

## M

**MACAEDIUM** see mazaedium.

**MACRO** (prefix), long, but commonly used in the sense of mega (q.v.), i.e., large.

**MACORCONIDIUM** the larger, generally more diagnostic, conidium of a fungus which has more than one kind of conidia.

**MACROGONIDIUM** (obsolete), a large photobiont cell.

**MACROLICHEN** larger lichen of squamulose, foliose, or fruticose habit.

**\*MACRONEMATOUS** (of conidiophores), morphologically different from the vegetative hyphae.

**MACROPHYLLINE** (of foliose lichens), having large lobes

**MACROSCOPIC** visible without a lens.

**MACULA** a small pale spot or blotch on the upper or outer surface of a thallus, often due to uneven distribution of photobiont cells below the thalline cortex (or unevenly thickened cortex), representing a locally discolored or algaless area, not associated with any break in the cortex; usually whitish or pale; usually visible only with a lens

**MACULATE** having maculae.

**MACULIFORM** 1) like a spot; 2) referring to a type of small, rounded, flattened, laminal sororium, as in Phaeophyscia orbicularis.

**MALACEOID** pattern on the underside of Peltigera, in which venation is only faintly indicated by a few whitish interstices.

**MANICIFORM** cuffshaped, curving back away from an opening at the tip of a hollow lobe, as in Hypogymnia tubulosa

**MANNA** sometimes considered to be the lichen Aspicilia esculenta.

**MANUBRIUM**

**MARGIN** 1) edge or rim, when applied to lobes or squamules; occasionally also used for the region at the periphery of a zonate to radiately lobed thallus; 2) exciple of an apothecium

**MARGINAL** located on the edge or margin rather than on the upper or lower surface or the tips

**MARGINATE** with a well defined edge or margin.

**MARGO** margin or excipulum of an apothecium; can be proprius (proper margin) or thallinus (thalline margin).

**MARKINGS** whitish reticulate or spotted outlines on the surface of lobes; a loose term that includes maculae and some types of pseudocyphellae.

**MATRIX** 1) the material or organism in or on which a lichen is living; most lichenologists prefer the term substrate or substratum; 2) a gelatinous substance, e.g., inside a perithecium or pycnidium.

**MATT** with a dull, opaque surface, i.e., not shiny, oily, or waxy

**MATTED** closely tangled; having the branches or lobes densely intertwined; used by Taylor to also mean cushionforming.

**MAZAEDIUM (MAZAEDIA)** a disclike to globose (or, in Sphaerophorus, enclosed) fruiting body in which ascus walls break down to leave a dry, loose, amorphous, powdery, often dark, mass of spores together with disintegrating asci and paraphyses.

**MEALY** nontechnical term for farinose.

**MEDULLA** an internal layer of fungal hyphae, below the algallayer, in the thallus or in a lecanorine apothecium; hyphae often more or less loosely interwoven and weakly gelatinized, but sometimes anticlinally arranged, densely packed, or strongly gelatinized; sometimes more or less densely filled with granules or crystals, which can be calcium oxalate, silicates, or lichen substances.

**MEDULLARHIZINE**

**MEDULLARY CAVITY**

**MEDULLARY EXCIPULUM**

**MEGA** (prefix) large

**MEGALOGONIDIUM** see macrogonidium.

**\*MELANIZED** containing dark brown pigments.

**MEMBRANE** a thin covering over the cup shaped podetia of Cladonia.

**MEMBRANACEOUS** thin, more or less pliant, like a membrane

**MESIC** of moist habitat, neither wet nor very dry

**MESODERMATUOUS** (of hyphae), having the outer wall and lumen of about the same thickness.

**\*MESOCONIDIUM (MESOCONIDIA)** an intermediatesized conidium in a species with three conidium types.

**METATHALLUS** assimilative part of a thallus containing photobiont cells; usually = algal layer.

**MICAREOID**

**MICRO** (prefix) small

**MICROCONIDIA** very tiny uninucleate bacilliform cells produced in pycnidia of a fungus that produces more than one kind of conidium.

**MICROGONIDIUM** (obsolete), very small photobiont cells

**MICROLICHEN** crustose lichen, usually small.

**MICROMETER, MICRON** one thousandth of a millimeter (0.001 mm); 1 um or 1 u.

**MICROPHYLLINE** with minute leaflets or leafy scales.

**MISCHOBlastiomorphic** pertaining to a specialized spore found in Rinodina, with very unevenly thickened walls and two funnelshaped locules (the two locules appearing like an hourglass in section); a type of polarilocular spore.

**MOLARIFORM** shaped like a short, blunt tooth

**MONILLIFORM, MONILLIOID** beadlike; regularly constricted,

composed of globose cells, joined together like a string or chain of beads; applies to hyphae and paraphyses.

**MONO** (prefix), one

**\*MONOBLASTIC** producing a blastic conidium at one point.

**MONOCARPOUS** containing one apothecium.

**MONOPHYLLOUS** of a thallus consisting of a single more or less orbicular foliose lobe; can be undulate or folded, or sometimes divided, but then always with a single attachment area.

**MONOPODIAL** of a stem in which growth is continued by the same apical growing point; a type of branching in which a persistent main axis gives off branches, one at a time and frequently in alternate or spiral series.

**MONOSPOROUS** (of asci), 1spored.

**MONOTYPIC** having only one representative, i.e., a genus with only one species or a family with only one genus.

**MORPH, MORPHODEME, MORPHOTYPE** a group of individuals of a taxondifferentiated by having a particular shape or form, of undetermined or no taxonomic significance.

**MORPHOLOGY** external shape or form

**MOTTLED** variegated white and black or brown, as on the lower surface of some foliose lichens.

**MUCILAGINOUS** sticky when wet; slimy.

**MUCRONATE** pointed; ended in a short, sharp point.

**MULTI** (prefix), many; much

**MULTISEPTATE** with many septa

**MULTISPOROUS** having numerous spores (usually 16 or more) per ascus; polysporous.

**MURALE** muriform.

**MURIFORM** with transverse and longitudinal (or oblique) walls, dividing the spore into more or less numerous (usually 10 or more) chambers, thus appearing like a brick wall.

**MUSCICOLOUS** growing on or among bryophytes (mosses or liverworts).

**MUTUALISM** a form of symbiosis in which both partners benefit more or less equally.

**MYC, MYCET, MYCETO, MYCO** (prefix), having to do with fungi

**MYCELIAL** made up of intertwined strands of hyphae.

**MYCELIUM** a mass of hyphae; the thallus of a fungus.

**MYCETAL** (obsolete), a fungus or lichen.

**MYCOBIONT** fungal partner in the symbiosis that constitutes a lichen.

**MYCOLECANORINE** of an apothecium with the margin lacking algae but having the cortex continuous with that of the thallus, with algae present below the hypothecium, and with the parathecium deeply pigmented

## N

**NAKED** 1) lacking rhizines; 2) epruinose.

**NARROWLY ELLIPSOID**

**NASSACRE, NASSE** the fingerlike protrusion of the inner part of a bitunicate ascus into the inner tunicle.

**NAVEL** see umbilicus.

**NECRAL LAYER** a thin to thick, horny, transparent layer of dead or dying fungal tissue, with indistinct lumina, overlying the thalline cortex or pseudocortex; usually on the upper surface (above the algal layer) and called epinecral layer (if below the algal layer, called hyponecral layer); often gives the surface a white, granular appearance, or a glossy or waxy appearance, and when thick frequently becomes cracked (rimose) in a characteristic way.

**NECROSIS** death of cells, especially when resulting in the tissue becoming dark in color.

**NIGRESCENT** turning black.

**NIPPLESHAPED, NIPPLELIKE** resembling a nipple; nontechnical terms for a growth form such as that of Pycnothelia papillaria

**NITID** smooth and clear; lustrous.

**NITROPHILOUS** having a preference for habitats rich in nitrogen; chionophilous; often used interchangeably with ornithocoprophilous.

**NITROPHOBOUS** having a preference for habitats poor in nitrogen.

**NODOSE** with rounding thickenings at intervals

**NODULE** 1) a small, broadbased, blunt, rounded, wartlike lump or excrescence on the surface (as of a spore or thallus); 2) knot (rounded thickening) in a branch.

**NODULAR, NODULOSE** having nodules (sense 2).

**NODUM** a phytosociological term.

**NOMEN** (Latin) name; **AMBIGUUM**, one used in different senses;

**CONFUSUM**, one of a taxonomic group based on two or more different elements; **CONSERVANDUM**, one made valid by a decision of an International Botanical Congress; **PROPOSITUM**, one put up for conservation; **DUBIUM**, one of uncertain sense; **MONSTROSITATIS**, one based on an abnormality; **NOVUM**, a new name, a replacement; **NUDUM**, one for a taxon having no diagnosis; **PROVISIORUM**, one proposed provisionally; **REJICIENDUM**, one rejected (e.g., officially by a Botanical Congress). A generic name may be a nomen ambiguum (etc.), but a binomial under such a name may be without ambiguity.

**NON** (prefix) not

**NUBILATED** cloudy and semiopaque as viewed by transmitted light.

**NUCLEUS**

## O

**OB** inverted or inversely (in combinations such as obovate)

**OBLIGATE** necessary, essential; restricted to a particular host, substratum, or mode of nutrition.

**OBLIQUE** 1) an angle between 45° and 90°; 2) "with sides unequal" (Galloway)

**OBLONG** (of spores), twice as long as wide and with rounded or truncate ends, margins parallel; almost rectangular but with rounded corners.

**OBLONGELLIPSOID** (of spores), roundedoblong; having sides parallel and ends almost hemispherical.

**OBOVOID, OBOVATE** (of spores), generally ovoid, but broader to the distal end; inversely ovate (narrowest at base).

**OBSOLETE** 1) (of organs or parts) rudimentary or absent; 2) (of terms) no longer in use (however, some obsolete terms were used in references that are still widely used).

**OBTRIANGULAR** triangular but with base uppermost.

**OBTUSE** rounded or blunt.

**OCHRACEOUS** of a dull yellow color, usually with a brownish tinge

**OCTOSPOROUS** having eight spores per ascus.

**OCULAR CHAMBER** the narrow, fingerlike protrusion of the epiplasm (sporecontaining part of the ascus) into the apical region (inner tunica) in a bitunicate ascus

**OID** (suffix), resembling, like; having the form of; most of the terms using this suffix are not given separate entries in this glossary.

### OILY

**OMBRO** (prefix), referring to precipitation, especially rain

**OMPHALODISC** apothecial disc with central column of sterile tissue (appearing as a knob on the surface), in Umbilicaria.

**ONTOGENY** developmental processes or stages during the formation and maturation of a structure

**OPAQUE** 1) not transparent or translucent; 2) matt.

**ORBICULAR** circular in outline, usually flattened; used by some authors (Swinscow & Krog) to also mean globose.

**ORCHIL, ORCHILL** a kind of dye made from certain lichens.

**ORCULIFORM** see polarilocular.

**ORIENTED** turned in one direction.

**ORNITHOCOPROPHILOUS** preferring habitats rich in bird droppings.

**ORTHOGRAPHIC VARIANT** a variant spelling of a name

**OSTIOLE, OSTIOLUM** in the strict sense, the schizogenous, paraphysiscovered cavity, ending in a pore, in the papilla or neck of a perithecium (Miller, 1928, Mycol.), usually develops through the simple opening up of an already constricted place, usually round, often pigmented; in a looser sense, the narrow,

usually apical, porelike opening (orifice) of a perithecium or pycnidium, through which the spores escape; also used in a loose sense for the pores in the fruit warts of Pertusaria.

**OVAL** broadly elliptic, narrowing somewhat from middle to rounded ends

**OVATE** (of a surface [or sometimes a solid]), **OVOID** (of a solid), egg shaped, with the further end narrower or smaller in diameter than the nearer (basal) end.

## P

**PACHYDERMATOUS** (of hyphae), having the outer wall thicker than the lumen.

**PACHYOSPORE** an ascospore with uniformly thickened walls and spherical lumina.

**PALLID** lightcolored, pale

**PALISADE PLECTENCHYMA** (in the cortex), a tissue composed of hyphae arranged perpendicular (anticlinal) to the surface, usually conglutinate.

**PALMATE** handshaped, radiately lobed or divided; having lobes radiating from a common center but not extending to the point of insertion.

**PAPILLA** a small (visible only with a lens), domelike to hemispherical, conical, pimplelike or nipplelike (sometimes wartlike) bump (process or protuberance) on the thallus, on the lower surface of some foliose lichens (e.g., some Nephroma spp.), or on the outer surface of fruticose lichens (e.g., in Usnea, globose or shortcylindrical, concolorous with the surface or paler at the tip, distinguished from "tubercle" by being smaller and having an unbroken cortical covering without a pore and not becoming soresiate), or on the upper surface of some foliose lichens (e.g., in Melanelia, in which it is tipped with a pseudocyphellum when young and develops into an isidium).

**PAPILLATE** having or shaped like a papilla or papillae; as applied to isidia in Pertusaria, means short (24 mm tall), with the apex frequently knobforming and dissimilar in color to the stalk; resembles immature stages of columnar or coralloid isidia.

**PAPILLOSE** covered with pimplelike or blisterlike structures.

**PARAPHYSIS (PARAPHYSES)** a specialized sterile hypha in the hymenium, threadlike, simple or branched, basally attached, usually more or less vertical (anticlinal); usually relatively thick (1.5  $\mu$ m or more), regularly septate, and at most rather weakly branched, rarely anastomosing, often with somewhat enlarged apices. Paraphyses provide support and packing between the asci in fruiting bodies. The term is often used in a broad sense to cover various structures similar to true paraphyses.

**PARAPHYSOID** pseudoparaphyses (q.v.), but as also used of interthecial tissue, is indefinite in meaning, fide Luttrell (1955); According to Hawksworth (The LichenForming Fungi), it refers to structures that form from the stretching of tissues present before the asci develop, and they are usually thin, sparsely septate, and anastomosing. Purvis, et al. define it as interascal or preascal tissue stretching and coming to resemble pseudoparaphyses, very often remotely septate, anastomosing and very narrow. It has a different meaning in Basidiomycotina

**PARAPHYSOID TISSUE (NET, THREADS OR FILAMENTS)** the remains of stromatic tissue in ascolocular ascocarps; often highly branched, forming a network of hyphal tissue similar in function to true paraphyses.

**PARAPLECTENCHYMA** a fungal tissue with a cellular structure superficially like parenchyma of vascular plants; composed of more or less isodiametric thinwalled fungal cells, with hyphae densely coherent but with large lumina and a cellular appearance.

**PARASITE** an organism living on or in, and obtaining food from, its host, another living organism.

**PARASYMBIONT** an organism symbiotic with a preexisting symbiosis (e.g., a lichenioclous fungus) not damaging its host, commensalistic.

#### **PARATHECIAN STAGE**

**PARATHECIUM** (of apothecia) the outside hyphal layer, (especially if?) darker in color, outside of the hypothecium and inside the amphitheciium sensu lato (the main part of the exciple in the margin, whether containing algae or not); often used to refer to the proper exciple (the exciple in a narrow sense).

**\*PARATYPE** any specimen cited in the protologue other than the holotype or isotypes when those are cited (or lectotype or neotype, when such is chosen); generally considered less important and often not included when "types" are treated specially in herbaria.

**PARMULIFORM** shieldshaped with the margins slightly upturned.

**PATELLIFORM** like a round plate having a wellmarked edge.

**PATTERNED** suggesting a design or order; low ridges, tiny cracks, white spots or lines give the suggestion of a design on the surface, often netlike; best observed at the periphery, where it is not obscured by wrinkling or various kinds of growths.

**PECTINATE** comblike, toothed.

**PEDICEL** a small stalk.

**PEDICELLATE** having a pedicel.

**\*PELLICLE** a delicate outside membrane.

**PELLUCID** clear, translucent or almost transparent

**PELTATE** like a shield or plate attached on the lower surface at a single central point (often on a short stalk), with the edges free.; umbilicate.

**PENDENT, PENDULOUS, PENDULOSE** hanging down, supported from above, with little or no horizontal or erect growth; implies a freedom to swing or sway (like a pendulum).

**PENICILLATE** tufted, like a paint brush.

**PERFORATE** with holes (visible at least with a lens) through the thallus or into a central cavity.

**PERI** around, surrounding.

**PERIAXIAL** around the axis (in Usnea).



**PERIBASE** lateral meristematic zone within a developing apothecium

**PERICENTRAL ENVELOPE**

**PERICENTRAL FLOOR**

**PERICENTRAL MUFF (COLLAR)**

**PERICENTRAL ROOF**

**PERICLINAL** parallel to (in the same plane as) the surface or circumference; can be straight or curved.

**PERIFULCRUM** (obsolete), the wall of a pycnidium.

**PERIFULCRUM** wall of a pycnidium; pseudoparenchymatous and usually not sharply delimited from the sporophore layer

**PERIHYMENIAL MUFF (COLLAR)**

**PERIPHERY**

**PERIPHYSIS, ES** a hairlike projection from, or near, the ostiole of a perithecioid ascocarp or pycnidium, usually oriented

**downwards\***, between the asci when in a perithecioid

ascocarp. **PERIPHYSOID** periphysislike structures that develop from above the asci (or fulcra) and grow down a short distance.

**\*PERISPORE** a colorless, often gelatinous layer enveloping a spore outside the main spore wall; when gelatinous also called a "halo".

**PERITHECIAL WALL** excipulum of a perithecium; also applied by some authors to the perifulcrum of a pycnidium

**PERITHECIUM (PERITHECIA)** a more or less globose or flaskshaped fungal fruiting body (ascocarp) sessile or more often at least partly immersed in the thallus or in thalline warts, with a single, terminal (central, or rarely eccentric) opening (ostiole) and otherwise completely enclosed by a wall; now limited by some workers to the "thinwalled, lightcolored structure resulting from the development of an ascogonium, and having a hymenium of thinwalled (unitunicate?) asci and paraphyses" (Ainsworth & Bisby); some authors state that the wall (and ostiole) must be darkened (in contrast to that in Pertusaria or similar taxa); often used in the broad sense for peritheciallike structures; characteristic of pyrenocarpous and angiocarpic Ascomycotina.

**PERSISTENT** as used by lichenologists, describes apothecial margins that remain visible from above as the apothecium ages.

**PERTUSARIATE** of an apothecium opening by one or more pores and constricted at the base, as in many species of Pertusaria

**PETROPHILOUS** = saxicolous

**PHAEO** (prefix), darkcolored or swarthy, usually brownish; crustose genera with this prefix have brown spores; foliose genera with this prefix usually have a dark upper surface of the thallus and lack atranorin in the cortex.

**PHENOCORTEX** pseudocortex sensu Poelt (1958).

**PHIALIDE** conidiogenous cell producing conidia in basipetal

succession (i.e., the apical part is oldest) through one or several openings; also applied by some authors to the sporogenous cell (pycnide) in a pycnidium.

**PHILIC** (suffix), "loving", preferring, as applied to particular ecological or substrate factors

**PHOBIC** (suffix), "fearing", avoiding, as applied to particular ecological or substrate factors

**PHOROPHYTE** the tree or shrub upon which a corticolous lichen is growing; used instead of the more general term substrate.

**PHOTOBIONT** the photosynthesizing (algal or cyanobacterial) component of a lichen.

**PHOTOPHILOUS** light loving; preferring wellilluminated habitats.

**PHOTOPHOBOUS** light fearing; preferring shaded habitats.

**PHOTOSYMBIODEME** either of one or two morphologically different structures formed by the interaction of a single mycobiont with two different photobionts.

**PHYCOBIONT** the "algal" component of a lichen; now replaced by photobiont, to include cyanobacteria.

**PHYCOLICHENS** lichens in which the vegetative thallus morphology is determined by the photobiont and which are of uncertain systematic position as the fungal sporocarps are unknown (e.g., Cystocoleus, Racodium).

**PHYCOPHILOUS** growing with or on algae; used for basidiomycetes (esp. Multiclavula) in which the fungal sporocarps are always associated with surfaces covered by algae, but do not form a distinct vegetative thallus that can be recognized as a lichen.

**PHYLLIDIUM** a vegetative propagule with distinct upper and under sides and in its structure resembling in miniature that of the parent thallus; small corticate, scalelike, dorsiventral structure developed at margins or on upper surface of thallus.

**PHYLLOCLADIUM** literally "leafbranch", a corticate outgrowth from pseudopodetia of Stereocaulon, granular to coralloid, digitate, or complanate and lobelike.

**PHYLOGENY** the history of the evolution of a group.

**PILEMA** padlike medulla on the lower surface with an especially loose texture.

**PINNATE** compound, with the parts arranged on either side of an axis, as in a feather.

**PIPECLEANERRHIZINE** squarrose rhizine in which the lateral branches are very fine and dense, as in some Peltigera spp.

**PIPELIKE** nontechnical term for resmbing a tube or a cylindrical, hollow body

**PITTED** having depressions or concavities in the thallus surface; usually because of irregular variations in the thickness of the thallus; often the negative effect of ridges, wrinkles, or veinlike thickenings.

**PLACODIOID, PLACIOID** of a thallus, crustose at the center and lobed (and sometimes plicate) at the periphery; in the broadest sense also includes some genera that are umbilicate (Rhizoplaca) or squamulose (Squamarina).

**PLACODIOMORPH** a 2celled spore with a thickened septum which may or may not have a pore, cf. polarilocular.

**PLAIN** unadorned, smooth; margins without isidia, soredia, or other such growth, but may be wavy, dissected, or ciliate.

**PLANE** flat (and generally more or less smooth), referring to the surface of lobes or apothecial discs.

**PLAQUE** a structure like a small disc or plate.

**PLATE** flattened rhizinelike structure on the lower surface of some Umbilicarias; technically called trabeculae.

**PLATYGONIDIA** (obsolete) phycobionts occurring in stellately or orbicular spreading colonies (e.g., Cephaleuros)

**PLATYSMOID** a tissue which consists of "densely agglutinated thickwalled hyphae with very narrow lumina" (Dahl, 1952, p. 129), as in Cetraria subg. Platysma (= ? the genus Platismatia).

**PLECTENCHYMA** a tissue, generally thick, formed of more or less tightly packed hyphae becoming interwoven or twisted and fused together.

**PLETHOMORPHIC** having rather short, irregular rhizinelike protrusions from the underside of a foliose thallus

**PLEURICELLULAR**

**PLEUROGENOUS** formed on the side (lateral, intercalary); a neutral term for endobasidial

**PLEXUS** the very earliest stage in the ontogeny of an apothecium, while it is still in the medulla and the ascogonial apparatus is just beginning to develop

**PLIABLE, PLIANT** capable of being bent without breaking.

**PLICA** a fold of skin, membrane or lamella.

**PLICATE** folded (longitudinally) into pleats. **PLURILOCULAR** many celled, usually applied to spores.

**PODETIIUM (IA)** a stalk (more or less elongated, erect, terete portion) of a thallus derived from tissue of apothecial origin (usually the hypothecium and stipe), usually rising from a primary thallus and often bearing apothecia or pycnidia, (usually?) hollow; usually becoming secondarily invested with an algal layer and cortex (as in Cladonia); can vary from being short and unbranched to quite tall and richly branched; lichenized, stemlike portion (stipe, or discopodium) bearing the hymenial discs and sometimes conidiomata in a fruticose apothecium (Ahti, Lichenologiist 14: 109 (1982)).

**PODETIROID** having the general appearance of a podetium.

**POLARILOCULAR, POLARIBILOCLAR** referring to spores which are non septate, but in which the wall thickens (intepreted by some

authors as being a thick, centrally perforated septum), almost dividing the cell into two polar components (locules), the insides of which are connected by a narrow canal (isthmus); characteristic of many members of the Teloschistaceae; placodiomorph; nontechnically described as "dumbellshaped within".

**POLY** (prefix) many

**\*POLYBLASTIC** (of conidiogenous cells), producing blastic conidia at several points.

**POLYCARPOUS** two or more apothecia per fruit wart (in Pertusaria).

**POLYCHOTOMOUS** having an apex dividing simultaneously into more than two branches; polytomic.

**POLYDACTYLOID VENATION** (of veins on underside of Peltigera), low, often rather indistinct

**POLYMORPHIC** having several forms; as applied to a taxon, in the strict sense implies that the forms have some genetic basis (rather than being due to environmental modification); as applied to components of a thallus (e.g., rhizines), means that various forms can occur side by side on the same thallus.

**POLYPHYLLOUS** of a thallus consisting of several to many lobes.

**POLYSPOROUS** more than eight spores per ascus.

**POLYTOMIC, POLYTOMOUS** divided into many branches, usually at one node (at the same level, equal in size)

**PORE** a small opening.

**PORIFORM** porelike.

**PORUS** the part of each cell in a **Pyxinaceaea\*** (Physciaceae) spore that protrudes towards the center (narrowest part) of the septum (somewhat like the canal in a polarilocular spore, but not penetrating the septum) (?)

#### **PREPARATHECIAN STAGE**

##### **PRIMARY CORPUS**

**PRIMARY SPECIES** species reproducing by sexual means.

**PRIMARY SQUAMULE** The scalelike component of the primary thallus of a Cladonia.

**PRIMARY THALLUS** the first formed, crustose to squamulose, thallus which may later give rise to secondary structures (podetia or pseudopodetia).

**PRIMORDIUM** earliest stage of development of an organ (e.g., of an apothecium)  
**PROCESS** projection from a sporogenous cell in a pycnidium, on which the pycnospore is borne; sterigma, style

**PROLIFERATE** to produce parts in succession, as the cups in certain Cladonias.

**PROPAGULE** a reproductive body, whether sexual or asexual; restricted by some authors (e.g., Galloway) to thallus fragments capable of propagating the plant (i.e., isidia, soredia,

phyllidia, phyllocladia).

**PROPER EXCIPLE** see proper margin, and exciple.

**PROPER MARGIN** apothecial margin lacking algae and derived from apothecial tissue; usually similar to the disc in color, or darker.

**PROSENCHYMA, PROSOPECTENCHYMA** a fungal tissue with a structure superficially like collenchyma of vascular plants, in which the hyphal elements appear elongated and recognizable as hyphae; usually with thickwalled hyphae having very minute, longish lumina.

**PROSTRATE** lying  $\pm$  flat (parallel to the substrate).

**PROTHALLUS** the first, purely fungal layer upon which an algaecontaining thallus may develop, usually forming a black rim or extending beyond the periphery of crustose thalli, sometimes appearing as radiating, branched hyphae or hyphal bundles; weft of fungal hyphae (white, reddish or blueblack) at margins of thallus, devoid of photobiont, often projecting beyond thallus onto substrate. Compare HYPOTHALLUS.

**PROTOLOGUE** everything associated with a name on its first publication, i.e., diagnosis, description, references, synonymy, geographical data, citation of specimens, discussion, illustrations.

**PROTOPARATHECIAN STAGE**

**PROXIMAL**

**PRUINA** a powdery, wooly, frostlike or chalky deposit (coating) or "bloom", usually white, gray, or bluish to yellowish, on the surface of a lichen or its ascocarps, usually crystalline; whitish thallus pruina is most often calcium oxalate (soluble in strong acid, insoluble in KOH); other kinds of pruina can consist of organic substances produced by the lichen (insoluble in acid, often soluble in KOH) or occasionally of dead or dying hyphal tissues.

**PRUINOSE** having a hoary (frosted) appearance (usually white or pale).

**PSEUDO** false, spurious, looking like.

**PSEUDOCORTEX** a thalline boundary layer in which the hyphae are distinct but not organized into a tissue showing a regular cellular or fibrous structure. Until recently the term was often used in a special sense, now called phenocortex.

**PSEUDOCYPHELLA (AE)** small orbicular to linear or irregular areas ("simple pores") of the thallus where the upper or lower cortex is missing and medullary hyphae extend to the surface or soredia erupt; lacking a clearly defined lining and pale rim; can be plane to slightly convex, or fissural; sometimes pigmented.

**PSEUDOISIDIUM** vegetative propagule, nodular to cylindrical and sometimes branched, containing both photobiont and mycobiont,

resembling an isidium but bounded by an at most ill defined, often discontinuous, cortex.

**PSEUDOLECANORATE** of apothecia in Pertusaria, in which several pertusariate (pored) apothecia fuse and thus appear to form a lecanorate apothecium.

**PSEUDOLECANORINE**, of apothecia with algae absent from the margins but present below the hypothecium, with a more or less hyaline parathecium (and without a cortex on the margin?)

**PSEUDOPARAPHYSIS** distinct, downgrowing, vertical, paraphysislike hypha in the locule or perithecial cavity before ascusformation; according to Hawksworth (The LichenForming Fungi), pseudoparaphyses form from above the level of the asci, grow downwards, and finally become attached to the base; **according to Purvis, et al.\***, they originate below the level of the [+ developed] asci, grow downwards between the developing asci, finally becoming attached to the base of the cavity and often also then free in the upper part; often regularly septate, branched and anastomosing and broader.

**PSEUDOPARATHECIAL**

**PSEUDOPARENCHYMA**, **PSEUDOPARAPLECTENCHYMA** a tissue having the appearance of parenchyma, that is, isodiametric cells; hyphal elements not recognizable as hyphae.

**PSEUDOPODETIUM (A)** podetiumlike structure (stalk) that has its origin in vegetative rather than reproductive tissue; erect or ascending, not dorsiventral; (usually?) solid; (often?) containing only fungal tissue; often bearing one or more apothecia; can be simple (as in Pycnothelia, and usually Baeomyces or Pilophorus) or highly branched (as in Stereocaulon).

**PSEUDOSEPTUM** an apparent division in the contents of a spore (protoplasmic or vacuolar membrane) which is not a true wall continuous with the cell wall and can usually be dispersed in 5% (or 10%) KOH.

**PSEUDOSTROMATA** a stroma in which fungal cells and remnants of host tissue are mixed.

**PSEUDOTHALLINE MARGIN** a margin of thalline origin external to the amphithecium in lecanorine apothecia, and external to the exciple in lecideine or biatorine apothecia; 1) a border formed by the thallus around an apothecium that is immersed in the thallus or between the areoles (as in Rhizocarpon lecanorinum or Diplotomma species); 2) a pale margin resembling a thalline margin but lacking algae (as in Trapelia).

**PSEUDOTHECIUM** the fruiting structure of an ascolocular (ascostromatic) ascomycete, superficially resembling a perithecium, but having asci in numerous unwallled locules.

**PUBESCENT** with a downy nap of soft hairs.

**PULVERULENT** powdery; as if powdered over

**PULVINATE** cushionlike; growing in small cushions.

**\*PUNCTA** small spots

**PUNCTATE** marked with very small dots or hollows

**PUNCTIFORM** dotlike and very minute (barely visible with a low power lens), as in tiny orbicular soralia or young ascocarps.

**PUSTULAR** of soralia, where the thalline cortex forms a swelling and then cracks open to form a soraliolum with jagged and sometimes everted (lifted up or bent back) edges.

**PUSTULATE** covered with blisterlike protuberances, each blister on the upper surface having a corresponding depression or pit on the lower surface, as in the thallus of Lasallia.

**PUSTULE** 1) pimplelike or blisterlike elevation on the thallus; definite; often eroding; 2) more or less isolated, cupshaped eruptions on the surface, usually filled with soredia.

**PYCNIDE** term for the cell bearing the pycnospor (either directly or on the tip of a sterigma); sporogenous cell; phialide; neutral equivalent of spermatogenous or conidiogenous cell (basidium)

**PYCNIDIAL JELLY** a hyaline to red gelatinous substance found in the pycnidial cavity of some species of Cladonia and Cladina.

**PYCNIDIOSPORE, PYCNIOSPORE, PYCNOSPORE** the spore type produced in a pycnidium, by budding off from the sides or tips of specialized hyphae; minute, generally rodshaped, fusiform, or threadlike, produced in large numbers, which might function either as asexual propagules (pycnoconidia) or as male gametes (spermatia).

**PYCNIDIUM (PYCNIDIA)** neutral term for a minute globose to flaskshaped (pearshaped) structure, resembling a perithecium and usually immersed in the medulla; opening to the surface by a tiny (often visible only under a dissecting microscope), often darkened, pore; containing a cavity lined with specialized hyphal structures (fulcra) producing pycnospores (small spores of unknown function, which might function either as spermatia or conidia); sometimes branched or chambered. Referred to as a spermatogonium when the spores are believed to function as spermatia.

**\*PYCNOASCOCARP** ascoma arising from a pycnidium

**PYCNOCONIDIUM** a pycnospor that functions in asexual reproduction; includes microconidia (and macroconidia?).

**PYRENIUM** the inner (or only) wall (excipulum) of a perithecium; a sporocarp of the Sphaeriales (obsolete).

**PYRENOCARP** perithecium of pyrenomycete lichens (e.g., Verrucaria)

**PYRENOCARPOUS, PYRENOCARPIC** of a lichen or fungus that bears perithecia; also used in a broader sense for taxa with peritheciumlike ascocarps.

**PYRENOID**

**PYRENOLICHEN, PYRENOMYCETE** lichens or fungi producing perithecia; often used loosely to include taxa with pseudothecia.

**PYRIFORM** pear shaped



## R

**RADIAL** (of lichen thalli), radially symmetrical in transverse section (e.g., Alectoria, Usnea)

**RADIATE** spreading from a center

**RADIATING** spreading from a central point.

**RANDOMLY ORIENTED**

**RECEPTACLE** any hymenium supporting structure

**RECURVED** bent back (upwards or downwards); used of branch tips which turn back upon themselves, often exposing the medulla and/or a sorediate undersurface.

**REFLEXED** (of an edge), turned up or back

**REGULAR** uniform, even, repeating

**RELICT** a persistent remnant of an otherwise extinct flora or fauna or kind of organism

**RENIFORM** kidney shaped.

**RETICULUM** a network

**RETICULATE** a network or netlike pattern; 1) with a network pattern (of ridges, lines, cracks, or pigmentation) on the surface; 2) like a net, anastomosing (applied to paraphyses)

**REVOLUTE** rolled backwards from the direction ordinarily assumed by similar structures in other cases; rolled outwards or downwards [back or up according to Ainsworth & Bisby; back and under according to Vitt, et al.], as in tips of sorediate lobes.

**RHEOPHYTE** a plant that is associated with swiftly flowing water.

**RHIZINE(S), RHIZINA(AE)** a short branch or extension of the underside of a foliose thallus, resembling a root, usually threadlike to intricately branched, usually more or less numerous, attaching a foliose lichen to its substrate; composed entirely of a compact cord of fungal hyphae, with limited (determinate) growth taking place mainly apically; usually an extension of the lower cortex; of various lengths, thicknesses, colors, and degrees and kinds of branching; usually smooth and solid appearing, but sometimes (e.g., Peltigera, fibrous or tomentose). Often used in a broad, loose sense for any elongated, rootlike structure visible at least under hand lens or dissecting scope, on the lower surface or margins of the thallus or the thalline margin of an apothecia.

**RHIZINAE SIMPLICES** rhizines consisting of simple robust hyphae

**RHIZINAE FIBRILLOSAE** woollyhirsute rhizines

**RHIZINAE PAPPOSAE** rhizines with brushlike tips

**RHIZINAE FASCIULATAE** rhizines intertwined into strands

**RHIZINOMORPH** rhizinelike organ not attaching thallus to its substrate, in peltate lichens (e.g., some species of Umbilicaria and Dermatocarpon)

**RHIZINOSE STRAND ("RHIZINENSTRANGE")** a rhizinelike organ of

attachment on the lower sides of diverse squamulose lichens (e.g., Toninia, Squamarina) or some fruticose lichens, which is tough and usually much branched; more or less compact strands of hyphae (sometimes with a loose hyphaefelt at the ends or on the surface); differing from rhizines by having a nearly unlimited growth which can be apical or intercalary, an irregularly branched shape (much more like a true root), and a rather deep penetration into the substratum. **RHIZOID** hyphal structures on the lower surface anchoring the thallus.

**RHIZOHYPHAE** more or less elongated singlerow hyphae on the lower surface, for attachment

**RHIZOHYPHAEFELT** loose "brushes" of long rhizophyphae which go deep into the substratum, occurring in placodioid soil and cleftdwelling lichens

**RHIZOMORPH**

**RHIZOPTE** loose (not compact) bundle of hyphae, otherwise like a rhizine

**RIBBED** having riblike ridges; veined, either parallel or in a network pattern.

**RIDGED** having sharply embossed lines on the surface; ridges are independent of growth pressure, more or less uniform in width, and often form a network, which frequently is more distinct towards the periphery of the thallus

**RIM** margin

**RIMIFORM** of soralia, in the form of elongated crevices, as in Parmelia sulcata.

**RIMOSE** chinked or fissured, with the cracks mostly incomplete and often rather narrow and shallow, extending in all directions.

**RIMOSEAREOLATE** with aroles formed secondarily from an originally continuous thallus, by cracking.

**RIMULOSE** diminutive of rimose.

**ROBUST** large, both in overall size and in coarseness of the component parts

**ROSTRUM**

**ROSETTE** orbicular thallus radiating from a center, usually with distinct lobes

**ROSETTIFORM**

**ROSULATE** in a rosette; a more restricted definition is given by Poelt (1958)

**ROTUND** rounded in outline, as the tips of lobes; lobes can be narrow or broad but the lengthwidth ratio is low; usually crowded or contiguous towards center of thallus, more distinct at periphery.

**ROUNDED** curved in outline or form; nontechnical term for rotund

**RUGA** wrinkle or low, rounded ridge.

**RUGOSE** having rugae; **Purvis, et al.\* use it to mean roughened,**

but most other authors use it to mean wrinkled.  
RUGULOSE diminutive of rugose.

## S

**SAC** pouchlike structure; also used (usually as "spore sac") as a nontechnical term for ascus

**\*SACCATE** saclike

**SACCULATE**

**SALMON PINK** vivid pale orange pink.

**SAXICOLOUS** growing on (or in) rock (used loosely to include manmade rocklike substrates).

**SCABRID, SCABROUS** rough, having fine scales or delicate and irregular projections on the (usually upper) surface; scurfy.

**SCALE** a general popular term for squamules or other small, flattened, not distinctly lobelike structures (e.g., schizidia, peltate areoles, etc.)

**SCHEDA, SCHEDULA** specimen labels, especially of exsiccata.

**SCHIZIDIUM** a lichen propagule formed by part of the thallus becoming constricted and splitting off from the main thallus (e.g., the lobulelike structures in Fulgensia bracteata and in the cups of Cladonia pyxidata)

**SCHIZOBIONT** bacteria once considered to be additional symbionts of lichens.

**SCHIZOGENOUS** formed by cracking or splitting

**SCLEROPLECTNCHYMA** plectenchyma composed of very thickwalled conglutinate cells.

**SCLEROTISED** hardened.

**SCORPIOID** a type of anisotomous branching in which the laterals are curved downward and all appear to arise from one side of the main stem, as in Cladina arbuscula.

**SCREENING** routine testing of organisms or chemical substances for a particular property.

**SCROBICULATE** marked by shallow depressions, pitted or irregularly furrowed; coarsely pitted, faveolate.

**SCULPTURED**

**SCURFY** having a fine powdery or scaly surface (not synonymous with sorediate)

**SCYPHIFEROUS** bearing scyphi

**SCYPHUS** a cup (usually of the cup shaped expanded apex of a podetium in Cladonia); some authors (e.g., Hammer) prefer this term to cup, and use it in a somewhat different sense.

**SECONDARY AREOLES**

**SECONDARY SPECIES** taxon reproducing mainly, or only, by vegetative means, derived from extinct or extant species reproducing mainly, or only, by sexual means (primary species).

**SEGREGATE** (in taxonomy), a group which is based on part of an earlier group; especially used for newly named or newly revived genera split out from large well known genera.

**SEMIIMMERSED** halfway immersed

**SENSU AMPL.** in an expanded, very broad sense

**SENSU LATO** in a broad sense

**SENSU STRICTO** in a narrow sense

**SEPARATE** not joined or in close contact, referring to patterns of lobing of the thallus.

**SEPTATE** divided by one or more septa.

**SEPTUM** a wall making a cellular division in a spore or hypha. **SERIAL** arranged in a series

**SERPENTINE**

**SERPENTINE ROCK**

**SESSILE** without a stem, stalk, or stipe of any kind, sitting closely on the surface, attached directly to the thallus. The term has been used rather loosely, with slightly different meanings, by different authors; some distinguish it from adnate.

**SEXUAL** involving meiosis

**SHAGREENLIKE**

**SHIELD LICHENS** (obsolete), formerly applied to lichens having large apothecia; more properly applied to umbilicate lichens.

**SHINY**

**SIGMOID** shaped like an "S"

**SILICEOUS** refers to rock composed mainly of silicon compounds, producing no (or few) bubbles upon application of 10% HCl; examples include quartz, granite, and basalt; often used interchangeably with "acidic rock", but primarily siliceous rocks sometimes do contain some calcium (or magnesium)

**SIMPLE** 1) unbranched, undivided; 2) nonseptate (unicellular, lacking a true septum). Contrasted with compound.

**SINUATE, SINUOUS** wavy, having rounded angles (of a margin)

**SINUS** curved or rounded junction between two projecting lobes of a thallus.

**SKIOPHILOUS** showing a strong association with shaded habitats.

**\*SOLEIFORM** shaped like the sole of a [human] shoe or foot.

**SORALIUM (IA)** an decorticate area or body of the thallus where soredia are produced; a conspicuous clump of soredia, usually "limited" with a definite boundary or margin and occurring in constant patterns on the thallus; can be in many forms. [See Du Rietz's classification, given by Ainsworth & Bisby]

**SORDID** 1) dark; 2) appearing "dirty", not a pure color.

**SOREDIA APOTHECIUM** a structure, in some Pertusaria spp., resembling a eulecanorine apothecium but with the hymenial area becoming replaced by soredia.

**SOREDIA ISIDIUM** an isidium bearing or erupting into soredia, usually at the tips; contrast with isidiate soredia.

**SOREDIA (IA)** a microscopic group of algal cells and loosely woven hyphae, without a cortex or pseudocortex, which erupt from

cracks or pores in the thallus, appear finely powdery to coarsely granular, and function as a vegetative reproductive unit; generally produced in localized masses (soralia) or covering large diffuse areas of thallus; can be greenish or variously pigmented.

**SPATHULATE** with a gradually widened and flattened blunt end, as a spatula.

**SPATULA** a broadly rounded, flat, spoonlike structure tapering to a narrow "handle"

**SPATULATE** spatula shaped.

#### **SPECIES**

**SPERMATIA** pycnospore that functions as a male gamete.

**SPERMATIOGENOUS CELL** sporogenous cell giving rise to spermatia

**SPERMATIOPHORE** a spermatia-producing or supporting structure

**SPERMOGONIUM** (AGONE, AGONIUM) a pycnidium (walled, usually flaskshape, structure) in which the spores function as gametes(spermatia).

**SPILODIUM** a minute round blackish structure on the thallus of Dirina stenhammari, composed of compacted darkcolored hyphae.

**SPINE** a stout process with a sharp point.

**SPINOSE** with spines

**SPINULE** diminutive of spine; a stiff, pointed, fibrillary appendage up to 3 mm long (arbitrarily but usefully distinguished from a fibril in Usnea); Purvis, et al. specify that it is constricted at the base.

**SPINULATE, SPINULOSE** having spinules.

**SPONGIOSTRATUM** layer of netlike anastomosing hyphae (not functioning for attachment), on the lower surface of Anzia and Pannoparmelia (the spongiostratum in these two genera is not homologous)

**SPORE** microscopic reproductive unit (onecelled to manycelled); with lichens, when used without a prefix usually refers to ascospore (or basidiospore), which is haploid and the result of meiosis.

**SPOROCARP** spore-producing organ; fruiting body.

**\*SPORODOCHIUM** a discrete tuft of conidiophores (usually visible on the surface of the thallus?).

**SPOROPHORE** a spore-producing or supporting structure, especially a conidiophore; in pycnidia it is equivalent to the fulcrum; also used in the sense of sporocarp.

#### **SPOROPHYTIC APPARATUS**

**SPREADING** extending in length and breadth in all directions, or in breadth only; flattening out; used of fruticose thalli which tend to grow broadly along a more or less horizontal plane more than upwards (in contrast to erect or pendent).

**SQUAMIFORM, SQUAMULIFORM** scaleshaped or scalelike, as in

flattened but more or less isodiametrical isidia or phyllocladia; sometimes use to mean squamulose

**SQUAMULE** a small (to 5 mm long and wide, or larger in basal squamules of Cladonia), complanate, scalelike thallus or thallus segment (lobe, foliole), usually more or less isodiametric (or at least short), with an entire to flexuous or crenate margin, with or without a lower cortex; intermediate between crustose and foliose, usually more leaflike than an areole (i.e., with a distinct lower side, often partly ascending or lifted off the substrate, sometimes removable intact). Many authors (e.g., Hale, Purvis, et al., Rogers, Taylor) restrict the term to structures lacking a lower cortex and rhizines; others (Galloway) describe a squamule as usually being corticate on both sides. Squamules usually lack a distinct stipe or umbilicus, but there is a continuum from peltate or stipitate areoles to umbilicate or subfruticose thalli.

**SQUAMULOSE** growth form composed of squamules; frequently forming extensive mats; also used interchangeably with squamulate.

**SQUAMULATE, SQUAMOSE** provided with squamules, as the podetia of Cladonia.

**SQUARROSE** 1) having numerous short, more or less perpendicular lateral branches, as in some rhizines, sometimes densely and finely branched, appearing like a pipecleaner or testtube brush, sometimes with only a few branches; 2) rough with projecting scales (this second sense is used more in referring to the caps of certain agaric mushrooms).

**STALK** general popular term for elongated structures bearing other structures; can be applied to podetia or similar structures, or to the stipes or elongated basal portions of thalli or sporocarps,

**STELLATE** starlike, starshaped.

**STEREOME** scleroplectenchyma which forms the main supporting tissue of the thallus, as in Cladonia and Alectoria

**STERIGMA (STERIGMATA)** spine on a basidium (bearing a basidiospore) or a projection from a sporogenous cell bearing a pycnospore; used by Nylander in the sense of spermatophore (i.e., the whole multicellular structure on which the spermatia are borne?).

**STERILE** not producing spores or a sporocarp (at least not by sexual reproduction; pycnidia and pycnospores may be present).

**STIFF** inflexible

**STIPE** stalk that supports a fruiting body, thallus, or part of a thallus; many authors (e.g., Hale, Purvis, et al., Swinscow & Krog, Taylor) restrict the term to structures supporting ascocarps (or basidiocarps) and consisting of extensions of the exciple, without algae.

**STIPITATE** elevated on a stalk or stipe.

**STRAMINEOUS** straw colored, more or less pale yellowish brown.

**STRAPSHAPED** as applied to lobes, means very narrow and elongate, with the width about the same from center to tip, and the tips are often blunt, squarish and forked (dichotomous).

**STRATIFIED, STRATOSE** consisting of horizontal layers, referring to the internal structure of lichens which have a distinct cortex (or corticoid layer), algal layer, and medulla, and frequently a lower cortex and rhizines; heteromerous.

**STRIA (AE)** a fine line or narrow band, oblongellipsoid to linear; usually used for minute (0.11.0 mm long) groove, channel, crack, or whitish ridge, usually parallel to the length of the axis, in the cortex of Alectoria and Ramalina (resembling elongated pseudocyphellae and treated as such by many authors).

**STRIATE, STRIATED** with parallel stripes or lines (or grooves or ridges).

**STRIATION** a stria; the condition of being striated.

**STRICT** very straight (as of lobes, or especially paraphyses); an older term rarely used today.

**STRIGOSE** bearing dense, short, hairlike projections or branches.

**STROMA (PL. STROMATA)** a compact mass or matrix of vegetative fungal tissue (with or without tissue of the host or substrate), sometimes Sclerotiumlike in form, usually in or on which fruits are formed; often covering a group of several ascocarps; often blackish or carbonaceous. Often used loosely to include any structure that contains  $\pm$  numerous ascocarps, especially perithecioid ones.

**STYLE** see sterigma

**STYLOSPORE** a large spore produced in a pycnidium or in a similar structure.

**SUB** 1) partially; 2) incompletely; 3) approaching or almost; 4) under. Frequently used in the sense of approximating the condition qualified.

**SUBCANALICULATE** with shallow channels or furrows.

**SUBCAPITATE**

**SUBCRUSTOSE** growth form intermediate between crustose and foliose, usually with a typically crustose central part and a lobed thallus margin; placodioid.

**SUBERECT** ascending toward the edges of the thallus but prostrate and broadly attached at the center; lobes are free for about 1/3 of their length; rhizines of intermediate length, if present often sparse towards periphery, or marginal; subfruticose

**SUBFOLIATE, SUBFOLIOSE** pertaining to crustose species with marginal lobes, showing some tendency towards becoming ascending; similar to subcrustose but more leaflike, and with the medulla of the lobes becoming very loose to almost hollow, as in Lecanora



garovaglii.

**SUBFRUTICOSE** a growth form intermediate between foliose and fruticose.

**SUBGELATINOUS** almost gelatinous, somewhat gelatinous

**SUBGLOBOSE**

**SUBHYMENIUM** ascogenous tissue immediately below the hymenium; sometimes used as equivalent to hypothecium; Ainsworth & Bisby use it for "tissue below the hypothecium" (this may be a mistake!)

**SUBIMMERSED** with ca. three fourths of the structure immersed

**SUBISIDiate** sparsely or imperfectly isidiate, often with intermingled soredia.

**SUBLAGENIFORM** rod shaped with a minute swelling near but not at one end (of pycnospores).

**SUBMURIFORM** not quite muriform; used to describe spores which have a few (usually 3) transverse septa but only one, complete or incomplete, transverse septum.

**SUBSQUAMULOSE** sparsely or imperfectly squamulose.

**SUBSTIPITATE** supported on a low, hardly distinguishable stipe.

**SUBSTRATE, SUBSTRATUM** the medium (soil, rock, bark, wood, etc.) on which a lichen grows or is attached; the underlying layer.

**SUBULATE** elongate, and gradually tapering from a wide base to a point, more or less circular in crosssection; awlshaped.

**SULCA** groove, channel, or fluting

**SULCATE** grooved, channelled, fluted; having sulcae

**SUPERFICIAL** on the surface

**SUPERLECIDINE** of a lecidine apothecium in which the outer part of the excipulum (i.e., the cortex) is pale, but the rest of the excipulum is dark.

**SYMBIONT** an organism that is associated with another, unrelated one, in a close relationship; often used in a narrow sense, implying that the relationship is mutually beneficial.

**SYMBIOSIS** the living together of unlike organisms (usually in a close, longlasting association); in the broad sense includes parasitism, but most frequently it is used for mutualistic or nonantagonistic associations.

**SYMPEDIUM**

**SYMPODIAL** having a main branch with lateral branches arising from it  
**SYNONYM.** another name for a taxon, especially a later or illegitimate name.

**SYNTYPE** one of two or more elements cited by an author in the original place of publication of a taxon when no holotype was designated.

**SYSTEMATICS**

## T

**TARTAREOUS** having a thick, rough, crumbling surface

**TAXON** a taxonomic group of any rank, e.g., family, genus, species, etc.

**TAXONOMY** the theory and practice of describing organisms and ordering them into a system of classification.

**TECTUM** roof of a developing apothecium

**TENTLIKE** nontechnical term for dimidiate.

**TERATUM** an abnormal modification, usually produced by response to grazing or infection.

**TERETE** more or less circular in crosssection (as applied to an elongated structure), either narrowly cylindrical or tapering (Purvis, et al. imply that it must be tapering).

**TERMINAL** ending the structure; borne at the end.

**TERRESTRIAL** on or of the land or earth.

**TERRICOLOUS** growing on the ground (strictly speaking, on soil).

**TESTACEOUS** brownish yellow, as of unglazed earthenware.

**TETRACHOTOMY** 4branched.

**TETRACHOTOMY** group of four branches

**TEXTURA INTRICATA** a tissue of interwoven nongelatinized hyphae.

**THALLIC** with the pycnospores enlarging after the septum forms; contrast with blastic

**THALLINE** pertaining to the lichen thallus, usually containing both mycobiont and photobiont; also see thalloid

**THALLINE ENVELOPE** tissue covering a perithecium or similar structure, similar in structure and appearance to the thallus and usually continuous with it.

**THALLINE EXCIPLE** see thalline margin.

**THALLINE MARGIN** apothecial margin containing algae and derived from the vegetative thallus; usually similar in color and consistency (and sometimes structure) to the thallus, often paler than the disc.

**\*THALLOCONIDIA** Conidia arising from the surface of a thallus or prothallus. Also see thallospore

**THALLOID** similar to the thallus in structure or appearance.

**THALLOSPORE** a vegetative (asexual) propagule, granular in appearance, composed of one to several pigmented, thick walled fungal cells, borne on the underside or edges of lobate to umbilicate thalli; the term is also applied in other ways (at least in nonlichenized fungi).

**THALLUS** in lichens, the vegetative and assimilative body, both mycobiont and photobiont; equivalent to the mycelium of nonlichenized fungi; relatively undifferentiated compared to the body of bryophytes and vascular plants.

**THALLYLE**

THECA ascus (obsolete)

THECASPORE ascospore (obsolete)

**THECIUM** the part of an apothecium containing the asci between the epithecium and hypothecium; sometimes used for the whole sporocarp or as equivalent to hymenium

**THELOTREMOID** having the appearance of Thelotrema, especially the fruiting bodies. **THOLUS** the (usually?) thickened inner part of the apex of an ascus, forming a thick cap beyond the sporeproducing part and [usually?] at least partly amyloid (IKI+ blue);

Ainsworth and Bisby used it as a synonym for nassace, (the fingerlike protrusion of the inner part of a bitunicate ascus into the inner tunicle, which = ocular chamber)

**THYRSOID** densely branched

**TIER** a platformlike expansion on the podetia of several taxa of Cladonia (e.g., Cladonia cervicornis ssp. verticillata) at which point one or more new branches arise; verticil.

**TOMENTOSE** having a tomentum.

**TOMENTUM** an external covering of hairs (projecting hyphae), often rather dense, feltlike, downy, lintlike, cobwebby or wooly, on the upper or lower surface of the thallus, usually forming a soft mat.

**TONINIFORM**

**TORTUOUS** irregularly bending, twisting and turning

**TORULOSE, TORULOUS** cylindrical but having swellings at intervals; moniliform.

**TORUS** a thickening or swelling around the septum in certain thickwalled spores in Rinodina, appearing as a tiny dot on both sides of the septum.

**TRABECULAR** a term applied to paraphysoids

**TRABECULATE** having trabeculae

**TRABECULA** platelike (flattened; often appearing shredded) structures (extensions from the lower cortex) on the underside of Umbilicaria thalli; used in quite different senses in nonlichenized fungi.

**\*TRAMA** the layer of hyphae in the central part of a lamella (gill) of an agaric basidiomycete

**TRANSLUCENT** not quite transparent

**TRANSVERSE** across the width

**\*TRAUMA** what a lichenologist undergoes when trying to identify a taxonomically difficult specimen, or when trying to find enough time, money or space to do his or her work, or when trying to translate something from an unfamiliar foreign language, etc., etc., etc.

**TREBOUXIOID** globose unicellular green algae

**TREELIKE** nontechnical term for dendroid; as used by Taylor it

refers to having a single more or less readily distinguishable main axis or trunk like a tree.

**TRENTEPOHLOID** filamentous, multicellular green algae with a yellow to orange color and elongate cylindrical cells.

**TRICHOGYNE** "the receptive hypha of the female organ" (Ainsworth & Bisby"; in lichens there is no "female organ" as such (?), but the ascocarp forms on a part of the thallus where a trichogyne protrudes, after fertilization by a spermatium.

**TRICHOTOMOUS** branching (usually more or less equally) into three, in clusters, sometimes repeatedly.

**TRICHOTOMY** group of 3 branches

**TRIMMED**

**\*TRUE EXCIPLE** an exciple which lacks algal cells, usually of a different color than the thallus; a synonym of proper exciple, used by some authors (e.g., Purvis, et al.) to avoid the connotation of "propriety", as though having algae is somehow immoral or undignified or something.

**TRUNCATE** ending abruptly, as though cut short at the end, such that the tip is blunt and more or less squarred off.

**TUBERCLE, TUBERCULE** a minute, wartlike or knoblike, thalline protuberance; in *Usnea* limited to superficial structures which are coarser than a papilla (but irregular in form and size) and in which the cortex is generally broken at the apex.

**TUBERCULAR, TUBERCULATE** warty or knoblike.

**TUBULAR** elongated and hollow

**TUFTED** nontechnical term for caespitose; having a small cluster of elongated parts arising close together or attached at the base, but free above; usually the lichen is small in size (under 10 cm long), rather stiff, and more or less erect (perpendicular to the substrate).

**TUMID** swollen; often implies "inflated", but not as applied to apothecial margins

**TUNICLE** layer or wall of an ascus.

**TURBINATE** topshaped

**TURGID** swollen, implying distended through internal pressure; sometimes used loosely to simply mean thick or wide.

**TYPE** a nomenclatural type or that constituent element of a taxon to which the name of the taxon is permanently attached.

**TYPE SPECIES** the species on which the genus is based.

**TYPE SPECIMEN** the single specimen to which the name of a species or a taxon below the rank of species is permanently attached.

## U

**\*ULCEROSE** ulcerlike (the condition of a lichenologist's stomach while undergoing TRAUMA (q.v.))

**ULTIMATE SEGMENT** the smallest main division of a branched or divided main lobe; a term useful in reducing the ambiguity in giving the dimensions of lobes (some authors give the measurements of the ultimate segments as the dimensions of the lobes)

### **ULTRABASIC (ULTRAMAFIC) ROCK**

**UMBILICATE** a foliose growth form attached at a single point, usually by a short stalk (umbilicus) at or near the center of a more or less orbicular thallus; generally with the lower cortex better developed than the upper one (giving the main structural support to the thallus), a loose to hollow medulla, and algae distributed in areas of optimum light regardless of relation to the morphological upper side; when strongly polyphyllous (often with the upper part swollen), sometimes difficult to distinguish from squamulose, toniniiform, or placodioid.

**UMBILICUS** a solitary, usually short, thick, stemlike organ more or less centrally located on the underside of an orbicular thallus in genera such as Umbilicaria, Dermatocarpon and Rhizoplaca; a single compact strand of fused hyphae or rhizines, functioning for attachment to a hard substratum (mostly rock).

**UMBO** a protuberance, like the central boss of a shield 1) sunken into a depression (like a "belly button") on the upper side of an umbilicate thallus (corresponding to the umbilicus on the underside), or 2) on the disc of an apothecium (often consisting of sterile tissue).

**UMBONATE** having an umbo

**UNCIFORM** rod shaped with one end hook shaped (of pycnospores).

UNDER CORTEX = lower cortex

**UNDULATE** wavy, bent or curved alternately up and down (or also in and out), wavy, as applied to a surface, or to a "crisped" margin of the thallus or lobes, which are often lifted off the substrate and appear as a series of more or less regular arcs, as in many species of Parmotrema or cetrarioid lichens; often, but not always, associated with being crenate; can also be applied to apothecia (discs or margins).

**UNION** a phytosociological term.

**UNORIENTED** not arranged in any particular direction.

**UNISERIATE** arranged in a single row, as spores in an ascus.

**UNITUNICATE** (of asci) ascus wall with one functional layer, without an inner wall, not developing a distinct and separate endoascus and exoascus, not splitting apart at discharge; called nonfissitunicate by some authors; usually thinwalled and somewhat

elongated.

**UNSTRATIFIED** lacking distinct layers, referring to the internal structure of gelatinous lichens which lack separate algal and medullary layers; homiomorous.

**UPPER CELL** in complex fulcra, the cell between the "lower cell" and the sporogenous cells

**URCEOLATE** deeply cupshaped, strongly concave, hollow, like an urn or pitcher  
**URNSHAPED**

## V

**VAGRANT** growing loose on soil, easily picked up by wind or animals; wandering, epigaeic; in the strict sense, applies to taxa that consist of large populations of thalli (usually sterile) that have this lifestyle and are permanently separated from the ancestral attached taxa

**VALID** (of names), in accord with the Code of Nomenclature

**VALIDLY PUBLISHED**

**VARIETY**

**VEGETATIVE** assimilative; not involved with sexual reproduction

**VEIL** a protective layer over the surface of an immature disciform apothecium in Pertusaria, formed by the incorporation of the tectum with the overriding thalline tissues

**VEIN** strand of conducting or strengthening tissue, broad or narrow, often more or less raised, branched and sometimes anastomosing, often pigmented, riblike or ridgelike structure on the lower surface of Peltigera and Solorina, perhaps functioning instead of a lower cortex. Can be caninoid, malaceoid, or polydactyloid (see Ainsworth & Bisby).

**VEINSTRAND** a single, central strand built by veins, penetrating into the soil like a rhizinose strand; found in Peltigera venosa

**VENTRAL** front or lower surface; the surface facing the axis

**VENTRICOSE** swelling out in the middle or at one side; inflated.

**VERMIFORM** like a worm, elongate with parallel sides and rounded ends (usually of spores); elongated and sinuous (of wrinkles on a thallus).

**VERRUCA** 1) a ( $\pm$ ) conspicuous, small, rounded wartlike protuberance, process, or swelling; 2) a convex to subglobose areole

**VERRUCIFORM** wartlike, wartshaped

**VERRUCOSE** warty; composed of or covered with wartlike growths.

**VERRUCULE** diminutive of verruca; in Usnea, refers to minut pimplelike structures gradually raised from the surface, with the tips becoming perforated, budding a fibril or soredium.

**VERRUCULOSE** diminutive of verrucose.

**VERTICILLATE** having parts in rings (verticils); whorled.

**VESICLE** a more or less circumscribed circular to elliptical swelling

**VESICULAR, VESICULATE** having vesicles.

**VESICULIFORM** urnshaped

**VILLOSE, VILLOUS** covered with long, soft hairs, which are not matted.

**VINELIKE** nontechnical term for fruticose thalli resembling a plant whose stems require support; trailing and entwined.

**VINESCENT** turning winered.

**VIRESCENT** turning green

**VITELLINE** yellow like egg yolk



## W

**WANDERING** vagrant; epigeic

**WARTY** having hardened protuberances (minute, rounded, corticate outgrowths from the surface, like mounds rather than fingers) nontechnical term for verrucose (as applied to a surface or the thallus as a whole); also used loosely to mean papillate or tuberculate

**WAVY** nontechnical term for flexuous or undulate

**WAXY**

**WEBBY** nontechnical term for arachnoid.

**WHITERETICULATE** having a netlike pattern of white lines (visible at least with a lens), as the surface of lobe tips in certain foliose lichens.

**WHITESPOTTED** having numerous tiny white spots on the upper surface (visible with a lens).

**WHORL** **several structures arising at the same level on an axis**

**WIDTH OF LOBES** width of the main ultimate segments

**WINGED** expanded along the sides to form a thin angular ridge, sometimes giving a twosided or foursided appearance to the branches of a fruticose species (e.g., in Usnea).

**WRINKLED** non technical term for rugose; having irregular corrugations; the surface of the thallus responds to growth pressures by forming nonpatterned, non uniform rolls and low folds, especially towards the center of the thallus, lifting sections of the thallus off the substrate.

## **X**

**XERIC** very dry.

**XEROPHYTIC** a plant occurring in dry habitats.

## **Z**

### **ZEORINE**

**ZONATE** ringed (especially at thallus margins) in circular lines forming pale and dark zones.