

## CHECK-LIST OF THE TASMANIAN LIVERWORTS

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A check-list of the Tasmanian liverworts is presented in an attempt to include all the species (282) that are presently believed to occur in Tasmania. The Lepidoziaceae is viewed as the family most in need of revision in southern Australia today.

**Key Words:** Tasmania, liverworts.

### INTRODUCTION

It has been three score and ten years since the last major revision of the Tasmanian hepatic flora was published (Rodway 1917). Since that time, many advances have been made in our knowledge of the liverworts in this region. Nevertheless, there has been no systematic work to replace Rodway's study, although it is now widely recognised that many species in that work are synonyms, and that several other species have been discovered in the past seven decades which are absent from that work.

A valuable paper on the liverworts of the whole of Australia is the annotated list of binomials and check-list of published species by Scott & Bradshaw (1985). That study was the starting point for the present paper, as it dealt critically with all the species names that were proposed up to about 1983.

### RESULTS AND DISCUSSION

The check-list of Tasmanian liverworts is presented in table 1. The arrangement of orders and families follows that of Scott & Bradshaw (1985), although the spelling of two families, Balantiopsaceae and Chaetophyllopsaceae, have been altered from their spelling in that work on the advice of Dr R. Grolle (*pers. comm.*). Within families, genera are listed in alphabetical order, as are species within a genus.

A total of 282 species appears in the list in table 1. This has to be considered to be a tentative list of the liverwort species of Tasmania, as several families, or genera within families, require revision. For the Anthocerotales, a complete revision of this order of plants in Australia needs to be undertaken. For the Metzgeriales, the genus *Metzgeria* is the most problematic, requiring revision. In the Aneuraceae, the genus *Riccardia* undoubtedly has some further undescribed species. *Fossombronina* is

an extremely difficult genus to identify to species level and the Tasmanian list of species for this genus is likely to be incomplete or erroneous. In the Pallaviciniaceae, the check-list follows the recent opinion of Dr R. Grolle (*pers. comm.*), who currently believes, based on his herbarium studies, that in the genera *Pallavicinia* and/or *Jensenia*, only *Pallavicinia rubristipa* and *P. xiphoides* actually occur in Tasmania, with all records of *Jensenia connivens* (Col.) Grolle, *J. piscicolor* (Hook. f. & Taylor) Grolle and *Pallavicinia lyelli* (Hook.) S.F. Gray from Tasmania being wrong. *Symphyogyna rhodina* has recently been rediscovered in Tasmania (collected by A.V. Ratkowsky), but study is needed to determine whether or not this species is another form of the highly polymorphic *S. podophylla*. Also, the type of *S. interrupta* needs examination.

In the order Marchantiales, a family that needs critical study is Ricciaceae. Although the genus *Riccia* in Australia was revised by Nathalang (1980), Tasmania was omitted from consideration. Thus, the species of *Riccia* in this check-list are preceded by a question mark and their identity must be viewed as doubtful. In Aytoniaceae, Dr R. Grolle (*pers. comm.*) asserts that *Asterella australis* (Tayl.) Verd., formerly believed to occur in Tasmania, is endemic to New Zealand.

The Jungermanniales is by far the largest order of liverworts and the one with the most pressing taxonomic problems. The situation with respect to Lepidoziaceae is serious, as there does not appear to be any hepaticologist currently working on a revision of this difficult family. The problem genera are *Bazzania*, *Kurzia* and *Telaranea*. Although *Bazzania monilineris* is a distinctive species, *B. adnexa* and *B. involuta* may be synonyms of a single very variable species. Although *Kurzia* and *Telaranea* appear in the list with nine species each, it is likely that some of the names in each

**TABLE 1**  
**Check-list of Tasmanian liverworts.**

**ANTHOCEROTALES**

## Anthocerotaceae

*Anthoceros laevis* L.*Megaceros longispirus* (Carringt. & Pears.) Steph.**METZGERIALES**

## Aneuraceae

*Aneura alterniloba* (Hook. f. & Tayl.) Hook. f. & Tayl.*A. rodwayi* Hewson*Riccardia aequicellularis* (Steph.) Hewson*R. alcicornis* (Hook. f. & Tayl.) Trev.*R. bipinnatifida* (Col.) Hewson*R. cochleata* (Hook. f. & Tayl.) Kuntze*R. colensoi* (Steph.) Martin*R. crassa* (Schwaegr.) Carringt. & Pears.*R. eriocaula* (Hook.) Besch. & Massal.*R. gracilis* (Steph.) Schust.*R. longiflora* (Steph.) Hewson*R. minima* Carringt. & Pears.*R. nitida* (Col.) Hodgs.*R. rupicola* (Steph.) Hewson*R. wattiana* (Steph.) Hewson

## Fossombroniaceae

*Fossombronia intestinalis* Tayl.*F. pusilla* (L.) Nees

## Hymenophytaceae

*Hymenophyton flabellatum* (Labill.) Dum. ex Trev.*H. leptopodium* (Hook. f. & Tayl.) Evans

## Pallaviciniaceae

*Pallavicinia rubristipa* Schiffn.*P. xiphoides* (Hook. f. & Tayl.) Trev.*Podomitrium phyllanthus* (Hook.) Mitt.*Symphyogyna interrupta* Carringt. & Pears.*S. podophylla* (Thunb.) Mont. & Nees*S. rhodina* (Hook. f. & Tayl.) Tayl.

## Metzgeriaceae

*Metzgeria atrichoneura* Spruce*M. australis* Steph.*M. colensoi* Steph.*M. conjugata* Lindb.*M. decipiens* (Massal.) Schiffn. & Gott.*M. densiseta* Steph.*M. furcata* (L.) Dum.*M. leptoneura* Spruce*M. pinnata* Steph.*M. saccata* Mitt.

## Treubiaceae

*Treubia lacunosa* (Col.) Prosk.*T. tasmanica* Schust. & Scott

## Vandiemeniaceae

*Vandiemenia ratkowskiana* Hewson**MARCHANTIALES**

## Aytoniaceae

*Asterella drummondii* (Hook. f. & Tayl.) Schust.*A. tasmanica* (Steph.) Schust.*A. tenera* (Mitt.) Schust.*Reboulia hemisphaerica* (L.) Raddi

## Marchantiaceae

*Lunularia cruciata* (L.) Dum.*Marchantia berteroana* Lehm. & Lindenb.*M. foliacea* Mitt.*M. polymorpha* L. var. *aquatica* Nees

## Targioniaceae

*Targonia hypophylla* L.

## Ricciaceae

(?) *Riccia crassa* Steph.(?) *R. tasmanica* Steph. ex Rodw.(?) *R. weymouthiana* Steph. ex Rodw.*Ricciocarpos natans* (L.) Corda

## Monocleaceae

*Monoclea forsteri* Hook.**CALOBRYALES**

## Haplomitriaceae

*Haplomitrium gibbsiae* (Steph.) Schust.**JUNGERMANNIALES**

## Herbertaceae

*Herbertus oldfieldianus* (Steph.) Rodw.*Triandrophyllum subtrifidum* (Hook. f. & Tayl.) Fulf. & Hatch.

## Pseudolepicoleaceae

*Isophyllaria attenuata* (Rodw.) Hodgs.*Temnoma pulchellum* (Hook.) Mitt.*T. townrowii* Schust.*Trichotemnoma corrugatum* (Steph.) Schust.

TABLE 1 (cont.)

## Balantiopsaceae

- Acrosyphella phoenicorhiza* (Grolle) Kitag. & Grolle  
*Balantiopsis diplophylla* (Hook. f. & Tayl.) Mitt.  
*B. tumida* Berggr.  
*Isotachis grandis* Carringt. & Pears.  
*I. intortifolia* (Hook. f. & Tayl.) Gott.  
*I. nigella* Herz. [syn. *Eoisotachis nigella* (Herz.) Schust.]  
*I. riparia* Rodw.

## Ptilidiaceae

- Mastigophora flagellifera* (Hook.) Steph.

## Lepicoleaceae

- Lepicolea scolopendra* (Hook.) Dum. ex Trev.

## Chaetophyllopsaceae

- Chaetophyllopsis whiteleggei* (Carringt. & Pears.) Schust.

## Trichocoleaceae

- Eotrichocolea polyacantha* (Hook. f. & Tayl.) Schust.  
*Trichocolea mollissima* (Hook. f. & Tayl.) Gott.  
*T. rigida* Schust.

## Lepidolaenaceae

- Gackstroemia weindorferi* (Herz.) Grolle  
*Lepidolaena brachyclada* (Tayl. ex Lehm.) Trev.  
*L. clavigera* (Hook.) Dum. ex Trev.  
*L. reticulata* (Hook. f. & Tayl.) Trev.  
*L. taylorii* (Gott.) Trev.

## Lepidoziaceae

- Acromastigum anisostomum* (Lehm. & Lindenb.) Evans  
*A. cavifolium* Schust.  
*A. colensoanum* (Mitt.) Evans ex Reim.  
*A. mooreanum* (Steph.) Hodgs.  
*Bazzania adnexa* (Lehm. & Lindenb.) Trev.  
*B. involuta* (Mont.) Trev.  
*B. monilineris* (Lehm. & Lindenb.) Trev.  
*B. novaezealandiae* (Mitt.) Besch. & Massal  
*Hyalolepidozia longiscypha* (Tayl.) Grolle  
*Hygrolembidium acrocladum* (Berggr.) Schust.  
*H. australe* (Steph.) Grolle  
*Isolembidium anomalum* (Rodw.) Grolle  
*Kurzia cucullifolia* (Steph.) Schust.  
*K. hippurioides* (Hook. f. & Tayl.) Grolle  
*K. quadriseta* Grolle  
*K. saddlensis* (Besch. & Massal.) Grolle

- K. setiformis* (de Not.) Engel & Schust.  
*K. sexfida* (Steph.) Grolle  
*K. temnomoides* Schust.  
*K. tenax* (Grev.) Grolle  
*K. verticillata* (Carringt.) Grolle  
*Lepidozia concinna* Col.  
*L. cupressina* (Sw.) Lindenb.  
*L. glaucophylla* (Hook. f. & Tayl.) Tayl.  
*L. laevifolia* (Hook. f. & Tayl.) Tayl.  
*L. microphylla* (Hook.) Lindenb.  
*L. pendulina* (Hook.) Lindenb.  
*L. procera* Mitt.  
*L. ulothrix* (Schwaegr.) Lindenb.  
*Neogrollea notabilis* Hodgs.  
*Pseudocephalozia paludicola* Schust.  
*Psiloclada clandestina* Mitt.  
*Telaranea capilligera* (Schwaegr.) Schust.  
*T. centipes* (Tayl. ex Gott. *et al.*) Schust.  
*T. gottscheana* (Lindenb.) Hodgs.  
*T. grossiseta* (Steph.) Engel & Schust.  
*T. herzogii* (Hodgs.) Hodgs.  
*T. mooreana* (Steph.) Schust.  
*T. patentissima* (Hook. f. & Tayl.) Hodgs.  
*T. praeniens* (Lehm. & Lindenb.) Hodgs.  
*T. tetradactyla* (Hook. f. & Tayl.) Hodgs.  
*Zoopsis argentea* (Hook. f. & Tayl.) Hook. f.  
*Z. leitgebiana* (Carringt. & Pears.) Bastow  
*Z. setulosa* Leitg.

## Calypogeiaceae

- Calypogeia sphagnicola* (H. Arnell & Perss.) Warnst. & Loeske

## Jungermanniaceae

- Anastrophyllum schismoides* (Mont.) Steph.  
*Andrewsianthus perigonalis* (Hook. f. & Tayl.) Schust.  
*Chandonanthus squarrosus* (Hook.) Mitt.  
*Cryptochila grandiflora* (Lindenb. & Gott.) Grolle  
*Cuspidatula monodon* (Tayl.) Steph.  
*Jamesoniella colorata* (Lehm.) Spruce ex Schiffn.  
*J. tasmanica* (Hook. f. & Tayl.) Steph.  
*Jungermannia inundata* Hook. f. & Tayl.  
*J. orbiculata* (Col.) Grolle  
*Lophozia tasmanica* Schust.

## Gymnomitriaceae

- Gymnomitrium incompletum* (Gott.) Schust.  
*Herzogobryum aterrimum* (Steph.) Grolle  
*H. erosum* (Carringt. & Pears.) Grolle  
*H. teres* (Carringt. & Pears.) Grolle

TABLE 1 (cont.)

## Scapaniaceae

- Blepharidophyllum vertebrale* (Tayl.) Aongstr.  
*B. xiphophyllum* Grolle  
*Diplophyllum obtusifolium* (Hook.) Dum.

## Schistochilaceae

- Pachyschistochila parvistipula* (Rodw.) Schust. & Engel  
*P. succulenta* Engel & Schust.  
*P. trispiralis* (Schust.) Schust. & Engel  
*Paraschistochila isotachyphylla* Engel & Schust.  
*P. pinnatifolia* (Hook.) Schust.  
*P. tuloides* (Hook. f. & Tayl.) Schust.  
*Schistochila balfouriana* (Hook. f. & Tayl.) Steph.  
*S. lehmanniana* (Lindenb.) Carringt. & Pears.  
*S. pseudociliata* Schust.  
*S. tasmanica* Steph.

## Geocalycaaceae

- Chiloscyphus amplexans* (Mitt.) Engel & Schust.  
*C. archeri* Engel & Schust.  
*C. australis* Gott. *et al.*  
*C. biciliatus* (Hook. f. & Tayl.) Gott. *et al.*  
*C. bispinosus* (Hook. f. & Tayl.) Engel & Schust.  
*C. echinellus* (Lindenb. & Gott.) Mitt.  
*C. excipulatus* (Steph.) Engel & Schust.  
*C. gippslandicus* Engel & Schust.  
*C. lentus* (Hook. f. & Tayl.) Engel & Schust.  
*C. leucophyllus* (Hook. f. & Tayl.) Gott. *et al.*  
*C. muricatus* (Lehm.) Engel & Schust.  
*C. novae-zeelandiae* (Lehm. & Lindenb.) Engel & Schust.  
*C. okaritanus* (Steph.) Engel & Schust.  
*C. pallidus* (Mitt.) Engel & Schust.  
*C. planiusculus* (Hook. f. & Tayl.) Engel & Schust.  
*C. semiteres* (Lehm.) Lehm. & Lindenb.  
*C. subporosus* (Mitt.) Engel & Schust.  
*C. variabilis* (Steph.) Engel & Schust.  
*C. villosus* (Mitt. ex Steph.) Engel & Schust.  
*Clasmatocolea marginata* (Mitt. ex Steph.) Grolle  
*C. notophylla* (Hook. f. & Tayl.) Grolle  
*C. strongylophylla* (Hook. f. & Tayl.) Grolle  
*C. vermicularis* (Lehm.) Grolle  
*C. verrucosa* Engel  
*Geocalyx caledonicus* Steph.  
*Hepatostolonophora paucistipula* (Rodw.) Engel  
*H. rotata* (Hook. f. & Tayl.) Engel  
*Heteroscyphus allodontus* (Hook. f. & Tayl.) Engel & Schust.  
*H. argutus* (Nees) Schiffn.  
*H. billardieri* (Schwaegr.) Schiffn.  
*H. coalitus* (Hook.) Schiffn.

- H. colensoi* (Mitt.) Schiffn.  
*H. conjugatus* (Mitt.) Engel & Schust.  
*H. cuneistipulus* (Steph.) Schiffn.  
*H. cymbaliferus* (Hook. f. & Tayl.) Engel & Schust.  
*H. decipiens* (Gott.) Engel & Schust.  
*H. fissistipus* (Hook. f. & Tayl.) Schiffn.  
*H. gunnianus* (Mitt.) Engel & Schust.  
*H. heterophyllus* (Steph.) Engel & Schust.  
*H. knightii* (Steph.) Grolle  
*H. levieri* (Steph.) Schiffn.  
*H. limosus* (Carringt. & Pears.) Schiffn.  
*H. lyallii* (Mitt.) Schust.  
*H. multifidus* (Steph.) Engel & Schust.  
*H. physanthus* (Hook. f. & Tayl.) Schust.  
*H. simillimus* (Steph.) Engel & Schust.  
*H. sinuosus* (Hook.) Schiffn.  
*H. supinus* (Hook. f. & Tayl.) Schust.  
*H. tasmanicus* (Steph.) Engel & Schust.  
*H. triacanthus* (Hook. f. & Tayl.) Schiffn.  
*H. weymouthianus* (Steph.) Schiffn.  
*Leptophyllopsis laxus* (Mitt.) Schust.  
*Leptoscyphus expansus* (Lehm.) Grolle  
*Saccogynidium decurvum* (Mitt.) Grolle

## Brevianthaceae

- Brevianthus flavus* (Grolle) Engel & Schust.

## Plagiochilaceae

- Acrochila biserialis* (Lehm. & Lindenb.) Grolle  
*Plagiochila annotina* (Menz.) Lindenb.  
*P. baileyana* Steph.  
*P. circinalis* (Lehm.) Lehm. & Lindenb.  
*P. deltoidea* Lindenb.  
*P. fasciculata* Lindenb.  
*P. fruticella* (Tayl.) Hook. f. & Tayl.  
*P. fuscella* (Tayl.) Tayl. & Hook. f.  
*P. incurvicolla* (Tayl.) Hook. f. & Tayl.  
*P. lyallii* Mitt.  
*P. pleurata* (Tayl.) Hook. f. & Tayl.  
*P. radiculosa* Mitt.  
*P. ramosissima* (Hook.) Lindenb.  
*P. ratkowskiana* H. Inoue  
*P. retrospectans* Nees  
*P. stephensoniana* Mitt.  
*P. strombifolia* (Tayl.) Tayl. ex Lehm.  
*P. watsii* Steph. ex Rodw.  
*Plagiochilion conjugatus* (Hook.) Schust.

## Acrobolbaceae

- Acrobolbus cinerascens* (Lehm. & Lindenb.) Schiffn.

- A. concinnus* (Mitt.) Grolle

TABLE 1 (cont.)

<i>A. ochrophyllus</i> (Hook. f. & Tayl.) Schust.	Frullaniaceae
<i>Goebelobryum unguiculatum</i> (Hook. f. & Tayl.) Grolle	<i>Frullania aterrima</i> (Hook. f. & Tayl.) Hook. f. & Tayl.
<i>Lethocolea squamata</i> (Tayl.) Hodgs.	<i>F. clavata</i> (Hook. f. & Tayl.) Tayl.
<i>Marsupidium setulosum</i> Mitt.	<i>F. engelii</i> Hatt.
<i>M. surculosum</i> (Nees) Schiffn.	<i>F. falciloba</i> Tayl. ex Lehm.
<i>Tylimanthus pseudosaccatus</i> Grolle	<i>F. monocera</i> (Hook. f. & Tayl.) Tayl.
<i>T. tenellus</i> (Hook. f. & Tayl.) Mitt.	<i>F. pentapleura</i> Tayl.
Adelanthaceae	<i>F. probosciphora</i> Tayl.
<i>Adelanthus bisetulus</i> (Steph.) Grolle	<i>F. rostrata</i> (Hook. f. & Tayl.) Hook. f. & Tayl.
<i>A. falcatus</i> (Hook.) Mitt.	<i>F. scandens</i> Mont.
<i>A. oclusus</i> (Hook. f. & Tayl.) Carringt.	Lejeuneaceae
Cephaloziellaceae	<i>Acrolejeunea aulacophora</i> (Mont.) Steph.
<i>Allisoniella nigra</i> (Rodw.) Schust.	<i>Austrolejeunea olgae</i> (Schust.) Schust.
<i>A. tasmanica</i> Schust.	<i>Cheilolejeunea albobirens</i> (Hook. f. & Tayl.) Hodgs.
<i>Cephaloziella arctica</i> Bryhn & Douin	<i>C. campbelliensis</i> (Steph.) Schust.
<i>C. exiliflora</i> (Tayl.) Steph.	<i>C. comitans</i> (Hook. f. & Tayl.) Schust.
<i>C. hirta</i> (Steph.) Schust.	<i>C. mimosa</i> (Hook. f. & Tayl.) Schust.
<i>C. pulcherrima</i> Schust.	<i>Cololejeunea laevigata</i> (Mitt.) Tilden
Radulaceae	<i>Colura pulcherrima</i> Jov.-Ast.
<i>Radula aneurismalis</i> (Hook. f. & Tayl.) Nees	<i>C. saccophylla</i> Hodgs. & Herz.
<i>R. australiana</i> Yamada	<i>Diplasiolejeunea plicatiloba</i> (Hook. f. & Tayl.) Grolle
<i>R. buccinifera</i> (Hook. f. & Tayl.) Tayl.	<i>Drepanolejeunea aucklandica</i> Steph.
<i>R. compacta</i> Castle	<i>Harpalejeunea latitans</i> (Hook. f. & Tayl.) Grolle
<i>R. multiamentula</i> Hodgs.	<i>Lejeunea cuspidistipula</i> (Steph.) Steph.
<i>R. novaehollandiae</i> Hampe	<i>L. drummondii</i> Tayl.
<i>R. plicata</i> Mitt.	<i>L. norrisii</i> Grolle
<i>R. ratkowskiana</i> Yamada	<i>L. primordialis</i> (Hook. f. & Tayl.) Tayl.
<i>R. retroflexa</i> Tayl.	<i>Nephelolejeunea hamata</i> Grolle
<i>R. tabularis</i> Steph.	<i>Siphonolejeunea nudipes</i> (Hook. f. & Tayl.) Herz.
<i>R. tasmanica</i> Steph.	
<i>R. wattiana</i> Steph.	

genus will be reduced to synonymy. A scholarly examination of this family, with 44 species in this check-list, is clearly the most urgent priority for the liverworts of southern Australia.

The species list for the Schistochilaceae stands on a firm basis, following the detailed recent study of Schuster & Engel (1985). A firm basis for Geocalyceae, the largest family of liverworts in Tasmania, will be provided when the study of this family to species level, being undertaken by Dr J. Engel and Prof. R.M. Schuster, is completed. At a generic level, Engel & Schuster (1984) cogently argued that *Lophocolea* and *Chiloscyphus* could not be maintained as independent genera, so that species formerly known under *Lophocolea* are now given combinations in *Chiloscyphus*. In addition,

their overview argued that many species formerly known under *Chiloscyphus* and all species known under *Tetracymbaliella* should now be transferred to *Heteroscyphus*. The names in table 1 reflect their viewpoint, although one must await their complete revision of all the species before one can be confident of which species do indeed occur in Tasmania. Of the remaining genera in Geocalyceae in Tasmania, perhaps only *Leptoscyphus* needs clarification, as the name of the Tasmanian species, given here as *L. expansus*, must be viewed as tentative. The species of the genera *Hepatosolonophora* and *Clasmatocolea* are firmly based owing to recent detailed treatments (Engel 1979 and Engel 1980 respectively).

The Plagiochilaceae in Tasmania is firmly based owing to the revision by Inoue & Schuster (1971), as are Acrobolbaceae and Adelanthaceae, except for two questions that have plagued this writer: (i) Exactly how does *Acrobolbus ochrophyllus* differ from *A. cinerascens*, and (ii) Exactly how does *Adelanthus oclusus* differ from *A. falcatus*? In the Cephaloziellaceae, the genus *Cephaloziella* needs revision. So does *Radula* in the Radulaceae; the names presented in table I are an amalgamation of various sources, the most recent being Yamada (1984).

The Frullaniaceae is represented in Tasmania only by the genus *Frullania*. Knowledge of its species has been greatly aided by several recent papers of Hattori (1979a, 1979b, 1983) plus a personal communication from Dr S. Hattori in which he (i) casts doubt on the occurrence of *F. deplanata* Mitt. in Tasmania, (ii) points out that *F. engelii* is closely related to, and possibly conspecific with, *F. setchellii* Pears. and *F. pycnantha* (Hook. f. & Tayl.) Tayl., both supposed New Zealand endemics, (iii) asserts that *F. gaudichaudii* (Nees & Mont.) Nees & Mont. is a tropical species, probably not occurring in Australia and certainly not in Tasmania, (iv) believes that *F. scandens* may or may not be conspecific with *F. mooreana* Steph.; if not, the latter is the correct name for the Tasmanian species, and (v) does not recognise the occurrence of *F. spinifera* Tayl. in Tasmania.

The species list of the final family, the Lejeuneaceae, is very reliable due to the overview by Grolle (1982), which gave a firm basis for the list of species of that family.

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