***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 **2-ranked** & **distichous** (attached in two rows on opposite sides of the stem).

Leaves **cleft** at anterior edge and clasping posterior edge of next leaf; WS *Fissidens*†

Leaves **decurrent** & **confluent**; protonemata **luminous**; “Goblin Gold”; WS\* *Schistostega*

Leaves with longitudinal **lamellae**; setae **long**; capsules **cylindrical**; **epiphragm** present; WS *Pogonatum*†

Leaves serrate to **spinose-dentate**; capsules **sessile**, +globose & **cleistocarpous**; WS *Ephemerum*

Leaves acute, **lacking** the above unique characteristics.

Plants growing on **soil**; costa **weak** at base; capsules **exserted**; WS\* *Discelium*

***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 *Pterygoneurum*

Leaves with **recurved** (at apex), **serrate** margins; cells +**smooth**; WS\* *Acaulon*

Leaves **subulate** / **setaceous** at least on perichaetial leaves.

Setae **straight**; capsules **immersed** & **cleistocarpous**.

Capsules **pyriform** with conspicuous, **stomatose** neck; spores **small**; WS *Bruchia*†

Capsules **globose** to **ovoid** with no neck.

Calyptrae mitrate or **cucullate**; spores numerous & **small**; WS *Pleuridium*

Calyptrae **rudimentary**; spores few & **large** (>100µ); E *Archidium*

Leaves **cuspidate** to long-apiculate with **reflexed** tips; **bulbiform**; WS\* *Acaulon*

Leaves **involute** when wet, crisped & contorted when dry; E *Astomum*

Leaves serrate to **spinose-dentate**; protonemata **persistent**; WS *Ephemerum*

Leaves acute to acuminate, **lacking** the above unique characteristics.

Capsules clearly **operculate**.

Operculum **short**-beaked; exothecial cells **collenchymatous**; WS *Aphanorrhegma*

Operculum **long**-beaked; exothecial cells **not** collenchymatous; WS *Physcomitrium*†

Capsules **cleistocarpous** or rupturing irregularly.

Capsules **pyriform** with conspicuous, **stomatose** neck; spores **small**; WS *Bruchia*†

Capsules **globose**.

Calyptrae **mitrate**; spores numerous & **small**; WS *Physcomitrella*

Calyptrae **rudimentary**.

Costa **strong**; spores few & **large** (>100µ); E *Archidium*

Costa **lacking**; spores **medium** to large (up to ~80µ); WS *Micromitrium*

***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*†

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*†

***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*†

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*†

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** oblatealar 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*†

End.