

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

<i>Acaulon</i> †	<i>Distichium</i>	<i>Paludella</i>
<i>Aulacomnium</i> †	<i>Erpodium</i>	<i>Plagiomnium</i>
<i>Bryoxiphium</i>	<i>Fissidens</i>	<i>Schistostega</i>
<i>Catoscopium</i>	<i>Meesia</i> †	<i>Triquetrella</i>
<i>Conostomum</i>		

Group A2 – Shoots julaceous both wet and dry

Group A2

<i>Anomobryum</i>	<i>Bryum</i> †	<i>Plagiobryum</i>
<i>Aongstroemia</i>	<i>Conostomum</i>	<i>Pleuridium</i> †
<i>Aulacomnium</i> †		

Group A3 – Stems densely tomentose

Group A3

<i>Anacolia</i>	<i>Dicranum</i> †	<i>Rhizomnium</i> †
<i>Aulacomnium</i> †	<i>Paludella</i>	<i>Scopelophila</i> †
<i>Cinclidium</i>	<i>Polytrichum</i> †	<i>Zygodon</i> †

Group A4 – Stems red

Group A4

<i>Anacolia</i>	<i>Cinclidium</i>	<i>Pohlia</i> †
<i>Anomobryum</i>	<i>Epipterygium</i>	<i>Rhizomnium</i> †
<i>Aongstroemia</i>	<i>Mnium</i> †	<i>Roellia</i>
<i>Blindia</i>	<i>Philonotis</i> †	<i>Trachycystis</i>
<i>Bryum</i> †	<i>Plagiobryum</i>	

Group A5 – Leaves squarrose-recurved

Group A5

<i>Barbula</i> †	<i>Paludella</i>	<i>Tortula</i> †
<i>Dicranella</i> †	<i>Pleurochaete</i>	<i>Trichodon</i>
<i>Didymodon</i> †	<i>Rhexophyllum</i>	<i>Triquetrella</i>
<i>Leptodontium</i>		

Group A6 – Leaves falcate-secund

Group A6

<i>Andreaebryum</i>	<i>Dicranum</i> †	<i>Paraleucobryum</i> †
<i>Dicranella</i> †	<i>Kiaeria</i> †	

Group A7 – Leaves subulate / setaceous

		Group A7
<i>Anacolia</i>	<i>Dicranella</i> †	<i>Orthodontium</i> †
<i>Archidium</i> †	<i>Dicranodontium</i>	<i>Paraleucobryum</i>
<i>Arctoa</i>	<i>Dicranoweisia</i>	<i>Pleuridium</i> †
<i>Bartramia</i> †	<i>Dicranum</i> †	<i>Pseudoditrichum</i>
<i>Blindia</i>	<i>Ditrichum</i> †	<i>Pyrrhobryum</i>
<i>Brachydontium</i>	<i>Eccremidium</i>	<i>Seligeria</i> †
<i>Brothera</i>	<i>Kiaeria</i>	<i>Symblepharis</i>
<i>Bruchia</i> †	<i>Leptobryum</i>	<i>Trematodon</i> †
<i>Campylopus</i> †	<i>Oncophorus</i> †	<i>Trichodon</i>

Group A8 – Leaves dimorphic

		Group A8
<i>Epipterygium</i>	<i>Erpodium</i>	

Group A9 – Leaves with hair-points or awns

		Group A9
<i>Acaulon</i> †	<i>Erpodium</i> †	<i>Pyramidula</i>
<i>Aloina</i> †	<i>Grimmia</i> †	<i>Schistidium</i> †
<i>Brachymenium</i> †	<i>Jaffueliobryum</i>	<i>Splachnum</i> †
<i>Bryum</i> †	<i>Lorentziella</i>	<i>Stegonia</i> †
<i>Campylopus</i> †	<i>Orthotrichum</i> †	<i>Tetraplodon</i> †
<i>Coscinodon</i>	<i>Phascum</i>	<i>Tortula</i> †
<i>Crossidium</i>	<i>Polytrichum</i> †	<i>Ulota</i> †
<i>Desmatodon</i> †	<i>Pseudocrossidium</i> †	<i>Venturiella</i>
<i>Encalypta</i> †	<i>Pterygoneurum</i>	<i>Voitia</i>

Group A10 – Leaves with lamellae, ridges, or filaments

		Group A10
<i>Aloina</i>	<i>Dicranum</i> †	<i>Polytrichastrum</i>
<i>Atrichum</i> †	<i>Dryptodon</i>	<i>Polytrichum</i>
<i>Bartramiopsis</i>	<i>Lyellia</i>	<i>Psilopilum</i>
<i>Campylopus</i> †	<i>Oligotrichum</i>	<i>Pterygoneurum</i>
<i>Crossidium</i>	<i>Pogonatum</i>	<i>Saelania</i>

Group A11 – Leaves undulate

		Group A11
<i>Atrichum</i> †	<i>Dicranum</i> †	<i>Tortella</i> †
<i>Aulacomnium</i> †		

Group A12 – Leaves involute

Aloina
Astomum
Hyophila

Indusiella
Plaubella
Polytrichum[†]

Ptychomitrium[†]
Weissia

Group A12

Group A13 – Leaves all costa

Leucobryum

Octoblepharum

Group A13

Group A14 – Leaves with a broad, single costa

Amblyodon
Brothera
Campylopodiella

Campylopus
Dicranella[†]
Dicranodontium

Leptobryum
Meesia[†]
Paraleucobryum

Group A14

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

Group A15 – Leaves with expanded, sheathing bases

Bartramia[†]
Bartramiopsis
Dicranella[†]
Ditrichum[†]
Indusiella
Lyellia

Oligotrichum[†]
Oncophorus[†]
Pogonatum
Polytrichastrum
Polytrichum
Pseudoditrichum

Rhexophyllum
Symblepharis
Timmia
Trematodon
Trichodon

Group A15

Group A16 – Leaves with long decurrencies

Bryum[†]
Leucolepis
Meesia[†]

Mnium
Paludella
Plagiomnium

Pohlia[†]
Triquetrella

Group A16

Group A17 – Leaves with a defined group of hyaline cells

Bryoerythrophyllum
Bryum[†]
Calymperes
Desmatodon[†]
Didymodon[†]
Encalypta[†]

Eucladium
Hedwigia
Luisierella
Plagiobryum[†]
Pleurochaete
Pottia[†]

Ptychomitrium[†]
Rhabdoweisia
Syrrhopodon
Tortella
Tortula[†]
Trichostomum

Group A17

Group A18 – Leaves with a distinct border

Group A18

<i>Atrichum</i>	<i>Entosthodon</i> [†]	<i>Psilopilum</i>
<i>Bartramiopsis</i>	<i>Epipterygium</i>	<i>Rhizomnium</i>
<i>Brachymenium</i> [†]	<i>Leptodontium</i> [†]	<i>Rhodobryum</i>
<i>Bryum</i> [†]	<i>Leucolepis</i>	<i>Roellia</i>
<i>Buxbaumia</i>	<i>Mnium</i> [†]	<i>Scouleria</i>
<i>Calymperes</i> [†]	<i>Oedipodium</i>	<i>Splachnobryum</i>
<i>Cinclidium</i>	<i>Plagiomnium</i>	<i>Syrrophodon</i> [†]
<i>Crumia</i>	<i>Pseudobryum</i>	<i>Tortula</i> [†]
<i>Cyrtomnium</i>	<i>Pseudocrossidium</i> [†]	<i>Trachycystis</i>
<i>Desmatodon</i> [†]		

Group A19 – Leaves with distinct alar cells

Group A19

<i>Arctoa</i>	<i>Dicranodontium</i>	<i>Grimmia</i> [†]
<i>Blindia</i>	<i>Dicranoweisia</i> [†]	<i>Kiaeria</i>
<i>Campylopus</i>	<i>Dicranum</i>	<i>Paraleucobryum</i>

Group A20 – Leaves with costa extremely reduced to lacking

Group A20

<i>Andreaea</i> [†]	<i>Micromitrium</i>	<i>Tetrodontium</i> [†]
<i>Ephemerum</i> [†]	<i>Schistostega</i>	<i>Venturiella</i>
<i>Erpodium</i>	<i>Sphagnum</i>	

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

<i>Orthodontium</i> [†]	<i>Pohlia</i> [†]
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Group A22 – Cells intermediate (2-5:1) and distinctly papillose

Group A22

<i>Bartramia</i> [†]	<i>Gymnostomiella</i>	<i>Philonotis</i> [†]
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Group A23 – Cells intermediate and distinctly prorulose

Group A23

<i>Bartramia</i> [†]	<i>Bruchia</i> [†]	<i>Ephemerum</i> [†]
<i>Bartramidula</i>	<i>Conostomum</i>	<i>Philonotis</i> [†]

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

Group A24

<i>Bruchia</i> [†]	<i>Ditrichum</i>	<i>Pohlia</i> [†]
<i>Bryobrittonia</i>	<i>Entosthodon</i>	<i>Seligeria</i> [†]
<i>Bryum</i>	<i>Funaria</i>	<i>Splachnobryum</i>
<i>Catoscopium</i>	<i>Mielichhoferia</i>	<i>Tayloria</i>
<i>Dicranella</i>	<i>Orthodontium</i> [†]	<i>Tetradontium</i>
<i>Discelium</i>	<i>Physcomitrium</i>	

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

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

Group A25

<i>Amphidium</i>	<i>Didymodon</i> [†]	<i>Orthotrichum</i> [†]
<i>Andreaea</i> [†]	<i>Encalypta</i>	<i>Pseudocrossidium</i>
<i>Anoetangium</i>	<i>Gymnostomum</i>	<i>Rhexophyllum</i>
<i>Aulacomnium</i> [†]	<i>Gyroweisia</i> [†]	<i>Timmia</i> [†]
<i>Barbula</i> [†]	<i>Hymenostylium</i>	<i>Tuerckheimia</i>
<i>Cynodontium</i> [†]	<i>Leptodontium</i>	<i>Ulota</i> [†]
<i>Desmatodon</i> [†]	<i>Molendoa</i>	<i>Zygodon</i>
<i>Dichodontium</i>		

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

Group A26

<i>Andreaea</i> [†]	<i>Gyroweisia</i> [†]	<i>Rhacithecium</i>
<i>Andreaeobryum</i>	<i>Hyophila</i>	<i>Schistidium</i>
<i>Barbula</i> [†]	<i>Meesia</i>	<i>Scopelophila</i>
<i>Campylostelium</i>	<i>Oncophorus</i>	<i>Scouleria</i>
<i>Ceratodon</i>	<i>Oreas</i>	<i>Seligeria</i> [†]
<i>Crumia</i>	<i>Orthotrichum</i> [†]	<i>Stegonia</i>
<i>Cynodontium</i> [†]	<i>Plagiopus</i>	<i>Tetraphis</i>
<i>Desmatodon</i> [†]	<i>Plaubella</i>	<i>Timmia</i> [†]
<i>Didymodon</i> [†]	<i>Pottia</i> [†]	<i>Timmiella</i>
<i>Diphyscium</i>	<i>Ptychomitrium</i>	<i>Tortula</i> [†]
<i>Globulinella</i>	<i>Pyrrhobryum</i>	<i>Ulota</i> [†]
<i>Grimmia</i>	<i>Rhabdoweisia</i>	

[#] 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 $\sim 2/3$ 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.