***Skeleton to Rarely Branched (mostly acrocarpous) Mosses***

*Revised through 23 July 2012*

***Reminder****: a dagger* (†) *indicates that not all of the species within the given genus have the character(s) defining that Group.*

***Group A1 – Shoots flattened or angular, i.e., not round***

 Group A1

 *Acaulon*† *Distichium* *Paludella*

 *Aulacomnium*† *Erpodium* *Plagiomnium*

 *Bryoxiphium Fissidens Schistostega*

 *Catoscopium Meesia*† *Triquetrella*

 *Conostomum*

***Group A2 – Shoots julaceous both wet and dry***

 Group A2

 *Anomobryum Bryum*† *Plagiobryum*

 *Aongstroemia Conostomum Pleuridium*†

 *Aulacomnium*†

***Group A3 – Stems densely tomentose***

 Group A3

 *Anacolia Dicranum*† *Rhizomnium*†

 *Aulacomnium*† *Paludella Scopelophila*†

 *Cinclidium Polytrichum*† *Zygodon*†

***Group A4 – Stems red***

 Group A4

 *Anacolia Cinclidium Pohlia*†

 *Anomobryum Epipterygium Rhizomnium*†

 *Aongstroemia Mnium*† *Roellia*

 *Blindia Philonotis*† *Trachycystis*

 *Bryum*† *Plagiobryum*

***Group A5 – Leaves squarrose-recurved***

 Group A5

 *Barbula*† *Paludella* *Tortula*†

 *Dicranella*† *Pleurochaete Trichodon*

 *Didymodon*† *Rhexophyllum Triquetrella*

 *Leptodontium*

***Group A6 – Leaves falcate-secund***

 Group A6

 *Andreaeobryum Dicranum*† *Paraleucobryum*†

 *Dicranella*† *Kiaeria*†

***Group A7 – Leaves subulate / setaceous***

 Group A7

 *Anacolia Dicranella*† *Orthodontium*†

 *Archidium*† *Dicranodontium Paraleucobryum*

 *Arctoa Dicranoweisia Pleuridium*†

 *Bartramia*† *Dicranum*† *Pseudoditrichum*

 *Blindia Ditrichum*† *Pyrrhobryum*

 *Brachydontium Eccremidium Seligeria*†

 *Brothera Kiaeria Symblepharis*

 *Bruchia*† *Leptobryum Trematodon*†

 *Campylopus*† *Oncophorus*† *Trichodon*

***Group A8 – Leaves dimorphic***

 Group A8

 *Epipterygium Erpodium*

***Group A9 – Leaves with hair-points or awns***

 Group A9

 *Acaulon*† *Erpodium*† *Pyramidula*

 *Aloina*† *Grimmia*† *Schistidium*†

 *Brachymenium*† *Jaffueliobryum Splachnum*†

 *Bryum*† *Lorentziella Stegonia*†

 *Campylopus*† *Orthotrichum*† *Tetraplodon*†

 *Coscinodon Phascum Tortula*†

 *Crossidium Polytrichum*† *Ulota*†

 *Desmatodon*† *Pseudocrossidium*† *Venturiella*

 *Encalypta*† *Pterygoneurum Voitia*

***Group A10 – Leaves with lamellae, ridges, or filaments***

 Group A10

 *Aloina Dicranum*† *Polytrichastrum*

 *Atrichum*† *Dryptodon Polytrichum*

 *Bartramiopsis Lyellia Psilopilum*

 *Campylopus*† *Oligotrichum Pterygoneurum*

 *Crossidium Pogonatum Saelania*

***Group A11 – Leaves undulate***

 Group A11

 *Atrichum*† *Dicranum*† *Tortella*†

 *Aulacomnium*†

***Group A12 – Leaves involute***

 **Group A12**

 *Aloina Indusiella Ptychomitrium*†

 *Astomum Plaubella Weissia*

 *Hyophila Polytrichum*†

***Group A13 – Leaves all costa***

 **Group A13**

 *Leucobryum Octoblepharum*

***Group A14 – Leaves with a broad, single costa***

 **Group A14**

 *Amblyodon**Campylopus Leptobryum*

 *Brothera Dicranella*† *Meesia*†

 *Campylopodiella Dicranodontium Paraleucobryum*

***Reminder****: The costa in Groups A15 through A19 is long and single.*

***Group A15 – Leaves with expanded, sheathing bases***

 Group A15

 *Bartramia*† *Oligotrichum*† *Rhexophyllum*

 *Bartramiopsis Oncophorus*† *Symblepharis*

 *Dicranella*† *Pogonatum Timmia*

 *Ditrichum*† *Polytrichastrum Trematodon*

 *Indusiella Polytrichum Trichodon*

 *Lyellia Pseudoditrichum*

***Group A16 – Leaves with long decurrencies***

 **Group A16**

 *Bryum*† *Mnium Pohlia*†

 *Leucolepis Paludella* *Triquetrella*

 *Meesia*† *Plagiomnium*

***Group A17 – Leaves with a defined group of hyaline cells***

 **Group A17**

 *Bryoerythrophyllum Eucladium Ptychomitrium*†

 *Bryum*† *Hedwigia Rhabdoweisia*

 *Calymperes Luisierella Syrrhopodon*

 *Desmatodon*† *Plagiobryum*† *Tortella*

 *Didymodon*† *Pleurochaete Tortula*†

 *Encalypta*† *Pottia*† *Trichostomum*

***Group A18 – Leaves with a distinct border***

 **Group A18**

 *Atrichum Entosthodon*† *Psilopilum*

 *Bartramiopsis Epipterygium Rhizomnium*

 *Brachymenium*† *Leptodontium*† *Rhodobryum*

 *Bryum*† *Leucolepis Roellia*

 *Buxbaumia Mnium*† *Scouleria*

 *Calymperes*† *Oedipodium Splachnobryum*

 *Cinclidium Plagiomnium Syrrhopodon*†

 *Crumia Pseudobryum Tortula*†

 *Cyrtomnium Pseudocrossidium*† *Trachycystis*

 *Desmatodon*†

***Group A19 – Leaves with distinct alar cells***

 **Group A19**

 *Arctoa Dicranodontium Grimmia*†

 *Blindia Dicranoweisia*† *Kiaeria*

 *Campylopus Dicranum Paraleucobryum*

***Group A20 – Leaves with costa extremely reduced to lacking***

 **Group A20**

 *Andreaea*† *Micromitrium Tetrodontium*†

 *Ephemerum*† *Schistostega Venturiella*

 *Erpodium Sphagnum*

***Reminder****: Definitions for cell length to breadth ratios are found in the Introduction, the Overview and at the end of this section.*

***Group A21 – Cells long (>5:1) and smooth***

 **Group A21**

 *Orthodontium*† *Pohlia*†

***Group A22 – Cells intermediate (2-5:1) and distinctly papillose***

 **Group A22**

 *Bartramia*† *Gymnostomiella Philonotis*†

***Group A23 – Cells intermediate and distinctly prorulose***

 **Group A23**

 *Bartramia*† *Bruchia*† *Ephemerum*†

 *Bartramidula Conostomum* *Philonotis*†

***Group A24 – Cells intermediate and smooth (or indistinctly ornamented#)***

 **Group A24**

 *Bruchia*† *Ditrichum* *Pohlia*†

 *Bryobrittonia Entosthodon* *Seligeria*†

 *Bryum Funaria Splachnobryum*

 *Catoscopium Mielichhoferia Tayloria*

 *Dicranella* *Orthodontium*† *Tetrodontium*

 *Discelium Physcomitrium*

 # Cells bulging, mammillose (both bulging & papillose) or indistinctly papillose, i.e. low papillae.

***Group A25 – Cells short (<2:1) and distinctly papillose***

 **Group A25**

 *Amphidium Didymodon*† *Orthotrichum*†

 *Andreaea*† *Encalypta Pseudocrossidium*

 *Anoectangium Gymnostomum Rhexophyllum*

 *Aulacomnium*† *Gyroweisia*† *Timmia*†

 *Barbula*† *Hymenostylium Tuerckheimia*

 *Cynodontium*† *Leptodontium Ulota*†

 *Desmatodon*† *Molendoa Zygodon*

 *Dichodontium*

***Group A26 – Cells short and smooth (or indistinctly ornamented#)***

 **Group A26**

 *Andreaea*† *Gyroweisia*† *Rhacithecium*

 *Andreaeobryum Hyophila Schistidium*

 *Barbula*† *Meesia* *Scopelophila*

 *Campylostelium Oncophorus Scouleria*

 *Ceratodon Oreas Seligeria*†

 *Crumia Orthotrichum*† *Stegonia*

 *Cynodontium*† *Plagiopus Tetraphis*

 *Desmatodon*† *Plaubella Timmia*†

 *Didymodon*† *Pottia*† *Timmiella*

 *Diphyscium Ptychomitrium Tortula*†

 *Globulinella Pyrrhobryum Ulota*†

 *Grimmia Rhabdoweisia*

 # Cells bulging, mammillose (both bulging and papillose) or indistinctly papillose, i.e. low papillae.

 Bulging: *Diphyscium, Hyophila, Plaubella, Ptychomitrium*†*, Timmia & Timmiella*

 Cuticular ridges: *Amphidium*, *Grimmia & Plagiopus*

 **Cells** = medial, laminal cells; cells ~2/3 of the way from insertion to apex, midway between the costa and the margin.

 Length to breadth **ratios** of medial, laminal cells:

 **Long** cells: >5:1; commonly termed linear.

 **Intermediate** cells: 2-5:1; commonly termed elongated, rectangular, hexagonal, or rhomboidal.

 **Short** cells: <2:1; commonly termed isodiametric, quadrate, rounded-quadrate, or
sub-quadrate.

End.