1. Alar cells numerous, forming a cluster or grouping in tiers, mostly colored, quadrate or rectangular, not much inflated, usually thick-walled.....2

1. Alar cells oval or kidney-shaped, usually translucent, inflated, thin-walled, forming at least one distinctly defined basal row 7

2. Caducous flagellate branchlets present on branches; propagula absent..... 10. *Isocladiella*

2. Caducous flagellate branchlets absent; asexual propagula, if present, filiform..... 3

3. Branches complanate with an enlarged and caudate terminus; leaf bases decurrent; leaf axillary propagula abundant .....4. *Clastobryopsis*

3. Branches not complanate, without an enlarged and caudate terminus; leaf bases not decurrent; leaf axillary propagula few 4

4. Rhizoids numerous on stems and branches.....18. *Struckia*

4. Rhizoids rare, not commonly persistent.....5

5. Plants small, slender, mat forming, with irregular long branches; leaves elongate-ovate, abruptly acute; endostome segments broad, short; cilia absent.....6. *Gammiella*

5. Plants large, stout, weft forming, with irregular short branches; leaves ovate-lanceolate, acuminate; endostome segments narrow, as long as the teeth; cilia present..... 6

6. Plants often growing on tree bark; paraphyllia absent; opercula obtuse; basal membrane of endostome low; cilia short ..... 14. *Pylaisiopsis*

6. Plants often growing on rotten logs; paraphyllia present; opercula shortly rostrate; basal membrane of endostome high; cilia long.....9. *Heterophyllium*

7. Leaf cells smooth..... 8

7. Leaf cells papillose or prorate.....19

8. Stems irregularly bi- to tri-pinnately branched; stem and branch leaves different in size and shape..... 22. *Wijkia*

8. Plants regularly branched; stem and branch leaves similar, or different only in size..... 9

9. Leaves abruptly constricted into a narrow or filiform acumen.....10

9. Leaves acute or gradually long acuminate.....11

10. Leaves erect spreading, at most slightly falcate, without a broad sheathing base; calyptrae small, cucullate .....16. *Rhaphidostichum*

10. Leaves strongly falcate, with a broad sheathing base; calyptrae large, campanulate.....21. *Warburgiella* in part

11. Peristome single.....*Meiothecium* (reported from Taiwan, not seen for this study)

11. Peristome double.....12

12. Exostome teeth non-striate.....3. *Chionostomum*

12. Exostome teeth striate.....13

13. Leaves lingulate to ligulate, margins bordered, irregularly and strongly toothed in the tongue-like portion.. .....12. *Pseudotrismegistia*

13. Leaves ovate, oblong to lanceolate, margins not bordered, entire or serrulate.....14

14. Leaves often triseriate.....5. *Clastobryum* in part

14. Leaves conspicuously in more than 3 rows.....15

15. Alar cells few, 4–5, not forming a continuous basal row reaching to costa.....16

15. Alar cells, including the well developed supra-alar cells, more than 6, often forming a continuous basal row reaching to costa

.....17

16. Plants green or yellowish brown, with filiform propagula in leaf axils; leaves not concave.....

.....13. *Pylaisiadelpha*

16. Plants reddish or purplish brown, without filiform propagula; leaves strongly concave.... 8. *Hageniella*

17. Leaf apex toothed; exothecial cells not collenchymatous, thickened along vertical cell walls.... 2. *Brotherella*

17. Leaf apex entire or weakly toothed; exothecial cells strongly collenchymatous.....18

18. Leaves strongly concave, margins involute; alar cells large, often curved, kidney-shaped.....

.....1. *Acroporium* in part

18. Leaves flat or slightly concave, margins plane or reflexed; alar cells small, oval to oblong.....

.....17. *Sematophyllum*

19. Leaves triseriate, leaf cells sparingly papillose or prorate.....5. *Clastobryum* in part

19. Leaves not triseriate, leaf cells uniformly papillose or prorate.....20

20. Leaf cells pluripapillose or uni- or bi-seriately papillose..... 21

20. Leaf cells unipapillose or prorate.....22

21. Leaves falcate-secund; setae papillose above; opercula obliquely long-rostrate; exothecial cells strongly collenchymatous

.....15. *Radulina*

21. Leaves not clearly falcate-secund; setae smooth throughout; opercula conic, short; exothecial cells not collenchymatous

.....19. *Taxithelium*

22. Leaves strongly falcate, leaf cells weakly prorate..... 21. *Warburgiella* in part

22. Leaves erect-spreading, flexuose or slightly curved, leaf cells papillose or strongly prorate..... 23

23. Opercula conic, short; exothecial cells not collenchymatous.....24

23. Opercula long-rostrate; exothecial cells collenchymatous.....25

24. Leaves ovate at base, long-filiform-acuminate toward apex; leaf cells shortly fusiform.....

..... *Acanthorrhynchium* (reported from Taiwan, not seen)

24. Leaves oblong-ovate or lingulate, obtuse or bluntly pointed at apex; leaf cells linear..... 7. *Glossadelphus*

25. Outermost alar cells long and curved; capsules erect to suberect.....1. *Acroporium* in part

25. Outmost alar cells not long and curved; capsules inclined or pendulous.....26

26. Leaves hooded in the upper half; apex somewhat constricted and narrowed into an acumen; alar cells often thick-walled

..... 11. *Papillidiopsis*

26. Leaves concave throughout; apex gradually attenuate; alar cells mostly thin-walled.....20. *Trichosteleum*