RAMBOLDIA

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Ramboldia Kantvilas & Elix, *Bryologist* 97: 296 (1994) *emend.* K.Kalb, B.Staiger, J.A.Elix, U.Lange & H.T.Lumbsch, *Nova Hedwigia* 86: 23 (2008); named in honour of the German lichenologist Gerhard Rambold (b. 1956).

Type: *R. stuartii* (Hampe) Kantvilas & Elix

Thallus crustose, areolate, effuse or endophloeodal; soredia, isidia or granules present or absent; photobiont green, trebouxioid. Ascomata apothecia, lecideine, sessile or broadly adnate, black, reddish brown to orange or red; margin persistent except in older apothecia. Exciple ±pigmented internally, composed of conglutinated radiating branched and anastomosing hyphae. Epihymenium black, brown, red or orange, K–, K+ pale grey-brown or K+ purple. Hymenium colourless to yellow-brown. Hypothecium colourless to pale orange-brown. Paraphyses sparingly branched and anastomosing; apices not expanded or weakly expanded, ±pigmented. Asci clavate, of the *Lecanora*-type; tholus with a strongly amyloid lateral part, a non-amyloid broadly diverging axial mass with a thick non-amyloid cap above and a weakly amyloid outer layer. Ascospores 8 per ascus, simple, hyaline, narrowly ellipsoidal to oblong-ellipsoidal, non-halonate. Pycnidia immersed. Conidia filiform, straight or curved.

Ramboldia is primarily a Southern Hemisphere genus of c. 26 species, 16 of which occur in Australia. These lichens occur in cool-temperate to tropical regions where they grow on bark, decorticated wood or rock.

The genus has already been documented in the *Flora of Australia* (Elix, 2004), but it has recently been emended to include many species previously accommodated in *Pyrrhospora* Körb. This expansion was supported by anatomical characters and molecular evidence and significantly increased the number of species in the genus (Kalb *et al.*, 2008). The additional species have red or red-brown, K+ violet apothecia rather than the black or brown, K– apothecia observed for *Ramboldia* in the narrow sense. *Pyrrhospora s. str.* differs from *Ramboldia* in having broadly ellipsoidal, hyaline ascospores that become brownish with age rather than narrowly ellipsoidal to bacilliform ascospores that remain hyaline, a euthyplectenchymatous rather than a prosoplectechymatous exciple and in containing the pigment 7-chloroemodin in the apothecia rather than russulone.

H.Hertel, Über saxicole, lecideiode Flechten der Subantarktis, *Beih. Nova Hedwigia* 79: 399–499 (1984); H.Hertel, New or little-known New Zealand lecideoid lichens, *Mitt. Bot. Staatssamml. München* 21: 301–337 (1985); G.Rambold, A monograph of the saxicolous lecideoid lichens of Australia (excl. Tasmania), *Biblioth. Lichenol.* 34: 1–345 (1989); G.Kantvilas & J.A.Elix, *Ramboldia*, a new genus in the lichen family Lecanoraceae, *Bryologist* 97: 296–304 (1994); J.A.Elix, *Ramboldia*, *Fl. Australia* 56A: 63–68 (2004); G.Kantvilas & J.A.Elix, The genus *Ramboldia* (*Lecanoraceae*): a new species, key and notes, *Lichenologist* 38: 135–141 (2007); K.Kalb, B.Staiger, J.A.Elix, U.Lange & H.T.Lumbsch, A new circumscription of the genus *Ramboldia* (Lecanoraceae, Ascomycota) based on morphological and molecular evidence, *Nova Hedwigia* 86: 23–42 (2008).

1 Apothecia usually brown to black; epihymenium K– or K+ pale grey-brown or olive-brown; russulone absent 2
1: Apothecia usually orange, orange, red or red-brown; epihymenium K+ purple; russulose present 10

2 Thallus lignicolous or corticolous *(1)* 3
2: Thallus saxicolous 9

3 Thallus sorediate or blastidiate *(2)* 4
3: Thallus lacking sorediate and blastidia 6

4 Thallus brownish or pale grey-green, blastidiate, K+ red; norstictic acid present *(3)*..**3. R. blastidiata**
4: Thallus pale grey or yellow-grey, sorediate, K+ yellow or K–; norstictic acid absent.....5

5 Thallus UV+ white, K+ purple, containing hypothamnolic acid *(4:)* .....**7. R. farinosa**
5: Thallus UV–, K+ intense yellow, containing thamnolic acid.....**14. R. sorediata**

6 Apothecia orange-brown to dark reddish brown; thallus corticolous, usually on twigs *(3:)* ....**4. R. brunneocarpa**
6: Apothecia ±black; thallus usually lignicolous 7

7 Thallus containing hypothamnolic acid; subhypothecium K+ purple *(6:)*.....**15. R. stuartii**
7: Thallus containing thamnolic acid; subhypothecium and thallus K+ yellow.....8

8 Thallus of scattered or ±contiguous convex areolae c. 0.25 mm wide, to 0.1 mm thick; paraphyses conspicuously vacuolate and swollen with oil inclusions *(7:)*.....**16. R. subnexa**
8: Thallus bullate-areolate; areolae 0.2–0.5 mm wide, 0.2–0.5 mm thick; paraphyses slender and evenly tapered, lacking oil inclusions.....**6. R. crassithallina**

9 Thallus and apothecia K–, containing baeomycesic acid *(2:)* .....**11. R. plicatula**
9: Thallus and apothecia K+ red, containing norstictic acid ..... **10. R. petraeoides**

10 Thallus lignicolous or corticolous *(1:)* 11
10: Thallus saxicolous.....16

11 Thallus granular-isidiate, containing fumarprotocetraric acid *(10)* ..... **1. R. arandensis**
11: Thallus not granular-isidiate; fumarprotocetraric acid absent.....12

12 Thallus orange-red or red *(11:)* .....**2. R. aurea**
12: Thallus grey-white to grey-green or olive-brown 13

13 Thallus olive-brown, bullate-areolate, smooth and glossy *(12:)* .....**5. R. bullata**
13: Thallus grey-white to grey-green, continuous to granular-papillate or areolate-cracked, dull and rough.... 14

14 Thallus thin, inconspicuous or absent, UV–; lichexanthone absent *(13:)*..... **9. R. laeta**
14: Thallus thick, prominent, areolate-cracked, UV+ yellow; lichexanthone present.....15

15 Medulla K+ red, P+ orange; norstictic acid present *(14:)*.....**8. R. haematites**
15: Medulla K+ pale yellow-brown, P+ red-orange; fumarprotocetraric acid present .....**12. R. quaesitica**

16 Thallus thick, white, UV+ yellow; lichexanthone present *(10:)*..... **13. R. sanguinolenta**
16: Thallus thin, inconspicuous or absent, UV–; lichexanthone absent..... **9. R. laeta**