

Sub-Guide to Initial Groups

Revised through 30 June 2010

Group A – Plants on persistent protonemata

	Group A
Leaves 2-ranked and distichous (attached in two rows on opposite sides of the stem).	
Leaves cleft at anterior edge and clasping posterior edge of next leaf; WS	<i>Fissidens</i> †
Leaves decurrent and confluent ; protonemata luminous ; “Goblin Gold”; WS*	<i>Schistostega</i>
Leaves with longitudinal lamellae ; setae long ; capsules cylindrical ; epiphragm present; WS	<i>Pogonatum</i> †
Leaves serrate to spinose-dentate ; capsules sessile , ±globose & cleistocarpous ; WS	<i>Ephemerum</i>
Leaves acute, lacking the above unique characteristics.	
Plants growing on clear, quartz crystals ; costa strong ; capsules immersed ; KS	<i>Aschisma</i>
Plants growing on soil ; costa weak at base; capsules exserted ; WS*	<i>Discelium</i>

Group B – Plants minute with immersed capsules

	Group B
Leaves with a hair-point or awn.	
Leaves with ridge-like lamellae on upper surface of costa; WS	<i>Pterygoneurum</i>
Leaves with revolute, entire margins; cells pleuripapillose (C-shaped); WS	<i>Phascum</i>
Leaves with recurved (at apex), serrate margins; cells ± smooth ; WS*	<i>Acaulon</i>
Leaves with plane, entire margins; cells smooth .	
Capsules cleistocarpous ; stem rhizome-like ; spores few and large (>100µ); TX	<i>Lorentziella</i>
Capsules operculate ; calyptrae persistent, 4-angled and split ; spores small ; E	<i>Pyramidula</i>
Leaves subulate / setaceous at least on perichaetial leaves.	
Setae curved ; capsules laterally emergent and operculate ; FL & GA	<i>Eccremidium</i>
Setae straight ; capsules immersed and cleistocarpous .	
Capsules pyriform with conspicuous, stomatose neck; spores small ; WS	<i>Bruchia</i> †
Capsules globose to ovoid with no neck.	
Calyptrae mitrate or cucullate ; spores numerous and small ; WS	<i>Pleuridium</i>
Calyptrae rudimentary ; spores few and large (>100µ); E	<i>Archidium</i>
Leaves cuspidate to long-apiculate with reflexed tips; bulbiform ; WS*	<i>Acaulon</i>
Leaves involute when wet, crisped and contorted when dry; E	<i>Astomum</i>
Leaves with ridge-like lamellae on upper surface of costa; WS	<i>Pterygoneurum</i>
Leaves serrate to spinose-dentate ; protonemata persistent ; WS	<i>Ephemerum</i>
Leaves acute to acuminate, lacking the above unique characteristics.	
Capsules clearly operculate .	
Operculum short-beaked ; exothelial cells collenchymatous ; WS	<i>Aphanorrhagma</i>
Operculum long-beaked ; exothelial cells not collenchymatous; WS	<i>Physcomitrium</i> †
Capsules cleistocarpous or rupturing irregularly.	
Capsules pyriform with conspicuous, stomatose neck; spores small ; WS	<i>Bruchia</i> †
Capsules ovoid ; calyptrae cucullate ; spores small ; BC, OR	<i>Pseudephemerum</i>
Capsules globose .	
Calyptrae cucullate ; persistent protonemata under quartz pebbles; KS	<i>Aschisma</i>
Calyptrae mitrate ; spores numerous and small ; WS	<i>Physcomitrella</i>
Calyptrae rudimentary .	
Costa strong ; spores few and large (>100µ); E	<i>Archidium</i>
Costa lacking ; spores medium to large (up to ~80µ); WS	<i>Micromitrium</i>

Group C – Plants dendroid or frondose from an erect stipe.

Group CPlants **dendroid**

Stems with dense **paraphyllia** or paraphyllia-like structures.

Paraphyllia **green**, filiform, and branched.

On rich **soil**; WS

On **trees**; curled when dry; WC, ID

Paraphyllia **hyaline**, filiform, and branched, **lamellae** on stem; NW

Stems **lacking** paraphyllia.

Stem leaves **bordered** with long marginal right-angled **teeth**; WC, NW

Stem leaves **not** bordered.

Leaf singly or doubly **serrate** above; apical cells **rhombic**; WS

Leaf with **alternate** large and small **teeth**; alar cells distinctly subquadrate; E, WC

Plants **frondose**.

Leaves **falcate-secund**; plant regularly pinnate; WS*

Leaves **dimorphic** (ventral amphigastria), **complanate** and **bordered**; FL, BC, AK

Leaves **concave** and serrulate above.

Long, axillary, filiform **brood branches**; FL

Short, axillary, spindle-shaped **brood bodies**; FL to LA

*Climacium**Dendroalsia abietina**Pleuroziopsis ruthenica**Leucolepis acanthoneuron**Thamnobryum**Isothecium*[†]*Ptilium crista-castrensis**Hypopterygium**Pseudocryphaea**Pireella*[†]

Group D – Plants with pendulous branches

Group D

Leaves **ovate** and cordate.

Leaves **plicate**; leaf cells **pleuripapillose**; FL, LA

Leaves **plane**; leaf cells **smooth**; FL

Leaves **lanceolate** to oblong-lanceolate.

Leaf margins coarsely **serrate** in upper third; upper cells **±prorulose**; WS

Leaf margins **revolute** to near apex; **extra costae**; leaf cells **smooth**; W, NF

Leaf margins **entire**; leaf cells **pleuripapillose**; FL to LA

*Papillaria nigrescens**Zelometeorium patulum**Isothecium myosuroides*[†]*Antitrichia curtispindula*[†]*Barbella pendula*

**Group E – Plants projecting horizontally from vertical surfaces or
with upturned/curled branch tips**

Group E

Plants growing horizontally ; sticking ±straight out from vertical surfaces.	
Leaves complanate and undulate .	
Costa long & single ; paraphyllia present; W	<i>Metaneckera menziesii</i>
Costa short & double , or lacking; paraphyllia lacking ; WS*	<i>Neckera</i> †
Leaves neither complanate nor undulate.	
Shoots distinctly julaceous ; costa long & single; cells short; SE	<i>Cryphaea</i>
Shoots not julaceous.	
Alar cells subquadrate in large groups; E	<i>Forsstroemia</i>
Alar cells in small , inconspicuous groups; ON	<i>Neomacounia nitida</i>
Plants with branch tips upturned or curled when dry.	
Branch tips distinctly or strongly upturned or curled when dry.	
Costa long & single .	
Plants dendroid ; paraphyllia present; leaf cells distinctly prorulose ; WC, ID	<i>Dendroalsia</i>
Plants not dendroid; paraphyllia lacking ; leaf cells smooth or ±prorulose ; W	<i>Homalothecium</i> †
Costa short & double , or lacking.	
Leaf margins sharply serrate above; leaf cells distinctly prorulose ; WC	<i>Pterogonium</i>
Leaf margins ±entire above; leaf cells smooth .	
Leaf cells >5:1 ; 5-20 quadrate alar cells at the basal angles ; WS*	<i>Pylaisiella</i>
Leaf cells ~3:1 ; numerous oblate alar cells extending up leaf margins ; E, AZ	<i>Leucodon</i>
Branch tips loosely or indistinctly upturned, or curled when dry.	
Stems with paraphyllia .	
Leaves falcate , plicate below & rugose above; WC, NW	<i>Rhytidiopsis</i>
Leaves straight , smooth & imbricate when dry; WC	<i>Alsia</i>
Stems red and/or julaceous ; costa long & single ; W	<i>Antitrichia</i>
Stems lacking the above unique characters.	
Costa long & single .	
Leaves plicate ; leaf cells smooth or ±prorulose ; W, NL	<i>Homalothecium</i> †
Leaves planar ; leaf cells papillose ; E	<i>Anomodon</i> †
Costa short & double , or lacking.	
Alar cells inflated as “bubble” cells; leaves ±homomallous ; E	<i>Sematophyllum</i> †
Alar cells quadrate & numerous.	
Capsules ±erect & symmetric ; upper leaf cells narrowly rhomboidal.	
Leaf margins reflexed below; brood branchlets common; WS*	<i>Platygyrium</i>
Leaf margins planar below; brood branchlets lacking ; WS*	<i>Pylaisiella</i>
Capsules ±inclined & asymmetric ; upper leaf cells shortly oblong-rhomboidal; WS *	<i>Homomallium</i> †

Group F – Plants growing on dung

Group F

Hypophysis turbinate , globose or skirt-like , and colored ; leaves obtuse to acuminate; N, CP & SA	<i>Splachnum</i>
Hypophysis pyriform and ±urn-colored ; leaves elongate- subulate to hair-pointed ; N	<i>Tetraplodon</i>
Hypophysis evident, but ±narrower than urn and wrinkled when dry; leaves obtuse to acuminate.	
Capsules cylindric ; setae brownish ; calyptrae constricted above base; N*	<i>Tayloria</i> †
Capsules dumbbell shaped; setae hyaline ; calyptrae not constricted; A/A	<i>Aplodon</i>
Hypophysis lacking ; cleistocarpous ; leaves long acuminate to hair-pointed ; A/A	<i>Voitia</i>

End.