

# NE Sub-Guide to Initial Groups

Revised through 17 May 2010

**Reminder:** A dagger (†) indicates that not all of the species within the given genus have the character(s) defining that Group. Abbreviations for the **distribution** of taxa are found at the end of the Concordance.

---

## Group A – Plants on persistent protonemata

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

---

## Group B – Plants minute with immersed capsules

	Group B
Leaves with a <b>hair-point</b> or awn.	
Leaves with ridge-like <b>lamellae</b> on upper surface of costa; WS	<i>Pterygoneurum</i>
Leaves with <b>recurved</b> (at apex), <b>serrate</b> margins; cells ± <b>smooth</b> ; WS*	<i>Acaulon</i>
Leaves <b>subulate / setaceous</b> at least on perichaetial leaves.	
Setae <b>straight</b> ; capsules <b>immersed &amp; cleistocarpous</b> .	
Capsules <b>pyriform</b> with conspicuous, <b>stomatose</b> neck; spores <b>small</b> ; WS	<i>Bruchia</i> †
Capsules <b>globose</b> to <b>ovoid</b> with no neck.	
Calyptrae mitrate or <b>cucullate</b> ; spores numerous & <b>small</b> ; WS	<i>Pleuroidium</i>
Calyptrae <b>rudimentary</b> ; spores few & <b>large</b> (>100µ); E	<i>Archidium</i>
Leaves <b>cuspidate</b> to long-apiculate with <b>reflexed</b> tips; <b>bulbiform</b> ; WS*	<i>Acaulon</i>
Leaves <b>involute</b> when wet, crisped & contorted when dry; E	<i>Astomum</i>
Leaves serrate to <b>spinose-dentate</b> ; protonemata <b>persistent</b> ; WS	<i>Ephemerum</i>
Leaves acute to acuminate, <b>lacking</b> the above unique characteristics.	
Capsules clearly <b>operculate</b> .	
Operculum <b>short</b> -beaked; exothelial cells <b>collenchymatous</b> ; WS	<i>Aphanorrhagma</i>
Operculum <b>long</b> -beaked; exothelial cells <b>not</b> collenchymatous; WS	<i>Physcomitrium</i> †
Capsules <b>cleistocarpous</b> or rupturing irregularly.	
Capsules <b>pyriform</b> with conspicuous, <b>stomatose</b> neck; spores <b>small</b> ; WS	<i>Bruchia</i> †
Capsules <b>globose</b> .	
Calyptrae <b>mitrate</b> ; spores numerous & <b>small</b> ; WS	<i>Physcomitrella</i>
Calyptrae <b>rudimentary</b> .	
Costa <b>strong</b> ; spores few & <b>large</b> (>100µ); E	<i>Archidium</i>
Costa <b>lacking</b> ; spores <b>medium</b> to large (up to ~80µ); WS	<i>Micromitrium</i>

---

---

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

**Group C**Plants **dendroid**Stems with dense **paraphyllia**, green, filiform, & branched; on rich soil; E*Climacium*Stems **lacking** paraphyllia.Leaves **not** bordered & ovate to lanceolate.Leaf singly or doubly **serrate** above; apical cells **rhombic**; WS*Thamnobryum*Leaf with **alternate** large & small **teeth**; alar cells distinctly subquadrate; E, WC*Isothecium*<sup>†</sup>Plants **frondose**.Leaves **falcate-secund**; plant regularly pinnate; WS\**Ptilium crista-castrensis*


---

**Group D – Plants with pendulous branches**

**Group D**Leaves **lanceolate** to oblong-lanceolate.Leaf margins coarsely **serrate** in upper third; upper cells **±prorulose**; WS*Isothecium myosuroides*<sup>†</sup>


---

**Group E – Plants growing horizontally or as “fish-hooks”**

**Group E**Plants growing **horizontally**; sticking **±straight out** from vertical surface.Leaves **complanate** & **undulate**; **ecostate**; paraphyllia **lacking**; WS\**Neckera*<sup>†</sup>Leaves **neither** complanate **nor** undulate.Alar cells subquadrate in **large** groups; E*Forsstroemia*Plants growing as “**fish-hooks**”; secondary branches **curved upwards** when dry.Costa **long** & **single**; leaf cells **papillose**; E*Anomodon viticulosus*<sup>†</sup>Costa **short** & **double** to lacking; leaf cells **smooth**.Leaf cells **>5:1**; **5-20** quadrate alar cells at the **basal angles**; WS\**Pylaisiella*Leaf cells **~3:1**; **numerous** oblate alar cells extending up **leaf margins**; E, AZ*Leucodon*


---

**Group F – Plants growing on dung**

**Group F**Hypophysis **turbinate**, **globose** or **skirt-like**, and **colored**; leaves obtuse to acuminate; N, CP & SA*Splachnum*Hypophysis **pyriform** & **±urn-colored**; leaves elongate-**subulate** to **hair-pointed**; N*Tetraplodon*Hypophysis evident, but **±narrower** than urn & **wrinkled** when dry; leaves obtuse to acuminate.Capsules **cylindric**; setae **brownish**; calyptrae **constricted** above base; N\**Tayloria*<sup>†</sup>


---

End.