaped fruitbody of certain ascomycetes fungi e.g. discos, cup fungi etc. With exposed fertile hymenium (fertile surface) containing asci on upper or inner surfaces of fruitbodies at maturity.
Apothecial	Having an apothecium
Apophysis	A swelling. The term is primarily applied to the funnel-shaped swelling of a sporangiophore (where spores are stored), immediately below the columella (sterile central axis inside a fruitbody formed of an often inflated continuation of the stalk into the head of a spore-producing structure), seen in some zygomycetes.
Appendage	A secondary part attached to the main structure; an external growth that seldom has any obvious function, hence appendiculate
Appendiculate	Describing a cap margin, fringed with veil fragments
Appendiculate	Having the nature of, or bearing appendage(s)
Applanate	Flattened
Appressed	Pressed down tightly, flattened down onto a surface (often used to describe scales)
Appressorium	This is a specialized cell typical of many fungal plant pathogens that is used to infect host plants. Consists of a flattened, hyphal "pressing" organ, from which a minute infection peg grows and enters the host
Arachnoid	Having a web like structure, cobwebby appearance from being covered with fine white hairs
Arborescent	Tree-like in growth or general appearance
Arboriform	Describing the hyphae, branched, resembling a tree in shape or appearance
Arbuscular mycorrhiza (AM)	In relation to a mycorrhiza, where fungi from the Glomeromycota group penetrate the roots of a (usually herbaceous) plant and provide the plant with water and nutrients while the plant supplies sugars to the fungus
Arc./alp.	Abbreviation for the arctic/alpine vegetation zone
Archicarp	The initial stage of a fruiting body, a female reproductive structure in ascomycetous fungi that consists of a cell or hypha and develops into the ascogonium
Arcuate	Arc shaped, with a concave gill edge, shape formed by being slightly decurrent at the stipe edge and a downward curving cap margin
Arcuate-decurrent	Describing the gills or tubes, curved and extending down the stem
Areolate	Divided into areas, usually by superficial clefts or cracks, thus appearing crazed or patched
Arid	describing gills that are dry, somewhat like parchment
Arm	The part of the microscope that connects the tube to the base. When carrying a microscope, it is recommended that you hold the arm with one hand and support under the base with the other hand

Arthric	Describes thallic conidia (asexually formed fungal spore) which form by the breaking up of fertile hyphae at the septa
Arthroconidia	Plural of Arthroconidium
Arthroconidium	A conidium released by fragmentation or separation at the septum (dividing wall) of cells of the hypha. A thallic conidium, often cylindrical and truncated at one or both ends, released by either the splitting of a double septum or by the fragmentation or lysis (breaking down of the membrane of a cell) of a disjunctor cell (an empty cell that fragments and/or undergoes lysis to release a conidium)
Arthrospore	A seriate vegetative spore created from the fragmentation of hyphae
Ascending	Describing a ring, flaring upwards and out like a sock
Ascending	Describing gills that are attached to the stipe over all or most of their total depth but rising up from the low cap margin to meet stipe
Asci	The spore-producing cells of an ascomycete
Asco-	Prefix meaning sack
Ascocarp	Fruitbody of an ascomycete fungus
Ascoconidia	Plural of ascoconidium
Ascoconidium	A small spore derived from normally developed ascospores, by budding or by changing into many smaller conidiospores (asexually produced spores)
Ascogenous hyphae	The hyphae, in fungi of the Ascomycota, that grow from the ascogonium after it has fused with the antheridium (male sex organ of fungi). The ascogenous hyphae are made up of binucleate cells containing one nucleus derived from the male antheridium and the other from the female ascogonium
Ascogonia	Plural of Ascogonium
Ascogonium	The female reproductive organ of ascomycetous fungi
Ascoma	The entire fruiting-body of an ascomycete, the structure containing the asci (spore-producing cells of an ascomycete)
Ascomata	Plural of Ascoma
Ascomycetes	A class of fungi that produce their spores in sac-like cells called asci, a member of the Ascomycota
Ascomycetous	Referring to the Ascomycetes
Ascomycota	A division or phylum of fungi that produce their cells in a sac like container called an asci, commonly referred to as sac fungi. It is separated from the division Basidiomycota
Ascomycotina	A phylum of the kingdom Fungi that, together with the Basidiomycota, forms the subkingdom Dikarya. Its members are commonly known as the sac fungi or ascomycetes
Ascospores	Sexual spores produced in the asci of ascomycetes fungi
Ascus	The spore-producing cell of an ascomycetes fruitbody, appearing as sacs containing the spores

Aseptate	Lacking Septa (a cross wall separating cells of a hyphal thread), often pertaining to the hyphae seen in zygomycete
Asexual reproduction	Any form of reproduction that involves neither meiosis (reductive division of the chromosomes) nor fusion of gametes (cell whose nucleus unites with that of another cell to form a new organism). In fungi, commonly involves either 1. fission of somatic (vegetative rather than reproductive) cell or 2. Budding of somatic cell or 3. fragmentation or disjoining of hyphae
Aspect	The overall shape of a fruiting body as determined by the portions of its parts
Asperate	Rough with projections or points
Asperulate	With minute spines or warts
Asporogenous	Non-spore forming
Associated organism	The species of the organism that the fungus is living in a mutualistic or parasitic relationship with.
Asterocystidia	Cystidia with a star- or ball-like cluster of crystals at the tip
Asterostromelloid	Describes tissue which is made of branched hyphae where many branches start at ± right angles at intervals along the main axis, giving the ends a star like appearance
Asterohyphidia	Modified terminal hyphae in the hymenium with stellate branching
Astrocystidia	See Asterocystidia
Asymmetrical	Irregular, unequal, lacking any plane of symmetry
Asymptomatic	Not showing any clinical manifestations
Athelioid	Having a very thin easily detachable membrane, reminiscent of old, peeling skin. Also called Pellicular
Atomate	Describing a cap, having minute shining particles
Attached	Describing a ring that is tightly adhering to the stipe
Attenuate	Gradually tapering
Auct.	Authors
Auricle	Ear-shaped lobe
Auriculate	Having ear-shaped elements
Auto-	Prefix meaning self
Autodigestion	Self-digesting or liquefying – a characteristic of the inkcap fungi
Autoecious	Describes those rust fungi (Uredinales) which complete their life cycle on a single host (cf. heteroecious)
Autoecism	As autoecious, the ability of a parasitic fungus to complete its entire life cycle on a single host species. Used particularly for certain rusts
Autolysis	The destruction of tissues or cells of an organism by the action of substances, such as enzymes, that are produced within the organism resulting in cell breakdown and often liquefaction.
Autotrophic	Capable of synthesizing energy-rich carbon compounds

Auxins	A group of naturally occurring and artificially synthesised plant hormones, some are produced by ectomycorrhizal fungi
Av.	Abbreviation for average
Avellaneous	Pale pinkish grey
Axis	A straight line with respect to which a body or figure is symmetrical
Azygospore	A spore exactly resembling a zygospore, but produced parthenogenetically (not involving the fusion of male and female gametes in reproduction) by an isolated reproductive organ in some members of the order Zygomycetes
B...	
Bacilloid	Rod shaped
Baculiform	Rod-like, longer than wide
Bald	Describing a pileus (cap) surface that is completely lacking, hairs, scales or any other prominent textures
Ballistoconidia	Plural of Ballistoconidium
Ballistoconidium	A conidium that is forcible discharged
Ballistospore	Spores that are borne on sterigmata of certain fungi and forcibly discharged at maturity
Ballistosporic	Producing actively projected spores, forcibly ejected from the basidium
Barrel focus	Describes a type of microscope, where the stage for holding the specimen is fixed and the body tube of the microscope is moved to focus the objective aperture, more commonly found in stereo dissecting microscopes
Basal	At or near the base c.f. Apical
Basal tomentum	Mycelium located at the base of the stipe; at times forming a velvety layer on the stipe base
Basauxic	Growing from the base, rather than at the apex
Basidia	Plural of basidium
Basidio-	Prefix meaning small pedestal
Basidiocarp	Fruitbody of a basidiomycete fungus
Basidiole	A sterile or immature basidium
Basidiomata	Plural of basidioma
Basidioma	Any multi-hyphal structure producing basidia; formed by most basidiomycetes, e.g., mushroom, puffball
Basidiome	Fruitbody of a basidiomycete fungus
Basidiomycetes	A class of fungi that produce their spores on basidia
Basidiomycotina	A group comprising fungi bearing the spores on a basidium
Basidiospores	Sexual spores produced on the basidia of basidiomycetes fungi

Basidium	Spore-producing cell of a basidiomycete fungus, usually with four basidiospores produced per basidium, but varying between one and eight. The shape, size and form of the basidia can help identification
Basifixed	Something attached by its base
Basipetal	In fungi usually relating to a chain of conidia (asexually formed fungal spore), the oldest conidium is at the apex and the youngest is at the base
Basocatenulate	In fungi usually relating to a chain of conidia, the oldest conidium is at the apex and the youngest is at the base
Belted	Describing a stipe (stem) with one or more veil zones or belts of thin fibrils
Bi-	A prefix meaning two
Biapiculate	Of spores, pointed at both ends
Bicyclic	Forming two circles
Biflagellate	Having two flagella (whip like appendages involved in the locomotion of a cell)
Bifurcate	Dividing into two branches or forks; often used to describe the branching pattern of gills (particularly in the genus Russula)
Bifusiform	Fusiform with a pinch in the middle
Biguttulate	With two oil droplets or 'bubbles' inside the spores
Bilateral	In relation to the gill trama (the flesh or context), in which there is a central strand of hyphae and lateral strands which diverge downwards from the central strand to the spore-bearing layer
Binding hyphae	Thick walled, mostly non-septate, branching hyphae originating from generative hyphae, binding generative and skeletal hyphae together
Binocular head	The head of a microscope with two eyepieces. This term is typically used to describe high powered compound microscopes which use a prism arrangement to divide a single image from the objective into two equally intense portions which our minds fuse into one. cf. Stereo microscopes
Binomial	The unique double name given to each known species: composed of firstly a generic name tying it to the genus or family followed by a species name to distinguish it from others in the same genus
Binominal	The unique double name given to each known species: composed of firstly a generic name tying it to the genus or family followed by a species name to distinguish it from others in the same genus
Binomial nomenclature	The system of nomenclature using binominal naming. Each species is given a name that consists of two parts. The first part is the Genus to which the species belongs and the second part is the species name
Bird's nest fungi	Members of the order Nidulariales: the basidiospores are in peridioles `eggs' and the `nest' is a splash-cup dispersal mechanism
Biocide	A substance which kills living organisms
Biocontrol	The control of undesirable organisms by other organisms

Bioconversion	The enzyme-mediated conversion of organic substrates, such as cellulose, to other more valuable substances, such as protein, by other organisms
Biodegradable	Capable of being broken down by microorganisms such as bacteria and/or fungi
Biotrophic	Feeding on living cells of other organisms
Bipolar budding	Blastoconidia developing at the opposite poles of a parent cell
Biseriate	Describing ascospores in a double row within the ascus (spore-producing cell of an ascomycete). cf. uniseriate
Biscoctiform	Biscuit-shaped, oblong and slightly constricted in the middle
Bisulcate	Having two narrow furrows or grooves
Bitunicatae	A series of the subphylum Ascomycotina, consisting of those having a bitunicate ascus. It includes the orders Dothideales and Erysiphales.
Bitunicate	A type of ascus (spore-producing cell of an ascomycete) with two distinct, persistent wall layers: the `jack-in-a-box' ascus that is diagnostic of the bitunicatae and is found in pseudothecial ascomata c.f. Unitunicate.
Biverticillate	Two or rarely three levels of branching directly below the phialides as in the genus Penicillium
Bladder-like	Irregular, roundish, hollow with an opening at the top
BLAST	Basic Local Alignment Search Tool, used for DNA comparison
Blastic	A form of conidial (asexually formed fungal spore) development where there is a recognizable enlargement or "blowing out" of a fertile hypha before being delimited by a septum
Blastocatenate	A chain of conidia having the youngest cell at the tip
Blastoconidia	Plural of Blastoconidium
Blastoconidium	An asexual conidium that forms by a blowing out or budding process
Blastospore	Spore produced by budding
Blight	A general name for many diseases of plants esp. When leaf damage is sudden and serious
Blister rusts	Serious diseases of pines, caused by species of cronartium (Uredinales: teliomycetes)
Blue stain	A blue-grey colouration of worked wood paradoxically caused by the growth of brown fungal hyphae, often those of ophiostoma) inside the wood cells.
Blueing reaction	A colouration of bruised or broken tissues in some agarics (esp. Boletaceae), caused by an oxidative reaction
Body tube length	In microscopy this refers to the distance between the objective and the very top of the body tube. This can be important as objective lenses are compatible with certain body tube lengths and a mismatch can cause spherical aberrations.
Bolete	A fleshy agaric (cap & stem fungi) with tubes instead of gills
Boletoid	Describing spores having a shape reminiscent of a Bolete spore, Subfusiform, truncate at one end, with a noticeable germ pore at the truncate end, smooth

Bore.	Abbreviation for the boreal vegetation zone
Booted	Describing a stipe (stem) with a veil that extends like a sock over the lower approximately half of the stipe and ending in a ± ring
Bovine Serum Albumin	Is a PCR additive that can enhance the yield of PCR products. It is thought that the BSA sequesters inhibitors that can result in inefficient reactions, however the exact mechanism is unknown
Bracket fungi	Any saprotrophic or parasitic fungus of the basidiomycetous family Polyporaceae, growing as a corky or woody, often perennial shelflike mass (bracket) from tree trunks and producing spores in vertical tubes in the bracket
Bright field illumination	A method of exposing a transparent or translucent specimen to bright white light whilst on a light background. cf. Dark field illumination
Broom cells	Cells from a gill edge or cap having apical appendages resulting in a broom like appearance
Brown rot	Wood rot that contains lignin – brown with transverse break points, produced by a basidiomycete that can degrade cellulose but not lignin
Brush cells	Describing cystidia (a distinctive type of sterile cell) or the cells of a pileipellis (the surface layer of the cap) that have numerous short finger like protrusions
BSA	Abbreviation for Bovine Serum Albumin
Bud	A young conidium. Usually used to denote the young blastoconidia of yeasts.
Budding	Asexual multiplication by the production of a small outgrowth or bud from a parent cell.
Buff	An indefinite pale colour; pale dull yellow or very pale tan
Bulbil	A small sclerotium-like structure having relatively few cells
Bulbillose	In relation to the stem, having a small or not clearly marked bulb at the base
Bulbipellis	Underside of bulb
Bulbous	When describing a stipe, with a swollen base
Bullate	Surface with rounded or globular blisters
Buller drop	The tiny droplet of liquid which appears at the base of a basidiospore just before it is discharged
Bulliform	Bubble-shaped, swollen
Bursiform	Bag-like
Button	A young fruiting body before it has opened up
Byssoid	Compound of fine threads, cottony or floccose
C...	
C-mount	This is an adapter used with various types of microscope cameras. The adaptor sits in the trinocular port (extra port for attaching a camera) of the microscope and has a standard 1" thread size that C-Mount cameras will match up with. The C-Mount adapters are specifically designed for use with certain brands and models of

	microscope in accordance with their focal length
Caeoma	An aecium in some rust fungi that has no surrounding membrane
Caespitose	Describing a growth habit where fruit-bodies are crowded together in a tuft or a cluster but not attached to each other
Calcareous	Soil containing calcium (chalk or limestone)
Calcicolous	Thrives in soil rich in lime
Calibration	A process carried out using a stage micrometer (a slide with scribed lines on it that are exactly 0.01mm apart) by comparing this slide viewed through the eyepiece graticule you can work out what the divisions in the eyepiece graticule equate to for each objective lens. The results of this calibration process will give a formula by which you can translate the number of lines that the specimen fits within viewed through the eyepiece graticule to an accurate real world measurement. Microscopes can have varying magnification factors for any given objective lens even two identical models so this has to be done for every microscope
Calliderm	A trichoderm with ± globose terminal elements
Callus	In relation to spores, having a thin-walled, convex area at the apical end
Calyptrate	With the outer spore wall loosening, resembling a cap or hood
Campanulate	Describing a cap, in the shape of a bell with outer edge often somewhat curved upwards
Canescent	Approaching white in colour, off white; also used to mean cap or stem surface becoming hoary or silvery; densely downy
Cap	The spreading, often umbrella-like, gill or tube-bearing part of an agaric, often raised from the substrate by a stem. More technically known as the pileus.
Capillitium	Coarse, thick walled, sterile filamentous hyphae found in amongst the spores in some Gasteromycetes and Mycetozoa
Capitate	Having a well formed head.
Capitate cystidia	Cystidia with a distinct ± rounded apical swelling; subcapitate is used to refer to only slightly apically swollen cystidia
Capsule	A hyaline mucopolysaccharide sheath around the cell wall of certain yeasts e.g. Cryptococcus and Rhodotorula
Carbonaceous	Black and brittle, reminiscent of coal
Cardinal temperatures	The minimum, maximum and optimum temperatures of growth of an organism
Carinate	Having a sharp ridge reminiscent of a keel
Carminophile	Fungi that are carminophilous
Carminophilous	Turning blackish purple or blackish violet in acetocarmine in the presence of metal ions. Also called siderophilous: literally iron-loving: Iron and various other metals form a complex aggregate with carmine and certain protein compounds in some basidia. Such basidia then exhibit a dark granulation (siderophilous granules) when heated

	with Acetocarmine. They occur in Lyophyllum and a few closely related genera. Also known as carminophile basidia.
Carotene	Orange coloured pigment
Carotenoids	Fat-soluble pigments including carotenes (yellow and orange) and xanthophylls (yellow)
Carpophore	Fungal fruitbody comprising stem, cap and gills
Cartilaginous	Used to describe consistency of stipe tissue; tough brittle, does not bend but breaks with a snap
Catenate	Describing cystidia with septate shortish broad cells appearing as if in chains
Catenulate	Describing cystidia with septate shortish broad cells appearing as if in chains
Caudate	Having a tail
Caulocystidia	Cystidia found on the surface of the stipe (stem)
Cauloparacystidia	Thin-walled balloon-shaped cells that may be found on the stipe
Caulocystidium	A cystidium on the surface of the stipe of a mushroom
Cavernous	In relation to the stem interior, having hollow chambers much like caverns
Cell	A small usually microscopic mass of protoplasm bounded externally by a semipermeable membrane, usually including one or more nuclei and various other organelles with their products
Cellulolytic enzyme	An enzyme that can degrade cellulose
Cellulase	An enzyme that can degrade cellulose
Cellulose	Component of plant cell walls and of wood composed of glucose units
Central	Describing stem attachment to the cap, with stem attached at the centre of the cap
Centriole	A short, hollow, cylindrical organelle consisting of nine sets of microtubules and usually occurring in pairs set at right angles to each other. Centrioles are responsible for the production of the spindle apparatus that appears just before the separation of the chromosomes into two sets prior to cell division
Centrum	Found within an ascoma (fruiting-body of an ascomycete) they are the structures which are concerned with the development of the asci (spore-producing cell of an ascomycete)
Cephalodia	Delimited parts of a lichen thallus containing a blue-green alga (cyanobacterium), while the main thallus contains a green alga
Cephaloid	Shaped like the head or the brain
Ceraceous	Waxy
Cerebriform	Having a convoluted surface reminiscent of a brain
Cespitose	Alternative spelling of caespitose
cf.	The abbreviation for the Latin: confer/conferatur, both meaning "compare". In biological naming conventions, cf. is commonly placed between the genus name

	and the species name to describe a specimen that is difficult to identify because of practical difficulties, such as the specimen being poorly preserved. For example, " Leccinum cf. variicolor " indicates that the specimen is in the genus Leccinum and believed to be Leccinum variicolor but the actual species-level identification cannot be certain.
Chalky	Describing a stem texture that tends towards breaking crossways much like chalk, without fibrous strips, can also apply to appearance
Chanterelle	Edible species of Cantharellus (Aphyllophorales: holobasidiomycetes)
Chartaceous	With a papery texture
Cheilocystidia	Cystidia occurring on the edges of the gills or pores, sometimes giving a distinct colour
Cheilocystidium	A cystidium on the edge of a mushroom gill or tube
Chiastobasidia	Basidia with nuclear spindles across the basidium and at the same level
Chitin	A primary polysaccharide in cell walls of most fungi (but not Oomycota)
Chlamydospores	Thick walled, asexual spores formed by the breaking up of fungal hyphae
Chlamydoconidia	Plural of Chlamydoconidium
Chlamydoconidium	A thick-walled, thallic conidium formed within the vegetative hyphae. Chlamydoconidia function as organs of perennation rather than dissemination.
Chlorozole Black	A stain used in microscopy which has a strong affinity for cellulose and chitin. It helps in distinguishing fungal bodies from artefacts due to chitin staining.
Choke	A disease of grasses caused by the fungi *Epichloe* a member of the clavicipitales; the yellow to pale cream coloured, fused mass of the teleomorph (sexual stage) hyphae encircles the stem of the grass and prevents it from flowering
Chromatic aberration	As light is bent in a lens or prism, different wavelengths (colours) respond differently to each other and will focus at different points, this can cause a distortion or blurring also known as a Chromatic aberration. This problem is greatly reduced by having a microscope with achromatic objective lenses
Chromistan	A biological kingdom consisting of single-celled and multicellular eukaryotic species
Chrysocystidia	Plural of Chrysocystidium
Chrysocystidium	Cystidia with yellow amorphous contents, that become more deeply yellow when exposed to ammonia or other alkaline compounds. Chrysocystidia are characteristic of many, though not all, members of the agaric family Strophariaceae
Chytrids	Any of various usually aquatic and often parasitic or saprophytic fungi in the division Chytridiomycota, having flagellated gametes (male spores that can move using whip like appendages)
Chytridiomycota	A phylum of fungi distinguished by having zoospores (motile cells) with a single, posterior, whiplash structure (flagellum). Species are microscopic in size, and most are found in freshwater or wet soils. Most are parasites of algae and animals or live on organic debris
Cicatrised	Bearing scars
Cilia	Hair like outgrowths

Ciliate	Describing a gill edge when viewed under a hand lens appearing to be finely toothed or floccose due to having prominent Cheilocystidia (sterile cells on the gill edge) these can give the gill edge a different colour to that of the gill face. Also used to describe a fruit body having delicate often marginal hairs
Cilium	Singular of cilia
Cinereous	Ash grey in colour
Circinate	Twisted round, coiled
Circumscissile	Splitting or opening along a circumference, with the top coming off as a lid
Circumcystidia	Cystidia found on the margin of the cap
Citriform	Lemon shaped
Clade	A grouping of organisms made on the basis of their presumed evolutionary history, consisting of a common ancestor and all of its descendants.
Clamp	A small lateral protuberance arching over a septum (dividing wall in hyphae), they can appear singly, in pairs or multiple whorled around the septum (verticillate). The absence presence or nature of clamps is an important microscopic feature in fungal identification
Clamp connection	Swollen area formed around septum in a hypha during cell division
Class	Taxonomic rank above order, but below subphylum; suffix in fungi is -mycetes
Clathrate	Latticed or pierced with apertures, like a cage or net
Clavarioid	Resembling fungi having club or coral shaped fungi
Clavate	Describing a stipe or cystidia, resembling a club in shape, becoming increasingly wider towards the apex before narrowing sharply to form a rounded end
Clavate-bulbous	Type of bulbous stem base having a bulb that gradually tapers upwards and merges with the stem
Cleisto-	Prefix meaning closed
Cleistothecia	Plural of cleistothecium
Cleistothecium	An ascomycete fruitbody that is closed at maturity and has passive spore dispersal, spheres containing asci (spore-producing cells of an ascomycete) and spores in powdery mildews
Clemencon's soln	Used to rehydrate dried material and make it easier to cut sections. The formula is 80ml of 96% ethanol (or industrial methylated spirit), 20 ml of concentrated ammonia and 1gm of glycerol. The dried material is soaked in this until it is sufficiently softened. It is then removed and allowed to dry for a while when it should be "waxy" and able to be sectioned. A final soak in 10% ammonia may help to expand the section.
Clavicutis	A cuticle with repent, irregular hyphae with inflated, irregularly arranged terminal elements
Clitocybe-like	Applied to any fruitbody with decurrent gills, fleshy-fibrous stem, and without a ring or volva
Clitocyboid	Resembling a *Clitocybe*

Close	A description of a gill spacing, having gills close together but not as close as crowded
Club fungi	Any of various basidiomycetes (family Clavariaceae) with a simple or branched often club-shaped fruiting body. Occasionally applied to ascomycetes because many asci (spore producing cells of an Ascomycete) are club shaped
Clustered	Growing together from a single or fused base
Clypeate	Having a clypeus
Clypeus	Small shield-like stroma which covers one or more perithecia
Coarse focus	On a compound microscope the course knob quickly increases and decreases the distance between the objective lens and the subject to get it into rough focus, before using the fine focus knob to improve the resolution of the image. On many parfocal (changing objective lens without the need to refocus) microscopes once they are set up there is often little need to adjust the coarse focus
Coaxial focus	This is the most common set up on modern microscopes where the fine and coarse focus mechanisms operate on the same axis. Typically, the coarse focusing knob is larger with the fine focus knob smaller and situated in the centre of the coarse focus knob, this arrangement is often duplicated on both sides of the microscope
Cochleariform	Concave, spoon-shaped
Coelomycetes	Anamorphic (asexual) fungi in which the conidia (asexually formed fungal spore) are produced in a growing cavity in the host's tissue. The fruiting structures are spherical with an opening at the apex (pycnidia) or are disc-shaped (acervuli)
Coenocytic	Hyphae that are multi-nucleate and lacking septa (cross walls) as in the *Zygomycetes* and Chromistan fungi
Coll.	In a collective sense
Collar	Another term for collarium
Collarette	A small collar. Usually, a remnant of a cell wall present at the tip of a phialide, or around a sporangiophore
Collarium	Describing a characteristic of some fungi, at the point where the gills would join the stipe (stem) they end in a distinct collar like junction at the apex of the stipe as in *Marasmius rotula*
Colliculose	Surface covered in small raised bumps
Collybia-like	Applied to any fruitbody with attached gills, cartilaginous or brittle stem, a convex cap with an incurved to decurved margin and without a ring or volva, see also Collybioid
Collybioid	With a habit reminiscent of a '*Collybia*' type (in original sense, now *Gymnopus*)
Colony	A separate or distinct mycelium of a fungus, often derived from a single spore
Columella	A sterile central axis inside a fruitbody formed of an often inflated continuation of the stalk into the head of a spore-producing structure; found in sporangia of Mucoraceae (Zygomycetes)
Columnar	Forming a column
Common main objective (CMO)	A design of stereomicroscope in which there is only one objective. The two eyepieces look through the same objective, but from left and right sides so as to produce two

	different views which are combined to give a stereo image
Compound ascoma	A teleomorphic (sexual stage) fructification incorporating several to many distinct ascomata (fruit bodies) on or in a single structure, as in the Clavicipitales and Xylariales
Compound microscope	A compound microscope is a high power (high magnification) microscope that uses a compounded (multiplied) lens system combining objective lenses to give an initial magnification, typically 4x, 10x, 40x or 100x, this image is then compounded by a secondary magnification strength of the eyepiece lens, typically 10x
Concave	Bowl shaped
Concavely adnate	A term used by some writers to describe gills that form a bowed shape curving evenly from the cap margin and running a little way down the stipe (stem) but not as far as would justify referring to them as being decurrent
Concentric	Circles having a common centre like a bullseye
Conchate	Shaped like a bivalve shell
Conchoid	Shell-shaped
Concolorous	When comparing parts of a fruitbody, being of the same colour
Concrescent	Describing a growth habit where the fruit bodies are fused together
Conditioning	Fungi use enzymes to soften substrates such as herbaceous debris this is referred to as conditioning
Confluent	Running alongside, located together, tissues of cap and stem alike and continuous so that cap and stem are not easily separated. Typical of *Cantharellus* (chantarelles)
Congo red	A good all round red stain commonly used in microscopy to stain the hyphal walls and to show up clamp connections
Conic	Roughly cone-shaped, generally used in reference to the shape of the pileus (cap)
Conical	Cone shaped
Conico-truncate	Having the shape of a cone that is truncated
Conidia	Asexually formed fungal spore forming on conidiophore hyphae, plural of conidium
Conidial fungi	Fungi of either ascomycetes or basidiomycetes which form conidia
Conidial state	Preliminary stage in the development; the immature fungus
Conidiation	The process of producing conidia
Conidiogenesis	A generic term used to cover the differing processes by which conidia are produced; see also: acropetal, annellidic, arthric, basipetal, blastic, phialidic, retrogressive, sympodial, synchronous, thallic
Conidiogenous	A cell that gives rise to conidia
Conidioma	Physical structure containing conidia
Conidiomata	Plural of conidioma
Conidiophore	A specialized hypha upon which conidia develop
Conidiospore	An asexually produced fungal spore formed on a conidiophore

Conidium	Asexual reproduction, especially in ascomycetes an asexually produced fungal spore, formed on a conidiophore
Connate	Describing a growth habit where the stipes are fused together at the base
Conspecific	Belonging to the same species
Context	The flesh of a fungal fruitbody (i.e. Under cap cuticle or within the stipe)
Contiguous	Adjoining, touching, but not united
Contrast Plate	A circular opaque plate that can be placed on the stage of a low power microscope. One side is white, the other is black. It can be turned over for best contrast depending on the colouration of your specimen
Convergent	Used to describe the central tissue of the gill when it curves towards the mid-line
Convex	Bulging outward like a lens, thicker at the middle than at the edge; When describing a cap means domed lacking either a central hump or a central depression
Coprophile	Dung loving, growing and living on or in dung
Coprophilous	Growing and living on or in dung
Coral fungi	Is a term that's broadly used to cover a wide range of fungi having erect, club-shaped, or branched bodies reminiscent of coral; Members of the family Clavariaceae
Coremia	The fruiting bodies of certain fungi, consisting of a loosely bound bundle of conidiophores
Cordate	Inverted heart-shaped, with a point at the apex and a notch at the base
Cordons	Hyphal strings
Coriaceous	Leathery texture; stiff and tough, but somewhat flexible
Cortex	Layer of tissue that is separable, like bark
Corti-	Prefix meaning bark
Corticioid fungi	Are a group of fungi in the Basidiomycota typically having effused (flattened & pressed to the substrate), smooth basidiocarps (fruit bodies) that are formed on the undersides of dead tree trunks or branches. They are sometimes colloquially called crust fungi
Corticolous	Growing on bark. (cf. lignicolous, growing on wood with the bark stripped off.)
Cortina	A cobweb-like partial veil consisting of fine silky fibres, particularly noticeable on young specimens
Cortinate	Having a cortina
Costate	With a series of ridges or raised bumps often used to describe cap margins, looking like the crimped edge of a pie crust
Cotton Blue	A blue stain used in microscopy, used for spore ornamentation & contents also basidia
Cottony	Having a loose and coarse texture
Cover slip	A very thin, square, rectangular or circular sheet of glass to be placed over the subject on a microscope slide, this flattens and keeps the subject in place as well as protecting

	the objective lens from becoming contaminated by contact with the subject or any stains & reagents being used
Crateriform	In the shape of a saucer or shallow cup; hemispherical or more shallow
Crenate	Having a margin that is distinctly serrated with blunt or rounded teeth, scalloped
Crenulate	An edge that is delicately scalloped or notched
Cresyl blue	Used as a reagent and stain, a strong blue stain. However, certain hyphae and spores turn a reddish violet colour, for example the stipe hyphae of Mycena
Cross-walls	A cross wall separating cells of a hyphal thread especially in a hyphae or spore; often referred to as a Septa
Crowded	A description of a gill spacing where the gills are very close together
Crozier	The clamp like base of many ascogenous hyphae, a terminal hook in which conjugate nuclear division takes place just prior to nuclear fusion, meiosis, and ascus formation
Cruciately-septate	Divided into four more or less equal parts by vertical cross-walls an example being the basidia of Tremellales
Cruciate	In the form of a cross
Cruciform	In the form of a cross
Crustaceous	Hard, thin and brittle
Crustose	Having a crust like appearance
Crustose	Describing a lichen, forming a close crust on a substrate (tree, rock etc)
Cryptic	Inconspicuous or hidden
Cryptogam	Propagation by spores rather than by seeds, a method used by fungi and chromistans but also by algae, bryophytes and ferns
Culm	The stem of any type of plant
Cuneiform	Having the shape of a wedge
Cup fungus	Any of various ascomycetous fungi, especially of the family Pezizaceae, characterized by a spore-bearing structure that is often stalk-less and cup-shaped or disk-shaped
Cupular	Cup shaped
Cupulate	Cup shaped or an orbicular, effused-reflexed crust that takes on the appearance of a cup fungus
Cupuliform	Nearly hemispherical, shaped like a cupola or dome
Cusp	A pointed tip
Cuspidate	Tipped with a cusp
Cuticle	The surface layer of the cap or stem of a fruitbody
Cutis	The surface layer of the cap or stem of a fruitbody, consisting of repent non-gelatinizing hyphae
Cyanophilic	Chemical reaction, staining blue with cotton blue reagent

Cyanophilous	Chemical reaction, staining blue with cotton blue reagent
Cyathiform	Cup shaped, wider at the top than at the bottom
Cylindric	Circular in cross section and of equal diameter throughout the length, and 2-3 times as long as wide
Cyphelloid	Describing a fruitbody, resembling a cyphella; i.e. a minute cup shaped fruitbody with smooth hymenophore (fertile surface)
Cystidia	Plural of Cystidium.
Cystidiole	Sterile basidium protruding beyond the surface
Cystidium	Are large distinctive cells found on some fungi among the basidia (spore-producing cells), embedded or projecting from the hymenium, differently shaped from the basidia. Can in some species also be found along the edge of the gill and be coloured giving the gill edge a distinctive colour, they can also be found in the pileal & stipe surface, Cystidia are very useful for identification of fungi, but their adaptive function is unknown
Cystidoid	Resembling a cystidium
D...	
Dacryoid	Tear shaped, rounded at one end pointed at the other
Dark field illumination	A lighting method in some microscopes resulting in the subject appearing light against a dark background through the use of light manipulation. The use of Dark field illumination enhances surface textures and allows detailed study of small features on the specimen surface
De Bary bubble	Gas bubble inside a spore that appears dark under the microscope
Deciduous	Falling off or shed at a specific season or stage of growth
Declinate	Curving downwards, and then upwards at the tip
Decorticate	To shed or peel off the outer bark of a tree
Decorticant	A fruiting body that develops under bark and then pulls up and away when mature
Decurrent	Describing gills, running down the stem
Decurrent tooth	Gill attachment where a tooth at the inner end of the gill runs down the stipe
Decurved	Describing a cap margin that is bent down but not inward
Deflexed	Bent abruptly downwards
Dehiscence	The spontaneous opening at maturity structure, to permit the escape of spores; the separation of spores from the structure that produced them
Dehiscent	Term used of asci (The spore-producing cells of an ascomycete) that release their spores under pressure (forcible discharge)
Deliquesce	To become soft or liquid with age or maturity
Dematiaceous	Dark brown, greenish grey or black

Dendrohyphidia	Modified terminal hyphae in the hymenium that are irregularly and strongly branched like a tree
Dendroid	Forming tree like branches
Dendrophyses	Cells usually cystidia (distinctive sterile cells), that have a pronounced antler like branching at or near the apex
Dentate	Having a tooth-like or serrated edge
Denticle	A small projection or peg on which conidia (asexually formed fungal spore) are produced
Denticulate	Finely toothed or notched
Depauperate	Poorly developed
Depressed	Describing a cap where the central region is lower than the margin. Also used to describe a tube attachment in Boletes, having a depression close to the junction with the Stipe (stem)
Depth of field	Refers to the amount of area in front of and behind the point of focus that is still in acceptably sharp focus. With a microscope the higher the magnification the smaller the depth of field
Dermatocystidia	A special type of cystidium from the cap, sometimes abbreviated to dcy, commonly referred to as pileocystidia. Also used as a generic term for both pileocystidia and caulocystidia (cystidia on the surface of the stipe (stem)
Descending	Describing a ring, flaring downwards and out, like a skirt
Detritivore	An organism such as a bacterium, fungus, or insect which eats organic detritus, the dead remains of other life forms
Deuteromycetes	Obsolete term for a group of fungi not known to reproduce sexually (molecular analysis can now determine their appropriate groups)
Dextrinoid	Chemical reaction, staining violet, brick red, brown or yellowish brown with Meltzer's or Lugol's reagent, this reaction persists even after rinsing in water
Diageotropism	The tendency to grow in a direction at right angles to that of gravitation i.e. a direction horizontal to the surface of the earth
Diam.	Abbreviation for diameter
Diaphanous	Thin, light, translucent, gossamer-like
Diaphragm	A thin membrane that separates the gleba from the stem in a puffball
Dichohyphidia	Modified terminal hyphae in the hymenium that are dichotomously branched
Dichotomous	Forking/dividing/branching into pairs in which the two arms are more or less equal (as in a capital Y)
Dichotomous Key	An identification tool using a series of statements consisting of 2 choices that describe characteristics of the unidentified organism. The user has to make a choice of which of the two statements best describes the unknown organism, then based on that choice moves to the next set of statements, ultimately ending in the identity of the unknown

Dictyochlamydospore	A multi-celled chlamydospore
Dictyoseptate	Having a number of septa running both horizontally and vertically, like the layers of cement between bricks (also described as muriformly septate)
Dictyospores	Spores which are dictyoseptate
Didymospores	Spores having one internal wall (septa) dividing the spore into two compartments
Diffluent	Breaking up in water
Diffuse	Spreading widely
Digital Microscope	A microscope with a built in digital camera that enables a direct feed to a computer, some have an integrated monitor instead of, or as well as, eyepieces
Dikaryomycota	Phylum of fungi that includes the ascomycetes and the basidiomycetes. Both of these groups have multinucleate, haploid (having only one set of chromosomes) hyphae that are septate (divided by walls to provide strength and structure).
Dikaryon	Is a nuclear feature which is primarily unique to certain fungi. When this occurs, the two nuclei of two cells pair off and cohabit without fusing known as karyogamy. Compatible cell-types can fuse cytoplasms and this is called plasmogamy. In ascomycetes this phenomenon is restricted to ascogenous hyphae (made up of binucleate cells containing one nucleus derived from the male antheridium and the other from the female ascogonium) and ascocarp (fruiting body) while the bulk of the mycelium remains monokaryotic (hyphae contain only one kind of nuclei). This is the dominant phase in basidiomycetes; the paired nuclei always divide synchronously
Dikaryotic	A hypha occurring in certain fungi after sexual reproduction in which each compartment contains two nuclei, one from each parent, a nuclear condition unique to the fungi occasionality abbreviated to 2N or N+N.
Dimidiate	Semi-circular or fan shaped in outline
Dimitic	Having two types of hyphae, generative hyphae and either skeletal or binding hyphae
Dimorphic	Having two different morphological forms in respect to shape and/or size; also sometimes used to describe sexual dimorphism; having an anamorph (asexual) and teleomorph (sexual) form
DIN Optics	A standard for the manufacturing of microscope lenses. This does not mean that they are better quality than non DIN lenses but they are interchangeable from one DIN standard microscope to another. They are compatible with a 160mm total tube length and have a uniform 20mm diameter screw thread. Most quality microscopes use DIN optics rather than JIS standard; whilst the two are interchangeable using a JIS standard lens on a DIN standard microscope will result in a different magnification than that stated on the lens
Diopter adjustment	Found on a stereo or binocular microscope, this is a ring on the eyepiece that when turned finely adjusts the focus for that eye. This allows you to compensate for any vision difference between one eye and the other
Diploid	A fruiting body, hyphae, cell or nucleus, having two sets of chromosomes, one from each of the parents, a nuclear condition unique to the fungi occasionality abbreviated to 2N or N+N

Disarticulating	Cells pulling or breaking apart
Disc	Fertile surface where asci develop on ascomycetes
Disclosing solution	A general stain for microscopy, can be used as an alternative to Congo red
Discoid	Resembling a disc or plate, having both thickness and parallel faces and with a rounded margin
Discolichens	Lichens in which the mycobiont (fungal partner) forms apothecial ascomata
Discomycete	A group of fungi considered as belonging to the class ascomycetes, including cup fungi, morels, and truffles, characterized by having their asci in a cup or disc shaped apothecia (fruiting body)
Discontinuous	Describing a growth habit in which the fruit bodies occur in more or less separated parts on the surface of the substrate
Discrete	Separate
Disjunct	Occurring in widely separated geographic areas, distinctly separate; applies to a discontinuous range in which one or more populations are separated from other potentially interbreeding populations far enough as to preclude gene flow between them
Disjunctor	The connecting piece between the spores in a chain
Disjunctor cell	An empty cell that fragments and/or undergoes lysis (enzymic dissolution) to release a conidium
Dissecting Microscope	A microscope generally of a lower magnification than a compound microscope, good for examining larger items and for viewing items whilst dissecting, another name for dissecting microscope is stereo microscope. The stereo microscope has two eyepieces that, unlike a compound microscope, produce two distinct optical paths so that the view to each eye is of a slightly different angle giving a three dimensional view. This is achieved, either by using a separate objective lens for each eyepiece known as Greenough stereo, or in the Common main objective (CMO) type, the two eyepieces look through the same objective, but from left and right sides so as to produce two different views which are combined to give a stereo image
Distal	Remote from the point of origin or attachment; the free end
Distant	A description of a gill spacing where the gills are very widely spaced
Distinct	Separate or free, not united
Divaricate	Wide-spreading
Divergent	Spreading in different directions, generally upward
Divergent	Describing gill trama that has downward pointing hyphae turning outward from a median line used to describe the central flesh of gills where hyphae turn outwards from the mid-line
Diverticulate	Branched, with short finger like excrescences
Diverticulum	A protrusion or outgrowth
Division	The term used for the rank below kingdom in the taxonomic hierarchy

DNA	Deoxyribose Nucleic Acid, the carrier of genetic information in living organisms
DNA barcoding	Is a method of species identification based on a short, standardized fragment of genomic DNA which is then compared with a database of sequences
Doliiform	Barrel shaped
Dolipore septum	A characteristic complex barrel-shaped septal pore apparatus found in almost all basidiomycetes that flares out near the pore to form an elongate channel. This structure is typically capped at either end by a specialized perforated dome of membrane called parenthesomes or simply "pore caps".
Domed	Describing a cap shape that is curving or bulging markedly and uniformly upwards
Dorsal	The part that faces away from the substrate. c.f. Ventral
Dorsiventral	Having structurally different upper and lower surfaces
Double septum	A two-layered septum that may undergo centripetal separation (schizolysis) to release a conidium
Doublet Lens	A lens structured by having two different lenses cemented together. Used in wide-field eyepieces to give improved colour performance
Downy	Having a short and dense mycelial texture
Downy Mildew	Any of various parasitic lower fungi (family Peronosporaceae) that produce whitish masses of sporangiophores (structure in which spores are produced) or conidiophores (structure in which conidia are produced) on the undersurface of the leaves of the host
Dry objectives	Generally compound microscope objective lenses below 100x are dry lenses, they are designed to be used with nothing but air in the space between the end of the objective lens and the cover slip. These can be seriously damaged if immersed in immersion oil
Dry rot	A decay of timber caused by basidiomycetes, e.g., serpula lacrymans that consume the cellulose of wood leaving a material that becomes brittle and readily crumbles into powder
Dryophila structure	With irregularly lobed or slightly coralloid elements, like in *Gymnopus dryophilus*
Dual organisms	Organisms which invariably consist of two interdependent symbionts, e.g. Lichens. Current thinking is that most plants are also dual or multiple organisms because of their intimate association with endo-mycorrhizal or ecto-mycorrhizal fungi
Duplex	Describing the flesh of fruitbody being two layered, with a well developed subpellis often visible as a darker line
Dysgonic	A slow growing variant
E...	
-eae	The suffix added to the stem of a generic name to form the name of a tribe
Ear fungi	A gelatinous, fruitbody of the auriculariales very reminiscent in shape to an ear
Earth balls	The common name for a group of ball shaped fungi in the genus Scleroderma

Earth stars	Any of a genus (Geastrum) of globose basidiomycetous fungi which are specialised soil-inhabiting puffballs with an outer peridium that splits and curls back in segments forming a star shape, this process raises the basidiospore mass above the surrounding leaf debris thereby increasing the efficacy of spore distribution
Eccentric	Describing stem attachment to cap with the stipe offset to one side; In relation to a germ pore, skewed towards the abaxial side of the spore
Echinate	Describing the surface of spores or hyphae, having pointed spines
Echinocyst	A sterile structure in the hymenium consisting of a rounded bladder covered with sparse, blunt projections.
Echinulate	Describing the surface of spores or hyphae, with small spines or projections
Ecological amplitude	The range of environmental conditions in which an organism can survive
Ectal	Outermost part
Ectal excipulum	Outermost layer of tissues in the apothecium
Ectomycorrhiza (EM)	A mycorrhiza where the fungus forms sheaths around plant rootlets (often of a tree), growing between but not penetrating the cells of the plant root, and providing the plant with water and nutrients while the plant supplies sugars to the fungus
Ectosporium	The very thin outer layer of the basidiospore wall
Ectosymbiont	An organism which lives in a mutualistic symbiosis with another organism whilst living outside of their hosts' cells
Ectotrophic mycorrhiza	Another term for Ectomycorrhiza
Effete	Dead, no longer producing spores
Effuse	Spread out, radiate; spread across the host substrate
Effused	A completely resupinate fruitbody stretched out flat entirely adherent to the substrate
Effused-reflexed	The same as Effuso-reflexed
Effuso-reflexed	Effuso-reflexed is a term used to describe a fungal fruitbody growing on a vertical surface in a resupinate effused (flat to the surface) manner with one margin, usually the upper one reflexed (bent sharply down) curling away from the substrate to form a bracket shaped Pileus (cap). It is partially resupinate and partially forming a horizontal pileus (cap) or bracket shape. The part that's sticking out is sometimes called the reflexed portion, and the resupinate part is sometimes called the effused portion
Eguttulate	Without droplets or ‘bubbles’ inside the spores
Elaters	Narrow threads that are elastic in nature and aid spore dispersal
Electrophoresis	Used in DNA barcoding is a technique used to separate molecules in a gel or fluid using an electric field. The rate and direction of particle movement in the electric field depends on the molecule's size and electric charge.
Ellipsoid	A 3-dimensional shape, having the shape of an ellipse, shaped like a flattened circle, symmetrical about both the long and the short axis, tapering equally to both ends. With a Q = 1.3 – 1.6
Elliptical	Oval, shaped like a flattened circle, symmetrical about both the long and the short

	axis, tapering equally to both ends
Elongate	Not globose, but this term does not specify a particular shape
Emarginate	Describing a gill shape with the gill edge rising up to form a notch close to the stem before curving back down to meet the stem, also called sinuate
En brosse	Describing cystidia with excrescences, also referred to as diverticulate
Encrusted	Describing hyphae or cystidia with lumpy or crystal-like, granular particles on their surfaces, visible as bands, granules or patches
Encrusting	On the hyphal wall, as a crust
Encrusting pigments	Pigment situated on the outer side of the wall of hyphae or cystidia
Endemic	Having a natural distribution restricted to a particular geographic region
Endogenous	Formed within another structure, as are the meiospores of ascomycetes (cf. Exogenous)
Endomycorrhiza	Mycorrhiza in which fungal hyphae penetrate cell walls of host plant can be in a mutualistic symbiosis relationship
Endophyte	Fungus living within a plant without causing visible symptoms of harm now known to produce neurotoxins that discourage herbivores, and therefore to be participating in a mutualistic symbiosis
Endospore	The inner layer of the wall of a spore
Endosporium	The electron transparent inner layer of the basidiospore wall at the inside of the episporium
Endosymbiont	An organism living in a mutualistic symbiosis with another organism whilst living inside of their hosts' cells
Endotrophic mycorrhiza	Another term for Endomycorrhiza
Endoperidium	The innermost wall of the fruitbody of gasteromycetes
Endophloedal	Growing inside, not on, the bark
Ensiform	Shaped like the blade of a sword, having sharp edges and tapering to a slender point
Entire	Referring to a cap margin, complete, not indented, notched or otherwise disrupted, it may be wavy or scalloped
Entomogenous	An organism that grows in or on the body of an insect, esp. as pathogens.
Entomopathogenic	Something that is pathogenic to insects; Several species of naturally occurring bacteria, fungi, nematodes, and viruses infect a variety of arthropods
Entomophthora	These are a group of fungi living in soil that infect insects by penetrating their cuticle to penetrate their bodies, feeding on them and eventually killing them; The type genus of the Entomophthoraceae; fungi parasitic on insect
Enucleate	To remove the nucleus of
Ephemeral	Short lived
Epi-	A prefix meaning upon

Epibasidium	The upper portion of the basidial apparatus of the Hemibasidiomycota
Epicutis	Upon the upper surface layer of the cap or stem of a fruitbody, consisting of repent non-gelatinizing hyphae
Epidermis	The outermost layer of the host substrate; an organ's outermost layer of cells, usually only one cell thick
Epigeous	Developing or fruiting on the surface of the ground c.f. Hypogeous
Epimembrenal	In relation to pigment, on the hyphae or spore wall
Epiphyllous	Growing upon a leaf, especially on its upper surface.
Epithecium	Layer formed by the fusion of the tips and branches of paraphyses and asci
Epithet	One of the words which makes up the binomial of an organism
Epiphloedal	Growing on bark
Epiphragm	A structure on the apical region of the peridium (the outer wall of the fungus), which eventually detaches to reveal the mature peridioles (spore capsules) in the order Nidulariales (Bird's Nest fungi)
Epiphyte	An organism that grows on the surface of a plant and derives its moisture and nutrients from the air, rain, water or from debris accumulating around it.
Epispore	A thickish outer coat found on spores of certain fungi.
Episporium	The electron opaque layer present in all basidiospores of the hymenocytes
Epithecium	A layer of tissue on the surface of the hymenium of an apothecium, formed by the union of the tips of the paraphyses over the asci
Epithelium	A cap cuticle of globose to broadly ellipsoid hyphae, more than one layer deep; regular epithelium occurs when the elements are in many-layered chains
Epruinose	Not pruinose i.e. the cap / stipe surface not being finely velvety / scurfy, not covered with fine powdery bloom
Erect	Upright
Ergot	Any of several fungi of the genus Claviceps, especially C. purpurea, that infect various cereal plants and form compact black masses of branching filaments that replace the grains of the host plant. The compact black masses are the sclerotium of the ergot fungus, which contains many toxic and psychogenic alkaloids.
Erythrosin b	A stain used in microscopy, can be useful to make the spores stand out, particularly useful for spores which have an epispore, (a thickish transparent outer layer found on spores of certain fungi e.g. some Coprinus).
Eroded	Describing a cap margin, irregularly wavy or indented
Erumpent	Bursting through a surface or covering, breaking through the outer layer of the substrate
Et al	And others, collaborators
Et alii	And others, collaborators
Eu-	Prefix meaning true

Euascomycetes	Any fungus of the former taxon Euascomycota, now called the Pezizomycotina
Eukaryotic	Having cells with visible nuclei surrounded by a nuclear membrane; pertaining to eukaryotes. c.f. prokaryotic
Eucarpic	With thallus divided into vegetative and reproductive structures. cf. Holocarpic
Eu-hymenium	Hymenium forming a palisade, arising from a clearly defined subhymenial layer
Eumycota	A phylum of true fungi, distinguished from the fungus-like slime moulds, Myxomycota, and similar organisms by having a mycelial thallus: in some classification systems, the class eumycetes
Eumycotan	A member of the Eumycota
Eutrophic	Rich in organic and mineral nutrients and supporting an abundant plant life
Evanescent	Fading, short-lived, soon disappearing
Everted	Turned outwards or inside out
Ex	In nomenclature, indicating that the preceding author proposed the name but did not legitimately publish it, and that the succeeding author referred to the first author when legitimately publishing the name
Excentric	Describing the nature of the stem attachment to the cap, offset to one side; In relation to a germ pore means skewed towards the abaxial side of the spore
Excipulum	External surface of the fruitbody, outer layer opposite to the hymenium
Excoriate	With the skin torn off
Expanded	Describing a pileus or cap that has opened fully at maturity
Exogenous	Formed externally to the parent cell, as are the meiospores of basidiomycetes
Exotic	Not native; introduced from another region or country
Exdoperidium	The outermost wall of the fruitbody of gasteromycetes
Excipulum	The outer layer of the hypothecium
Excoriate	Describing a pileus or cap surface that appears abraded or frayed with parts naturally peeling off
Exospore	The outermost layer of the wall of certain spore. Also used to describe an asexual spore developed externally by budding, as from a sporophore.
Exosporium	A layer of the basidiospore wall between perisporium and episporium, frequently responsible for the ornamentation of the spores
Expallent	Describing a cap becoming paler when drying
Expanded	Describing a cap opened out when mature
Exsiccata	Dried fruitbody
Exsiccatum	Fruitbody or specimen that is dried, labelled and stored in a herbarium to enable further study and examination
Exudate	A viscous exuded substance which can be thick and in some cases crystalline

Eyepiece diaphragm	A part within the eyepiece which provides the field of view and is where an eyepiece graticule (graduated scale for measuring specimens) is placed
Eyepiece graticule	The eyepiece graticule is a disc placed in the eyepiece that has lines giving 100 divisions. By working out what length each division equals for each objective lens you can enable accurate measurement of specimens under the microscope
Eyepiece lens	This is the part of the microscope that you look through and that provides the second stage of the magnification process, eyepiece lenses are most often 10x so using the 40x objective lens with a 10x eyepiece will give a magnification of 400x. Eyepiece lenses are also available at 5x, 10x, 15x, 20x and rarely at 30x they are also available in a wide field format that increases the field of view and is very helpful for spectacle wearers
Eyepiece Tube	The tube or tubes on a microscope in which the eyepiece lens is slotted
F...	
f.	Abbreviation for forma: the shape and structure of an object.
Fabiform	Shaped like a kidney-bean
Facultative	Capable of infecting another living organism or of growing on dead organic matter
Facultative parasite	An organism capable of infecting another living organism or of growing on dead organic matter, according to circumstances
Facultative saprobe	An organism capable of growing on dead organic matter, or of infecting another living organism, according to circumstances
Fairy ring	A ring of fungal fruitbodies marking the periphery of the perennial underground growth of the mycelium, can also be seen in grassland as a ring of lush grass growth; common in grasslands, and around conifers
Falcate	Curved like a sickle
Falciform	Shaped like a sickle
False Morel	Any of a genus (Gyromitra) of fungi that are often poisonous and have a cap with convolutions resembling a brain
Family	A formal taxonomic group of one or more genera with features and/or ancestry in common; the term for the principal rank between order and genus; suffix is -aceae
Farinaceous	Flour like, relating to taste or smell of fresh ground flour, also called mealy; relating to texture minutely granulose
Farinose	Covered with floury particles, finely granulose
Fasciate	Bundled or fused together
Fascicle	In relation to hyphae and conidiophores, describing a cluster or loosely bound bundle
Fasciculate	Describing a growth habit in which fruit-bodies or cystidia are growing in a group or bundle
FAST A	Genetic barcode formed of letters using T-A-G-C
Faveolate	Honeycombed. With regular, angled pits. Compare foveolate
Felted	Covered with very dense, interlocked and matted hairs with the appearance or texture

	of felt or woollen cloth
Ferruginous	Rust coloured
Fertile	Able to produce spores
Fertile	Describing a gill edge composed of basidia only
Fertile surface	Spore producing surface
Fertilisation	The fusion of two gametes to form a diploid zygote
$FeSO_4$	Iron sulphate, produces stained reaction when applied to the flesh of certain basidiomycetes.
Fibril	Fine fibre
Fibrillose	Describing a cap or stipe surface covered with thin fibrils, having a covering of delicate loosely interwoven hyphae forming a net
Fibrous	Comprising dense fibres
Field diaphragm	An iris diaphragm which in most modern microscopes is located on top of the built-in illumination. It is used to control the diameter of the beam of light entering the substage condenser, thereby reducing the effect of stray light
Field of view	The area which you can see when looking into the microscope eyepiece. This decreases as the magnification increases. It can be measured using a stage micrometre. Sometimes abbreviated to FoV
Field number (FN)	The field number is often marked on the eyepiece near the magnification, for example 10×/20. This figure represents magnification/field number. The field number is used to calculate in millimetres the diameter of the field of view of that eyepiece, were it to be used with a theoretical ×1 objective lens. Of course we are not going to be using a x1 objective lens in our microscope, but using the formula 'field number ÷ the magnification of our objective lens' will give you the field of view in mm for any objective lens used with that eyepiece. Therefore, an eyepiece with an FN of 20 when used with a ×10 objective lens, 20 ÷ 10 = 2, would give a field of view of 2.0 mm
Filamentous	Describing tissues having fibrous rather than rounded cellular components
Filiform	Very narrow, threadlike
Filter	A transparent piece of glass or plastic, normally circular, that is inserted into the optical path just below the condenser, so as to alter the colour or intensity of the light passing through the specimen
Fimbriate	An edge fringed with regular hair-like projections, or fringed with cystidia, or finely torn
Fimicolous	Living on dung (syn. coprophilous)
Fine focus	On most microscopes this is the smaller of the focus rings and is used following coarse focus to fine tune the sharpness of the image and to shift the point of focus to various parts of the specimen to enable examination of fine details
Fissitunicate	A fissitunicate ascus is a term distinguished by some people from bitunicate to refer to an ascus where the inner wall pops completely out of the outer wall during

	spontaneous opening at maturity
Fistulose	Tubular, hollow
Flabellate	Fan-shaped
Flabelliform	Describing the shape of cap, being fan shaped
Flaccid	Limp; tending to wilt; compare turgid.
Flagella	Plural of flagellum
Flagellate	With whip-like or thread-like appendages
Flagellum	A long, threadlike appendage, especially a whiplike extension of certain cells or unicellular organisms that functions as an organ of locomotion.
Fleshy	Rather soft, putrescent, spongy; often describing mushroom caps
Flexuose	Bending
Flexuous	Bent alternately in opposite directions
Flocci	Cotton-like groups of tufts
Floccose	Describing a cap or stipe surface that is fleecy, with a covering of loose cotton-like scales, often soon disappearing
Flocculose	Describing a cap or stipe surface that with a loosely cottony or woolly covering, often appearing ± tufted, minutely floccose
Focus	On a microscope this is achieved by moving the specimen closer or further away from the objective lens to render a sharp image. On some microscopes, the stage moves and on others, the tube moves. This movement is generally achieved by a durable Rack and pinion system
Foetid	With a strong and offensive odour
Foliar	Relating to leaves
Folded	Describing a pileus (cap) surface with deep radial folds such as a *Coprinus*
Foliicolous	Growth habit of certain lichens, algae, and fungi that prefer to grow on the leaves of vascular plants
Foliose	Describing a lichen shaped like a leaf
Foot-cell	Spore cell attenuated obliquely at the base as in *Fusarium*
Forma	A taxonomic category subordinate to species and within the taxonomic hierarchy, below variety (varietas), usually differentiated by a minor character. More commonly referred to as form
Foveolate	With regular tiny pits. Compare faveolate
Free	Describing a gill attachment, not attached to the stem; When used in reference to a volva, not attached closely to the stem, bag like
Fragile	Easily broken
Fragmentation	The segmentation of the thallus into a number of fragments each of which is capable of growing into a new individual. A method of asexual reproduction

Frb.	An abbreviation for fruiting body
Friable	Brittle, easily pulverized or crumbled.
Fructification	The act of forming or producing a fruiting body
Fruticose	Describing a lichen, shaped like a shrub
Fructification	Any fungal structure that contains or bears spores
Fugacious	Transient or short lived
Fuliginous	Sooty coloured
Fulvous	Rusty brown or tawny
Fungi imperfecti	An obsolete and outdated term for anamorphic fungi
Funiculose	Aggregated together to form strands
Funiculus	A fine, twisted cord, within a sheath, connecting a peridiole (spore capsules) to the peridial wall in the order Nidulariales (Bird's Nest fungi)
Funnelform	With a form gradually widening from the base to apex; funnel-shaped
Furcate	Describing lamellae (gills) or a hymenophore (fertile surface) that appears forked
Furfuraceous	Describing a surface, covered in particles that look like grains of sand, scurfy
Furrowed	Describing a pileus (cap) surface with channel like grooves or depressions
Fuscous	Greyish or greyish brown, brown tinged with grey or black
Fused	Joined together
Fusiform	Spindle-shaped, tapering at top and bottom often used when describing a stem
Fusiform	Rugby ball shaped often used when describing a spore
Fusoid	Tapering to a point at both ends somewhat fusiform
Fusoid-ventricose	Describing a cystidium that is tapered towards both ends but distinctly enlarged in the middle
G...	
Gamete	A cell whose nucleus unites with that of another cell to form a new organism. A gamete contains only a single, haploid, set of chromosomes
Gametangia	A cell in which gametes are produced
Gametothallus	A gamete-producing thallus
Gasterocarp	Fruitbody of a gasteromycete, typically with a sterile peridium (outer wall) enclosing the fertile gleba
Gasteromycetes	Name often given to a subgroup of fungi consisting of more than 700 species in the phylum Basidiomycota (kingdom Fungi). Their spores, called basidiospores, are borne within a variety of fruiting bodies (basidiocarps) that are often spherical or egg-shaped and resemble mushrooms. The shape of the fruiting body forms the basis for inclusion in the gasteromycetes subgroup. This subgroup often refers not only to gasteromycete species but also to non-gasteromycete relatives

Geastroid	Describing a fruitbody, resembling *Geastrum* (Earthstar) species
Gel electrophoresis	A method for separation and analysis of macromolecules and their fragments, based on their size and charge. It is used in molecular biology to separate a mixed population of DNA and RNA fragments by length, to estimate the size of DNA and RNA fragments. In barcoding it is an effective method for assessing whether you have a viable sample for sending away for analysis
Gelatinised	Term applied to hyphal cell walls which soften and partially dissolve in water, swelling up and becoming slimy; sometimes evident macroscopically when the cuticle stretches like rubber as it is peeled
Gelatinous	Having a jelly-like, glassy nature (usually referring to cap or stem surface, hyphae or cap trama)
Gemma	A thick-walled cell similar to a chlamydospore
Generative	Branched, thin to thick walled, commonly septate and clamped hyphae, spore bearing
Generative hyphae	In reference to hyphal systems, basic hyphae of unlimited growth, branching, septate, thin or thick walled, with or without clamp connections
Geniculate	Bent like a knee
Genome	The total genetic material of an organism (chromosomes plus cytoplasmic genes)
Genotype	The genetic makeup, as distinguished from the physical appearance, of an organism or a group of organisms. In many fungi only part of this is expressed at any given time (see holomorph, anamorph, teleomorph)
Genus	A taxonomic category ranking below a family and above a species and designating a group of species that are presumed to be closely related and usually exhibit similar characteristics
Geophilous	Growing or rooting in the ground
Geotropic	Growing vertically downward under the influence of gravity
Geotropism	The direction of growth of a fungus in response to gravity (either downwards or upwards), can be seen in bracket fungi growing on a tree trunk when the tree falls the bracket will change its direction of growth
Germ pore	Thin region of spore wall via which spores can germinate
Germ slit	Thin area of a spore wall running the length of the spore
Germ tube	The hypha that emerges from germinating spores of true fungi.
Germination by repetition	The production and forcible release of a secondary ballistospore by a recently released basidiospore; A process that is characteristic of the phragmobasidiomycetes
Germination cleft	A longitudinal furrow in a spore visible under a microscope
Gibbose	Describing a spore, with large rounded warts
Gibbous	Describing a cap, with an eccentric umbo
Gill attachment	The way in which the gill joins the pileus (cap) and stipe (stem), this is a valuable identification factor mentioned in most ID guides. There are number of forms of attachment and this information can be a valuable aid to identification

Gills	± thin flat structures of tissue growing down from the underside of the cap and covered with hymenium (fertile surface) in an agaricoid fungus (having a cap and stem). The shape, colour, angle, spacing and attachment are all important macroscopic identification features.
Gill spacing	How closely the gills sit in relation to each other: **Distant** - A description of a gill spacing where the gills are very widely spaced gills **Subdistant** - A term used by some writers to define a gill spacing that is not quite distant, but not close either **Close** - A description of a gill spacing where gills close together but not as close as crowded **Crowded** - A description of a gill spacing where the gills are very close together
Glabrescent	Becoming glabrous, almost glabrous
Glabrous	Describing a surface, bald, neither hairy nor scaly
Glandiform	Acorn-shaped
Glassine packets	Glassine is a smooth and glossy paper that is air, water, and grease resistant, making Glassine packets a useful container in which to protect specimens whilst out collecting in the field, and upon which to record details of the find. NB they must be acid free for collecting material that is intended for DNA testing
Glaucous	Bluish grey to greenish
Gleba	Is the spore-bearing inner mass of certain fungi such as the puffball or stinkhorn
Glebifer	A cup-shaped organ that supports the gleba in some fungi in the genus Clathrus
Globose	Spherical or nearly so
Globulose	Approximately spherical
Glociferous	In relation to hyphae, containing oil droplets
Gloeocystidia	Thin walled, tubular, balloon-shaped or vesicular in shape, often sinuous or with constrictions. Usually highly refractive containing granular, hyaline or yellowish oily contents, but may be empty. Typically staining in sulphur aniline
Gloeoplerous	Hyphae containing oil droplets
Gloiospora	Conidia (asexually formed fungal spore) aggregated in slimy heads at the tip of an annellide or phialide
Glomerales	An order of symbiotic fungi within the phylum Glomeromycota
Glomeromycota	A group of soil-borne fungi that form intimate mycorrhizal associations with nearly 80% of land plants, believed to have been crucial in the initial colonization of the terrestrial realm by plants
Glutinous	Describing a cap surface or stipe, covered with a sticky, slimy gelatinous layer
Glycerol	Glycerol (glycerine) in 10% solution aids in preventing the slide drying up prematurely
Grandinoid	Having small, rounded grains
Granulate	Covered with small granules
Granulose	Describing a cap or stem surface, covered with minute granules

Graticule	The eyepiece graticule is a disc placed in the eyepiece that has lines giving 100 divisions. By working out what length each division equals for each objective lens you can enable accurate measurement of specimens under the microscope
Greenough stereo	A design of stereo microscope in which there are two objective lenses, one for each eyepiece producing two separate views to give a stereo image. Other stereo microscopes use the common main objective (CMO) design
Gregarious	Several fruit bodies growing in close proximity but not connected to each other
Guttate	With droplet-shaped spots
Guttation drops	Liquid secretions in the form of droplets observed on the surface of bristles and hairs etc.
Guttulate	Spores or basidia with oil droplets or 'bubbles' within
Guttule	A small oil-like drop inside the spore of some species of fungi, visible via a microscope
Gymnocarpic	In relation to a fruitbody, the spore producing region being visible at all stages of development
Gymnothecia	An ascomycetous fruiting body composed of loosely interwoven hyphae, often with characteristic appendages
H...	
Habitus	The form of growth or general appearance
Hallucinogen	A psychoactive substance which causes perceptual changes including heightened sense of awareness, as well as substantial subjective changes in thought, emotion, and consciousness, e.g. Psilocybin
Halocystidia	Cystidia with a capitate apex surrounded by a large resinous droplet
Hamate	Hooked
Haploid	A fruiting body, hyphae, cell or nucleus, having only one set of chromosomes (often denoted by `n')
Hapteron	A mass of highly adhesive hyphae that form an attachment organ at the base of the funicular cord (mechanism that tethers peridioles to vegetation in a perfect location for browsing by herbivores) of the Nidulariaceae (Bird's Nest fungi)
Hartig net	The intercellular hyphal network formed by an ectomycorrhizal fungus consisting of a network of inward-growing hyphae that extends into the root of the symbiotic partner, penetrating between the epidermis and cortex of plants. This network is a site of two way nutrient exchange between the fungus and the host plant transferring sugars to the fungi and minerals to the plant
Haustoria	Plural of Haustorium
Haustorium	In parasitic fungi, specialized branches or organs of mycelia, serving either as a means of attachment or to bring the fungus into organic connection with its host, these hyphae penetrate the cells of other organisms and absorb nutrients directly from them
Head	The upper part of the microscope containing the eyepiece tube and prisms
Heart rot	In trees, heart rot is a fungal disease that causes the decay of wood at the centre of

	the trunk and branches. Fungi enter the tree through wounds in the bark and decay the heartwood. The diseased heartwood softens, making trees structurally weaker and prone to breakage
Helicoid	In the shape of a spiral
Helicospore	a coiled cylindrical fungal spore which curves through more than 180 degrees, and often through several complete gyres, coiling in two or three dimensions
Hemiamyloid	Red reaction to iodine reagents.
Hemiangiocarpic	Describing a fruitbody, with hymenium becoming exposed before fully mature
Hemiascomycete	Any yeast or similar fungus of the class hemiascomycetes
Hemiascomycetes	Plural form of hemiascomycete
Hemib.	Abbreviation for the hemiboreal vegetation zone
Hemicellulose	Amorphous (non-crystalline) polysaccharides in plant cell walls
Hemisphaeric	With the shape of half a sphere
Hetero-	Prefix meaning other
Heterobasidia	A basidium that is septate or with deep divisions and has a cell divided longitudinal or transverse in (usually) four parts by three septae
Heterobasidiomycetes	A subclass of basidiomycetes that have heterobasidia
Heteroecious	Spending different stages of the life cycle on different, usually unrelated hosts. Describes rust fungi which need two hosts to complete their life cycle (cf. Autoecious)
Heterokaryotic	Refers to cells where two or more genetically different nuclei share one common cytoplasm. It is the antonym of homokaryotic
Heteromerous	A mixture of hyphae and groups of sphaerocysts, containing cells with distinctive textures (e. g. in *Russula*, spherical cells and hyphae intermixed; in *Lactarius*, +/– latex bearing hyphae)
Heterothallic	A fungus that requires mating between two compatible strains for sexual reproduction to occur. Two definitions exist one being: refers to a species consisting of self-sterile (self. incompatible) individuals requiring therefore the union of two compatible thalli for sexual reproduction, regardless of the possible presence of both male and female organs on the same individual. Another definition being: refers to a species in which the sexes are segregated in separate thalli, two different thalli being required for sexual reproduction.
Heterothahallism	The condition exemplified by heterothallic species.
Hexagonal	Six sided
High eyepoint	Light rays emanating from the eyepiece intersect at the exit pupil or eyepoint, a high eyepoint eyepiece is deigned to work in such a way as to make this point high enough that even when wearing spectacles it is possible to see the full field of view
Hilar appendage	In relation to spores, short process at basal end of spore, by which it was attached to the basidium by the sterigma, also sometimes referred to as an apiculus

Hilar depression	A depression on the spore near to the apiculus
Hilum	A scar at the base of a conidium
Hirsute	Covered in long coarse hairs
Hispid	Covered with long or short, erect, stiff bristle-like hairs
Hispidus	Covered with long or short, erect, stiff bristle-like hairs
Hoary	Describing a surface, covered with dense whitish or greyish silky down
Holobasidiomycete	Basidiomycetes in which the basidia are not subdivided by septa
Holobasidium	A basidium not divided by septa, which usually gives rise to 4 exogenous basidiospores
Holoblastic	A mode of blastic conidium ontogeny in which all the cell wall layers of the conidiogenous cell are involved in conidium development
Holocarpic	The thallus of the fungi becoming entirely converted into reproductive structures
Holothallic	A mode of thallic conidium ontogeny in which all the cell wall layers of the conidiogenous cell are involved in conidium development
Holothecial	Describing a fruitbody, hymenium covering all surfaces, no differentiation between sterile and fertile surfaces
Holomorph	All forms in the life cycle of any fungus of the phyla Ascomycota and Basidiomycota treated as a whole including all the manifestations of a genotype: in a fungus this frequently means one or more anamorphs (asexual stage) plus teleomorph (sexual stage)
Holotype	The single specimen or other element used or designated as the type specimen of a species or subspecies in the original published description of the taxon
Holozoic	Ingesting food in the form of solid particles
Homo-	Prefix meaning same
Homobasidiomycete	A basidiomycete with undivided basidia, usually a more or less clavate (club shaped) non septate (undivided) cell
Homokaryotic	A term used to refer to multinucleate cells where all nuclei are genetically identical. In multinucleate cells, nuclei share one common cytoplasm, as is found in hyphal cells or mycelium of filamentous fungi
Homogeneous	Being the same throughout
Homoiomerous	Relating to the flesh of the fruitbody, composed exclusively of hyphae without nests of sphaerocysts (thin-walled cells, found clustered in the tissues of some species)
Homoiomerous	Describing a lichen thallus, having the fungal and algal components intermixed throughout
Homomerous	Relating to the flesh of the fruitbody, composed exclusively of hyphae without nests of sphaerocysts
Homothallic	Having both male and female reproductive organs on the same thallus, which can be self-fertilizing
Homothallism	Self-fertility, the condition exemplified by homothallic species

Host	The substrate organism on and in which the fungus lives, this relationship can be: **Parasitic** = A process whereby a living organism feeds at the expense of another. **Necrotrophic** = Feeding by killing and consuming part of another organism **Symbiotic** = Where one or both benefit and the host is often not harmed
Humicolous	Growing in or on soil
Hyaline	Clear, colourless when viewed under a microscope; beware of apparent yellow-green colour which can be due to refracted light
Hyalo-	Prefix meaning colourless. Note – spores are considered to be pigmented if the walls appear dark either individually or within a mass
Hyalospore	One-celled conidium devoid of colour (if coloured, a phaeospore)
Hydnaceous	With a spiny or toothed hymenophore
Hydnoid	Having prominent tooth-like or spiny projections
Hygrophanous	Appearing darker and translucent when wet, paler and opaquer when dry, sometimes clearly recognizable by concentric zones of light and dark or flame-like radial markings due to uneven drying
Hygroscopic	Changing shape in response to humidity
Hymenia	Plural of hymenium
Hymenial cystidia	Cystidia arising in the hymenium or subhymenium
Hymeniderm	A cuticle of non-septate elements originating at the same level resembling a hymenium
Hymeniform	Describing a cap cuticle, constructed like the hymenium, usually of clavate to rounded cells arranged side by side and perpendicular to the surface
Hymenium	The fertile spore-bearing layer of tissue on a fruitbody often intermixed with sterile elements (cystidia), which bears asci in Ascomata, basidia in Basidiomata, conidia in Pycnidia or Acervuli
Hymenomycetes	One of the great divisions of fungi, containing those species in which the hymenium is completely exposed.
Hymenoderm	Cap cuticle with such a structure as to resemble a hymenium – all elements originating at same level
Hymenophoral trama	That part of the context which supports the subhymenial layer and hymenium
Hymenophore	Spore bearing surface layer of the fruitbody, the tissue supporting the hymenium
Hyperparasite	Any parasite whose host is a parasite
Hypertrophy	Excessive or abnormal growth produced entirely by enlargement of existing cells
Hypha	Individual threadlike filament which forms the basic structure of both the mycelium and the fruitbody
Hyphae	Individual threadlike filament which forms the basic structure of both the mycelium and the fruitbody, plural of hypha
Hyphal cord	A cord formed of many hyphae, often known as a rhizomorph when it has a dark outer

	surface or rind
Hyphal peg	A projection extending beyond the general level of the hymenium, consisting of parallel or interwoven hyphae
Hyphidia	Plural of hyphidium
Hyphocystidia	Very simple hypha-like cystidia originating in the subhymenium and projecting beyond the hymenium, akin to paraphyses
Hyphidium	A sterile hyphal structure of modified hyphae in the fertile layer of a fungus often with a branched appearance
Hyphoid	Resembling hyphae
Hyphoepithelium	An epithelium overlayered by repent, elongate, septate or branched hyphae
Hyphomycetes	Hyphomycetes are a form classification of Fungi. Hyphomycetes lack closed fruit bodies, and are often referred to as moulds. Most hyphomycetes are now assigned to the Ascomycota, on the basis of genetic connections made by life-cycle studies or by phylogenetic analysis of DNA sequences; many remain unassigned phylogenetically.
Hypobasidium	The basal portion of the basidial apparatus of the hemibasidiomycetes
Hypochnoid	Loosely intertwined, more or less compacted or felted
Hypoderm, hypodermium	A differentiated region just below the cap cuticle or stem cuticle, e.g., in Hypholoma, the layer between the cap cuticle and the cap flesh, thus usually meaning the same as subcuticle. It should, however, only be used for cellular structures; hyphal structures being designated subcuticle
Hypogean	Describing a growth habit in which the fruitbody grows below the ground
Hypogeous	Describing a growth habit in which the fruitbody grows or develops below ground c.f. Epigeous
Hypoid	Resembling hyphae
Hypophyllous	Growing on the under surface of a leaf
Hypothallus	A thin, often transparent deposit at the base of the fructifications of some Myxogastres
Hypothecium	The thick fleshy portion or main body of an apothecium
Hysteriales	An order of fungi of the subclass euascomycetes, characterized by elongated ascomata opening by a longitudinal slit and includes various fungi which cause leaf cast of conifers
Hysterothecia	Elongated stromata a with cleft like aperture
Hysterothecium	Elongated narrow ascocarp opening at maturity by a narrow lengthwise slit
I…	
I-	Abbreviation meaning inamyloid. Not changing colour with iodine reagents e.g. Melzer's or Lugol's
I+	Abbreviation meaning amyloid. Changing colour with iodine reagents e.g. Melzer's or Lugol's

Illuminator	The light source of a microscope, mounted either above or below the stage depending on the type of microscope. LED or halogen are the most commonly used in modern microscopes
Imbricate	Describing a growth habit in which the fruitbody grows overlapping like the tiles on a roof
In	In nomenclature, where the preceding author published the name in an article or book, authored or edited by the succeeding author
Inamyloid	Not changing colour with iodine reagents e.g. Melzer's or Lugol's
Inaequi-hymeniiferous	Hymenium having basidia which mature unevenly over the surface of each lamella; c.f. aequi-hymeniiferous
Immersion oil	A specialised oil, a drop of which is placed between the 100x oil immersion objective lens and the cover slip to improve light transmission by reducing light refraction. Not to be used with non oil immersion dry lenses.
Imperfect stage	Another name for the asexual reproductive stage of ascomycetes
Incarnate	Flesh coloured
Incised	Split as if cut, often used to describe the margin of a cap
Incrusted	The same as encrusted, covered with a fine crust. On hyphae visible as bands, granules or patches
Incurved	With the margin (usually of a mushroom cap) turning inward toward the stem
Indehiscent	Term used of asci not forcibly discharging their spores
Indel	A molecular biology term for an insertion or deletion of bases in the genome of an organism. It is classified among small genetic variations, measuring from 1 to 10 000 base pairs in length, including insertion and deletion events that may be separated by many years, and may not be related to each other in any way. A microindel is defined as an indel that results in a net change of 1 to 50 nucleotides
Indigenous	Native to the area, not introduced, and not necessarily confined to the region discussed or present throughout it (hardly distinct from 'native' but usually applied to a smaller area)
Indusium	Found in the *Phallus* species, a membranous, fragile spreading veil, formed on the receptacle below the pileus
Ined.	Abbreviation of Latin inedita, an unpublished work. Used to indicate that a botanical name appeared only in a manuscript that was not published, so the name is invalid
Inferior	Describing a ring, located nearer the base of the stem, below half way
Inflexed	Bent inwards
Infrageneric	Denoting taxonomic ranks below the genus level, for example, subgenera, sections, and series
Infraspecific	Denotes taxonomic ranks below species level, for example subspecies
Infundibuliform	fruitbody forming a shape reminiscent of a Funnel
Ingest	To obtain food by engulfing it, as opposed to absorbing, which is what fungi do

Ingoldian fungi	A general term referring to something like 300 species of asexual fungi that live in streams. They decompose organic matter that gets into the stream.
Innate	Relating to the scales on a cap surface, not readily detached as in *Lepiota*
Inoculate	To put a microorganism into an organism or a substratum
Inoculum	A small amount of a fungus used to inoculate fresh culture medium or to infect a host organism
Inoperculate	Describing an ascus, lacking an operculum or cap that opens to permit spore discharge, spores discharge via a pore instead
Inrolled	Curled inwards often used in reference to a cap margin)
Insititious	Arising cleanly from the substrate
Intercalary	Within a hyphal element between the base and apex, among or between cells; refers to such things as non-apical chlamydospores in many fungi.
Intercellular	Situated between the cells
Intermediate	Describing gills, not reaching the stem
Interpupiliary adjustment	Many microscopes with binocular eyepieces are designed to enable the user to adjust the distance between the eyepieces to ensure the optimal comfort. This should be the first adjustment to make so that you are comfortably viewing the specimen with both eyes
Interveined	Having veins between the gills e.g. Mycena galericulata
Intervenose	Having veins between the gills e.g. Mycena galericulata
Interwoven	Describing the composition of the hymenia, hyphae intricately entangled, not running in any particular direction as they project downwards from the cap to form the gill trama
Intracellular	Describing the location of pigment situated inside the cells
Intramatrical spores	Another name for the vesicles produced in host roots by most endomycorrhizal fungi
Intraparietal	Describing the location of pigment situated within the hyphal wall itself (as opposed to encrusting or cellular)
Invalid	Use of names not validly published according to the code; i.e. They are not strictly 'names' in the sense of the international code of botanical nomenclature
Inverse	Describing gill trama, having downward convergent hyphae, i.e. turning inward toward a meridian line
Inverted microscope	A compound microscope in which the objective lenses are below the stage with the light source and condenser on the top, above the stage pointing down. Inverted microscopes are useful for observing living cells or organisms at the bottom of a large container under more natural conditions than on a glass slide, as is the case with a conventional microscope
Involute	Describing the shape of the cap with the margin rolled inwards towards the gills
Iron salts	A chemical sometimes used to aid identification of some groups of fungi based on a colour change in response to contact with the iron salts

Irpicoid	With irregular, tooth-like projections, also known as dentate
Irregular	Often used to describe gill trama with interwoven hyphae. Also used relating to the shape of the fruitbody, of non-uniform shape such that it is impossible to give a precise diameter
IS (Index of Slenderness)	Length of stipe squared, divided by stipe diameter multiplied by cap diameter
Isabella	Yellowish brown to light olive brown
Isabelline	Yellowish brown to light olive brown
Isodiametric	Of a cell or similar body, having a similar diameter in all planes
Isotype	Specimen that is substituted in place of the holotype
Ixo-	A prefix meaning gelatinous, embedded in a gelatinous layer, like in ixocutis
Ixocutis	A cuticle made up of gelatinous hyphae
Ixohymeniderm	A hymenium embedded in a gelatinous layer
Ixotrichoderm	A trichoderm made up of gelatinising elements
J...	
Jelly fungi	Jelly fungi are types of fungi that belong to several different orders, including Auriculariales, Dacrymycetales, and Tremellales. They belong to the class heterobasidiomycetes and form mushrooms that have a gelatinous appearance. Jelly fungi can typically be found growing on logs as well as on twigs and tree stumps
JIS standard	A less common standard for the manufacturing of microscope lenses designed to enable compatibility with a 170mm total tube length and have a uniform screw thread. Most quality microscopes use DIN optics rather than JIS standard; whilst the two are interchangeable using a JIS standard lens on a DIN standard microscope will result in a different magnification than that stated on the lens
K...	
K, k+, k-	In lichenology, "k" is the abbreviation for the outcome of a test in which a 10% solution of potassium hydroxide (koh — hence "k") is placed on lichen tissues. Colour change is noted by "k-" for none, and k+ for a yellow to red or purple colour
Karyogamy	The coming together and fusing of two sexual nuclei, as in fertilization
Kingdom	The highest taxonomic category, of which 7 are currently recognized (Archaebacteria, Eubacteria, Protozoa, Chromista, Plantae, Eumycota and Animalia); all members of kingdom Eumycota are fungi, and two of the phyla in kingdom Chromista are also treated as fungi.
Koehler illumination	A process used in microscopy employing both a field iris and an aperture iris. This gives the user increased control of the illumination to enable focusing and centring of the light path whilst spreading it evenly over the field of view to give optimum contrast and resolution, also known as double diaphragm illumination
KOH	Potassium hydroxide, a chemical sometimes used to improve staining or to revive dried samples for examination

L...	
L	This is figure arrived at by counting the number of gills reaching the stem, it is a more objective measure than descriptions of gill spacing but is a system that is not used in many books
Laccate	Describing a pileus (cap) surface that has a waxy or lacquered surface texture
Laceroid	Describing spores shaped like those of *Inocybe lacera* (i.e. uneven cylindrical as in *Boletus*)
Laciniate	Appearing as though torn into strips
Lacrymoid	Tear shaped
Lactifer	A latex bearing hypha
Lactiferous	Describing hyphae that are non-septate (lacking cross walls), thin-walled with milky or colourless juice or latex
Lacto-phenol cotton blue	Is a general stain used in microscopy and is also used to observe whether structures are acyanophilous (no distinct darkening of cell walls in cotton blue) or cyanophilous (the walls of basidiospores, cystidia, basidia, or hyphae turn dark(er) blue in the presence of cotton blue). The tissue needs to sit in cotton blue for half an hour so that the lactic acid can properly swell the cytoplasm (the substance of the body of a cell), this process can be speeded up by heating
Lacunose	A surface with wide sunken pits like an irregular honey comb
Lageniform	Swollen at the base, narrowed at the top; shaped like a flask or gourd, typically used to describe the shape of cystidia
Lageniform cystidia	Cystidia with a broad basal part and needle-like, encrusted apical part, like a bottle brush
Lagenocystidia	See Lageniform cystidia
Lamella	The mycological term for a single gill of a fungi
Lamellae	The gills of a fungi plural of lamella, the attachment of the lamellae to the stipe
Lamellate	Having gills
Lamellulae	Short gills that do not extend fully from the cap edge to the stem interspersed between lamellae
Lamellules	Short gills that do not extend fully from the cap edge to the stem interspersed between lamellae
Lamprocystidia	Cystidia usually filled with granular or oily droplet-like contents, conical to cylindrical, thick walled, encrusted cystidia; not always distinguishable from thick-walled, encrusted leptocystidia.
Lanceolate	Shaped like the head of a lance; tapering from a rounded base toward the apex
Lanose	Woolly
Lateral	Pertaining to or arising from the side, a mushroom stipe attached to one side of the cap, e. g. *Pleurotus*
Latex	A white, coloured or colourless fluid that oozes from cut surfaces of certain fungi, in

	particular *Lactarius* species. The profusion, taste, colour and any colour changes, along with duration before change takes place can be vital clues to identification.
Laticifer	A latex bearing hypha
Laticiferous	Latex-bearing, producing a milky juice
Lecythiform	Describing the shape of cystidia that are bottle or bowling pin shaped with a short neck and distinct apical head
Lenticel	A cleft shaped opening in the bark of a tree, allow the interchange of gases between the interior tissue and the surrounding air, also found on plant stems and fruit
Lenticular	Lens-shaped, flattened but with both surfaces convex
Lentiform	Lens-shaped, flattened but with both surfaces convex
Lepidote	Covered with small scales
Leptocystidia	Projecting, thin walled, hyaline cystidia with no contents. Most common type of hymenial cystidia, thin to moderately thick-walled, cylindrical to fusoid to conical, sometimes encrusted
Lichen	Organism comprising a fungus and an alga or a cyanobacterium, in which the two components are so interwoven as to form what appears to be a single individual
Lignicolous	Growing on or in wood tissue after bark as fallen or been stripped off
Lignin	A polymer that is an important constituent of wood. It is resistant to biodegradation by most organisms, but can be degraded by many basidiomycetes
Lignum	Dead wood, typically in the context of a substrate
Limnic	Relating to bodies of water with low salt concentration, such as lakes and ponds
Limoniform	Lemon shaped
Linear	Describing gills that are narrow with parallel edges
Livid	Greyish or bluish grey
Locule	A cavity, in ascomycetes a spore-containing cavity, especially one secondarily developed within a pseudothecial ascoma, or in the basidiomata of lycoperdales and sclerodermatales, or in many sequestrate agarics
Loculus	Literally a small space, one of a number of small compartments or cells, separated from one another by septa; Cavity in a stoma where the hymenium forms in those species that do not form perithecia
Loculoascomycetes	A now no longer recognised class of fungi, in which the fruiting body is an ascostroma and the asci are bitunicate
Loupe	A small portable magnifying glass. They generally have higher magnification than a traditional magnifying glass, and are designed to be held or worn close to the eye. They come in a range of magnifications from 2x to 40x, it is generally recommended that for mycology a 10x is a good choice. There are a wide range of styles from which to choose, one that can be attached to a lanyard can be valuable as they are easy to lose, also given the low light levels in which they are often used one with a built in LED light can be useful

Lubricious	With moist, soapy, feel; greasy to the touch
Lugol's Iodine	A solution of iodine and iodide potassium in water, less toxic than Melzer's, frequently used in the study of ascomycetes.
Lugol's solution	Another name for Lugol's Iodine
Lumen	Hollow centre of skeletal hyphae or cystidia
Luminescent	Emission of light, glows in the dark. Characteristic of some fungi e.g. *Omphalotus*
Lunate	Crescent shaped
Lurid	Dark red
Lutescent	Staining yellow
Lycocystidia	Cystidia characteristic of some genera, they have thick, refractive walls. Note they dissolve in KOH.
Lycoperdales	A now outdated order of fungi. The order included some well-known types such as the giant puffball, the earthstars, and other tuberous fungi
Lyophilization	the creation of a stable preparation of a biologic substance by rapid freezing and dehydration of the frozen product under high vacuum, a technique used to preserve fungal cultures in a state of suspended animation
Lysis	The dissolution or destruction of cells, as by the action of a specific lysin that disrupts the cell membrane
M...	
Macroconidia	Plural of Macroconidium
Macroconidium	The larger of two different types of conidia (asexually formed fungal spore) produced by a fungus in the same manner
Macrocyclic	Describes rust fungi which produce all the 5 developmental stages, these being: basidiospores, spermatia, aeciospores, urediniospores, and teliospores (cf. Microcyclic)
Macronematous	Having a conidiophore that is morphologically different from the vegetative hyphae
Macroscopic	Large enough to be perceived or examined by the unaided eye; as opposed to microscopic.
Maculate	Spotted, marked with spots
Magic mushrooms	A fungus (such as genus Psilocybe) containing hallucinogenic alkaloids (such as psilocybin), but also spp. of *Gymnopilus, Panaeolus, Conocybe,* and *Amanita muscaria*
Magnification	In microscopes the magnification is performed in two sets of lenses the first being the objective lens and then secondly by the eyepiece lens, to ascertain the actual magnification you multiply the objective lens magnification by the eyepiece magnification
Mamillate	Having bluntly rounded protuberances. When referring to the shape of cap possessing a central protuberance (i.e., umbo)
Mantle	A compact layer of hyphae enclosing short feeder roots of ectomycorrhizal plants; connected to the Hartig net on the inside, and to the hyphae on the outside; acts as a

	sink for nutrients
Marcescent	Able to revive when moistened. Applied to a fruitbody refers to one which can resume spore production when moistened after being dried; often the fruitbody swells out and resumes its original shape
Margin	The edge or rim of a mushroom cap
Marginate	Relating to the cap, having a clearly defined edge of a different colour or shade. Can also be used to mean not having a cortina. Describing the gill margin, used to describe a gill having a well-marked edge or margin of a different colour to that of the face of the gill, often due to having distinctly coloured microscopic gill edge cystidia. Occasionally also used to describe a bulbous stem base when the bulb is well marked by its distinct rim, although this is generally referred to as Marginate bulbous.
Marginate bulbous	Describing a stipe, with swollen base baring a clearly defined raised rim on the upper edge
Matrix	The substrate, the thing on which the fungus is feeding and growing.
Mealy	Flour like with a taste, smell or texture of fresh ground flour, also called farinaceous
Mechanical Stage	Found on high power microscopes, this is a type of stage upon which to place the microscope slide that has two dials, used to control very precise movements of the slide under the objective lens enabling the user to view different parts of the specimen on the slide
Medallion clamp	Clamp connection with an opening between the clamp itself and the hyphae connected by it
Median	Middle
Medium	Sub-stratum of a balanced chemical composition employed in the laboratory for growing microorganisms. Media may be used in the liquid state or may be solidified with agar, gelatin, or other solidifying agents
Medulla	Middle layer of tissue between the hymenium (fertile surface) and excipulum (outer surface opposite to the hymenium)
Medullary	Inner or innermost
Meiosis	Reductive division of the chromosomes, the process of cell division in sexually reproducing organisms that reduces the number of chromosomes from diploid to haploid, as in the production of gametes
Meiosporangia	Plural of Meiosporangium
Meiosporangium	A sporangium within which meiosis occurs before spore formation
Meiotic spindle	A framework of fibres formed between the centrioles during nuclear division at meiosis
Meixner test	Used for the detection of amatoxins: The testing method is as follows (1) express fluid from agaric onto newsprint, (2) dry, (3) add a drop of concentrated hydrochloric acid, (4) blue colour developing in 1-20 mins. Indicates presence of amatoxin; higher levels produce colour sooner.
Melleous	Honey-coloured

Melzer's Iodine	A reagent and stain used in microscopy for testing amyloidity and dextrinoidity. Fungal structures are said to have an: **Amyloid** response if they turn blue in Melzer's reagent. **Dextrinoid** response if they turn reddish-brown colour. **Inamyloid** or negative if they turn yellowish or do not change at all. Good at showing the ornamentation of *Russula* & *Lactarius* spores. It is also useful for ascomycetes as it "blues" the tips of some asci. Its effectiveness is based on the fact that iodine reacts with starchy substances to produce an intense dark blue-black colour Contains chloral hydrate which means that it can only be obtained from specialist sources in some countries but once obtained is reported to have a long shelf life
Meltzers reagent	Another name for Melzer's Iodine
Membranaceous	Thin, with a skin-like consistency
Membranal	Describing the location of a pigment which lies within the hyphal wall (not encrusting or intracellular)
Membranous	Describing a veil of fine filmy skin like texture
Membranous	Description of the context of a fungus that is thin not fleshy and flexible, or pliant
Meristem	Pertaining (in fungi) to an area (meristem) of the hyphae, or of other specialized structures from which new growth occurs. It consists of undifferentiated cells (meristematic cells) capable of cell division. Cells in the meristem can develop into all the other tissues and organs that occur in the fungi. The meristematic tissue has the quality of self-renewal. Every time the cell divides, one cell remains identical to the parent cell, and the others form specialized structures.
Meristematic	Relating to the meristem
Meristogenous	Refers to the origin of a fruiting body from the division of a simple cell or of adjacent cells of the same hypha
Meront	A portion of anything, but more especially of a splitting plasmodium (schizont) of the Plasmodiophorales
Merosporangia	Plural of Merosporangium
Merosporangium	One of the cylindrical outgrowths developing from the swollen sporangium tip in various fungi of the order Mucorales and having contents that divide to form a series of sporangiospores like a chain and simulate conidia (asexually formed fungal spore) upon breakdown of the sporangium wall
–merous	Suffix meaning part (e. g. trimerous means in three parts)
Merulioid	Folded into a shallow, maze like pattern, folded wrinkled surface sometimes poroid with irregular and fertile edges
Mesophilic	Describes any of various organisms, especially certain bacteria and fungi, that thrive at moderate temperatures between about 25°C and 40°C
Mesopodal	With the stipe placed centrally
Metabasidia	Plural of metabasidium

Metabasidium	A basidium after meiosis
Metachromic	A chemical reaction of spores turning magenta red to violet using a solution of Cresyl blue in water
Metuloid	Are more or less thick walled projecting cystidia which are not pointed at the end and that excrete encrusting matter at the apex and are granular in appearance. Having two distinct parts, a basal one with no encrustation and an apical one which is conical and covered in crystals.
Micaceous	Describing a cap surface with glistening particles
Microcyclic	Describes rust fungi in which some stages of the life cycle are bypassed characterized by the production of teliospores and basidiospores only
Microgramme	Is a unit of mass equal to one millionth ($1 \times 10 -6$) of a gram. The unit symbol is µg
Micrograph	A drawing or photographic reproduction of an object as viewed through a microscope.
Microlitre	A microlitre is a unit of volume equal one millionth of a litre. The unit symbol is µl
Micron	One millionth of a metre, one thousandth of a millimetre. The unit symbol is µm
Microconidia	Plural of Microconidium
Microconidium	The smaller of two different types of conidia (asexually formed fungal spore) produced by a fungus in the same manner
Micrometer	Often abbreviated to µm, also called a micron it is the size measurement used in microscopy. There are 1000 microns in a millimetre. If something is 1.5mm long then it can also be expressed as 1,500 microns or micrometers long
Micrometer disc	Another term for graticule
Microns	See Micrometer
Micronematous	Having a conidiophore that is not morphologically different from the vegetative hyphae
Milk	Milky fluid that oozes from cut surfaces of certain fungi, *Lactarius* species
Mitosis	The process in cell division by which the nucleus divides, typically consisting of four stages, prophase, metaphase, anaphase, and telophase, and normally resulting in two new nuclei, each of which contains a complete copy of the parental chromosomes.
Mitospore	The spore produced by mitosis, and characteristic of ascomycete fungi
Mitosporangium	A sporangium containing spores produced by mitotic divisions
Mitotic	Relating to or marked by mitosis
Mollisioid	Looking similar to *Mollisia* fruit bodies (shallow cup shaped disc)
Moniliform	Cylindrical, contracted at regular intervals resembling a string of beads
Moniliform cystidia	Regularly constricted leptocystidia or gloeocystidia, like a string of beads also called Torulose cystidia
Monilioid	Hyphae that are closely septate with swollen cells and are constricted at the septa. Also used to mean relating to, or characteristic of fungi of the genus *Monilinia*

Monocular head	A microscope head with only one eyepiece
Monograph	Of a group of fungi, a comprehensive treatise presenting an analysis and synthesis of taxonomic knowledge of that taxon; the fullest account possible (at the time) of a family, tribe or genus. It is generally worldwide in scope and evaluates all taxonomic treatments of that taxon including studies of its evolutionary relationships with other related taxa, and cytological, genetic, morphological, palaeobotanical and ecological studies
Monokaryon	In ascomycetes and basidiomycetes, the haploid phase in which the hyphae contain only one kind of nuclei
Mononematous	Comprising of a single filament or thread
Monomitic	Containing only one type of hyphae i.e. generative hyphae
Monomorphic	Having only one form in respect to shape and/or size
Monophyletic	Of a single line of descent
Monoplanetic	Refers to a species which produces only one type of zoospore and in which there is but one swarming period
Monopodial	Having a single and continuous axis branching one at a time often alternately
Monopodium	Having a single and continuous axis
Monostichous	Arranged in a single row on one side of an axis
Monosulcate	Having a single narrow furrow or groove
Monotypic genus	A genus containing only one species
Mor	Humus formed under acidic conditions, soil that is hard and often moss covered
Morphological	Relating to the form and structure of an organism
Mounting medium	A liquid placed on a glass slide into which a piece of fungal tissue is deposited and then covered with a cover slip to be observed under a compound microscope
Movable	Describing a ring that is not fixed, movable to some extent up and down the stem
Mucedinoid	Mould-like
Mucilaginous	Covered with slime, often describing a mushroom cap
Mucoid	Sticky or slimy
Mucronate	Ending abruptly in a sharp point; abruptly tipped with a short and sharp point
Mucronate Cystidia	Cystidia with small abrupt and very pointed protuberance at apex; more acute at the apex than schizopapillate cystidia
Mull	Humus formed under non-acidic conditions, soil soft and absence of moss
Multilocular	With several to many internal spore-producing cavities or chambers
Multipileate	Describing a growth habit in which several pilei (caps) arise from a single stipe
Multipolar budding	Blastoconidia (asexual conidium formed by a budding process) developing at different sites on the surface of a parent cell

Multiseptate	Having several septa
Muricate	Encrusted with crystals at the apex
Muriform	A conidium with both longitudinal and transverse septa giving the appearance of a dry stone wall
Muriformly septate	Having cross-walls running horizontally and vertically, like the layers of cement between bricks (also described as Dictyoseptate)
Muscarine	Toxic quaternary ammonium compound found in species of *Clitocybe* and *Inocybe*; causes Perspiration-Salivation-Lacrymation syndrome
Muscimol	A hallucinogenic derivative of ibotenic acid; formed in amanita muscaria when basidiomata are dried
Mutualism	A type of symbiosis in which two or more organisms living together mutually and permanently help and support one another, both or all partners gain from the association, e.g. Mycorrhizae
Mutualistic symbiosis	Another term for Mutualism
Mycelium	A web of dense hyphae forming the body of a fungus, most of which hidden within the substrate
Mycenoid	With habit reminiscent of a *Mycena* type
Mycetozoa	Another term for myxomycetes
Mycobiont	The fungal component of a lichen or of a mycorrhizal partnership
Mycology	The study of fungi
Mycoparasite	A fungus which attacks other fungi
Mycophagous	Eating fungi
Mycophagy	The eating of fungi
Mycophile	A person who loves fungi
Mycophobe	A person who fears or loathes fungi
Mycorrhiza	Structure by which a fungus and a plant, exchange nutrients gaining a mutual benefit
Mycotroph	A plant that obtains most or all of its carbon, water and nutrients by associating with a fungus
Myxamoeba	An amoeboid uninucleate protoplast that lacks both cilia and flagella, it is a characteristic stage in the life cycle of slime moulds and some other fungi. It arises from a haploid derivative of a swarm spore or by fusion of two haploid zoospores, and typically develops into a plasmodium either by repeated nuclear fission or by fusion of individual myxamoebas
Myxogastria	Another term for the group commonly called myxomycetes
Myxomycetes	A large and commonly encountered group of amoeboid protists commonly known as true slime moulds. They exhibit characteristics of both protozoans (one-celled microorganisms) and fungi and were considered for many years as a special group of fungi.

Myxomycophyta	The group of fungi known as myxomycetes
Myxosporium	Describing a spore in which the outermost layer of the spore-wall is usually sticky, and may form part of the surface ornament
N...	
Native	Naturally occurring in an area, but not necessarily confined to it; cf. Endemic
Navicular	Boat shaped in profile like a rowing boat
Neck	Hollow chamber along which spores pass when liberated in ascomycetes
Necrosis	Death of cells or tissues
Necropigments	Appear as dark inclusions in the hyphae after the fruitbody has been dried
Necrotroph	A parasitic organism that kills the living cells of its host and then feeds on the dead matter.
Necrotrophic	Feeding by killing and consuming (part of) another organism
Nidulariaceae	Commonly known as the Bird's Nest fungi, their fruiting bodies resemble tiny egg-filled bird's nests
Nidulariales	Members of the Nidulariaceae (Bird's Nest fungi)
Niger	Often used in fungi names describing the colour Black
Nitrophilous	Growing in soil well supplied with nitrogen
Nodose	With rounded protuberances
Nodulose	Often used to describe spores that Have a slightly to markedly uneven bumpy outline, can also be used to describe any surface that has small rounded protuberances
Nomenclature	The system or procedure of assigning names to groups of organisms as part of a taxonomic classification
Nomen conservandum	A conserved name, usually a name that became so much better known than the correct name, that a substitution was made
Nomen illegitimum	A name that is either superfluous at its time of publication because the taxon to which it was applied already has a name, or the name has already been applied to another fungi
Nomen invalidum	A name that is not validly published, and technically is therefore not a botanical name.
Nom. inval	Abbreviation for nomen invalidum
Nom. nud.	Abbreviation for nomen nudum
Nomen nudum	A name not published in accordance with the international code of nomenclature for algae, fungi, and plants, usually without a diagnosis or description of the entity to which it applies, and without reference to either; such a name should not be used
Nomenclature	The naming of things; often restricted to the correct use of scientific names in taxonomy; a system that sets out provisions for the formation and use of names
Non.	Not in the sense of / not the same as
Nonamyloid	Not turning blue, grey or black when stained with Melzer's reagent (becoming yellow

	is not a positive reaction)
Non-septate	Without septa (cross wall separating cells)
Nosepiece	This is the part of the microscope that the objective lenses are fitted into, this can be revolved allowing the user to switch between the objective lenses to increase or decrease magnification, also called a turret
Nucleus	A specialized body within the eukaryotic cell bounded by a double membrane and containing the chromosomes
Numerical aperture (NA)	This is a measure of the ability of an objective lens to gather light and to resolve fine detail. A higher NA produces a brighter image with more detail but less depth of field. An NA greater than 1.0 can only be achieved using liquid immersion objectives, for use in mycology this is likely to be oil immersion. The NA is normally marked on the objective, as a number between 0.04 and 1.4
O…	
Ob-	Inversely or of a reversed shape; usually referring to the same shape as suffix but attached by the narrower end, for example obcordate, oblanceolate, obconical
Obclavate	Reverse club shaped with the broadest part at the base
Obconical	An inverted cone
Obcordate	Heart-shaped, with a point at the base and a notch at the apex
Objective lens	The primary magnifying lens or lenses situated closest to the object that you are examining. On a high power binocular model there is only one objective lens giving a 2 dimensional view. On a stereo microscope, usually low power, there is either one objective lens or objective pairs, one lens for each eyepiece lens, both these stereo microscope systems enable a 3 dimensional view
Oblanceolate	Shaped like the head of a lance but reversed; tapering from a rounded apex toward the pointed base
Oblate	Spheroid distinctly broader than long
Obligate	Able to exist under only one set of environmental conditions and therefore invariably found in a particular situation; usually used in reference to organisms which live in intimate association with a living host and cannot live independently of that host: an obligate parasite
Obligate parasite	Can obtain food only from living protoplasm. Obligate parasites cannot be grown in culture on non-living media
Obligate saprobe	An organism which must obtain its food from dead organic matter, and is incapable of infecting another living organism
Oblong	Describing the shape of spores that have a Q value of Q = 1.6 – 2.0
Obovate	Egg-shaped, with the narrow end at the base and the broad extremity located away from the base.
Obovoid	Egg-shaped, with the narrow end at the base and the broad extremity located away from the base.

Obpyriform	Inverted pear-shaped, having a shape that is in outline like that of a pear, with the base at the narrower end.
Obsolete	Not evident, or at most rudimentary or vestigial
Obtuse	Blunt rounded; converging edges making an angle of more than 90°
Ochre	Brownish yellow
Ochraceous	Brownish yellowish
Odontoid	Having short cylindrical to conical projections
oft.	Often
-oid	Suffix meaning similar to, like
-oideae	The suffix added to the stem of a generic name to form the name of a subfamily
Oidia	Conidia (asexually formed fungal spore) arranged in chains can also be a thin-walled, free, hyphal cell derived from the fragmentation of a somatic hypha into its component cells, or from an oidiophore. It behaves as a spore or as a spermatium
Oidiophore	A hypha which fragments into oidia from the tip toward the base
Oidization	The union of an oidium with a somatic hypha resulting in the dikaryotisation of the latter
Oil immersion	Placing a drop of a specialised oil between the 100x oil immersion lens and the cover slip to improve light transmission. Not to be used with non oil immersion dry lenses
Oil Immersion Objectives	High power objective lenses in the region of 100X and above are generally designed to allow for oil immersion. These are called 'oil' or 'wet' objectives. You can place oil in the space between the specimen and the objective so the light waves passing through that space pass through oil rather than air. This decreases distortion and leads to a higher quality image
Oleiferous	Describing hyphae that have oily contents
Oligonucleotides	Another name for DNA primers
Olivaceous	Olive green in colour
Omphalinoid	Resembling an *Omphalina; Clitocybe*-like but more delicate, with a strongly depressed cap centre
Ontogeny	The sequence of developmental stages through which an organism passes
Oogamous	A type of fertilization in which two heterogametangia come in contact, and the contents of one flow into the other through a pore or tube
Oogamy	Type of reproduction in which male and female gametes (a cell whose nucleus unites with that of another cell to form a new organism) of an organism differ in both size and form, with the male gamete being motile (having the power to move spontaneously) and the female gamete non-motile and often larger
Oogonia	Plural of oogonium
Oogonium	A female reproductive structure in certain thallophytes (algae, fungi, and lichens, that show no differentiation into stem, root, or leaf) and in oomycetes, usually a rounded cell or sac containing one or more unfertilized female gametes

Oomycete	A member of the Oomycota
Oomycota	Phylum of fungus like organisms in the kingdom Chromista. oomycetes may occur as saprotrophs (living on decayed matter) or as parasites living on higher plants and can be aquatic, amphibious, or terrestrial. They include water moulds, white rusts, and downy mildews. They are distinguished from the zygomycetes by having the gametangia (cell in which gametes are produced) usually differentiated into antheridia (male sexual organ) and oogonia (female reproductive structure) and by producing oospores as a result of the sexual process
Oosphere	Unfertilized female gamete in oogamous fungi, esp. Oomycota
Oospore	Thick-walled resting spore developing from a fertilized egg of the oomycetes
Opera utique oppressa	Listed after the botanical name of a fungi, or the name of a publication, this indicates that a publication is listed in the international code of nomenclature for algae, fungi, and plants as a suppressed work. Botanical names of the specified rank in the publication are considered not validly published; Plural
Operculate	Describes sporangia (structure in which spores are produced), having a special lid or cap (operculum) that opens to permit spore discharge cf. Inoperculate
Operculum	A cover or lid on a sporangium or an ascus
Opportunistic	Fungi which whilst normally saprobic, can occasionally act as pathogens when conditions unusually favourable for infection arise (cf. Facultative, obligate)
Opus utique oppressum	Listed after the botanical name of a plant, or the name of a publication, this indicates that a publication is listed in the international code of nomenclature for algae, fungi, and plants as a suppressed work. Botanical names of the specified rank in the publication are considered not validly published; Singular
Orbicular	Circular
Order	Taxonomic rank above family, but below class, a group of one or more families sharing common features, ancestry, or both; suffix is -ales
Organelle	A differentiated separate structure within a cell
Ornament	Sculpture on spores in form of wart, spine, rib, net, etc.
Ornamentation	The term used when describing the appearance of the surface of a spore, cap, or stem for any projections or protuberances on the outer surface such as warts and spines
Orthochromic	Chemical reaction, turning blue with Cresyl blue
Orthotropic	Describing the structure of basidiospores relating to their manner of development, resulting in a radial symmetry of the spore
Osmotrophic absorption	The process of acquiring food by taking up water and dissolved substances across a membrane, which is how fungi operate
Ostiole	The pore in the reproductive bodies of certain algae and fungi through which spores are released or expelled
Ovate	Oval shaped
Ovoid	Egg shaped

Ozonium	An often vividly coloured, loose web of hyphae at the base of the fruitbody
P...	
Paint fungi	A term used to describe wood-inhabiting basidiomycetes with thin, spread out, indefinite basidiomata; many corticiaceae and thelephoraceae: aphyllophorales fit into this category
Pallid	Pale, off white colour
Palisade	A type of cap cuticle in which all the terminal elements reach the same level and form a palisade of inflated, somewhat elongate cells
Papilla	When referring to a spore is used to denote a small protuberance. When referring to a fruitbody is used to denote a minute umbo on the cap
Papillate	Small rounded protuberances; type of umbo, cap having a papilla; differs from mamillate in having a smaller protuberance
Papillose	Nipple-like in shape
Para-	Prefix meaning beside
Parabolic	Describing the shape of a cap in which the height is greater than the width but the apex is still rounded, like that of a parabola; broadly parabolic: parabolic in shape with the apex broadly rounded; narrowly parabolic: parabolic in shape with the apex narrowly rounded
Paraboloid	With the outline of a parabola
Paracystidia	These are smaller thin-walled clavate to balloon-shaped cells that can be found amongst the cystidia. In most species they are fairly inconspicuous and colourless, in a few they are absent, and in a few they are conspicuous with well-defined walls and occasionally with brown contents. They do not occur in species having simple cheilocystidia but can often be found amongst metuloid cheilocystidia, typically half the length of the metuloids or less.
Paraderm	A cap or cuticle of many-angular elements, more than one layer deep, like an epithelium, but with angular elements
Paraphyses	Plural of paraphysis
Paraphysis	Sterile, usually thread-like structures in some ascomycetes arising between the asci and parallel to them, often with a distinctive shape and of taxonomic importance
Parasexuality	Genetic recombination during the mitotic cycle, best known in conidial fungi (ascomycetous anamorphs, such as aspergillus)
Parasite	An organism that lives at the expense of another (host)
Parasitic	A process whereby a living organism feeds at the expense of another (host)
Parasitism	The act of a living organism feeding at the expense of another (host)
Parenchyma	Tissues or thalli made up of thin-walled, apparently randomly arranged cells, packed tightly together and thus usually polygonal
Parenchymatous	Having Parenchyma
Parenthesome	Within the cells of some members of basidiomycetes fungi are found septa

	(specialized dividing walls between cells) that have microscopic barrel-shaped structures called parenthesomes or septal pore caps these are curved domes of perforated double membrane that cover each end of a dolipore septum (a characteristic complex barrel-shaped septal pore apparatus that flares out near the pore to form an elongate channel)
Parcentered	Almost all microscopes are parcentered which means when changing from one objective lens to another, the image of the object should stay in the centre of the view
Parfocal	Having a parfocal microscope means that when you rotate the turret to change to a different objective lens you will only need to slightly tweak the focus with the fine focus knob rather than having to use the coarse focus
Parietal	Describing the location of a pigment being within the hyphal wall
Part-spores	A single-celled spore the result of the breaking up of a two or more celled ascospore
Partial veil	Protective membrane covering gills during development of a fruitbody in some agarics; after rupture, it remains as a ring or annulus on the stipe
Patelliform	Shaped like a saucer with a well defined edge
Pathogen	An organism that causes disease
PCR	Is a method widely used to rapidly make millions to billions of complete or partial copies, of a specific DNA sample, allowing scientists to take a very small sample of DNA and amplify it, or a part of it, to a large enough amount to study in detail
Pectinate	Describing the appearance of a gill margin being like the teeth of a comb; used when the lines are more obvious than would be called striate
Pedicel	A slender or short stalk
Pedicellate	Describing the shape of Cystidia with a short or long stalk at the base. Having a stalk
Pedunculate	Attached to a stem or stalk
Pellicle	A description of the outermost surface layer of a cap, often used only for a surface that is viscid and peels off with ease
Pellicular	Having a very thin easily detachable membrane, reminiscent of old, peeling skin
Pellis	Refers to the cellular cortical layers (outer skin) of a mushroom
Penicillate	Having tufts of hair
Pellucid	Translucent
Pendant	Describing orientation, hanging down; said of a ring which hangs down the stem
Penicillate	Having or forming a tuft or brush of fine hairs
Penicilli	Splayed out paint brush like structures, one of the branched conidiophores bearing chains of conidia (asexually formed fungal spore) in Penicillium species
Per-	Prefix meaning 'more than'
Percurrent	Conidiogenous cell growth where a new axis grows through the open end where the previous conidium became detached, or through a terminal pore
Perforate	Describing a pileus (cap) with a central opening, continuous with the hollow stipe

Peri-	Prefix meaning around
Periderm	Membrane surrounding a sorus or a group of asci
Peridia	Plural of peridium
Peridioles	The small disc-shaped capsules of spores forming the “eggs” in the Bird's Nest fungi (Nidulariales), the spores are dispersed when raindrops fall into the cup, splashing out the peridioles
Peridiopellis	Outer layer of the peridium in gastroid fungi, parallel to the pileipellis
Peridial	Enclosing a fruiting structure, the hyphal structure that surrounds the asci.
Peridioles	Any of the lenticular bodies situated either free or attached within the peridium of fungi of the family Nidulariaceae (Bird's Nest fungi) and containing the spores
Peridiopellis	Surface layer of the pileus (cap)
Peridium	The outer wall of a fungus, especially puffballs
Peridium	Outer wall of a fungus, especially a gasteromycete (e.g. A puffball)
Perisporium	The layer of the basidiospore wall just inside the ectosporium
Peristome	Marginal edge of the opening of earthstars and related fungi, well defined edge of the ostiole
Periphyses	Short, hair-like growths in the form of a fringe lining the inside of an ostiole (hole through which spores are released or expelled) or of a pore in a stroma
Periplasm	A layer of protoplasm surrounding the oosphere (thick-walled resting spore) of certain Phycomycota
Perithecia	Plural of perithecium
Perithecial ascoma	Another term for perithecium
Perithecium	Found in ascomycetes, perithecia are typically, more or less completely closed, globose, cylindrical or flask-shaped structures containing the asci. Opening by a pore or ostiole (short papilla opening by a circular pore) through which the ascospores escape. The ostiolar canal may be lined by hair-like structures called periphyses
Peronate	The stipe sheathed by a volva or ring, with free edge pointing upwards, having a covering like a sock; used to describe the lower portion of a stem which is sheathed or covered with a universal or partial veil
Peronosporales	Are a family of water moulds, most of them are called downy mildews. They are obligate (host specific) plant pathogens. An order comprising chiefly parasitic lower fungi (subclass oomycetes) that have asexual spores with two equal flagella (whip like structures used for locomotion) and conidia (asexually formed fungal spore) which either germinate directly or act as sporangia within which asexual spores are developed
Persistent	Remaining for a long time
Perfect stage	Another name for the sexual reproductive stage of ascomycetes
Periphysis	Sterile, short, thread-like filaments which arise from the hymenium or line the ostiole of many perithecia and other fruiting structures of fungi

Pervious	Describing a pileus (cap) with a central opening
Petri dish	A glass container consisting of a circular, flat dish with vertical sides, and a similar but slightly larger cover which fits over it. Standard equipment for the growth of microorganisms in pure culture.
Pezizomycotina	A group that contains the filamentous ascomycetes and is a subdivision of the Ascomycota (fungi that form their spores in a sac-like ascus)
Phaeo-	A prefix meaning coloured or darkly pigmented. Note – spores are considered to be pigmented if the walls appear dark either separate or within a mass
Phaeospore	Coloured one-celled spore
Phago-	Prefix meaning to eat
Phallales	Order of fungi comprising the stinkhorns and related forms whose mature hymenium (fertile surface) is slimy and fetid; sometimes placed in subclass homobasidiomycetes
Phase contrast	Phase-contrast microscopy is a technique used to give contrast in a translucent specimen without having to resort to using stains. The technique shifts the light phase wavelength, thereby causing the light deviated by the specimen to appear dark on a light background. One major advantage is that phase-contrast microscopy can be used with high-resolution objectives, but it requires a specialized condenser and more expensive objectives
Phaseoliform	Used to describe Spores that are shaped like a bean, forming a bent ellipsoid concave in face view
Phenolic	Having an odour of the chemical phenol, described as sickeningly sweet and tarry.
Phenotype	The observable physical or biochemical characteristics of an organism, as determined by both genetic makeup and environmental influences. An individual or group of organisms exhibiting a particular phenotype.
Phialide	A cell which produces a basipetal (oldest at the top, youngest at the bottom) succession of blastic conidia (formed by swelling and dividing at a septa) from one or more openings without any change in the length of the cell, the meristematic (region of cells capable of division and growth) end remains unchanged as successive conidia are extruded out to form chains
Phialidic	A term used to describe conidia (asexually formed fungal spore) produced by a phialide
Phialoconidia	Plural of phialoconidium
Phialoconidium	A conidium produced from a phialide
Phlebioid	With irregular but not anastomosed (joining or running together) folds; also sometimes used to describe a typical *Phlebia* texture, dense and hard when fresh and crustaceous when dry.
Phloxine B	A stain used in microscopy
Photobiont	Photosynthesising component (alga or cyanobacterium) of a lichen
Photomicrography	Taking photographs through a microscope. Note that microphotography is actually the term for the production of very small photographs

Photosynthesis	Process by which plants convert carbon dioxide and water to sugars
Phototropic	Bending or growing toward a light source
Phototropism	Bending or growing toward a light source, as in many dung-inhabiting fungi
Photo tube	The vertical tube at the top of a trinocular microscope that enables a camera to be attached
Phragmidium	A genus of rust fungi that typically infect plant species in the Rosaceae. It is characterised by having stalked teliospores borne on telia each having a row of four or more cells. All species have a caeoma (cup like structure containing chains of aeciospores) which is a diffuse aecidium (cupulate fruiting body) lacking a peridium (outer wall)
Phragmobasidiomycetes	Basidiomycetes in which the basidia are subdivided by primary septa
Phragmobasidium	Basidium divided by septa i.e. a multicellular basidium; septa can cut across the basidium horizontally (transversely) or vertically (cruciate), characteristic of the phragmobasidiomycete
Phragmoconidia	Plural of Phragmoconidium
Phragmoconidium	A conidium having two or more transverse septa.
Phragmospore	A spore which has two or more transverse septa; giving an appearance akin to the rungs of a ladder
Phycobiont	The photosynthesising algal or cyanobacterium partner in a symbiotic relationship, as in a lichen also the plant partner in a mutualistic symbiosis (two organisms living together where both partners benefit), e.g. a mycorrhiza
Phycomycetes	A large class of lower fungi that are in many respects similar to algae and are now often assigned to subdivisions such as Mastigomycotina and Zygomycota
Phylogenetics	The study of the evolutionary history and relationships among or within groups of organisms. These relationships are determined by phylogenetic inference methods that focus on observed heritable traits, such as DNA sequences, protein amino acid sequences, or morphology.
Phylogenetic tree	is a branching diagram or a tree showing the evolutionary relationships among various biological species or other entities based upon similarities and differences in their physical or genetic characteristics, commonly known as an evolutionary tree or a phylogeny
Phylum	A group of related living things that ranks above the class and below the kingdom in scientific classification. There are five phyla of fungi: Chytridiomycota (eumycotan), Dikaryomycota, Hyphochytriomycota (chromistan), Oomycota and Zygomycota
-physis	Suffix meaning growth
Phytobiont	The plant partner in a mutualistic symbiosis (two or more organisms living together mutually, all partners gaining from the association), e.g. A mycorrhiza
Pileate	Bearing or forming a pileus or cap
Pileus	The mycological term for the umbrella-shaped spore-bearing cap or head of a mushroom or other large fungal fruiting body. The appearance of the pileus is an important aid to identification

Pileipellis	The superficial layer of cells covering the upper side of the cap of an agaric, the surface layer of the pileus The pileipellis is the uppermost layer of hyphae in the pileus (cap) of a fungal fruiting body. It is more or less synonymous with the cuticle, however, the cuticle generally describes this layer as a macroscopic feature, while pileipellis refers to this structure as a microscopic layer. Pileipellis type observed under a microscope is an important character in the identification of fungi
Pileocystidia	Plural of pileocystidium
Pileocystidium	A cystidium situated on the surface of the cap
Pilose	Covered with long dense soft hairs or filaments
Pilothecial	Describes a fruitbody consisting of a pileus (cap) and stipe (stem)
Pip-shaped	Literally shaped like the small hard seed found inside an apple
Plage	A smooth area found on some rough spores just below the apiculus (tiny projection on a spore where it was attached to the sterigma)
Plan lens	Also called planar lens, are an objective lens that corrects for field curvature. Field curvature often results in blurred images and correction for this helps produce good quality images. Plan lenses are a step up from Semi-plan lenses as they correct for over 90% of the field of view. cf. Semi-plan lens
Plano-convex	Slightly convex
Plasma	Cell sap or fluid
Plasmogamy	A stage in the sexual reproduction of fungi, in which the protoplasm of two parent cells fuses together without the fusion of nuclei
Plasmodiocarp	A curved or branched, vein-like fruiting structure of some of the Myxogastres
Plasmodiophorales	An order of fungi (subclass oomycetes) having spores with unequal flagella
Plasmodium	A naked, multinucleate, phagotrophic, amoeboid thallus, as in Myxostelida
Plectenchyma	Same meaning as pseudoparenchyma, a tissue resembling parenchyma (tissues or thalli made up of thin-walled, apparently randomly arranged cells), but of a far different origin, being produced from united and transformed hyphae
Plectobasidium	A basidium which arises irregularly, not collectively forming a hymenium
Pleomorphic	Having more than one form
Pleural	Having two or more roots
Pleural basidia	Basidia attached on the side, formed laterally from any hyphal cell
Pleurobasidia	Basidia which develop laterally on hyphae
Pleurocystidia	Cystidia found on the face (the flat surface) of gills, pores or tubes
Pleurocystidium	A cystidium on the surface of the face of the gill
Pleurogenous	Born on the sides of a conidiophore or hyphae
Pleuropodal	With the stipe placed laterally

Pluerotoid	Resembling a *Pleurotus*
Plumose	Feathery
Plurivorous	Living or feeding on substrates or hosts of several different kinds
Plicate	Describing a pileus (cap) surface. folded radially, like a fan: with very regular, radial folds or pleats as in *Coprinus plicatilis*
Plurilocular	Having a number of locules (cavities) between septa
Podetia	Upright, cylindrical structures in lichens especially Cladonia, which often bear apothecial ascomata (cup shaped fruit bodies) at their apex
-podium	Suffix meaning foot
Pointer	Some eyepiece lenses are fitted with a pointer that can be rotated by turning the eyepiece which enables a viewer to point out a specific area of a specimen
Poly	Prefix meaning many
Polymerase chain reaction PCR	Is a method widely used to rapidly make millions to billions of complete or partial copies, of a specific DNA sample, allowing scientists to take a very small sample of DNA and amplify it, or a part of it, to a large enough amount to study in detail
Polymorphic	Having many forms in respect to shape and/or size
Polyphialides	Phialides with more than one or a number of openings
Polypore	A fungus with pores on the underside, shelf- or bracket-fungi; hymenomycetes living on dead (or sometimes living) trees and often producing perennial basidiomata in which the hymenium lines annual layers of corky, vertically oriented tubes
Polysporous	Having many spores
Pomiform	Apple shaped
Porate	Having a germ pore
Pores	The orifices of the tubes of polypore fungi via which spores emerge
Poroconidia	Plural of Poroconidium
Poroconidium	A conidium produced through a small pore in a conidiogenous cell
Poroid	Having a porous surface of vertical tubes as the fertile layer
Portable Microscope	A cordless field microscope that typically, includes a rechargeable LED light source enabling it to be used away from a power supply, some come with the ability to be connected to a mobile phone using the phone display as a viewing screen
Porulose	Finely poroid in appearance
Potassium hydroxide (KOH)	A chemical used in microscopy for mounting specimens
Powdery mildews	Plant diseases caused by host specific parasitic fungi
Precursor	A substance that precedes and is the source of another substance
Predaceous	Preying upon other organisms, as in the nematode-exploiting fungi
Predaceous fungi	Specialized fungi of several phyla which trap or infect nematodes, rotifers, collembola,

	amoebae, tardigrades, etc., exploiting them either as principal diet or as a nitrogen supplement
Primary host	The principal host of heteroecious rust fungi, which bears the sexual phase (the teliospores); see alternate host
Primary mycelium	The uni-nucleate mycelium from a germinating spore
Primer	In relation to DNA barcoding a Primer is a short, single-stranded DNA sequence used in the polymerase chain reaction (PCR) technique. In the PCR method, a pair of primers is used to hybridize with the sample DNA and define the region of the DNA that will be amplified. Primers are also referred to as oligonucleotides
Primordial hyphae	Distinct, coloured hyphae from cap cuticle of Russula
Primordium	Initial stage of development in fruitbody or organ formation
Pro-	Prefix meaning before
Probasidia	Plural of probasidium
Probasidium	A cell in which two haploid nuclei fuse to form a diploid nucleus from which the basidium arises in some basidiomycetes
Prokaryotic	Having cells that lack membrane-bound nuclei
Promycelium	A short usually 4-celled hyphal filament that constitutes the basidium of various fungi, formed by germination of a teliospore (thick-walled resting or overwintering spores) in rusts or of a chlamydospore (thick walled, asexual spores) in smuts, and bears sporidia (asexual reproduction through the process of budding), also called epibasidium
p.p.	Abbreviation for pro parte
Pro parte	In part; in nomenclature, to denote that the preceding taxon includes more than one currently recognized entity, and that only one of those entities is being considered
Propagules	A portion of a plant or fungus, such as a seed or spore, from which a new individual may develop
Prosenchyma	A type of plectenchyma (tissues or thalli made up of thin-walled, apparently randomly arranged cells) in which the component hyphae lie parallel to one another and are easily recognized as such
Prosenchymatous	Made up of clearly visible hyphal elements twisted together to form a tissue
Prosorus	A structure which eventually divides to give rise to a sorus (a simple fruiting structure produced by rust and smut fungi)
Protoascomycete	Group containing those ascomycetes that lack ascocarps and the hyphae that produce the ascocarps. Most of the yeasts are in this class
Protoascomycetes	Plural of protoascomycete
Protists	Any of numerous eukaryotic organisms that are not fungi, plants, or animals and are chiefly unicellular or colonial. Protists that are multicellular do not have cells differentiated into tissues. The protists include the protozoans, certain algae, oomycetes, and slime moulds
Prototunicate	Describes a kind of ascus that is basically unitunicate (with only one distinct, functional wall layer), but whose wall disintegrates at or before maturity; such asci may develop

	in a hymenium or may be distributed randomly in the interior of the ascoma (Fruitbody of an ascomycete)
Proximal	Near the point of origin or attachment
Pruinose	Describing the surface of a pileus (cap) or stipe (stem) that is very finely velvety / scurfy, as if covered with fine powdery bloom often appears pale, as though coated with a fine layer of chalk dust
Pruinosity	Having a surface of a pileus (cap) or stipe (stem) that is very finely velvety / scurfy, as if covered with fine powdery bloom often appears pale, as though coated with a fine layer of chalk dust
P. sp	Pars sponifera, the spore bearing part
Pseudo-	Prefix meaning false
Pseudamyloid	Staining yellow-brown to red-brown or ruby-red with Melzer's reagent also known as dextrinoid
Pseudocapillitium	Irregular threads, plates, or other structures present among the spores within the fructifications of many Myxogastres; resembles capillitium
Pseudocystidia	Differentiated prolongation of the vascular hyphae into the hymenium arising from the trama or subiculum
Pseudohymenium	an indefinite fertile layer, formed by plectobasidia (a basidium which arises irregularly) found in Nidulariales (Bird's Nest fungi)
Pseudoparenchyma	A tissue resembling parenchyma (tissues made up of thin-walled, apparently randomly arranged cells), but of far different origin, being produced from united and transformed hyphae
Pseudoparaphyses	Specialized hyphae found in some ascomycetes that are bitunicate (a type of ascus with two distinct, persistent wall layers); they grow down from the roof of the pseudothecial ascoma (resembling a perithecium) and dissolve a space for the developing asci. Also used to describe basidium-like, but sterile cells interspersed with basidia, found for example, in the hymenium of species of *Coprinus*
Psuedoparenchymatic	Trama/context of ± globose hyphae
Psuedoparenchymatous	Describing a tissue of closely compacted hyphae, appearing cellular when seen in section although made up of hyphal elements
Pseudorhiza	A tap-root-like extension at the base of a mushroom stem
Pseudoseptate	Plug-like partition of cellulin or other substance in a hypha, resembling septa but not completely reaching all the way across a spore from wall to wall
Pseudostipe	Stem like base which is not structurally distinct from the upper part of the fruitbody
Pseudothecia	An ascocarp resembling a perithecium but whose asci are not regularly organised into a hymenium and are bitunicate, having a double wall which expands when it takes up water and shoots the enclosed spores out suddenly to disperse them
Pseudothecial ascoma	Ascoma (fruiting body of ascomycetes) containing bitunicate (double walled) asci; often resembling a perithecial ascoma, though developing differently

Pseudothecium	See pseudothecial ascoma
Psilocin and psilocybin	Hallucinogenic chemicals found in many species of psilocybe, and some species of *Panaeolus, Gymnopilus* and *Conocybe*
Psychedelic	Of, characterized by, or generating hallucinations, distortions of perception, altered states of awareness, and occasionally states resembling psychosis
Psychrotolerant	Growing at temperatures below 10c (optimum temp. Below 20c)
Puberulent	Covered with minute soft erect hairs
Puberulous	Covered with minute soft erect hairs
Pubescent	Covered with fine short hairs
Puffball	Any of various gasteromycete fungi chiefly of the family Lycoperdaceae, having a ball-shaped fruiting body, enclosed in a papery skin at maturity, that when pressed or struck releases clouds of small spores. An ostiole allows compression or wind suction to disperse basidiospores in the Lycoperdales and Tulostomatales
Puffing	A phenomenon in which thousands of asci in an apothecial ascoma discharge their ascospores simultaneously, producing a visible cloud of spores
Pulleywheel occlusion	The structure blocking the septal pore in hyphae of the rust fungi (Uredinales)
Pulverulent	Describing the appearance of the surface of the pileus (cap) covered with a dense layer of fine powder so that it appears velvety; having powdery or crumbly particles as if pulverized
Pulvinate	Cushion-shaped. A cap that is convex and tall
Punctate	Describing the appearance of the surface of the pileus (cap) or stipe (stem) Pitted with dots or covered with fine raised dot-like elevations Describing the appearance of the surface of spores when these exhibit finely dot-like ornamentation, but without wart-like protrusions being visible in outline. Beware of confusion with plasma granulation which can look similar
Punctiform	Dot-like
Punctuate	Describes a surface that is either pitted with dots or covered with fine raised dots.
Pustulate	Describing the appearance of the surface of the pileus (cap) or stipe (stem) with small rounded warts or having small blister-like structures
Pustule	A small cushion like growth especially a fruitbody
Putrescent	Becoming putrid or rotten, tending to decay rapidly.
Pycnia	Plural of pycnium
Pycnidial conidioma	Flask-shaped sporoma produced by coelomycetous anamorphs
Pycnidia	Plural of Pycnidium
Pycnidium	An often globose or flask shaped asexual fruiting body containing conidia (asexually formed fungal spore)
Pycnidiospore	A conidium borne in a pycnidium
Pycniospore	The old designation for the spermatium of the rusts, used before the true function of

	the spermatia of the rusts was discovered
Pycnium	The old designation for the spermogonium (flask-shaped or depressed receptacle in which spermatia are produced) of the rusts denoting the small flask-shaped fruit bodies of a rust fungus formed in clusters just beneath the surface of the host tissue, produced as a result of infection by a single basidiospore, and producing hyphae and pycniospores
Pycnosclerotium	A more or less hard-walled structure resembling a pycnidium but containing no spores
Pyriform	Pear shaped
Pyrenolichens	Lichens in which the mycobiont produces perithecial or pseudothecial ascomata
Pyrenomycete	Fungi with perithecia, generally of a black hard consistency. They are fungi with perithecia, small flask-shaped fruit-bodies that contain asci and they constitute a large part of the sac-fungi or Ascomycota
Q...	
Q	Abbreviation for quotient: The spore length divided by the spore width, used to define the shape of the spore. See below for Q values.
Q-value	Q values are a ratio of length and width, calculated by dividing length by width, the result of which is used to describe the shape of spores as below. • Q 1.00 - 1.05 = Globose • Q 1.05 - 1.15 = Sub-globose • Q 1.15 - 1.30 = Broadly ellipsoid • Q 1.30 - 1.60 = Ellipsoid • Q 1.60 - 2.00 = Elongate or cylindrical • Q 2 - 3 = Narrowly cylindrical • Q 3 -4 = Alantoid • Q 4 - 6 = Fusiform
Qav.	Abbreviation for an average Q value taken across a number of spores
R...	
Racemose	Development first on one side and then on the other of a central axis from the base upwards
Rachis	The main stem of a sympodial (branching) proliferating conidiogenous cell bearing conidia (asexually formed fungal spore)
Rack and pinion	A mechanism consisting of a toothed track and a rotating gear, by turning a knob the gear moves along the track. This system is used in focusing mechanisms, in Abbe condenser focusing systems, and on mechanical stages to move the slide around
Rack Stop	A safety feature usually pre-set in the factory that prevents the slide from coming too far up and hitting the objective lens. Changing the rack stop is only necessary if your slides are exceptionally thin and you are unable to focus the specimen at higher magnifications
Racquet hyphae	A hypha composed of a number of cells swollen at one end resembling a tennis racquet
Radial	With structures radiating from a central point as spokes on a wheel, for example, the

	lateral spines of a cactus
Radicant	With a long, pointed rooting stipe
Radicating	Having a long, pointed rooting stipe
Raduloid	Having blunt rounded projections
Rameales structure	A cap cuticle consisting of irregularly branched, coral-like, forking hyphae, often with outgrowths, (irregularly shaped and arranged, nodose or en brosse or diverticulate elements), as in some species of *Marasmius* section *Rameales,* but also in *Marasmiellus, Xeromphalina* and *Coprinus* subsection *Alachuani*
Ramoconidia	Short apical branches (often conidiogenous cells) of a conidiophore which secede and function as conidia. They are characterised by having a truncate, undifferentiated base, i.e., they differ from true conidia (asexually formed fungal spore) by lacking characteristic basal hila caused by conidiogenesis
Raphanoid	Smell of radish or turnip
Receptacle	Sterile tissue which supports the hymenium in an apothecium (cup-shaped fruitbody of certain ascomycetes)
Receptacle	Stem-like, net-like or stellate outgrowth at the top of the *Phallales* (Stinkhorns) which supports the slimy gleba (the spore-bearing inner mass)
Receptive hyphae	A special hypha arising from spermagonia (structure containing male reproductive cells) of rust fungi; the spermatia (a non-motile cell functioning as a male gamete) from other spermagonia fuse with them and initiate the dikaryon (pair of closely associated, sexually compatible nuclei)
Rectocutis	Describes a cap cuticle of radiating hyphae
Recurved	Bent or curved backwards or downwards with the outside of the curve expanded reminiscent of a sickle, or a new moon
Reflexed	Curled upwards or bent sharply back or down
Refractive vacuolar bodies (VBs)	Specialised cell vacuoles (membrane-bound cavities within a cell) with a content that makes them refractive
Regular	Describing gill trama with parallel hyphae. Describing hymenophoral (fertile surface) trama having parallel hyphae. Describing a gill edge that is smooth, not toothed or notched in any way. Describing epithelium that consists of elements in erect rows
Reindeer 'moss'	The fruticose lichen, *Cladonia rangiferina*, and similar species.
Remote	A gill attachment where the gills have a large gap between their ends and the stipe
Reniform	Describing spores that are kidney shaped
Repand	Upturned especially of caps in Agarics
Repeating	A term for basidiospores (sexual spores produced on the basidia) that can duplicate themselves
Repent	Describing hyphae that are lying flat to the surface, creeping, prostrate, not ascending
Reproduction	The production of new individuals having all the characteristics typical of the species.

Resolution	The ability of a lens to display fine details clearly. A low resolution would result in a less clear image. A consideration when purchasing a microscope
Resupinate	fruitbody that lies flat on the substrate with its hymenium outermost and its sterile surface facing the substrate
Reticulate	Marked with a net-like pattern, forming a net, often but not exclusively used referring to the stem of a Bolete; a net-like pattern formed by spore ornamentation
Reticule	When referring to microscopy the terms reticule and graticule both refer to a disc placed in the eyepiece that has lines giving 100 divisions. By working out what length each division equals for each objective lens you can enable accurate measurement of specimens under the microscope
Reticulum	A network or mesh of ridges or lines
Retina	A light-sensitive area, as in the subsporangial (below the capsule in which spores are produced and stored) structure of the *Pilobolus* dung fungi enabling it to orient itself to point directly towards a light source
Retrogressive conidial development	A type of conidial production, the conidiogenous cell becomes shorter during the successive development of conidia (asexual spore)
Reviving	Having the property of expanding to normal shape and size when moistened
Revolute	Having the edge rolled over
Rhexolytic	Secession of conidia involving the circumscissile (splitting or opening along a circumference) rupture or breakdown of the longitudinal wall of the cell below the conidium cf. Schizolytic
Rhizoids	Small, narrow, branching hyphae that grow downwards from the stolons (horizontal hyphae) that anchor the fungus to the substrate, where they release digestive enzymes and absorb digested organic material
Rhizome	A stem of root-like appearance that is often thickened by deposits of reserve food material, lying horizontally under or on the ground. They are distinguished from a true root in possessing buds, nodes, and usually scalelike leaves, they grow perpendicular, permitting new shoots to grow up out of the ground. When separated, each piece of a rhizome is capable of producing a new plant
Rhizomorph	A root-like mycelial strand of fungal threads intertwining like the strands of a rope that frequently resembles a root and is characteristic of many basidiomycetes such as *Armillaria mellea*
Rhizomycelium	A primitive type of mycelium formed by certain fungi consisting of an aggregation of gradually attenuated hyphal branches, as in the fungi of the family Cladochytriaceae having fertile regions developed at various points. Possibly the precursor of true hyphae.
Rhomboid	Four sided in outline but the four angles are not right angles and with unequal adjacent sides
Rimose	Describing a pileus (cap) that has radial cracking, seen on the caps of certain fungi
Rimulose	Describing a pileus (cap) that is finely rimose
Ring	A more or less distinct membranous or woolly band or ring on the stem resulting from the loosening of the veil from the margin of the cap. The mycological term for the ring

	is the annulus
Ring Light	An independent light source that usually connects to a stereo microscope body and gives off a ring of light
Ring zone	Area where there is a more or less distinct membranous or woolly band or ring on the stipe (stem) resulting from the loosening of the veil from the margin of the cap
Rivulose	Describing a pileus with a thinly wrinkled surface of branching wavy or crooked lines
RMS	Refers to a standard set by the Royal Microscopical Society for a universal screw thread at the top of an objective lens, 0.8" diameter, 36 t.p.i. this is the most common screw thread
Rock tripe	Rock-inhabiting lichens of the genus Umbilicaria
Rooting	Describing a stipe (stem) that tapers to an elongated point below the ground
Rostrate	Beak shaped
Rubescent	Blushing red
Rudimentary	Being in an early stage of development or having a simple form
Rufescent	Reddening
Rufous	Brownish reddish or pinkish
Rugose	Describing a surface that is coarsely wrinkled
Rugulose	Describing a surface that is finely wrinkled.
Rusts	Are unique obligate (host specific) parasitic fungi, having up to five stages in their life cycles, which can occur on two different hosts. Not all Rust fungi pass through all five stages during their life. The stages are traditionally recorded using Roman numerals and are: **Stage 0 – Pycnium bearing pycniospores** and receptive hyphae (referred to as Spermogonia bearing spermatia by some authors). The gametic stage bearing sex cells which are self-sterile. **Stage I - Aecia bearing aeciospores**. These serve mainly as non-repeating, asexual spores, and go on to infect the primary host. **Stage II - Uredia bearing uredospores**. These serve as repeating spores re-infecting the same host on which the spores were produced. **Stage III - Telia bearing Teliospores** (referred to as Teleutospores by some authors). These spores are the overwintering stage of the life cycle. They usually do not infect a plant directly; instead they germinate to produce basidia and basidiospores. **Stage IV - Promycelia bearing basidiospores**. These wind-borne spores often infect the alternate host in Spring
S...	
Saccate	Describing the shape of a volva, cup or bag-shaped, with the tissue in the form of a bag or sack around the base of the stem
Sapro-	Prefix meaning rotten
Saprobe	An organism that derives food from dead or decaying organic material, or from organic substances liberated by living ones.

Saprophyte	An organism that obtains its nutrients from dead organic material
Saprophytic	Growing on dead organic matter
Saprotrophic	Feeding on dead organic material
Sarcodimitic	Consisting of generative hyphae and chains of very long, thin to thick walled elements
Sarcoskeletal	Having tissue consisting of generative hyphae and chains of very long, thin to thick walled elements
Saxi-	Prefix meaning rock
Scabrid	Rough with scale-like projections used to describe a stem or cap surface
Scabrose	Rough with scale-like projections used to describe a stem or cap surface
Scabrosities	Erect scales which are often pointed, as found on the stipe of *Leccinum* species
Scabrous	Rough with scale-like projections used to describe a stem or cap surface
Scale	Flat, fleshy flakes seen on the caps of certain fungi
Schaffer reaction	An orange reaction on the cuticle of some *Agaricus* species after mixing aniline with nitric acid
Scarious	Dry and membranous
Scattered	Describing a growth habit of growing several inches to several feet apart, whilst possibly coming from the same mycelium
Schizolysis	Simple division see Schizolytic for a more in depth explanation
Schizolytic	Hyphal growth by simple division or fission. A dividing double wall with a central layer forms between the cells, the central layer then breaks down releasing the cell cf. Rhexolytic
Schizopapillate cystidia	Cystidia with an apical constriction, sometimes described very accurately as looking like the end of a semi-deflated balloon
Schizont	Anything that splits up into portions, but more especially a plasmodium of the Plasmodiophorales, which behaves in this manner
Sclerified	Describing hyphae becoming hard and thick-walled
Sclerotia	Plural of sclerotium
Sclerotised hyphae	Thick walled, with septa (partitioned by cross walls) and often with clamps (small lateral protuberance arching over a septum)
Sclerotium	Found in certain fungi and slime moulds, a hard, dormant, multicellular structure of tightly grouped hyphae which protect a fungus from adverse conditions and provides a reservoir of reserve material from which the fungus will subsequently produce mycelium and or a fruitbody
Scolecospores	Spores which are very long and thin (length/width ratio more than 15:1)
Scrobiculate	Describing a surface that has small spot like pits or depressions on the surface
Scrupose	Describing a surface that is covered with rough, jagged points
Scutellum	Upper wall of a thyriothecium (an inverted ascomycete fruiting body, having the wall

	more or less radial in structure)
Seceding	Describing an anomaly of gill attachment in that, as the fruitbody dries out and the cap lifts, gills that were attached to the stem sometimes pull away from both it and the underside of the cap; can sometimes be distinguished from truly free gills by torn bits on stem.
Secession	Release, breaking off, separating of spores from sporogenous cells
Secondary mycelium	The binucleate mycelium formed after mating and thus capable of fruitbody formation
Secondary spores	Small spores derived from normally developed asco-spores, by budding or by developing into many smaller spores. Sometimes considered to be asco-conidia.
Secotioid	Describing Agaric fungi with a fruiting body that is angiocarpic (a type of development of the fruitbody in which at some stage the developing hymenium is situated in a closed cavity)
Self-compatible	Self-fertile. Refers to a thallus that reproduces sexually by itself
SEM	Scanning electron microscope
Semiglobose	Having the shape of half of a sphere
Semimacronematous	Having a conidiophore (a specialized hypha upon which conidia develop) that is only slightly morphologically different from the vegetative hyphae
Semipileate	Resupinate in the main but forming a bracket
Semi-plan lens	Also called semi-planar, is an objective lens that corrects for field curvature. Field curvature often results in blurred images and correction for this helps produce good quality images. Semi-plan lens correct for approx 80% of the field of view. cf. Plan lens
Sensu	In the sense of
s.	Abbreviation for sensu
Sensu auct.	Sensu auctores; in the sense of various authors but not in the original sense. Of a fungi group or name, as cited by a named authority
s. auct.	Abbreviation for sensu auct
Sensu auctores pluralis	In the sense of most authors but not in the original sense
s. auct. plur.	Abbreviation for sensu auctores pluralis
Sensu amplo	Of a fungi group or name, in a generous or ample sense
Sensu lato	“In a broad sense”, used especially with names of taxa to indicate that the name is used more inclusively than sanctioned by current practice
s. lato	Abbreviation for sensu lato
Sensu stricta	In a narrow or strict sense, used especially with names of taxa
s. str.	Abbreviation for sensu stricta
Sensu strictiore	A comparative adjective meaning "in the stricter sense" or "more strictly speaking".
Sensu strictissimo	A superlative adjective may be used to convey the meaning of "most" "in the strictest possible sense". Of a fungi group, in the narrowest sense

Sensu stricto	In a narrow or strict sense, used especially with names of taxa
Septa	Plural of septum
Septate	Partitioned by cross walls known as septa used when describing hyphae
Septation	The formation of cell walls which originate during cell division and separate two adjacent cells in hyphae
Septocystidia	Cystidia with regular septa, often with clamp connections, typically cylindrical, thin-walled or thick-walled
Septum	A cross wall separating cells of a hyphal thread especially in a hypha or spore, they strengthen hypha and define the compartments. The septa have openings called pores to allow the flow of cytoplasm and nutrients through
Sequestrate	Describes fungal fruit bodies which have evolved from exposed hymenia and forcibly discharged spores to a closed or even hypogeous (growing underground) habit in which the spores are retained in the fruitbody until it decays or is eaten by an animal vector
Seriate	Arranged in rows
Sericeous	Silky, with fine glossy hairs
Serrate	With saw-toothed edges often used when describing gill margins
Serrulate	Minutely serrate
Serrulatum-type	Having sterile strands of hyphae running parallel along the gill edge, at irregular intervals with clusters of septate terminal endings or cheilocystidia, usually with intercellular pigmentation. Macroscopically seen as a coloured and irregular serrulate edge.
Sessile	Attached directly to the substrate and lacking a stipe
Seta	Usually brown or yellow, thick walled, bristle shaped, cystidium-like elements. Minute bristle like stiff hairs, often pointed, erect hyphae which protrude from a fertile layer or fruiting body and may have a protective function
Setae	Plural of seta
Setiform	Bristle-shaped
Setaceous	Bristle like
Setose	Having setae, can appear hairy or bristly under magnification
Setulae	Fine appendages arising from the surface of a spore
Setule	Thin-walled, elongated bristle-like cell protruding from the surface of the cap and visible with a hand lens
Shelf fungi	Another name for Bracket fungi
Shelving	Attached to an object by the side of the cap and forming a shelf, like a bracket
Siderophilous	Turning blackish purple or blackish violet in acetocarmine in the presence of metal ions siderophilous: literally iron-loving: Iron and various other metals form a complex aggregate with carmine and certain protein compounds in some basidia. Such basidia

	then exhibit a dark granulation, siderophilous granules, when heated with Acetocarmine. They occur in *Lyophyllum* and a few closely related genera. Also known as carminophile basidia.
Siedentopf head	A microscope head design where the interpupillary (space between the eyepieces) adjustment is achieved by moving the eyepieces together and apart in a vertical arc around a central axis like binoculars. This design also means that you can adjust the interpupillary distance without changing the focus
Sigmoid	Shaped like the letter S
Simple	Opposite of branched
Simplex	Having no divisions
Sinuate	Describing a gill edge rising up close to the stem before curving back down to meet the stem, also called emarginate
Sinuate	Having a strongly or distinctly wavy cap margin
Sinuous	Wavy as per sinuate
Skeletal hyphae	Mostly unbranched, non-septate, thick walled hyphae
Skeletocystidia	Thick-walled, cystidium-like ends of skeletal hyphae that project through the spore-bearing surface
Slide	A rectangular plate normally of glass upon which the subject is placed for viewing under the microscope. They can also be purchased with a small central depression to hold drops of liquid to be studied
Slip Clutch	If you move the focus all the way up or down and continue to turn the knob, damage to the focusing system can occur. A slip clutch is a mechanical device that protects the gears of the microscope from damage if this happens
Slime moulds	A group of fungus-like organisms that use spores to reproduce, members of the phylum Myxomycophyta
Smooth	Describing a pileus (cap) surface that has no defining features
Sociability	Denseness of growth or degree of separation between individuals of a given species
Soma	The body of an organism as distinguished from its reproductive organs or reproductive phase
Somatic	Relating to the vegetative, as distinguished from the generative, functions
Somatogamy	Fusion of somatic cells during plasmogamy
Sordid	Dingy
Smuts	A plant-pathogenic group of fungi, often specific to higher plant sex organs. These fungi are characterized by the production of masses of dark, sooty teliospores (thick-walled resting or overwintering spores of most rust and smut fungi). The powdery masses of spores give the appearance of dirt or ash, hence the name smuts.
Soredia	An organ of vegetative reproduction in many lichens. They resemble tiny dust balls and consist of one or more algal cells interwoven with fungal hyphae. They are formed in the gonidial layer (a layer of green chlorophyll-bearing cells found within the thallus of a lichen) of the lichen, where the algal cells are concentrated.

Sori	Plural of sorus
Sorocarp	The fructification (spore-bearing structure) of the Acrasieae (a class of Slime moulds)
Sorus	A simple fruiting structure produced by rust and smut fungi; an aggregation of spore-bearing cells bursting through the host epidermis
sp.	Abbreviation used to indicate spores
sp. deposit	The collection of millions of spores shed by the gills or tubes onto a piece of paper or other material for the purpose of aiding identification
Sp.	Abbreviation of species (singular), often used when the genus is known but the species has not been determined
Spp.	Abbreviation for more than one species
Sparassoid	With cauliflower-like fruiting-body resembling *Sparassis crispa*
Spathulate	In relation to a stipe (stem) being spatula shaped with a tapering base
Species	A group of closely related organisms that are very similar to each other and are usually capable of interbreeding and producing fertile offspring. The species is the fundamental category of taxonomic classification, ranking below a genus or subgenus. Species names are represented by the genus name (capitalised) followed by the (uncapitalised) specific epithet, both words being italicised. Generally the lowest-ranking taxon normally used but subspecies, variety and race are subspecific taxa that are often encountered
Specific epithet	Follows the name of the genus and is the second word of a botanical binomial. The generic name and specific epithet together constitute the full name of a species
Spermagonium	The small flask-shaped sporoma producing spermatia; found in rust fungi formed in clusters just beneath the surface of the host tissue, produced as a result of infection by a single basidiospore, and producing hyphae and Spermatia
Spermatia	Plural of spermatium
Spermatium	A non-motile cell functioning as a male gamete in certain fungi and lichens which empties its contents into a receptive female structure during plasmogamy (a stage in the sexual reproduction of fungi, in which the protoplasm of two parent cells fuses together without the fusion of nuclei). Spermatia are variously regarded as gametes or gametangia (a cell whose nucleus unites with that of another cell to form a new organism)
Spermatiophore	A specialized hypha that produces spermatia
Spermatization	Union of a spermatium with a receptive structure via Plasmogamy (protoplasm of two parent cells fuses together without the fusion of nuclei)
Spermogonium	A flask-shaped or depressed receptacle in which spermatia are produced in some fungi and lichens, a structure resembling a pycnidium (an often globose or flask shaped asexual fruiting body containing conidia) which contains minute, rod- shaped, or oval spore-like bodies which in some cases have proved to be functional spermatia
Sphaeriales	Another name for pyrenomycetes, which are fungi with a perithecia (hollow structure that contains asci) of a generally black, hard consistency
Sphaerocystidia	Another name for Sphaerocysts

Sphaerocysts	± globose hyphal, thin-walled cells, found either on the pileus surface (cap), in the veil or clustered in the tissues of *Russula* and *Lactarius* (agaricales), and accounting for the peculiar brittle texture of their flesh
Sphaeropedunculate	Describes a shape that is globose or sub-globose with long stalks
Spherical aberration	An inferior image caused by light rays failing to converge to a single point resulting in a loss of definition
Spherocysts	An alternative spelling of Sphaerocysts
Spicules	Needle like outgrowths
Spines	Spore bearing structures seen in toothed fungi
Spinose	Having spines
Spinulose	Finely spiny
Splash-cup	A cup-like structure in some groups of fungi for spore dispersal whereby energy of raindrops hitting into the cup splash back out carrying the spore
Split	Describing a pileus (cap) margin having pronounced radial splits
Sporangia	Plural of sporangium
Sporangiferous	Having a sporangium
Sporangiole	A small single spored sporangium lacking columella (a sterile central axis inside a fruitbody)
Sporangiolum	A small sporangium producing a small number of sporangiospores
Sporangiophore	A specialized hyphal branch bearing one or more sporangia
Sporangiospore	An asexual spore produced within a sporangium
Sporangium	A single-celled or many-celled structure in fungi, in which the reproductive spores are produced and stored.
Spore	A small, usually single-celled reproductive body that is resistant to adverse environmental conditions and is capable of growing into a new organism without fusion with another cell
Spore colour	Spore colour is diagnostic, and can be determined by placing a severed cap fertile side downwards on a white or black paper and covering with a glass. Depending on the fungi and other environmental factors usually after a few hours many spores will have fallen
Spore print	A visible deposit of basidiospores obtained by allowing an agaric to drop spores onto a collecting material over a period of a few hours; the colour of this deposit is an important aid to identification
Spore ornamentation	An important identification feature of spores is a description of the surface of the spore observed under a microscope
Spore shape	Q values are often used to describe the shape of a spore and are a ratio of length and width, calculated by dividing length by width, the result of which is used to describe the shape of spores as below. • Q 1.00 - 1.05 = Globose

	• Q 1.05 - 1.15 = Sub-globose • Q 1.15 - 1.30 = Broadly ellipsoid • Q 1.30 - 1.60 = Ellipsoid • Q 1.60 - 2.00 = Elongate or cylindrical • Q 2 - 3 = Narrowly cylindrical • Q 3 - 4 = Alantoid • Q 4 - 6 = Fusiform
Sporidia	The result of homokaryotic (multinucleate cells where all nuclei are genetically identical) smut fungi, asexual reproduction through the process of budding
Sporiferous vesicle	A thin-walled accessory cell distal to (situated away from the point of attachment), or behind and to one side of, the chlamydospore (thick walled, asexual spores formed from fungal hyphae) of some VAM (vesicular-arbuscular mycorrhizal) fungi.
Sporocarp	Is the fungal fruitbody of either an ascomycete or basidiomycete it is a multicellular structure on which spore-producing structures, such as basidia or asci, are borne. The fruitbody is part of the sexual phase of a fungal life cycle, while the rest of the life cycle is characterized by vegetative mycelial growth and asexual spore production. The fruitbody of a basidiomycete is known as a basidiocarp or basidiome, while the fruitbody of an ascomycete is known as an ascocarp. Many shapes and morphologies are found in both basidiocarps and ascocarps and these features play an important role in the identification and taxonomy of fungi
Sporodochia	Plural of Sporodochium
Sporodochial conidioma	See Sporodochium
Sporodochium	A cushion-shaped mass of hyphae bearing conidiophores (a specialized hypha upon which conidia develop)
Sporomata	Plural of Sporoma
Sporoma	Any multicellular structure specially developed to produce spores
Sporophore	Fungal fruitbody of either an ascomycete or basidiomycete
Sporothallus	A thallus that produces spores, as opposed to a gametothallus (a thallus that produces cells having only one set of chromosomes, whose nucleus unites with that of another cell to form a new organism)
Sporulation	The production of spores
Squamose	Covered with scales, referring to cap and stem surfaces
Squamules	Small, pointed, wispy scales
Squamulose	Covered with tiny scales when referring to cap and stem surfaces. Also used to describe lichen thalli which consist of small scales
Squarrose	Covered with projecting coarse, distinctly erect scales referring to cap and stem surfaces
Squarrulose	Covered with small projecting scale referring to cap and stem surfaces
s.t.	Sometimes

Stage	The part of the microscope where the slide is placed, on a compound microscope this is usually between the light source and the objective lens. Some stages have clips to hold the slide in place
Stage Clips	Clips on the stage used to hold the slide in place
Stage Plate	On a low power microscope, there is a frosted circular glass plate that fits in over the lower illuminator. cf. contrast plate
Stand	This is connection between the microscope body and the base on a low power microscope. There are three main types: the post, the fixed arm and the universal boom stand
Statismospore	A basidiospore that is not actively discharged at maturity
Statismosporic	Basidiospores not bring forcibly discharged or released from the basidium at maturity
Staurospores	Spores with three to many radiating extensions
Stellate	Star-shaped with branches radiating
Stem	The structure carrying the cap, in some books more correctly referred to as a stipe
Stephanocyst	A sterile structure in the hymenium consisting of a cup-like cell, at or near the base, containing a globose cell of homogenous fluid
Stereoid	Describing a surface that is smooth or very slightly and irregularly bumpy
Stereoid	Having a fruitbody resembling a Stereum
Stereo microscope	A microscope generally of a lower magnification than a compound microscope, good for examining larger items and for viewing items whilst dissecting, another name for stereo microscope is dissecting microscope. The stereo microscope has two eyepieces that, unlike a compound microscope, produce two distinct optical paths so that the view to each eye is of a slightly different angle giving a three dimensional view. This is achieved, either by using a separate objective lens for each eyepiece known as Greenough stereo, or in the Common main objective (CMO) type, the two eyepieces look through the same objective, but from left and right sides so as to produce two different views which are combined to give a stereo image
Sterigma	Small pointed horn like structures at the top of a basidium on which a basidiospore develops
Sterigmata	Plural of sterigma
Sterile	Not having a hymenium (fertile surface), immature, not containing or producing spores. Also used to describe a gill surface or edge that is composed of cystidia (sterile cells) whilst having no basidia
Stichic	In relation to a basidium, a stichic is a meiotic spindle (framework of fibres formed between the centrioles (a short, hollow, cylindrical organelle) parallel to the longitudinal axis
Stinkhorn	A common name for the basidioma (multi-hyphal structure producing basidia) of some members of the order Phallales
Stipe	The mycological term for the structurally distinct column of tissue that supports the

	reproductive structure in some fungi, in the case of an Agaric the pileus (cap) of a mushroom. The main function of a mushroom's stipe is to raise the spore releasing pileus up into a location where there is a greater likelihood of moving air currents to facilitate wider spore distribution
Stipitate	A fruitbody having a stipe or stem
Stipitipellis	The superficial layer of cells covering the stipe of an agaric, the surface layer of the stipe
Stirps	A group of species below the rank of section
Stolon	A horizontal running hyphae that allows the fungus to spread over an area and from which rhizoids (hyphae for absorbing water and nutrients) and sporangiospores arise
Straight	Not in curved at the margin
Striae	Fine lines, grooves or ridges
Striate	Marked on the surface with delicate lines, grooves, or ridges, radially oriented on the pileus (cap), longitudinally oriented on the stipe (stem)
Strigose	Covered with long, coarse or thick, rather stiff hairs; term often used for such hairs at the stem base
Stroma	Fused mass of hyphae appearing as a soft or crusty tissue in which fruit bodies are embedded and from which perithecial (hollow structure that contains asci) or other fruit bodies are formed. Fungal tissue within or under which the mature fruiting bodies develop
Stromata	Plural of stroma
Stromatic tissue	Dense tissue, typically with ± immersed erumpant (breaking through the outer layer of the substrate) fruitbodies often perithecia (hollow structure that contains asci)
Stromatized	Plant tissue that has been invaded by fungal hyphae, often changing the form and often the colour of the plant tissue
Staurospores	Spores of some stream-inhabiting fungi; the three to many radiating arms ensure a stable three-point landing on the substrate
Stylospore	An elongated or cane shaped pycnidiospore (a conidium borne in a pycnidium) of unknown function
Sub	Prefix meaning almost, somewhat or under
Suba	Abbreviation for the subarctic/subalpine vegetation zone
Subcapitate	With a slight rounded thickening of the cell tip a common shape in cheilocystidia
Subcapitate cystidia	Cystidia that have a slight apical swelling
Subcellular	Nearly cellular or consisting of cellular (rather than filamentous) elements
Subcoriaceous	Describing a texture that is slightly leathery
Subdecurrent	Gills or tubes running just a short distance down the stem
Subglobose	Almost spherical
Subhyaline	Not quite colourless, but not strongly pigmented, e.g. conidia/conidiophores of

	Aspergillus nidulans
Subhymenium	Layer of supportive hyphae beneath the surface hymenium which sometimes contrasts with both the hymenium (fertile surface) and the trama (the flesh or context of a fungal fruitbody) by virtue of different structure
Subhypogeous	Growing partially submerged in the soil.
Subiculum	Dense felt of mycelial hyphae covering the substrate from which the fruitbody arise
Sublimoniform	Almost but not quite lemon-shaped
Submarginate	Describing a stem base that is bulbous with an ill-defined rim
Subovoid	Not quite round
Subpellis	The layer separating the pellis (cellular layer at the very surface of the fruitbody) from the trama (the flesh or context of a fungal fruitbody)
Subphylum	Taxon above class but below phylum; suffix is -mycotina, e.g. Ascomycotina, Basidiomycotina
Subporiform	With gills which anastomose (running together to form a vein like network) to form shortly elongated pores
Substrate	The surface on which an organism grows or to which it is attached, obtains its nourishment, and in which the mycelium is found. Knowing the type of material that the fungus was growing on is an important aid to identification e.g. dead branch, living leaf, soil or buried woody debris, these latter two can be difficult to ascertain without very careful extraction of the very base of the stipe.
Subspecies	A grouping within a species, usually used for geographically isolated and morphologically distinct entities. Its taxonomic rank occurs between species and variety
subsp.	Abbreviation for subspecies
Sub-Stage	Those parts of the microscope that are below the stage, including the illumination system
Subtending	Extending from underneath
Subtomentose	Somewhat or finely woolly with a moderately dense layer of matted down or soft hairs, or like a newly sheared lamb
Subulate	Awl shaped, thin and tapering gradually to a point
Subulate cystidia	Cystidia that taper to a point like an awl, but also specialized cystidia in the genus Subulicystidium that consist of a hypha protruding from a needle-tipped, thick-walled crystalline sheath, ornamented with regular, rectangular encrustations.
Subulicystidia	See Subulate cystidia
Surfactant	An agent which reduces the surface tension of a liquid, e.g., detergents
Sulcate	With grooves, more deeply grooved than striate and less deeply than plicate
Sulpho-vanillin	A stain made from sulfuric acid (H_2SO_4) and vanillin (vanilla) used for SV reaction in *Russulas* and to colour the contents of gloeocystidia (cystidia that are usually highly refractive containing granular, clear or yellowish oily contents)

Sulphidia	Pleurocystidium (cystidia on the gill face) that have a yellowish colouration similar to that of a chrysocystidium, but not turning yellow in KOH
Sulphobenzaldehyde	Used as a stain in microscopy
Superficial	On or near the surface
Superior	A ring located on the upper half of the stipe
Suprahilar depression	A small depression above the apiculus (a tiny projection on a spore where it is or was attached to the sterigma. Also called the Hilar appendix)
Suprahilar plage	A rounded ± smooth area just above the apiculus (a tiny projection on a spore where it is or was attached to the sterigma. Also called the Hilar appendix)
Suprapellis	The uppermost layer of the pellis (cellular layer at the very surface of the fruitbody)
SV	Sulfo-vanillin
Symbiont	An organism that is very closely associated with another, usually larger, organism. This larger organism is called a host. A symbiont can live on, in, or sometimes very near its host There are two general categories of symbionts: **Ectosymbionts** - An organism which lives in a mutualistic symbiosis with another organism whilst living outside of their hosts' cells **Endosymbiont** - An organism which lives in a mutualistic symbiosis with another organism whilst living inside of their hosts' cells
Symbiosis	A state of intimate association or living together between two organisms. There are three types of behaviours observed in symbiotic relationships, namely: **Mutualism -** both the involved organisms benefit from each other. **Commensalism** - only one organism benefits, while the other is neither benefited nor harmed **Parasitism** - one organism is benefited while the other organism is harmed.
Symbiotic	See Symbiosis
Symphogenous	Originating from structures which grow together, refers to the origin of a fruiting body from a number of interweaving hyphae
Sympodial	A mode of conidial (asexually formed fungal spore) growth where the apical meristem (point where new growth occurs) is terminated and growth is continued by one or more lateral meristems growing at a 90 degree angle, which repeat the process. This can occur on opposite sides producing a zig zag pattern or always on the same side producing a geniculate (bent) growth pattern
Syn-	A prefix meaning together, with
Synanamorph	When a single fungus produces multiple morphologically distinct anamorphs (asexual fruiting bodies) which develop simultaneously, or are otherwise known to be associated with a single teleomorph (sexual stage)
Synchronous	Describes conidia (asexually formed fungal spore) initiated simultaneously in a cluster or on a specialized cell via blastic conidial development where there is a recognizable enlargement of a fertile hypha before being delimited by a septum (dividing wall)
Synnema	A group of erect conidiophores (a specialized hypha upon which conidia develop) that

	are cemented together producing conidia (asexually formed fungal spore) at the apex and/or along the sides
Synnemata	Plural of Synnema
Synnematal conidioma	See Synnema
Synonym	Another name for species, especially one that has been superseded
T...	
T-mount	An adapter required usually to connect an SLR to a microscope. The camera lens is removed, and a t-mount is mounted to the body of the camera and then connected to the additional camera adapter that works with the microscope. Sometimes referred to as a step-ring
Tawny	Describing a colour that is dull yellowish brown, sand coloured
Taxa	Plural of Taxon
Taxon	A taxonomic category or group, such as a phylum, order, family, genus, or species
Taxonomy	A method of grouping organisms for systematic purposes allowing for the classification of organisms based on their natural relationships, ranging in rank from species up to kingdom
Teleomorph	The sexual stage in a fungal life cycle (non-sexual stage is the anamorph)
Teleutospore	As Teliospores
Teliomycetes	A class of fungi (no longer recognized in most taxonomic schemes) that do not form basidiocarps (fruit bodies). The class included the orders Uredinales and Ustilaginales. Their teleomorphs consist of teliospores from which basidia develop
Teliospores	Thick-walled resting or overwintering spores of most rust and smut fungi (Uredinales and Ustilaginales), in which karyogamy (fusing of two sexual nuclei) takes place to produce a basidium
Telium	A group of binucleate cells which produce teliospores
Temp.	Abbreviation for the temperate vegetation zone
Tension Adjustment	This is an adjustment of the microscope focusing mechanism that is designed to make it easy to focus but also tight enough so that the stage doesn't drift when you are not focusing, on many microscopes this can be adjusted with the tool provided. Stage drift is caused by the weight of the stage (or tube) moving the stage downwards and out of focus
Terete	Describing a stipe (stem) that is approximately cylindrical, not flattened, but usually tapering at both ends
Terminal	Situated at the tip or apex
Terrestrial	Growing on the ground
Terri-	Prefix meaning earth
Terricolous	Growing on or in the soil
Tessellate	Chequered like a floor mosaic

Tetrapolarity	A condition of sexual compatibility in some Basidiomycota in which each of the four basidiospores of a basidium is of a different strain
Tetraradiate	Describes the spores of some stream-inhabiting fungi; these are staurospores that have four, sometimes more, radiating extensions ensuring a stable three-point landing on the substrate
Tetrahedral	Shaped like a triangular pyramid
-thecium	Suffix meaning case
Thermotolerant	Capable of growing at high temperatures up to 60c, ideally 40-50c, cf. Psychrotolerant
Textura	Terminology relating to the tissue structure
Thalli	The body of a fungus or a lichen plural of Thallus
Thallic	Denoting conidia produced with no enlargement or growth, via separation by septa (dividing walls) in the hypha; the entire parent cell becomes an arthroconidium (an asexual fungal spore, typically produced by this process), cf. Blastic
Thallophyte	Any of a group of organisms, including the algae, fungi, and lichens, that show no differentiation into stem, root, or leaf
Thallus	The body of a fungus or a lichen
Thyriothecia	Plural of thyriothecium
Thyriothecium	An ascomycete, with an ascocarp (fruiting body) having the wall more or less radial in structure, so inverted that the generative hyphae are dependent
Tibiiform	Describing the shape of a cystidia, bottle shaped with long neck and distinct head
Tissue	A group of similar cells organized into a structural and functional unit
Toadstool	An unreliable historic term relating to fungi generally applied to Agaric fungi that are perceived to be poisonous
Toluidine blue	Used as a stain in microscopy. It is a metachromatic (having more than one colour produced by the same stain) dye that stains nucleic acids blue and polysaccharides purple and also increases the sharpness in histology (microscopic structure of tissue) slides
Tomentose	Densely woolly, velvety, or thickly covered with soft hairs
Tomentum	A cuticle with a loose, irregularly aligned hyphae. Mass of soft hairs
Tooth fungi	Fungi that produce their spores from a hymenium situated on downward pointing spine-like teeth rather than gills. Members of the family *Hydnaceae*
Torulose	Cylindrical body swollen and constricted at intervals like a string of beads
Torulose cystidia	Regularly constricted cystidia like a string of beads; also called Moniliform cystidia
Toxigenic	Producing toxins
Trama	The flesh or context of a fungal fruitbody's cap, gills or stem, a term used in microscopic description for the sterile interior tissue of a fruitbody, excluding the surface tissue, the flesh as seen through the compound microscope
Tramal plates	Layers of sterile tissue, which give rise to the hymenia and basidia within the gleba

Tremellaceous	Jelly-like
Tremelloid	Jelly-like
Transfer spores	Relating to Rust fungi this is another term for the aeciospores. These serve mainly as non-repeating, asexual spores, and go on to infect the primary host
Translucent-striate	Describing the appearance of a margin of the pileus (cap) having translucent tissue which permits the attachments of the gills to show through as dark lines or striations
Tribe	A taxonomic grouping, in rank between genus and family
Trichoderma	A genus of fungi in the family *Hypocreaceae* present in all soils, where they are the most prevalent culturable fungi
Trichodermium	A pileus (cap) cuticle in which the hyphae of the uppermost layer covering the cap are ± at right angles to the surface but not strictly parallel giving a velvety appearance if dry
Tricholomatoid	Resembling a *Tricholoma,* applied to any mushroom characterized by sinuate (wavy) gills, neither free, nor decurrent, a stem ± as long as diameter of cap, context of cap fleshy, continuous with context of stem which lacks a volva and rarely has a ring
Trichogyne	A slender terminal prolongation of the ascogonium (a female reproductive organ) that receives the male gamete before fertilization (in some ascomycetes)
Trigonous	Having three angles or corners, triangular in cross section
Trimitic	With three types of hyphae, generative, skeletal and binding
Trinocular head	A type of microscope head available on both high and low power microscopes that has two eyepieces with another port to which a microscope camera can be fitted. Some microscopes have an adjustment to enable control of where the majority of the light is directed, either to the camera or the eyepieces
Triradiate	Having three arms
Trooping	A group of fungal fruit bodies growing on the same substrate but separate to each other
Trophocysts	Nutritional “cells” within the gleba, which stimulate young basidiospores to maturity; also called nurse cells, found in the group Sclerodermatales
Truffle	A truffle is the fruiting body of a subterranean ascomycete fungus, predominantly one of the many species of the genus Tuber
Truncate	Ending abruptly as though chopped off
Tuberculate	Having small rounded projections or protuberances
Tuberculate-striate	Having lines of tubercules, small wart-like projections
Tubercule	Small rounded projection
Tuberoid	Resembling a tuber
Tuberous	Describing a gasteromycete fruitbody, irregular in form resembling a tuber
Tubes	Spore-bearing cylindrical structures of boletes and polypores
Tuft	A group of fungal fruit bodies arising from a common base

Tulostomatales	An order of fungi belonging to the class gasteromycetes
Tuning-fork basidia	Also called bifurcated basidia. These basidia begin as long cylinders but branch once to form a tuning fork or Y shape. Each fork produces a single basidiospore. Tuning fork basidia are found in fungi of the order Dacrymycetales.
Turbinate	Shaped like a spinning top, or a cone resting on its apex
Turgid	Swollen with liquid; firm; cf. flaccid
Turret	This is the part of the microscope that the objective lenses are fitted into, this can be revolved allowing the user to switch between the objective lenses to increase or decrease magnification, also called nosepiece
Type	An item (usually a herbarium specimen) to which the name of a taxon is permanently attached, i.e. a designated representative of a plant name. Important in determining the priority of names available for a particular taxon
Type genus	In nomenclature, the genus from which the family is based
U...	
µm	Abbreviation for micrometer = 1/1000 of a mm
Umbilicate	Locally depressed or hollowed
Umbilicate	A pileus (cap) having a navel-like central depression; simple ostioles (pore through which spores are released or expelled) in Pyrenomycetous fungi
Umbo	A raised central mound, often conical with a rounded top
Umbonate	Describing a pileus (cap) having a raised central mound, having an umbo, varieties are: **Acutely umbonate:** with a sharply delineated or pointed umbo; **Broadly umbonate:** with a rounded, and broad umbo; **Obtusely umbonate:** with a blunt or rounded umbo, often used if the umbo is blunt but not very broad
Uncinate	Hooked
Uncinate	Referring to gills decurrent with a hooked tooth
Undulate	Wavy and not flat; cf. sinuate
Ungulate	Hoof shaped
Uniguttulate	With one small drop
Unipileate	Describing Gasterocarp development, forming on pileus (cap) a single tramal branch develops as a column of tissue from base to apex and spreads out in a pileus-like manner, on the inner surface of the peridium (outer wall)
Uniseriate	In one row
Unitunicate	Describes a type of ascus with only one distinct, functional wall layer cf. Bitunicate
Universal veil	A protective membrane that is initially totally enclosing some young agaric basidiomata as in *Amanita*; after rupture it remains as the volva around base of the stipe (stem), and often also as scales on the cap. cf. Partial veil
Uplifted	Describing the shape of a pileus (cap) having an upward curling margin

Urceolate	Pitcher or urn shaped, rounded with the walls curving inwards towards the top
Uredinales	Rust fungi, an order within the Basidiomycota
Uredinium	A reddish pustule-like structure that is formed in the tissue of a plant infected by a rust fungus and produces urediniospores
Urediniospores	A dikaryotic (two nuclei, one from each parent) often reddish spore of most rust fungi, they are sometimes referred to as `summer spores' they disperse widely, spreading infection within a primary host plant and to other primary host plants
Uredium	Another term for Uredinium
Urniform	Describing the shape of a basidium that is shaped like an urn, short and swollen towards the base
Urticoid	Resembling a hair from a stinging nettle, roughly similar in shape to a wine bottle with a pointed top.
usu.	Usually
Ustilaginomycetes	Smut fungi, a class within the Basidiomycota
Utriform	A description of cystidia that are shaped like a leather bottle or flask, with the neck more than half as broad as the body, fatter than lageniform which is swollen at the base, narrowed at the top
V...	
Vacuole	A membrane-bound cavity within a cell, often containing a watery liquid or secretion.
VAM	Vesicular-arbuscular mycorrhizal fungi are soil fungi which colonize the roots of approximately 80% of plant families in a symbiotic relationship that is mutually beneficial, more correctly AM or arbuscular mycorrhizal, since not all fungi producing this kind of mycorrhiza have vesicles
Var.	See varietas
Variant	A fungi or group of fungi showing some measure of difference from the characteristics associated with a particular taxon
Varietas	In the Linnean hierarchy a rank below that of species, between the ranks of subspecies and form. Variety in common usage, abbreviated as var.
Variety	In the Linnean hierarchy a rank below that of species, between the ranks of subspecies and form. Abbreviated as var.
Vector	An organism which consciously or unconsciously aids in the dispersal of another, e.g. dipteran flies are vectors for stinkhorn
Vegetable caterpillar	A mummified Moth or Butterfly larva from which arises the sexual spore producing fruitbody of a species of Cordyceps
Veil	A layer of hyphae creating a covering which partly or completely encloses a fruiting body, varieties are: **Partial:** enclosing the hymenium and sometimes also the cap surface **Universal:** enclosing the whole fruiting body when young
Veil layers	Protective tissues covering the young fruitbody

Veined	With vein-like wrinkles
Velar	Of, forming, or relating to a veil
Velipellis	A layer of intricately interwoven hyphae, originating from the pileipellis (cap surface) and universal veil
Velum	Veil
Velutinous	Covered with short, fine, soft, dense hairs
Velvety	Densely covered with fine, short, soft, erect hairs
Venose	Veined, with vein like wrinkles
Venter	Expanded basal part of a fruiting body
Ventral	The part that faces towards the substrate. c.f. Dorsal
Ventricose	Considerably broader at or near to the middle than at either end, often used when describing a stem, gills or cystidia
Vermiform	Shaped like a worm, cylindrical and bending
Vernicose	Shiny
Verruciform	Wart-like in form
Verrucose	Covered with small rounded warts often used when describing spores
Verruculose	Minutely warty, minutely verrucose
Verticil	A whorl
Verticillate	Describing a hypha having more than one clamp (small lateral protuberance arching over) at a septum (dividing wall), can be paired or multiple whorled around the septum.
Vesicle	Small, intracellular, membrane-bounded sac in which substances are transported or stored. Also used to describe the swollen, lipid-filled cells produced inside plant roots by most endomycorrhizal fungal hyphae which penetrate cell walls of host plant, sometimes called intramatrical spores
Vesicular-arbuscular mycorrhizas	These are symbiotic soil fungi which colonize the roots of approximately 80% of plant families, more correctly AM or arbuscular mycorrhizal, since not all fungi producing this kind of mycorrhiza have vesicles
Vesiculose	Bladder like
Villose	Covered with fairly long, soft, weak, ± straight, not interwoven hairs
Villous	Covered with fairly long, soft, weak, ± straight, not interwoven hairs
Vinaceous	The colour of a pale red wine
Virgate	Streaked, usually by differently coloured fibrils
Viscid	Sticky or slimy when moist but not slime-covered.
Volva	Remains of the universal veil found at stem base of the stem of some fungi

W...	
Warty	A surface roughened by relatively large protuberances
Water	Good general mounting medium for microscopy. The addition a small quantity of detergent or photographic wetting agent helps to reduce the problem of wandering spores
Water moulds	The common name for a group of organisms that superficially resemble fungi but are placed in the kingdom Protista. There are two important phyla of water moulds: chytrids and oomycetes
Wavy	Describing a cap margin having an irregular undulating appearance Describing a gill margin having an irregular undulating appearance
Weeping	Exuding drops of liquid secretion from the gill edge, pore openings or top of the stipe (stem)
White rot	A wood rot where both cellulose and lignin have been degraded resulting in white and fibrous remains, produced by fungi that can degrade both cellulose and lignin
White rust	Disease of crucifers (any plant of the family Brassicaceae) caused by *Albuginaceae*
Whorled	Having more than one clamp at a septum
Wide field eyepiece	These are eyepiece lenses which have the greatest diameter and allow a wide field of view, particularly valuable for spectacle wearers. The eyepiece needs to be used with an objective that can provide a good image across the wider field of view
Winter spores	Relating to rust fungi another name for teliospores
Witches' brooms	Massed outgrowths (proliferations) of the branches of woody plants caused by mites, viruses, etc., as well as fungi, esp. rust fungi
Working distance	This describes the distance between the tip of the objective lens and the slide when on the microscope stage. Larger subjects will require microscopes with longer working distances resulting in less magnification
Woronin bodies	A rounded granular body, bounded by a double membrane, found in the hyphae of filamentous ascomycete fungi. One or more Woronin bodies are closely associated with the pore in each cross-wall (septum) of the hyphae. If the hypha is injured, the Woronin body is swept by the flow of cytoplasm to plug the pore and minimize further damage
X...	
Xanthochroic	Chemical reaction darkening on alkalization especially common in the Hymenochaetales
Xerotolerant	Able to grow under dry condition
Y...	
Yeasts	Fungi which in many cases are unicellular, though some produce hyphae; most yeasts are anamorphs (asexual forms) their cells are conidia, and they multiply by various kinds of conidiogenesis (asexual reproduction). Some can produce asci, some can form basidia, and some appear to be anamorphic holomorphs (entirely asexual)
Z...	

Zonate	Marked with concentric colour bands usually used when describing a pileus (cap)
Zoogamete	A motile gamete (a cell whose nucleus unites with that of another cell to form a new organism). Also called planogamete
Zoom	Is the ability to provide step-less increases in magnification whilst requiring only slight adjustment to keep the subject in focus. This is a feature offered by some stereo dissecting microscopes, and is usually expected of USB microscopes
Zoosporangium	A sporangium (structure in which the reproductive spores are produced and stored) that contains zoospores
Zoospore	A motile, asexually produced spore
Zygo-	Prefix meaning yoke; a paired structure
zygomycete	A member of the group of fungi known as Zygomycota
Zygomycota	A class of simple fungi whose hyphae generally lack (septa) cross walls
Zygophore	A specialized hyphal branch bearing zygospores
Zygosporangium	A sporangium (structure in which the reproductive spores are produced and stored) which is formed from the germination of a zygospore
Zygospores	A thick-walled sexual spore formed by the fusion of two similar gametangia (a cell in which gametes are produced); characteristic of the zygomycetes

Part two - Terms used in recording a description of a fungus, grouped by category

Section 1 – Growth habit

Angiocarpy	A type of development of the fruitbody in which at some stage the developing hymenium is situated in a closed cavity
Bracket fungi	Any saprotrophic or parasitic fungus of the basidiomycetous family Polyporaceae, growing as a corky or woody, often perennial shelflike mass (bracket) from tree trunks and producing spores in vertical tubes in the bracket
Caespitose	Describing a growth habit where fruit-bodies are crowded together in a tuft or a cluster but not attached to each other
Clustered	Growing together from a single or fused base
Concrescent	Describing a growth habit where the fruit bodies are fused together
Connate	Describing a growth habit where the stipes are fused together at the base
Coprophilous	Growing and living on or in dung
Corticolous	Growing on bark. cf. lignicolous, growing on wood with the bark stripped off
Diageotropism	The tendency to grow in a direction at right angles to that of gravitation i.e. a direction horizontal to the surface of the earth
Discontinuous	Describing a growth habit in which the fruit bodies occur in more or less separated parts on the surface of the substrate
Effuso-reflexed	Effuso-reflexed is a term used to describe a fungal fruitbody growing on a vertical surface in a resupinate effused (flat to the surface) manner with one margin, usually the upper one reflexed (bent sharply down) curling away from the substrate to form a bracket shaped Pileus (cap). It is partially resupinate and partially forming a horizontal pileus (cap) or bracket shape. The part that's sticking out is sometimes called the reflexed portion, and the resupinate part is sometimes called the effused portion
Endophloedal	Growing inside, not on, the bark
Entomophthora	These are a group of fungi living in soil that infect insects by penetrating their cuticle to penetrate their bodies, feeding on them and eventually killing them; The type genus of the Entomophthoraceae; fungi parasitic on insect
Epiphloedal	Growing on bark
Epigeous	Developing or fruiting on the surface of the ground c.f. Hypogeous
Erumpent	Bursting through a surface or covering, breaking through the outer layer of the substrate
Facultative	Capable of infecting another living organism or of growing on dead organic matter
Facultative parasite	An organism capable of infecting another living organism or of growing on dead organic matter, according to circumstances
Facultative saprobe	An organism capable of growing on dead organic matter, or of infecting another living organism, according to circumstances

Fairy ring	A ring of fungal fruit-bodies marking the periphery of the perennial underground growth of the mycelium, can also be seen in grassland as a ring of lush grass growth; common in grasslands, and around conifers
Fasciculate	Describing a growth habit in which fruit-bodies are growing in a group or bundle
Foliicolous	Growth habit of certain lichens, algae, and fungi that prefer to grow on the leaves of vascular plants
Geophilous	Growing or rooting in the ground
Geotropic	Growing vertically downward under the influence of gravity
Geotropism	The direction of growth of a fungus in response to gravity (either downwards or upwards), can be seen in bracket fungi growing on a tree trunk when the tree falls the bracket will change its direction of growth
Gregarious	Several fruit bodies growing in close proximity but not connected to each other
Humicolous	Growing in or on soil
Hypogean	Describing a growth habit in which the fruitbody grows below the ground
Hypogeous	Describing a growth habit in which the fruitbody grows below the ground
Hypophyllous	Growing on the under surface of a leaf
Imbricate	Describing a growth habit in which the fruitbody grows overlapping like the tiles on a roof
Lignicolous	Growing on or in wood tissue after bark has fallen or been stripped off
Multipileate	Describing a growth habit in which several pilei (caps) arise from a single stipe
Nitrophilous	Growing in soil well supplied with nitrogen
Obligate parasite	Can obtain food only from living protoplasm. Obligate parasites cannot be grown in culture on non-living media
Obligate saprobe	An organism which must obtain its food from dead organic matter, and is incapable of infecting another living organism
Resupinate	fruitbody that lies flat on the substrate with its hymenium outermost and its sterile surface facing the substrate
Saprophyte	An organism that obtains its nutrients from dead organic material
Saprophytic	Growing on dead organic matter
Saprotrophic	Feeding on dead organic material
Scattered	Describing a growth habit of growing several inches to several feet apart, whilst possibly coming from the same mycelium
Subhypogeous	Growing partially submerged in the soil.
Terrestrial	Growing on the ground
Terricolous	Growing on or in the soil
Trooping	A group of fungal fruit bodies growing on the same substrate but separate to each other

Section 2 – Pileus - terms describing the shape of the pileus (cap)

Aplanate	Describing the cap, flattened or horizontally expanded
Campanulate	Bell shaped
Conchate	Shaped like an oyster or bivalve shell
Conical	Cone-shaped. Acute and obtuse are used to describe the sharpness of the apex
Convex	Domed without either a hump or a depression
Cuspidate	Umbonate with a pointy conical apex, witch's hat shaped
Cylindrical	A cap that is tall with ± straight sides and a convex top
Decurved	Describing a cap margin that is bent down but not inward
Depressed	Where the central region is lower than the margin
Eccentric	Describing stem attachment to cap, offset to one side
Expanded	Describing a pileus or cap that has opened fully at maturity
Gibbeux	Flat apart from a concentric ridge, and a moat with a raised centre
Infundibuliform	Funnel-shaped
Membranous	A thin, pliable and wide mushroom cap is described as membranous
Ovoid	Egg-shaped. Also referred to as hemispherical or hemispheric
Papillate	Umbonate with a nipple-like bump, sharply raised centre
Plane	Flat
Perforate	Describing a pileus (cap) with a central opening, continuous with the hollow stipe
Pervious	Describing a pileus (cap) with a central opening
Pulvinate	Cushion-shaped. A cap that is convex and tall
Sinuate	Having a strongly or distinctly wavy cap margin
Split	Describing a pileus (cap) margin having pronounced radial splits
Umbilicate	Having a navel-like central depression
Umbonate	Having a raised central mound, varieties are: **Acutely umbonate**: with a sharply delineated or pointed umbo; **Broadly umbonate**: with a rounded, and broad umbo; **Obtusely umbonate:** with a blunt or rounded umbo, often used if the umbo is blunt but not very broad
Uplifted	Describing the shape of a pileus (cap) having an upward curling margin

Wavy	Describing a cap margin having an irregular undulating appearance

Section 3 - Pileus - terms describing the appearance and feel of the surface of the pileus (cap)

Alveolate	Small hollows in the surface
Areolate	Cracked surface resembling dried-mud or paint
Appendiculate	Cap margin fringed with veil fragments
Appressed	Often used to describe surface scales flattened down onto a surface
Atomate	Having minute shining particles
Canescent	Covered in dense white or grey down-like hairs. Giving a frosted appearance
Cerebriform	Having a convoluted surface reminiscent of a brain
Coriaceous	Leathery
Costate	With a series of ridges or raised bumps often used to describe cap margins, looking like the crimped edge of a pie crust
Crenate	Having a margin that is distinctly serrated with blunt or rounded teeth, scalloped
Crenulate	An edge that is delicately scalloped or notched
Epruinose	Not pruinose i.e. the cap / stipe surface not being finely velvety / scurfy, not covered with fine powdery bloom
Eroded	Describing a cap margin, irregularly wavy or indented
Expanded	Describing a pileus or cap that has opened fully at maturity
Excoriate	Describing a pileus or cap surface that appears abraded or frayed with parts naturally peeling off
Expallent	Describing a cap becoming paler when drying
Farinose	Covered with floury particles, finely granulose
Fibrillose	Covered in thread-like filaments
Flabelliform	Describing the shape of cap, being fan shaped
Fleshy	Rather soft, putrescent, spongy; often describing mushroom caps
Floccose	Describing a cap or stipe surface that is fleecy, with a covering of loose cotton-like scales, often soon disappearing
Flocculose	Describing a cap or stipe surface that with a loosely cottony or woolly covering, often appearing ± tufted, minutely floccose
Folded	Describing a pileus (cap) surface with deep radial folds such as a *coprinus*
Furfuraceous	Covered in flaky bran-like particles; dandruff-like
Gelatinous	Having a jelly-like, glassy nature (usually referring to cap or stem surface, hyphae or

	cap trama)
Glabrous	A bald surface, neither hairy nor scaly
Glutinous	Having a sticky, slimy gelatinous layer
Grandinoid	Having small, rounded grains
Granulose	Covered in fine granules
Hirsute	Covered in long coarse hairs
Hispid	Covered with straight bristle-like hairs
Hygrophanous	Darker and translucent when wet, paler and opaquer when dry
Incised	Split as if cut, often used to describe the margin of a cap
Incurved	With the margin turning inward toward the stem
Innate	Relating to the scales on a cap surface, not readily detached as in *lepiota*
Inrolled	Curled inwards often used in reference to a cap margin
Laccate	Waxy or lacquered surface texture
Lanose	Woolly
Lepidote	Covered with small scales
Lubricious	With moist, soapy, feel; greasy to the touch
Maculate	Spotted, marked with spots
Marginate	Having a clearly defined edge of a different colour or shade. Can also be used to mean not having a cortina
Micaceous	Describing a cap surface with glistening particles
Mucilaginous	Covered with slime
Perforate	Describing a pileus (cap) with a central opening, continuous with the hollow stipe
Pilose	Covered with long dense soft hairs or filaments
Plicate	Describing a pileus (cap) surface. folded radially, like a fan: with very regular, radial folds or pleats as in C*oprinus plicatilis*
Pruinose	Having a fine, pale powdery bloom, as though coated with a fine layer of chalk dust
Pubescent	Covered with fine short hairs
Puberulous	Covered with minute soft erect hairs
Pulverulent	With a dense layer of fine powdery or crumbly particles as if pulverized
Punctate	Describing the appearance of the surface of the pileus (cap) or stipe (stem) pitted with dots or covered with fine raised dot-like elevations
Pustulate	Describing the appearance of the surface of the pileus (cap) or stipe (stem) with small rounded warts or having small blister-like structures

Rimose	Covered in radial cracks and crevices
Rimulose	Finely rimose
Rivulose	A thinly wrinkled surface of branching wavy or crooked lines
Rugose	Coarsely wrinkled or rough
Rugulose	Finely wrinkled
Scabrous Scabrid Scabrose	Rough with scale-like projections used to describe a stem or cap surface
Scale	Flat, fleshy flakes seen on the caps of certain fungi
Scrobiculate	Small spot like pits or depressions on the surface
Scrupose	Describing a surface that is covered with rough, jagged points
Sericeous	Having a silky surface
Smooth	No defining features on the surface
Squamose	Covered with small, pointed, wispy scales
Squamulose	Covered with minute scales
Squarrose	Covered with projecting coarse, distinctly erect scales referring to cap and stem surfaces
Squarrulose	Covered with small projecting scale referring to cap and stem surfaces
Striate	Having fine radiating lines or furrows around margin
Strigose	Covered with long bristle-like hairs
Subtomentose	Somewhat or finely woolly with a moderately dense layer of matted down or soft hairs, or like a newly sheared lamb
Sulcate	With grooves, more deeply grooved than striate and less deeply than plicate
Tomentose	Covered densely with matted hairs
Translucent-striate	Describing the appearance of a margin of the cap having translucent tissue which permits the attachments of the gills to show through as dark lines or striations
Trichodermium	A pileus (cap) cuticle in which the hyphae of the uppermost layer covering the cap are ± at right angles to the surface but not strictly parallel giving a velvety appearance if dry
Uneven	Bumpy or lumpy
Velutinous	Covered with short, fine, soft, dense hairs
Velvety	Covered with very fine and soft hairs
Villose	Covered with long soft hairs
Virgate	Streaked, usually by differently coloured fibrils

Viscid	Sticky or slimy when moist but not slime-covered
Warty	Remnants of the universal veil remain on the surface in small patches
Zonate	Having zones or bands that are distinguished by texture or colour

Section 4 - Lamellae - terms for describing the lamellae (gills)

Anastomising	Lamellae or hymeneal ridges, running together to form a vein like network
Arcuate	Arc shaped, with a concave gill edge, shape formed by being slightly decurrent at the stipe edge and a downward curving cap margin
Ciliate	Appearing to be finely toothed or floccose due to having prominent Cheilocystidia (sterile cells on the gill edge) these can give the gill edge a different colour to that of the gill face
Denticulate	Having gill margins finely toothed or notched
Gill spacing	How closely the gills sit in relation to each other: **Distant** - A description of a gill spacing where the gills are very widely spaced gills **Subdistant** - A term used by some writers to define a gill spacing that is not quite distant, but not close either **Close** - A description of a gill spacing where gills close together but not as close as crowded **Crowded** - A description of a gill spacing where the gills are very close together
Intermediate	Describing gills, not reaching the stem
Interveined	Having veins between the gills e.g. Mycena galericulata
L	This is figure arrived by counting the number of gills reaching the stem, it is a more objective measure than descriptions of gill spacing but is a system that is not used in many books
Lamellules	Short gills that do not extend fully from the cap edge to the stem interspersed between lamellae
Linear	Describing gills that are narrow with parallel edges
Marginate	Used to describe a gill having a well-marked edge or margin of a different colour to that of the face of the gill, often due to having distinctly coloured microscopic gill edge cystidia.
Regular	Describing a gill edge that is smooth, not toothed or notched in any way
Remote	A gill attachment where the gills have a large gap between their ends and the stipe
Serrate	Having gill margins with saw-toothed edges
Serrulate	Minutely serrate
Serrulatum-type	Having sterile strands of hyphae running parallel along the gill edge, at irregular intervals with clusters of septate terminal endings or cheilocystidia, usually with intercellular pigmentation. Macroscopically seen as a coloured and irregular serrulate edge.
Sterile	A term used to describe a gill surface or edge that is composed of cystidia (sterile cells) whilst having no basidia
Subporiform	With gills which anastomose (running together to form a vein like network) to form shortly elongated pores

Undulate	Wavy and not flat; cf. sinuate
Ventricose	Considerably broader at or near to the middle than at either end

Section 5 - Lamellae and tubes - terms for describing the way that these are attached to the stipe

Adnate	Gills or tubes that are broadly attached to the stipe
Adnate-emarginate	A gill attachment which has a more tenuous attachment than sinuate, but is still not free
Adnexed	Gills or tubes, tapering in depth toward stipe so that the attachment is narrow e
Arcuate-decurrent	Describing the gills or tubes, curved and extending down the stem
Ascending	Describing gills that are attached to the stipe over all or most of their total depth but rising up from the low cap margin to meet stipe
Collared	Gills are attached to a collar or ring that encircles the stipe, referred to as a Collarium
Concavely adnate	A term used by some writers to describe gills that form a bowed shape curving evenly from the cap margin and running a little way down the stipe (stem) but not as far as would justify referring to them as being decurrent
Decurrent	The gills are attached and extend down the stipe
Decurrent	Describing gills which are widely spaced
Emarginate	The gills are notched abruptly before attaching to the stipe
Free	Gills or tubes do not attach to the stipe
Pectinate	Describing the appearance of a gill margin being like the teeth of a comb; used when the lines are more obvious than would be called striate
Seceding	More a form of detachment where the gills appear torn away or hanging, but where attached at some point in time. Evidence of the attachment may remain on the stipe (stem), usually occurs in older specimens
Sinuate	Describing a gill edge rising up close to the stem before curving back down to meet the stem, also called emarginate
Subdecurrent	The gills or tubes are attached and slightly extend down the stipe
Uncinate	Referring to gills decurrent with a hooked tooth

Section 6 - Stipe - terms describing the characteristics of the stipe (stem)

Alveolate	Pitted
Attached	Describing a ring that is tightly adhering to the stipe
Bulbillose	In relation to the stem, having a small or not clearly marked bulb at the base
Bulbous	With a swollen base
Canescent	Stem surface becoming hoary or silvery; densely downy
Cartilaginous	Used to describe consistency of a stipe tissue that is tough brittle, does not bend but breaks with a snap
Cavernous	In relation to the stem interior, having hollow chambers much like caverns
Central	Describing stem attachment to the cap, with stem attached at the centre of the cap
Chalky	Describing a stem texture that tends towards breaking crossways much like chalk, without fibrous strips, can also apply to appearance
Clavate	Club-shaped
Clavate-bulbous	Type of bulbous stem base having a bulb that gradually tapers upwards and merges with the stem
Fusiform	Spindle-shaped, tapering at top and bottom
Lacunose	A surface with wide sunken pits like an irregular honey comb
Lateral	Pertaining to or arising from the side, a mushroom stipe attached to one side of the cap, e. g. *Pleurotus*
Marginate bulbous	Describing a stipe, with swollen base baring a clearly defined raised rim on the upper edge
Mesopodal	With the stipe placed centrally
Peronate	The stipe sheathed by a volva or ring, with free edge pointing upwards, having a covering like a sock; used to describe the lower portion of a stem which is sheathed or covered with a universal or partial veil
Pervious	Describing a pileus (cap) with a central opening
Pleuropodal	With the stipe placed laterally
Pruinose	Having a fine, pale powdery bloom, as though coated with a fine layer of chalk dust
Pseudorhiza	A tap-root-like extension at the base of a mushroom stem
Pseudostipe	Stem like base which is not structurally distinct from the upper part of the fruitbody
Punctate	Describing the appearance of the surface of spores when these exhibit finely dot-like ornamentation, but without wart-like protrusions being visible in outline. Beware of confusion with plasma granulation which can look similar
Punctuate	Pitted with dots

Radicant	With a long, pointed rooting stipe
Radicating	Having a long, pointed rooting stipe
Reticulate	Marked with a net-like pattern, forming a net, often but not exclusively used referring to the stem of a Bolete; a net-like pattern formed by spore ornamentation
Rooting	Describing a stipe (stem) that tapers to an elongated point below the ground
Scabrous Scabrid Scabrose	Rough with scale-like projections used to describe a stem or cap surface
Scabrosities	Erect scales which are often pointed (as on the stipe of Leccinum species)
Scrobiculate	Describing a surface that has small spot like pits or depressions on the surface
Scrupose	Describing a surface that is covered with rough, jagged points
Spathulate	Being spatula shaped with a tapering base
Squamose	Covered with scales, referring to cap and stem surfaces
Squamulose	Covered with minute scales when referring to cap and stem surfaces.
Strigose	Covered with long, coarse or thick, rather stiff hairs; term often used for such hairs at the stem base
Submarginate	Describing a stem base that is bulbous with an ill-defined rim
Terete	Describing a stipe (stem) that is approximately cylindrical, not flattened, but usually tapering at both ends
Ventricose	Swollen at or near to the middle
Villose	Covered with fairly long, soft, weak, ± straight, not interwoven hairs

Section 7 - Annulus - terms describing the form that the annulus (ring) takes

Annular zone	Ring-like band on stem where partial vale was originally attached, often indicated by a change of colour or texture or by a deposit of spores
Ascending	Describing a ring, flaring upwards and out like a sock
Cortinate	The partial veil is cobweb-like or tread-like
Descending	Describing a ring, flaring downwards and out, like a skirt
Double	Two visible rings
Flaring	Attached to the stipe with the ring flaring strongly away from the stipe
Floccose	The partial veil is fluffy and down-like
Movable	Describing a ring that is not fixed, movable to some extent up and down the stem
Pendant	Attached at the top of ring and hanging down the stipe
Peronate	The stipe resembles a sheath-like boot or stocking
Ring zone	The same as Annular zone
Stellate	The partial veil resembles a cogwheel

Section 8 - Annulus - terms for describing the position of the annulus on the stipe.

Many authors use a 3 tier system for describing the annulus position:

Superior	Top half of stem
Median	Middle of stem
Inferior	Lower half of stem

Some authors use a 5 tier system of describing annulus position, if you imagine the stipe divided into 5 equal bands and working down from the pileus (cap) to the base of the stipe:

Superior	Top 5th of stem
Apical	Second from top 5th of stem
Median	Middle 5th of stem
Inferior	Second from bottom 5th of stem
Basal	Bottom 5th of stipe

Section 9 - Ascomycetes - terms relating to ascomycetes

Apical apparatus	A specialized structure found in the tips of many unitunicate-inoperculate (single skinned and lacking a lid) asci, acting as a valve or sphincter that controls the forcible expulsion of ascospore
Apical ring	Another term for Apical apparatus
Apothecium	Cup-shaped fruitbody of certain ascomycetes fungi e.g. discos, cup fungi etc. With exposed fertile hymenium (fertile surface) containing asci on upper or inner surfaces of fruitbodies at maturity
Asci	The spore-producing cells of an ascomycete
Ascocarp	Fruitbody of an ascomycete fungus
Ascoconidia	Plural of ascoconidium
Ascoconidium	A small spore derived from normally developed ascospores, by budding or by changing into many smaller conidiospores (asexually produced spores)
Ascogenous hyphae	The hyphae, in fungi of the Ascomycota, that grow from the ascogonium after it has fused with the antheridium (male sex organ of fungi). The ascogenous hyphae are made up of binucleate cells containing one nucleus derived from the male antheridium and the other from the female ascogonium
Ascogonia	Plural of Ascogonium
Ascogonium	The female reproductive organ of ascomycetous fungi
Ascoma	The entire fruiting-body of an ascomycete, the structure containing the asci (spore-producing cells of an ascomycete)
Ascomata	Plural of Ascoma
Ascomycetes	A class of fungi that produce their spores in sac-like cells called asci, a member of the Ascomycota
Ascomycota	A division or phylum of fungi that produce their cells in a sac like container called an asci, commonly referred to as sac fungi. It is separated from the division | Basidiomycota
Ascomycotina	A phylum of the kingdom Fungi that, together with the Basidiomycota, forms the subkingdom Dikarya. Its members are commonly known as the sac fungi or ascomycetes
Ascospores	Sexual spores produced in the asci of ascomycetes fungi
Ascus	The spore-producing cell of an ascomycetes fruitbody, appearing as sacs containing the spores
Biseriate	Describing ascospores in a double row within the ascus (spore-producing cell of an ascomycete). cf. Uniseriate
Bitunicatae	A series of the subphylum Ascomycotina, consisting of those having a bitunicate ascus, it includes the orders Dothideales and Erysiphales.
Bitunicate	A type of ascus (spore-producing cell of an ascomycete) having a bitunicate ascus (with two distinct, persistent wall layers): the `jack-in-a-box' ascus that is diagnostic of the

	bitunicatae and is found in pseudothecial ascomata c.f. Unitunicate.
Centrum	Found within an ascoma (fruiting-body of an ascomycete) they are the structures which are concerned with the development of the asci (spore-producing cell of an ascomycete)
Cleistothecium	An ascomycete fruitbody that is closed at maturity and has passive spore dispersal, spheres containing asci (spore-producing cells of an ascomycete) and spores in powdery mildews
Clypeus	Small shield-like stroma which covers one or more perithecia
Cup fungus	Any of various ascomycetous fungi, especially of the family Pezizaceae, characterized by a spore-bearing structure that is often stalk-less and cup-shaped or disk-shaped
Dehiscence	The spontaneous opening at maturity structure, to permit the escape of spores; the separation of spores from the structure that produced them
Dehiscent	Term used of asci (The spore-producing cells of an ascomycete) that release their spores under pressure (forcible discharge)
Dimorphic	Having two different morphological forms in respect to shape and/or size; also sometimes used to describe sexual dimorphism; having an anamorph (asexual) and teleomorph (sexual) form
Disc	Fertile surface where asci develop on ascomycetes
Discoid	Resembling a disc or plate, having both thickness and parallel faces and with a rounded margin
Discomycete	A group of fungi considered as belonging to the class Ascomycetes, including cup fungi, morels, and truffles, characterized by having their asci in a cup or disc shaped apothecia (fruiting body)
Endogenous	Formed within another structure, as are the meiospores of ascomycetes (cf. Exogenous)
Epithecium	A layer of tissue on the surface of the hymenium of an apothecium, formed by the union of the tips of the paraphyses over the asci
Fissitunicate	A fissitunicate ascus is a term distinguished by some people from bitunicate to refer to an ascus where the inner wall pops completely out of the outer wall during spontaneous opening at maturity
Gymnothecia	An ascomycetous fruiting body composed of loosely interwoven hyphae, often with characteristic appendages
Indehiscent	Term used of asci not forcibly discharging their spores
Locule	A cavity, in ascos a spore-containing cavity, especially one secondarily developed within a pseudothecial ascoma, or in the basidiomata of lycoperdales and sclerodermatales, or in many sequestrate agarics
Mitosis	The process in cell division by which the nucleus divides, typically consisting of four stages, prophase, metaphase, anaphase, and telophase, and normally resulting in two new nuclei, each of which contains a complete copy of the parental chromosomes.
Mitospore	The spore produced by mitosis, and characteristic of Ascomycete fungi
Mitosporangium	A sporangium containing spores produced by mitotic divisions

Ostiole	The pore in the reproductive bodies of certain algae and fungi through which spores are released or expelled
Paraphysis	Sterile, usually thread-like structures in some ascomycetes arising between the asci and parallel to them, often with a distinctive shape and of taxonomic importance
Periderm	Membrane surrounding a sorus or a group of asci
Peridial	Enclosing a fruiting structure, the hyphal structure that surrounds the asci.
Periphysis	Sterile, short, thread-like filaments which arise from the hymenium or line the ostiole of many perithecia and other fruiting structures of fungi
Perithecium	Found in Ascomycetes, Perithecia are typically, more or less completely closed, globose, cylindrical or flask-shaped structures containing the asci. Opening by a pore or ostiole (short papilla opening by a circular pore) through which the ascospores escape. The ostiolar canal may be lined by hair-like structures called periphyses
Pezizomycotina	A group that contains the filamentous ascomycetes and is a subdivision of the Ascomycota (fungi that form their spores in a sac-like ascus)
Prototunicate	Describes a kind of ascus that is basically unitunicate (with only one distinct, functional wall layer), but whose wall disintegrates at or before maturity; such asci may develop in a hymenium or may be distributed randomly in the interior of the ascoma (Fruitbody of an Ascomycete)
Pseudoparaphyses	Specialized hyphae found in some ascomycetes that are bitunicate (a type of ascus with two distinct, persistent wall layers); they grow down from the roof of the pseudothecial ascoma (resembling a perithecium) and dissolve a space for the developing asci. Also used to describe basidium-like, but sterile cells interspersed with basidia, found for example, in the hymenium of species of *Coprinus*
Pseudothecia	An ascocarp resembling a perithecium but whose asci are not regularly organised into a hymenium and are bitunicate, having a double wall which expands when it takes up water and shoots the enclosed spores out suddenly to disperse them
Pseudothecial ascoma	Ascoma (fruiting body of Ascomyetes) containing bitunicate (double walled) asci; often resembling a perithecial ascoma, though developing differently
Puffing	A phenomenon in which thousands of asci in an apothecial ascoma discharge their ascospores simultaneously, producing a visible cloud of spores
Pyrenomycete	Fungi with perithecia, generally of a black hard consistency. They are fungi with perithecia, small flask-shaped fruit-bodies that contain asci and they constitute a large part of the sac-fungi or Ascomycota
Receptacle	Sterile tissue which supports the hymenium in an apothecium (cup-shaped fruitbody of certain ascomycetes)
Scutellum	Upper wall of a thyriothecium (an inverted ascomycete fruiting body, having the wall more or less radial in structure)
Secondary spores	Small spores derived from normally developed asco-spores, by budding or by developing into many smaller spores. Sometimes considered to be asco-conidia.
Sphaeriales	Another name for Pyrenomycetes, which are fungi with a perithecia (hollow structure

	that contains asci) of a generally black, hard consistency
Stroma	Fused mass of hyphae appearing as a soft or crusty tissue in which fruit bodies are embedded and from which perithecial (hollow structure that contains asci) or other fruit bodies are formed. Fungal tissue within or under which the mature fruiting bodies develop
Stromatic tissue	Dense tissue, typically with ± immersed erumpant (breaking through the outer layer of the substrate) fruitbodies often perithecia (hollow structure that contains asci)
Thyriothecium	An Ascomycete, with an ascocarp (fruit body) having the wall more or less radial in structure, so inverted that the generative hyphae are dependent
Trichogyne	A slender terminal prolongation of the ascogonium (a female reproductive organ) that receives the male gamete before fertilization (in some ascomycetes)
Woronin bodies	A rounded granular body, bounded by a double membrane, found in the hyphae of filamentous ascomycote fungi. One or more Woronin bodies are closely associated with the pore in each cross-wall (septum) of the hyphae. If the hypha is injured, the Woronin body is swept by the flow of cytoplasm to plug the pore and minimize further damage

Section 10 - Colour - terms used describing colouration of parts of the fungi

Alutaceous	Pale tan to light leather coloured
Avellaneous	Pale pinkish grey
Blueing reaction	A colouration of bruised or broken tissues in some fungi esp. Boletaceae
Buff	An indefinite pale colour; pale dull yellow or very pale tan
Canescent	Approaching white in colour, off white
Cinereous	Ash grey in colour
Concolorous	Describing two or more parts of the fungi being of the same colour
Dematiaceous	Dark brown, greenish grey or black
Ferruginous	Rusty
Fuliginous	Sooty coloured
Fulvous	Rusty brown or tawny
Fuscous	Greyish or greyish brown, brown tinged with grey or black
Glaucous	Greenish or blueish grey
Hyaline	Clear (colourless) when viewed under a microscope
Incarnate	Flesh coloured
Isabella	Yellowish brown to light olive brown
Isabelline	Yellowish brown to light olive brown
Livid	Greyish or bluish grey
Lurid	Usually "dark red"; sometimes "dirty," as in "sleazy" dirty
Lutescent	Staining yellow
Melleous	Honey-coloured
Ochre	Brownish yellow
Ochraceous	Brownish yellowish
Olivaceous	Olive green
Pallid	Pale, off white colour
Rubescent	Blushing reddish or pinkish
Rufescent	Reddening

Rufous	Brownish red
Sordid	Dingy, lacking light or brightness, drab, discoloured
Subhyaline	Not quite colourless, but not strongly pigmented
Tawny	Describing a colour that is dull yellowish brown, sand coloured
Vinaceous	The colour of pale red wine

Section 11 - Spores - terms describing the different spore shapes

Allantoid	Bent sausage-shaped spores regardless of their quotient
Amygdaliform	Almond-shaped
Biapiculate	Spores, pointed at both ends
Boletoid	Describing spores having a shape reminiscent of a Bolete spore (subfusiform, truncate at one end, with a noticeable germ pore at the truncate end, smooth)
Citriform	Lemon shaped
Epispore	A thickish outer coat found on spores of certain fungi.
Fusoid or fusiform	Tapering to a point on both ends like a rugby ball
Globose	Spherical or nearly so
Globulose	Approximately spherical
Lacrymoid	Shaped like a tear drop, specifically one with a somewhat curved tip
Laceroid	Describing spores shaped like those of *Inocybe lacera* (i.e. Uneven cylindrical as in *Boletus*)
Lentiform	Lens-shaped, flattened but with both surfaces convex
Limoniform	Lemon shaped
Navicular	Boat-shaped, like a row boat in profile
Ovate or Ovoid	Oval-shaped
Phaseoliform	Used to describe Spores that are shaped like a bean, forming a bent ellipsoid, concave in face view
Pip-shaped	Literally shaped like the small hard seed found inside an apple
Pyriform	Pear-shaped
Q-value	Q values are a ratio of length and width, calculated by dividing length by width, the result of which is used to describe the shape of spores as below. • Q 1.00 - 1.05 = Globose • Q 1.05 - 1.15 = Sub-globose • Q 1.15 - 1.30 = Broadly ellipsoid • Q 1.30 - 1.60 = Ellipsoid • Q 1.60 - 2.00 = Elongate or cylindrical • Q 2 - 3 = Narrowly cylindrical • Q 3 -4 = Alantoid • Q 4 - 6 = Fusiform
Qav.	Abbreviation for an average Q value taken across a number of spores
Reniform	Kidney-shaped

Scolecospores	Spores which are very long and thin (length/width ratio more than 15:1)
Staurospores	Spores with three to many radiating extensions
Subglobose	Nearly round
Sublimoniform	Almost but not quite lemon-shaped
Tetrahedral	Shaped like a triangular pyramid

Section 12 - Spores - terms describing the different spore ornamentation and characteristics

Alveolate	Describing the surface of spore, cap or stipe, pitted, having small hollows in the surface
Anastomisng	Describing a spore with vein like ornamentation that branches and re-joins
Apiculus	Tiny projection on a spore where it is or was attached to the sterigma. Also called the Hilar appendix
Asperulate	Roughened by many small points or warts
Aculeate	Having narrow spines; such as the spores of *Laccaria* which are round and have narrow spines on the outer wall
Biguttulate	With two oil droplets or 'bubbles' inside the spores
Callus	In relation to spores, having a thin-walled, convex area at the apical end
De Bary bubble	Gas bubble inside a spore that appears dark under the microscope
Dictyospores	Spores which are dictyoseptate, having a number of septa running both horizontally and vertically, like the layers of cement between bricks (also described as muriformly septate)
Didymospores	Spores having one internal wall (septa) dividing the spore into two compartments
Echinulate	Roughened with small spines or prickles
Germ pore	Thin region of spore wall via which spores can germinate
Germ slit	Thin area of a spore wall running the length of the spore
Germination cleft	A longitudinal furrow in a spore visible under a microscope
Gibbose	Describing a spore, with large rounded warts
Guttule	A small oil-like drop inside the spore of some species of fungi, visible via a microscope
Hilar appendage	In relation to spores, short process at basal end of spore, by which it was attached to the basidium by the sterigma, also sometimes referred to as an apiculus
Hilar depression	A depression on the spore near to the apiculus
Nodulose	Often used to describe spores that Have a slightly to markedly uneven bumpy outline
Papilla	When referring to a spore is used to denote a small protuberance
Phragmospore	A spore which has two or more transverse septa; giving an appearance akin to the rungs of a ladder
Plage	A smooth area found on some rough spores just below the apiculus (tiny projection on a spore where it was attached to the sterigma)
Punctate	Describing the appearance of the surface of spores when these exhibit finely dot-like ornamentation, but without wart-like protrusions being visible in outline. Beware of confusion with plasma granulation which can look similar
Reticulate	Having a network or mesh of ridges or lines

Reticulum	A network or mesh of ridges or lines
Setulae	Fine appendages arising from the surface of a spore
Smooth	No ornamentations
Striate	Coated with linear ridges
Suprahilar depression	A small depression above the apiculus (a tiny projection on a spore where it is or was attached to the sterigma. Also called the Hilar appendix
Suprahilar plage	A rounded ± smooth area just above the apiculus (a tiny projection on a spore where it is or was attached to the sterigma. Also called the Hilar appendix)
Tetraradiate	Describes the spores of some stream-inhabiting fungi; these are staurospores that have four, sometimes more, radiating extensions ensuring a stable three-point landing on the substrate
Tuberculate	Roughened with small rounded projections or protuberances
Tuberculate-striate	Having lines of tubercules, small wart-like projections
Warted or verrucose	Roughened by relatively large protuberances
Verruculose	Minutely warty, minutely verrucose

Section 13 – Basidia – terms describing the different shapes and forms of basidia

Chiastobasidia	Basidia with nuclear spindles across the basidium and at the same level
Clavate	Shaped like a club
Constricted	Basidium with pinched sections
Cruciately-septate	Divided into four more or less equal parts by vertical cross-walls an example being the basidia of Tremellales
Cylindrical	Relatively constant width across the entire basidium
Cystidiole	Sterile basidium protruding beyond the surface
Guttulate	Basidia with oil droplets or 'bubbles' within
Heterobasidia	A basidium that is septate or with deep divisions and has a cell divided longitudinal or transverse in (usually) four parts by three septae
Holobasidium	A basidium not divided by septa, which usually gives rise to 4 exogenous basidiospores
Phragmobasidium	Basidium divided by septa i.e. a multicellular basidium; septa can cut across the basidium horizontally (transversely) or vertically (cruciate), characteristic of the phragmobasidiomycete
Pleurobasidia	Basidia attached on the side, formed laterally from any hyphal cell
Probasidium	A cell in which two haploid nuclei fuse to form a diploid nucleus from which the basidium arises in some Basidiomycetes
Stalked	Basidium subtended by an elongated stalk
Sterigma	Small pointed horn like structures at the top of a basidium on which a basidiospore develops
Subglobose	Short, squat, nearly round basidium
Tuning-fork basidia	Also called bifurcated basidia. These basidia begin as long cylinders but branch once to form a tuning fork or Y shape. Each fork produces a single basidiospore. Tuning fork basidia are found in fungi of the order Dacrymycetales.
Urniform	Shaped like an urn
Utriform	Shaped like a leather bottle that has a central constriction

Section 14 - Cystidia - describing the location where they are to be found

Caulocystidia	Located on the stipe
Cheilocystidia	Located on the edge of a lamella, pores or other hymenophoral structure
Circumcystidia	Located on the margin of the cap
Cystidiole	Sterile basidium protruding beyond the surface
Dermatocystidia	Mostly another term for pileocystidia but used by some writers to refer to any cystidia located in the surface tissue
Hymenial cystidia	Arising in the hymenium or subhymenium
Pileocystidia	Located on the surface of the cap also called dermatocystidia
Pleurocystidia	Located on the face of a lamella or inside the pores
Pseudocystidia	Arising from the trama or subiculum
Skeletocystidia	Thick-walled, cystidium-like ends of skeletal hyphae that project through the spore-bearing surface

Section 15 - Cystidia - describing the form and characteristics

Acanthocystidia	Cystidia that are described as antler-like, covered with apical protuberances
Asterocystidia	As astrocystidia
Astrocystidia	Cystidia with a star- or pompom-like cluster of crystals at the tip
Capitate	Cystidia with a distinct apical swelling; subcapitate is used to refer to only slightly apically swollen cystidia
Catenate & Catenulate	Describing cystidia with septate shortish broad cells appearing as if in chains
Chrysocystidia	Having yellow amorphous contents, that becomes more deeply yellow when exposed to ammonia or other alkaline compounds
Dendrocystidia	Multiple branching
Gloeocystidia	Tubular or vesicular, often sinuous or constricted along their length, with thin walls and abundant hyaline or yellowish oily content in the cytoplasm
Halocystidia	Cystidia with a capitate apex surrounded by a large resinous droplet
Hyphocystidia	Very simple hypha-like cystidia originating in the subhymenium and projecting beyond the hymenium, akin to paraphyses
Lageniform	Cystidia with a broad basal part and needle-like, encrusted apical part, like a bottle brush
Lamprocystidia	Look like leptocystidia but are usually filled with granular or oily droplet-like contents
Lecythiform	Describing the shape of cystidia that are bottle or bowling pin shaped with a short neck and distinct apical head
Leptocystidia	Most common type of hymenial cystidia, thin to moderately thick-walled, cylindrical to fusoid to conical, sometimes encrusted with no contents
Lycocystidia	Cystidia characteristic of some genera, they have thick, refractive walls. Note they dissolve in koh.
Metuloid	Are more or less thick walled projecting cystidia which are not pointed at the end and that excrete encrusting matter at the apex and are granular in appearance. Having two distinct parts, a basal one with no encrustation and an apical one which is conical and covered in crystals.
Moniliform	Regularly constricted leptocystidia or gloeocystidia, like a string of beads also called torulose cystidia
Mucronate cystidia	Similar to schizopapillate, but in reference to a more acute protuberance at the apex
Paracystidia	Can often be found amongst metuloid cheilocystidia and are smaller thin-walled clavate to balloon-shaped cells
Septocystidia	Cystidia with regular septa, often with clamp connections, typically cylindrical, thin-

	walled or thick-walled
Schizopapillate	Cystidia with an apical constriction, looking like the end of a semi-deflated balloon
Subcapitate	Cystidia that have a slight apical swelling
Subulate cystidia	See subulicystidia
Subulicystidia	Cystidia that taper to a point like an awl
Sulphidia	Pleurocystidia that have a yellowish colouration, but not turning yellow in koh
Torulose cystidia	See moniliform cystidia

Section 16 - Pileipellis - describing the different forms of hyphal structure of the cap cuticle

Cutis	Characterized by hyphae that are repent, that is, that run parallel to the pileus surface
Epithelium	Consisting of rounded cells in multiple layers, often connected in chains, and sometimes breaking off
Trichoderm	The outermost hyphae emerge roughly parallel, like hairs, perpendicular to the cap surface
Hymeniderm	Also called hymeniform, or often palisade. When viewed from above, appears to be paved with roughly circular polygonal elements. The elements may be globular cells or may be the tips of hyphae extending deeper into the surface

Section 17 – Stains & reagents - describing their use and colour reactions

Acetocarmine	A stain used in microscopy to show up spore walls and basidia
Acyanophilous	Where there is no distinct darkening of cell walls in cotton blue
Ammonium hydroxide	(NH 4 OH) Used in microscopy for mounting, and as a reagent causing colour change with some fungi. Also good for removing excess stain from samples by putting a drop of 10% ammonia at one edge of the cover slip and touching the opposite edge with a scrap of tissue, this will draw the Ammonium hydroxide through taking the excess stain with it
Amyloid	Chemical reaction, turning blue, grey or black when stained with Meltzer's or Lugol's reagent, cf. dextrinoid
Carbol fuchsin	A strong stain in solution with phenol. Mostly used in determining "fuchsinophile hyphae" in some Russulas. Needs to be used in conjunction with 10% hydrochloric acid
Carminophilous	Turning blackish purple or blackish violet in acetocarmine in the presence of metal ions. Also called siderophilous
Chlorozole Black	A stain used in microscopy which has a strong affinity for cellulose and chitin. It helps in distinguishing fungal bodies from artefacts due to chitin staining.
Clemencon's soln	Used to rehydrate dried material and make it easier to cut sections. The formula is 80ml of 96% ethanol (or industrial methylated spirit), 20 ml of concentrated ammonia and 1gm of glycerol. The dried material is soaked in this until it is sufficiently softened. It is then removed and allowed to dry for a while when it should be "waxy" and able to be sectioned. A final soak in 10% ammonia may help to expand the section.
Congo red	A good all round red stain commonly used in microscopy to stain the hyphal walls and to show up clamp connections
Cotton Blue	A blue stain used in microscopy, used for spore ornamentation & contents, also basidia
Cresyl blue	Used as a reagent and stain, a strong blue stain. However, certain hyphae and spores turn a reddish violet colour, for example the stipe hyphae of *Mycena*
Cyanophilous	Staining blue with cotton blue reagent
Dextrinoid	Staining brick red or brown with Melzer's reagent
Disclosing solution	A general stain can be used as an alternative to Congo red
Erythrosin b	A stain used in microscopy, can be useful to make the spores stand out, particularly useful for spores which have an epispore, (a thickish transparent outer layer found on spores of certain fungi e.g. some Coprinus).
FeSO4 Iron sulphate	Produces coloured reaction when applied to the flesh of certain Basidiomycotes. Mycologists sometimes carry a large crystal of this for use in the field.
Glycerol	Glycerol (glycerine) in 10% solution aids in preventing the slide drying up prematurely
Guaiac	A saturated soln. of gum guaiacum (a resin from a tropical tree) in 70% ethanol. Mainly of use macroscopically as it gives a colour reaction with some fungi such as

	Russulas
Hemiamyloid	Red reaction to iodine reagents
I-	Abbreviation meaning inamyloid. Not changing colour with iodine reagents e.g. Melzer's or Lugol's
I+	Abbreviation meaning amyloid. Changing colour with iodine reagents e.g. Melzer's or Lugol's
Inamyloid	Not turning blue, grey or black when stained with Melzer's reagent, becoming yellow is not a positive reaction
KOH	Potassium hydroxide, a chemical sometimes used to improve staining or to revive dried samples for examination
Lacto-phenol cotton blue	Cotton Blue dissolved in lactic acid, glycerol and phenol. Is a general stain used in microscopy and is also used to observe whether structures are acyanophilous (no distinct darkening of cell walls in cotton blue) or cyanophilous (the walls of basidiospores, cystidia, basidia, or hyphae turn dark(er) blue in the presence of cotton blue). The tissue needs to sit in cotton blue for half an hour so that the lactic acid can properly swell the cytoplasm (the substance of the body of a cell), this process can be speeded up by heating
Lugol's Iodine **Lugol's solution**	A solution of iodine and iodide potassium in water, less toxic than Melzer's, frequently used in the study of ascomycetes.
Meltzer's Iodine **Meltzers reagent**	A reagent and stain used in microscopy for testing amyloidity and dextrinoidity. Good at showing the ornamentation of *Russula* & *Lactarius* spores. It is also useful for ascomycetes as it "blues" the tips of some asci. Its effectiveness is based on the fact that iodine reacts with starchy substances to produce an intense dark blue-black colour Contains chloral hydrate which means that it can only be obtained from specialist sources in some countries but once obtained is reported to have a long shelf life
Metachromic	A chemical reaction of spores turning magenta red to violet using a solution of cresyl blue in water
Nonamyloid	Another term for inamyloid
Orthochromic	Chemical reaction, turning blue with cresyl blue, same as cyanophilous
Phloxine B	A stain used in microscopy
Pseudamyloid	Staining yellow-brown to red-brown or ruby-red with Melzer's reagent also known as dextrinoid
Schaffer reaction	An orange reaction on the cuticle of some agaricus species after mixing aniline with nitric acid
Siderophilous	Another term for Carminophilous
Sulpho-vanillin	A stain made from sulfuric acid (H_2SO_4) and vanillin (vanilla) used for SV reaction in *Russulas* and to colour the contents of gloeocystidia (cystidia that are usually highly refractive containing granular, clear or yellowish oily contents)
Sulphobenzaldehyde	Used as a stain in microscopy

Toluidine blue	Used as a stain in microscopy. It is a metachromatic (having more than one colour produced by the same stain) dye that stains nucleic acids blue and polysaccharides purple and also increases the sharpness in histology (microscopic structure of tissue) slides
Water	Good general mounting medium for microscopy. The addition a small quantity of detergent or photographic wetting agent helps to reduce the problem of wandering spores

Section 18 – Microscopy - terms related to microscopes and their use

Abbe condenser	A microscope condenser is a lens located below the stage and is usually movable up and down. It has an iris type aperture to control the diameter of the beam of light entering the lens system. By changing the size of the iris and moving the condenser lens toward or away from the stage, the diameter and focal point of the cone of light that goes through the specimen can be controlled allowing the light to be concentrated on the subject, particularly useful for high powered objectives which require concentrated light
Achromatic Lens	When light goes through a lens, it is bent or refracted. Some colours refract more than others and as a result, will focus at different points, reducing resolution. This is a lens that is designed to limit the effects of chromatic and spherical aberration. Achromatic lenses are corrected to bring two wavelengths, typically red and blue, into focus on the same plane. The most common type is composed of two individual lenses made from glasses with different amounts of dispersion. The lens elements are mounted next to each other, often cemented together, and shaped so that the chromatic aberration of one is counterbalanced by that of the other
Apochromatic Lens	Apochromatic lenses have better correction of chromatic and spherical aberration than the much more common achromatic lenses. They are designed to bring three colours into focus in the same plane typically red, green and blue and are also corrected for spherical aberration at two wavelengths, rather than one as in an Achromatic lens The resulting quality is significantly higher than an Achromatic lens and this is reflected in their price
Arm	The part of the microscope that connects the tube to the base. When carrying a microscope, it is recommended that you hold the arm with one hand and support under the base with the other hand
Barrel focus	Describes a type of microscope, where the stage for holding the specimen is fixed and the body tube of the microscope is moved to focus the objective aperture, more commonly found in stereo dissecting microscopes
Body tube length	In microscopy this refers to the distance between the objective and the very top of the body tube. This can be important as objective lenses are compatible with certain body tube lengths and a mismatch can cause spherical aberrations.
Binocular head	The head of a microscope with two eyepieces. This term is typically used to describe high powered compound microscopes which use a prism arrangement to divide a single image from the objective into two equally intense portions which our minds fuse into one. cf. Stereo microscopes
Bright field illumination	A method of exposing a transparent or translucent specimen to bright white light whilst on a light background. cf. Dark field illumination
C-mount	This is an adapter used with various types of microscope cameras. The adaptor sits in the trinocular port (extra port for attaching a camera) of the microscope and has a standard 1" thread size that C-Mount cameras will match up with. The C-Mount adapters are specifically designed for use with certain brands and models of microscope in accordance with their focal length

Calibration	Is a process carried out using a stage micrometer (a slide with scribed lines on it that are exactly 0.01mm apart) by comparing this slide viewed through the eyepiece graticule you can work out what the divisions in the eyepiece graticule equate to for each objective lens. The results of this calibration process will give a formula by which you can translate the number of lines that the specimen fits within viewed through the eyepiece graticule to an accurate real world measurement. Microscopes can have varying magnification factors for any given objective lens even two identical models so this has to be done for every microscope
Chromatic aberration	As light is bent in a lens or prism, different wavelengths (colours) respond differently to each other and will focus at different points, this can cause a distortion or blurring also known as a Chromatic aberration. This problem is greatly reduced by having a microscope with achromatic objective lenses
Coarse focus	On a compound microscope the course knob quickly increases and decreases the distance between the objective lens and the subject to get it into rough focus, before using the fine focus knob to improve the resolution of the image. On many parfocal (changing objective lens without the need to refocus) microscopes once they are set up there is often little need to adjust the coarse focus
Coaxial focus	This is the most common set up on modern microscopes where the fine and coarse focus mechanisms operate on the same axis. Typically, the coarse focusing knob is larger with the fine focus knob smaller and situated in the centre of the coarse focus knob, this arrangement is often duplicated on both sides of the microscope
Common main objective (CMO)	A design of stereomicroscope in which there is only one objective. The two eyepieces look through the same objective, but from left and right sides so as to produce two different views which are combined to give a stereo image
Compound microscope	A compound microscope is a high power (high magnification) microscope that uses a compounded (multiplied) lens system combining objective lenses to give an initial magnification, typically 4x, 10x, 40x or 100x, this image is then compounded by a secondary magnification strength of the eyepiece lens, typically 10x
Contrast Plate	A circular opaque plate that can be placed on the stage of a low power microscope. One side is white, the other is black. It can be turned over for best contrast depending on the colouration of your specimen
Cover slip	A very thin, square, rectangular or circular sheet of glass to be placed over the subject on a microscope slide, this flattens and keeps the subject in place as well as protecting the objective lens from becoming contaminated by contact with the subject or any stains & reagents being used
Dark field illumination	A lighting method in some microscopes resulting in the subject appearing light against a dark background through the use of light manipulation. The use of Dark field illumination enhances surface textures and allows detailed study of small features on the specimen surface
Depth of field	Refers to the amount of area in front of and behind the point of focus that is still in acceptably sharp focus. With a microscope the higher the magnification the smaller the depth of field
Digital Microscope	A microscope with a built in digital camera that enables a direct feed to a computer, some have an integrated monitor instead of, or as well as, eyepieces

DIN Optics	A standard for the manufacturing of microscope lenses. This does not mean that they are better quality than non DIN lenses but they are interchangeable from one DIN standard microscope to another. They are compatible with a 160mm total tube length and have a uniform 20mm diameter screw thread. Most quality microscopes use DIN optics rather than JIS standard; whilst the two are interchangeable using a JIS standard lens on a DIN standard microscope will result in a different magnification than that stated on the lens
Diopter adjustment	Found on a stereo or binocular microscope, this is a ring on the eyepiece that when turned finely adjusts the focus for that eye. This allows you to compensate for any vision difference between one eye and the other
Dissecting Microscope	A microscope generally of a lower magnification than a compound microscope, good for examining larger items and for viewing items whilst dissecting, another name for dissecting microscope is stereo microscope. The stereo microscope has two eyepieces that, unlike a compound microscope, produce two distinct optical paths so that the view to each eye is of a slightly different angle giving a three dimensional view. This is achieved, either by using a separate objective lens for each eyepiece known as Greenough stereo, or in the Common main objective (CMO) type, the two eyepieces look through the same objective, but from left and right sides so as to produce two different views which are combined to give a stereo image
Doublet Lens	A lens structured by having two different lenses cemented together. Used in wide-field eyepieces to give improved colour performance
Dry Objectives	Generally compound microscope objective lenses below 100x are dry lenses, they are designed to be used with nothing but air in the space between the end of the objective lens and the cover slip. These can be seriously damaged if immersed in immersion oil
Eyepiece diaphragm	A part within the eyepiece which provides the field of view and is where an eyepiece graticule (graduated scale for measuring specimens) is placed
Eyepiece graticule	The eyepiece graticule is a disc placed in the eyepiece that has lines giving 100 divisions. By working out what length each division equals for each objective lens you can enable accurate measurement of specimens under the microscope
Eyepiece lens	This is the part of the microscope that you look through and that provides the second stage of the magnification process, eyepiece lenses are most often 10x so using the 40x objective lens with a 10x eyepiece will give a magnification of 400x. Eyepiece lenses are also available at 5x, 10x, 15x, 20x and rarely at 30x they are also available in a wide field format that increases the field of view and is very helpful for spectacle wearers
Eyepiece Tube	The tube or tubes on a microscope in which the eyepiece lens is slotted
Field diaphragm	An iris diaphragm which in most modern microscopes is located on top of the built-in illumination. It is used to control the diameter of the beam of light entering the substage condenser, thereby reducing the effect of stray light
Field of view	The area which you can see when looking into the microscope eyepiece. This decreases as the magnification increases. It can be measured using a stage micrometre. Sometimes abbreviated to FoV
Field number (FN)	The field number is often marked on the eyepiece near the magnification, for example

	10×/20. This figure represents magnification/field number. The field number is used to calculate in millimetres the diameter of the field of view of that eyepiece, were it to be used with a theoretical ×1 objective lens. Of course we are not going to be using a x1 objective lens in our microscope, but using the formula 'field number ÷ the magnification of our objective lens' will give you the field of view in mm for any objective lens used with that eyepiece. Therefore, an eyepiece with an FN of 20 when used with a ×10 objective lens, 20 ÷ 10 = 2, would give a field of view of 2.0 mm
Filter	A transparent piece of glass or plastic, normally circular, that is inserted into the optical path just below the condenser, so as to alter the colour or intensity of the light passing through the specimen
Fine focus	On most microscopes this is the smaller of the focus rings and is used following coarse focus to fine tune the sharpness of the image and to shift the point of focus to various parts of the specimen to enable examination of fine details
Focus	On a microscope this is achieved by moving the specimen closer or further away from the objective lens to render a sharp image. On some microscopes, the stage moves and on others, the tube moves. This movement is generally achieved by a durable Rack and pinion system
Graticule	See eyepiece graticule
Greenough stereo	A design of stereo microscope in which there are two objective lenses, one for each eyepiece producing two separate views to give a stereo image. Other stereo microscopes use the common main objective (CMO) design
Head	The upper part of the microscope containing the eyepiece tube and prisms
High eyepoint	Light rays emanating from the eyepiece intersect at the exit pupil or eyepoint, a high eyepoint eyepiece is deigned to work in such a way as to make this point high enough that even when wearing spectacles it is possible to see the full field of view
Illuminator	The light source of a microscope, mounted either above or below the stage depending on the type of microscope. LED or halogen are the most commonly used in modern microscopes
Immersion oil	A specialised oil used in microscopy, a drop of which is placed between the 100x oil immersion objective lens and the cover slip to improve light transmission by reducing light refraction. Not to be used with non oil immersion dry lenses
Interpupiliary adjustment	Many microscopes with binocular eyepieces are designed to enable the user to adjust the distance between the eyepieces to ensure the optimal comfort. This should be the first adjustment to make so that you are comfortably viewing the specimen with both eyes
Inverted microscope	A compound microscope in which the objective lenses are below the stage with the light source and condenser on the top, above the stage pointing down. Inverted microscopes are useful for observing living cells or organisms at the bottom of a large container under more natural conditions than on a glass slide, as is the case with a conventional microscope
JIS standard	A less common standard for the manufacturing of microscope lenses designed to enable compatibility with a 170mm total tube length and have a uniform screw thread. Most quality microscopes use DIN optics rather than JIS standard; whilst the two are interchangeable using a JIS standard lens on a DIN standard microscope will

	result in a different magnification than that stated on the lens
Koehler illumination	A process used in microscopy employing both a field iris and an aperture iris. This gives the user increased control of the illumination to enable focusing and centring of the light path whilst spreading it evenly over the field of view to give optimum contrast and resolution, also known as double diaphragm illumination
Magnification	In microscopes the magnification is performed in two sets of lenses the first being the objective lens and then secondly by the eyepiece lens, to ascertain the actual magnification you multiply the objective lens magnification by the eyepiece magnification
Mechanical Stage	Found on high power microscopes, this is a type of stage upon which to place the microscope slide that has two dials, used to control very precise movements of the slide under the objective lens enabling the user to view different parts of the specimen on the slide
Micrograph	A drawing or photographic reproduction of an object as viewed through a microscope.
Micrometer	Often abbreviated to µm, also called a micron it is the size measurement used in microscopy. There are 1000 microns in a millimetre. If something is 1.5mm long then it can also be expressed as 1,500 microns or micrometers long
Micrometer disc	Another term for graticule
Microns	See Micrometer
Monocular head	A microscope head with only one eyepiece
Nosepiece	This is the part of the microscope that the objective lenses are fitted into, this can be revolved allowing the user to switch between the objective lenses to increase or decrease magnification, also called a turret
Numerical aperture (NA)	This is a measure of the ability of an objective lens to gather light and to resolve fine detail. A higher NA produces a brighter image with more detail but less depth of field. An NA greater than 1.0 can only be achieved using liquid immersion objectives, for use in mycology this is likely to be oil immersion. The NA is normally marked on the objective, as a number between 0.04 and 1.4
Objective lens	The primary magnifying lens or lenses situated closest to the object that you are examining. On a high power binocular model there is only one objective lens giving a 2 dimensional view. On a stereo microscope, usually low power, there is either one objective lens or objective pairs, one lens for each eyepiece lens, both these stereo microscope systems enable a 3 dimensional view
Oil Immersion Objectives	High power objective lenses in the region of 100X and above are generally designed to allow for oil immersion. These are called ‘oil’ or ‘wet’ objectives. You can place oil in the space between the specimen and the objective so the light waves passing through that space pass through oil rather than air. This decreases distortion and leads to a higher quality image
Parcentered	Almost all microscopes are parcentered which means when changing from one objective lens to another, the image of the object should stay in the centre of the view
Parfocal	Having a parfocal microscope means that when you rotate the turret to change to a

	different objective lens you will only need to slightly tweak the focus with the fine focus knob rather than having to use the coarse focus
Phase Contrast	Phase-contrast microscopy is a technique used to give contrast in a translucent specimen without having to resort to using stains. The technique shifts the light phase wavelength, thereby causing the light deviated by the specimen to appear dark on a light background. One major advantage is that phase-contrast microscopy can be used with high-resolution objectives, but it requires a specialized condenser and more expensive objectives
Photomicrography	Taking photographs through a microscope. Note that microphotography is actually the term for the production of very small photographs
Photo tube	The vertical tube at the top of a trinocular microscope that enables a camera to be attached
Plan Lens	Also called planar lens, are an objective lens that corrects for field curvature. Field curvature often results in blurred images and correction for this helps produce good quality images. Plan lenses are a step up from Semi-plan lenses as they correct for over 90% of the field of view. cf. Semi-plan lens
Pointer	Some eyepiece lenses are fitted with a pointer that can be rotated by turning the eyepiece which enables a viewer to point out a specific area of a specimen
Portable Microscope	A cordless field microscope that typically, includes a rechargeable LED light source enabling it to be used away from a power supply, some come with the ability to be connected to a mobile phone using the phone display as a viewing screen
Rack and pinion	A mechanism consisting of a toothed track and a rotating gear, by turning a knob the gear moves along the track. This system is used in focusing mechanisms, in Abbe condenser focusing systems, and on mechanical stages to move the slide around
Rack Stop	A safety feature usually pre-set in the factory that prevents the slide from coming too far up and hitting the objective lens. Changing the rack stop is only necessary if your slides are exceptionally thin and you are unable to focus the specimen at higher magnifications
Resolution	The ability of a lens to display fine details clearly. A low resolution would result in a less clear image. A consideration when purchasing a microscope
Reticule	When referring to microscopy the terms reticule and graticule both refer to a disc placed in the eyepiece that has lines giving 100 divisions. By working out what length each division equals for each objective lens you can enable accurate measurement of specimens under the microscope
Ring Light	An independent light source that usually connects to a stereo microscope body and gives off a ring of light
RMS	Refers to a standard set by the Royal Microscopical Society for a universal screw thread at the top of an objective lens, 0.8” diameter, 36 t.p.i. this is the most common screw thread
Semi-plan lens	Also called semi-planar, is an objective lens that corrects for field curvature. Field curvature often results in blurred images and correction for this helps produce good quality images. Semi-plan lens correct for approx 80% of the field of view. cf. Plan lens
Siedentopf head	A microscope head design where the interpupillary (space between the eyepieces) adjustment is achieved by moving the eyepieces together and apart in a vertical arc

	around a central axis like binoculars. This design also means that you can adjust the interpupillary distance without changing the focus
Slide	A rectangular plate normally of glass upon which the subject is placed for viewing under the microscope. They can also be purchased with a small central depression to hold drops of liquid to be studied
Slip Clutch	If you move the focus all the way up or down and continue to turn the knob, damage to the focusing system can occur. A slip clutch is a mechanical device that protects the gears of the microscope from damage if this happens
Spherical aberration	An inferior image caused by light rays failing to converge to a single point resulting in a loss of definition
Stage	The part of the microscope where the slide is placed, on a compound microscope this is usually between the light source and the objective lens. Some stages have clips to hold the slide in place
Stage Clips	Clips on the stage used to hold the slide in place
Stage Plate	On a low power microscope, there is a frosted circular glass plate that fits in over the lower illuminator. cf. contrast plate
Stand	This is connection between the microscope body and the base on a low power microscope. There are three main types: the post, the fixed arm and the universal boom stand
Stereo microscope	A microscope generally of a lower magnification than a compound microscope, good for examining larger items and for viewing items whilst dissecting, another name for stereo microscope is dissecting microscope. The stereo microscope has two eyepieces that, unlike a compound microscope, produce two distinct optical paths so that the view to each eye is of a slightly different angle giving a three dimensional view. This is achieved, either by using a separate objective lens for each eyepiece known as Greenough stereo, or in the Common main objective (CMO) type, the two eyepieces look through the same objective, but from left and right sides so as to produce two different views which are combined to give a stereo image
Sub-Stage	Those parts of the microscope that are below the stage, including the illumination system
Tension Adjustment	This is an adjustment of the microscope focusing mechanism that is designed to make it easy to focus but also tight enough so that the stage doesn't drift when you are not focusing, on many microscopes this can be adjusted with the tool provided. Stage drift is caused by the weight of the stage (or tube) moving the stage downwards and out of focus
T-mount	An adapter required usually to connect an SLR to a microscope. The camera lens is removed, and a t-mount is mounted to the body of the camera and then connected to the additional camera adapter that works with the microscope. Sometimes referred to as a step-ring
Trinocular head	A type of microscope head available on both high and low power microscopes that has two eyepieces with another port to which a microscope camera can be fitted. Some microscopes have an adjustment to enable control of where the majority of the light is directed, either to the camera or the eyepieces

Turret	This is the part of the microscope that the objective lenses are fitted into, this can be revolved allowing the user to switch between the objective lenses to increase or decrease magnification, also called nosepiece
Wide field eyepiece	These are eyepiece lenses which have the greatest diameter and allow a wide field of view, particularly valuable for spectacle wearers. The eyepiece needs to be used with an objective that can provide a good image across the wider field of view
Working distance	This describes the distance between the tip of the objective lens and the slide when on the microscope stage. Larger subjects will require microscopes with longer working distances resulting in less magnification
Zoom	Is the ability to provide step-less increases in magnification whilst requiring only slight adjustment to keep the subject in focus. This is a feature offered by some stereo dissecting microscopes, and is usually expected of USB microscopes