A worldwide nomenclature revision of sequestrate *Russula* species

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57 new combinations
34 new names
Russulaceae

Abstract: Before the application of molecular techniques, evolutionary relationships between sequestrate genera and their epigeous counterparts in the *Russulaceae* were unclear. Based on overwhelming evidence now available, personal observations, and consideration of the International Code for Nomenclature of Algae, Fungi and Plants, we combine the overlapping sequestrate generic names Bucholtzia, Cystangium, Elasmomyces, Gymnomyces, Macowanites, and Martellia with the agaricoid genus *Russula*. This nomenclatural action follows precedents set by earlier mycologists and continues an effort to create clarity in our understanding of the evolutionary affiliations among sequestrate fungi - particularly the *Russulaceae*. We also provide the first comprehensive list of described sequestrate species of *Russula*.

INTRODUCTION

There are many compelling arguments suggesting that sequestrate fruiting habits in fungi resulted from adaptations to abiotic environmental factors and symbiotic associations with vertebrate and invertebrate spore dispersers (Thiers 1984, Cázares & Trappe 1994, Trappe & Claridge 2005, Galante et al. 2011, Gehring et al. 2014). These evolutionary pressures led to the convergence of fruiting macromorphologies in many fungal lineages; however, early mycologists chose to classify fungi with “gasteroid” or “secooid” fruiting habits in the obsolete class “Gasteromyctes”. At the time, it was thought that this class was distantly related to non-sequestrate (agaricoid) fungi. The evolution of truffle-like fungi from non-sequestrate forms was recognized before the availability of molecular tools (Malaňon 1931, Shaffer 1968, Heim 1971, Smith 1973, Trappe 1979, Thiers 1984) and later confirmed (Bruns et al. 1989, Hibbett et al. 1997, Krüger et al. 2001, Peintner et al. 2001, Binder & Bresinsky 2002, Geml 2004, Lebel et al. 2004, Vellinga 2004, Matheny et al. 2006, Albee-Scott 2007, Sheedy et al. 2016).

The spread of molecular approaches in mycology has taken this evolutionary perspective a step further by combining many sequestrate genera with closely affiliated non-sequestrate/gymnocarpic genera. For example, in the *Agaricaeae*, sequestrate species of *Amoagnostus*, *Cryptopleiota*, *Endopcytium*, *Gyrophragmium*, and *Longula* have been variously described in or transferred to *Agaricus*, *Chlorophyllum*, *Lepiota*, and *Macropleiota* (Vellinga 2002, Geml 2004, Geml et al. 2004, Lebel & Syme 2012, Ge & Smith 2013, Lebel 2013, Lebel & Vellinga 2013, Kerrigan 2016). In the *Amanitaceae*, *Torrendia* and *Amarrrendia* were combined with *Amanita* (Justo et al. 2010).

In the *Boletaceae*, the sequestrate genus *Descomyces* and some members of the genera *Setchelliooaster* and *Tingmoeova* have been combined with *Descolea* (Kuhar et al. 2017). In the *Boletaceae*, a new sequestrate species has been described in *Afroboletus*, and some *Gastroboletus* species have been combined with traditionally gymnocarpic genera (Nuhn et al. 2013, Wu et al. 2016, Han 2017). In the *Cortinariaceae*, *Thaxteragaster* and some species of *Protoglossum* have been combined with or described in *Cortinarius* (Peintner et al. 2002, Danks et al. 2010, Kuhar et al. 2017). In the *Entolomataceae*, the sequestrate genus *Richioniella* has been combined with *Entoloma* (Co-David 2009, Kinosita et al. 2012). In the *Inocybaceae*, several sequestrate species have been placed in *Inocybe* (Braaten et al. 2013). In the *Physalacriaceae*, members of the sequestrate genus *Cribbea* have been combined with *Oudemansiella* (Lebel 2017). In the *Psathyrellaceae*, the sequestrate *Psathyrellia secoioideas* was described (Moreno et al. 2015). In the *Strophariaceae*, one species of the sequestrate genus *Nivatogastrium* has been placed in *Pholiota* and two species of the sequestrate genus *Weraroa* have been moved to *Leratiomyces* (Bridge et al. 2008). In the *Hymenogastraceae*, the sequestrate species *Weraroa novae-zelandiae* (previously in *Strophariaceae*) has been recombined and renamed *Psilocybe weraroa* (Borovička et al. 2011).

The wave of recent nomenclatural changes among sequestrate fungi is analogous to the “one fungus, one name” approach that is in use for revisions of pleomorphic fungus nomenclature (Hawksworth 2015). In the case of sequestrate fungi, it might be better termed “one fungus, several names.” In the next section, we follow the precedents set by these aforementioned mycologists to bring the genus *Russula* and
its associated sequestrate genera up to date with current understandings of sequestrate fungus nomenclature.

SEQUESTRATE SPECIES OF RUSSULA

Since the early 19th century, new sequestrate Russulae have been placed in one or more of several genera created expressly for them. In early observations of amyloid spore reactions to iodine solutions, Bucholtz (1901, 1903) linked the sequestrate genus Elasmostomycetes to the Russula lineage and Arcangeliella to Lactarius, even though the phylogenetic affinities were not well understood at the time. The number of sequestrate genera regarded as russuloid in pre-molecular times reached its zenith at five in the seminal paper by Singer & Smith (1960): Cystangium, Elasmostomycetes, Gymnomyces, Macowanites, and Martellia. A sixth, Bucholtzia, had been validly described by Lohwag (1924) but never accepted by the taxonomist community. Species in two other genera of sequestrate Russulaceae, Arcangeliella and Zelleromycetes, are mostly resolved within the epigeous genus Lactarius, although some individual species may eventually be resolved within Russula or other genera in the Russulaceae (Buyck et al. 2008). Each of these 10 genera was circumscribed by characters thought to separate them from the others, but all show various degrees of intergradation (Calonge & Martin 2000, Trappe et al. 2002). Moreover, some sequestrate russuloid species had initially been erroneously assigned to families unrelated to the Russulaceae, including the Agaricaceae, Boletaceae, and Hydnangiaceae. The champion in nomenclatural complexity is Russula kriukowensis, which has been treated in seven genera (see the following species list for the formal new combination).

By the late 20th century, the phylogenetic relationship of sequestrate russuloid taxa to Russula was firmly demonstrated (Lebel & Trappe 2000, Lebel 2007). Morphological distinctions between some of those genera soon became blurred as additional new species proved to be morphological intermediates. Calonge & Martin (2000), Lebel & Trappe (2000, 2002), and Lebel (2007) attempted to sharpen the generic morphological distinctions, but phylogenetic analyses by Miller et al. (2001, 2006) clearly showed that the Russulaceae are monophyletic, and members of the six named sequestrate russuloid genera are nested among non-sequestrate Russula species with no consistent genetic relationship to each other or to any clade within Russula. The generic names erected to describe sequestrate morphologies of species we now combine with Russula have been shown to be nomenclatural artifacts that in hindsight have little bearing on the phylogenetic positions of these taxa. No available phylograms provide evidence that any sequestrate Russula spp. belong to distinct lineages within the genus. The para- or polyphyletic within phylogenies that include both sequestrate and non-sequestrate Russula spp. are nomenclatural relics, not genetics.

Over the last twenty years, multiple papers have been published to either describe new sequestrate species in Russula or Lactarius, recombine species from sequestrate genera with Russula or Lactarius, or suggest close or monophyletic relationships between species with the different morphologies (Martin et al. 1999, Miller et al. 2001, Desjardin 2003, Nuytinck et al. 2003, Eberhardt & Verroken 2004, Lebel & Tonkin 2007, Li et al. 2013, Verroken et al. 2014, Beenken et al. 2016, Lebel 2017, Looney et al. 2018). It has been widely suggested through published phylogenies that all remaining members of Bucholtzia, Cystangium, Elasmostomycetes, Gymnomyces, Macowanites, and Martellia should be transferred to Russula. These combinations will reduce the confusion in the current “one fungus, several names” situation and will simplify how we refer to these fungi. Lebel (2007, 2017) did a meticulous job of combining all Australian sequestrate Russulaceae into Russula. Here we update the remaining described sequestrate Russula species. In an era of genetics, environmental sequencing, and analysis of ecological roles of fungi through sequencing of root tips, having multiple generic names representing fungi that share close genetic affinities leads to further confusion. As stated in the preamble to the 2012 International Code of Nomenclature for Algae, Fungi, and Plants: “The purpose of giving a name to a taxonomic group is not to indicate its characters or history, but to supply a means of referring to it and to indicate its taxonomic rank” (McNeill et al. 2012). Accordingly, we judge that the following nomenclatural revisions of the genus Russula provide the clearest and most accurate information to indicate their taxonomic rank. Some information is lost without the sequestrate generic names; however, this is easily remedied in phylograms by using an arbitrary symbol, colour, or font in association with sequestrate names in a list, caption, text, phylogram, etc., as done by Miller et al. (2001) and Hosaka et al. (2006).

METHODS

We considered genetics whenever possible, but it was impossible to source sequences of type specimens (or new enough specimens) collected from close to type localities to generate a full phylogeny of the species we cover. To resolve the nomenclatural issues in this study, we relied heavily on morphology and reviewed specimens and/or original descriptions of the species we combined to ensure that they belonged in Russula. With increased interest in the sequestrate Russulaceae, we hope that many of these taxa will be re-collected and sequenced to generate a world phylogeny of this group. Genetics would make it possible to resolve the placement of the sequestrate genera Arcangeliella and Zelleromycetes within the closely affiliated gymnocarpic genera Lactarius, Lactifluus, and Multifurca.

All specific epithet headings are capitalized and arranged alphabetically in the list below. These species were originally published in the genera Bucholtzia, Cystangium, Elasmostomycetes, Gymnomyces, Macowanites, or Martellia, as listed in Index Fungorum (plus a few incorrectly placed in non-russuloid genera). In this way, readers can determine how and why an original sequestrate name has been converted to its corresponding Russula name. The protocols for these decisions follow Rossman (2014) and use an amended version of the format provided by Rossman et al. (2016). Sequestrate species with Russula names already or newly published herein are in boldface. The standard nomenclature abbreviation comb. nov. is used when the genus is being combined with Russula but the original specific epithet can still be retained; nom. nov. is used when a new name must be proposed to avoid creating a homonym with a previously described species of Russula. When a new name is needed to avoid producing Russula homonyms, its etymology and other relevant information are noted. MycoBank numbers are assigned and registered to each new combination or new name.
REVISED NOMENCLATURE OF SEQUESTRATE RUSSULA SPP.

Generic type species: *Russula emetica* (Schaeff.) Pers., *Observ. Mycol. (Lipsiae)* 1: 100. 1796.

ABIETIS

*Russula subabietis* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB8821258.

*Replaced synonym*: *Gymnomyces abietis* Trappe & Castellano, *Mycotaxon* 75: 161. 2000, non *Russula abietum* (J. Blum) Bon, *Doc. Mycol.* 13 (no. 50): 27. 1983.

*Note*: *subabietis* (“almost of the fir”) to avoid confusion between *abietis* (“of the fir”) with the related epithet *abietum* (“of firs”).

ACRIS

*Russula acerba* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB8821259.

*Replaced synonym*: *Macowanites acris* Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21(3): 86. 1960, non *Russula acris* Steinhaus, *Hedwiga* 27: 51. 1888.

*Etymology and note*: *acerba* (“bitter”) to avoid producing a homonym with the earlier *acer* (“sharp”) of *Russula acris* Steinhaus (1888).

AGARICINUS

*Russula agaricina* (Kalchbr. ex Berk.) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB 825252.

*Basionym*: *Macowanites agaricina* Kalchbr. ex Berk., *Gard. Chron.* 5: 785. 1876.

*Synonyms*: *Macowanites agaricus* (Kalchbr. ex Berk.) Kalchbr., *Grevillea* 10(55): 107. 1882. *Russula agaricina* (Kalchbr. ex Berk.) T. Lebel, [as ‘(Kalchbr.) T. Lebel.’], *Austral. Syst. Bot.* 20: 360. 2007, nom. inval. (Art. 41.5).

*Note*: *Macowania agaricina* is a legitimate name although published under Kalchbrenner’s illegitimate genus name *Macowania* (Art. 55.1) and has to be considered in terms of priority issues (Art. 11.4). Lebel (in Lebel & Tonkin 2007) intended to reallocate this name to *Russula* but did not introduce a valid combination (basionym not cited). She only referred to *Macowanites agaricus*, which is only an indirect reference to the true basionym and not sufficient to validate the combination (Art. 41.5).

ALBA

*Russula stevemilleri* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB8821262.

*Replaced synonym*: *Hydnangium album* Harkn., *Proc. Calif. Acad. Sci.*, Ser. 3, Bot. 1: 251. 1899, non *Russula alba* Velen., *České Houby* 1: 149. 1920.

*Synonyms*: *Martellia alba* (Harkn.) Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21: 41. 1961.

*Gymnomyces albus* (Harkn.) Trappe, T. Lebel & Castellano, *Mycotaxon* 81: 198. 2002.

*Etymology and note*: In honor of Dr. Steve Miller for his continuing research on taxonomy and phylogeny of sequestrate and other *Russula* species. This new name is erected to avoid producing a homonym with *Russula alba* Velen. (1920).

ALBIDIGLEBA

*Russula albidigleba* (Singer & A.H. Sm.) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB8821263.

*Basionym*: *Macowanites albidiglebus* Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21(3): 85. 1960.

ALBIDOFLAVA

*Russula albidoflava* T. Lebel, *Austral. Syst. Bot.* 20: 361. 2007. MycoBank MB532175.

ALBOBRUNNEA

*Russula albobrunnea* T. Lebel, *Austral. Syst. Bot.* 20: 362. 2007. MycoBank MB532176.

ALPINUS

*Russula alpica* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB8821264.

*Replaced synonym*: *Macowanites alpinus* Zeller, *Mycologia* 39: 291. 1947, non *Russula alpina* (A. Blytt & Rostr.) F.H. Møller & Jul. Schäff., *Ann. Mycol.* 38(2/4): 333. 1940. *Synonym*: *Elasmomyces alpinus* (Zeller) Zeller, *Mycologia* 40: 643. 1948.

*Etymology and note*: *alpica* (“dweller of alps”), to avoid producing a homonym with the earlier *Russula alpina* (A. Blytt & Rostr.) F.H. Møller & Jul. Schäff. (1940).

AMMOPHILUS

*Russula ammophila* (J.M. Vidal & Calonge) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB8821265.

*Basionym*: *Gymnomyces ammophilus* J.M. Vidal & Calonge, *Bol. Soc. Micol. Madrid* 24: 66. 1999. *Synonym*: *Macowanites ammophilus* (J.M. Vidal & Calonge) J.M. Vidal & Calonge, *Revista Catal. Micol.* 24: 70. 2002.

ARENICOLA

*Russula arenicola* (S.L. Mill. & D. Mitch.) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB8821266.

*Basionym*: *Macowanites arenicola* S.L. Mill. & D. Mitch., *Mycotaxon* 89: 284. 2004.

BALPINEUM

*Russula balpineum* (Grgur.) T. Lebel, *Muelleria* 36: 12. 2017. MycoBank MB8820015. *Basionym*: *Cystangium balpineum* Grgur., *Larger Fungi of South Australia (Adelaide)*: 53 (1997).

BISPORUM

*Russula bispora* (T. Lebel) T. Lebel, *Muelleria* 36: 12. 2017. MycoBank MB8820016. *Basionym*: *Cystangium bisporum* T. Lebel, *Austral. Syst. Bot.* 16: 373. 2003.

BORANUPENSIS

*Russula boranupensis* (T. Lebel) T. Lebel, *Muelleria* 36: 12. 2017. MycoBank MB8820018. *Basionym*: *Gymnomyces boranupensis* T. Lebel, *Austral. Syst. Bot.* 16: 403. 2003.

BRUNNEONIGRA

*Russula brunneonigra* T. Lebel, *Austral. Syst. Bot.* 20: 363. 2007. MycoBank MB532177.
BRUNESCENS

*Russula shafferii* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB821312.

*Replaced synonym:* Martellia brunescens Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21(3): 37. 1961, non *Russula brunescens* Murrill, *Lloydia* 8: 264. 1946 (1945).

*Synonym:* Gymnomyces brunescens (Singer & A.H. Sm.) Trappe, T. Lebel & Castellano, *Mycotaxon* 81: 199. 2002.

*Etymology and note:* To honor Dr. Robert Shaffer for his important contributions to knowledge of North American *Russulae*. This new name is erected to avoid producing a homonym with the earlier *Russula brunescens* Murrill (1945).

CALIFORNICA

*Russula californica* (Singer & A.H. Sm.) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB8821336.

*Basionym:* Martellia californica Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21(3): 33. 1961.

*Synonym:* Gymnomyces californicus (Singer & A.H. Sm.) Trappe, T. Lebel & Castellano, *Mycotaxon* 81: 199. 2002, non *Russula californiensis* Burl., *Mycologia* 28: 262. 1936.

CANDIDUS

*Note:* Originally described as *Hydnangium candidum* Tul. & C. Tul. in 1843, this species was recombined by Zeller & Dodge (1935) as *Sclerogaster candidus* (Tul. & C. Tul.) Zeller & C.W. Dodge, and then by Vidal (2005) as *Macowanites candidus* (Tul. & C. Tul.) J.M. Vidal. According to Kirk (2010), *s. candidus* in the *Sclerogasteraceae*, not the *Russulaceae*, is the correct name.

CAPITIS-ORAE

*Russula capitis-orae* (Dring) T. Lebel, *Muellera* 36: 12. 2017. MycoBank MB8820020.

*Basionym:* Elasmomycetes capitis-orae Dring, in Dring & Pegler, *Kew Bull.* 32(3): 564. 1978.

*Synonym:* Cystangium capitis-orae (Dring) T. Lebel, *Mycotaxon* 81: 197. 2002.

CHLORINOSMUS

*Russula chlorineolens* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB8821355.

*Replaced synonym:* Macowanites chlorinus A.H. Sm. & Trappe, *Mycologia* 55: 423. 1963, non *Russula chlorinus* Burl., *Mycologia* 16: 22. 1924.

*Etymology and note:* “chlorineolens” (smelling like chlorine), to avoid producing a homonym with the earlier, similarly smelling *Russula chlorinus* Burl. (1924).

CINNAMOMEA

*Russula unicalifornica* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB8821338.

*Replaced synonym:* Gymnomyces cinnamomeus Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21(3): 51. 1960, non *Russula cinnamomea* Banning, *Bot. Gaz.* 6(1): 166. 1881.

*Etymology and note:* “unicalifornica” contraction of “University of California” in reference to the site of the type collection to avoid producing a homonym with the earlier *Russula cinnamomea* Banning (1881).

CITRINA

*Russula harknessii* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB8821339.

*Replaced synonym:* Octavia m citrinus Harkn., *Proc. Calif. Acad. Sci., Ser. 3*, Bot. 1: 252. 1899, non *Russula citrina* Gillet, *Revue Mycol., Toulouse* 3(no. 11): 5. 1881, non *Macowanites citrinus* Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21(3): 69. 1960.

*Synonyms:* Hydnangium citrinum (Harkn.) Zeller & C.W. Dodge, *Ann. Missouri. Bot. Gard.* 22: 371. 1935. Gymnomyces citrinus (Harkn.) Trappe, T. Lebel & Castellano, *Mycotaxon* 81: 199. 2002.

*Etymology and note:* In honor of H. W. Harkness, pioneer in taxonomy of North American sequestrate fungi. This new name is erected to avoid producing a homonym with the earlier *Russula citrina* Gillet (1881).

CITRINUS

*Russula alleinstanleyae* T.F. Elliott & Trappe, *nom. nov.* MycoBank MB8823193.

*Replaced synonym:* Macowanites citrinus Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21(3): 69. 1960, non *Russula citrina* Gillet, *Revue Mycol., (Toulouse)* 3(no. 11): 5 (1961), non *Gymnomyces citrinus* (Harkn.) Trappe, T. Lebel & Castellano, *Mycotaxon* 81: 199. 2002.

*Etymology and note:* In honor of mycologist and educator Allein Stanley for her more than 40 years of dedicated service to the North American Mycological Association. This new name is erected to avoid producing a homonym with the earlier *Russula citrina* Gillet (1881).

CLAVATUM

*Russula clavata* (T. Lebel) T. Lebel, *Muellera* 36: 12. 2017. MycoBank MB8820021.

*Basionym:* Cystangium clavatum T. Lebel, *Austral. Syst. Bot.* 16: 375. 2003.

CLELANDII

*Russula aurantirosea* T. Lebel, *Muellera* 36: 12. 2017. MycoBank MB8820058.

*Replaced synonym:* Gymnomyces clelandii T. Lebel, *Austral. Syst. Bot.* 16: 404. 2003, non *Russula clelandii* O.K. Mill. & R.N. Hilton, *Sydowia* 39: 128. 1987.

COMPACTA

*Russula mattsmithii* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB8821354.

*Replaced synonym:* Gymnomyces compactus Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21(3): 53. 1960, non *Russula compacta* Frost, *Rep. (Annual) New York State Mus. Nat. Hist.* 32: 32. 1879.

*Etymology and note:* In honor of Dr. Matt Smith for his extensive research on taxonomy and ecology of sequestrate fungi. This new name is erected to avoid producing a homonym with the earlier *Russula compacta* Frost (1879).

COSTATISPORUS

*Russula costatispora* (T. Lebel) T. Lebel, *Muellera* 36: 12. 2017. MycoBank MB8820022.

*Basionym:* Gymnomyces costatisporus T. Lebel, *Austral. Syst. Bot.* 16: 405. 2003.
CREMEA

**Russula dodgei** Trappe & T.F. Elliott, *nom. nov.* MycoBank MB824950.

*Replaced synonym:* Arcangeliella creamea Zeller & C.W. Dodge, *Ann. Missouri Bot. Gard.* **22**: 367. 1935, non *Russula creamea* (Murrill) Singer, *Lilloa* **22**: 711. 1951.

*Synonyms:* Martellia creamea (Zeller & C.W. Dodge) Singer & A.H. Sm., *Mem. Torrey Bot. Club* **21**(3): 45. 1961 (1960).

*Gymnomycetes creameus* (Zeller & C.W. Dodge) Trappe et al., *Mycotaxon* **81**: 199. 2002.

*Etymology and note:* In honor of C.W. Dodge, who collaborated with S. M. Zeller in describing numerous new species of sequestrate fungi, including this taxon and to avoid confusion with *Russula creamea* (Murrill) Singer.

CRISTATA

**Russula korystospora** T. Lebel, *Muelleria* **36**: 12. 2017. MycoBank MB821530.

*Replaced synonym:* Gymnomycetes cristatus T. Lebel, *New Zealand J. Bot.* **40**: 491. 2002, non *Russula cristata* Romagn., *Bull. Mens. Soc. Linn. Soc. Bot. Lyon* **31**(1): 177. 1962.

DEPAUPERATUM

**Russula depauperata** (Singer & A.H. Sm.) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB821344.

*Basionym:* Cystangium depauperatum Singer & A.H. Sm., *Mem. Torrey Bot. Club* **21**: 69. 1960.

DOMINGUEZIAE

**Russula laurae** Trappe & T.F. Elliott, *nom. nov.* MycoBank MB821357.

*Replaced synonym:* Cystangium domingueziae Nouhra & Trierv.-Per., *Mycologia* **107**: 94. 2014, non Gymnomycetes dominguezii Mor.-Arr., J. Gómez & Calonge, *Mycol. Res.* **103**: 215. 1999.

*Etymology and note:* In honor of Argentine mycologist, Laura S. Dominguez after whom the species was originally named. This new name is erected to avoid producing a homonym with the earlier and similar name Gymnomycetes dominguezii Mor.-Arr., J. Gómez & Calonge (see following entry).

DOMINGUEZII

**Russula dominguezii** (Mor.-Arrl, J. Gómez & Calonge) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB821346.

*Basionym:* Gymnomycetes dominguezii Mor.-Arr., J. Gómez & Calonge, *Mycol. Res.* **103**: 215. 1999.

DURANGENSIS

**Russula durangensis** (Guzmán) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB821358.

*Basionym:* Macowanites durangensis Guzmán, *Revista Mex. Microl.* **4**: 118. 1988.

EBURNEA

**Russula eburnea** (T. Lebel) T. Lebel, *Muelleria* **36**: 12. 2017. MycoBank MB820023.

*Basionym:* Gymnomycetes eburneus T. Lebel, *Austral. Syst. Bot.* **16**: 408. 2003.

ECHINOSPORUS

**Russula tombrunsii** Trappe & T.F. Elliott, *nom. nov.* MycoBank MB823196.

*Replaced synonym:* Macowanites echinosporus Zeller & C.W. Dodge, *Ann. Missouri Bot. Gard.* **6**: 57. 1919, non *Russula echinospora* Singer, *Bull. Soc. Mycol. France* **55**: 270. 1940, non *Russula echinospora* R. Heim, *Rev. Mycol. (Toulouse)* **32**: 207. 1967, non Cystangium echinosporum (Zeller & C.W. Dodge) Trappe, T. Lebel & Castellano, *Mycotaxon* **81**: 197. 2002, non Elasmomyces echinosporus Zeller & C.W. Dodge, *Ann. Missouri Bot. Gard.* **22**: 370. 1935.

*Etymology and note:* In honor of Dr. Tom Bruns for his career-long research on taxonomy, phylogeny and ecology of ectomycorrhizal fungi. This new name is erected to avoid producing a homonym of *R. echinospora* Singer (1940).

EILDONENSIS

**Russula eildonensis** (G.W. Beaton et al.) T. Lebel, *Muelleria* **36**: 12. 2017. MycoBank MB820024

*Basionym:* Gymnomycetes eildonensis G.W. Beaton et al., *Kew Bull.* **39**: 680. 1984.

ELLIPSOSPORUM

**Russula ellipsospora** (Zeller) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB821361.

*Basionym:* Hydnangiellum ellipsosporum Zeller, *Mycologia* **31**: 13. 1939.

*Synonyms:* Martellia ellipsospora (Zeller) Singer & A.H. Sm., *Mem. Torrey Bot. Club* **21**: 30. 1960.

Gymnomycetes ellipsosporus (Zeller) Trappe, T. Lebel & Castellano, *Mycotaxon* **81**: 199. 2002.

FALLAX

**Russula similaris** Trappe & T.F. Elliott, *nom. nov.* MycoBank MB821362.

*Replaced synonym:* Martellia fallax Singer & A.H. Sm., *Mem. Torrey Bot. Club* **21**: 34. 1960, non *Russula fallax* (Schaef.) Fr., *Hymenomyc. Eur.* (Upsaliae): 449. 1874.

*Synonym:* Gymnomycetes fallax (Singer & A.H. Sm.) Trappe, T. Lebel & Castellano, *Mycotaxon* **81**: 199. 2002.

*Etymology and note:* “similaris” in reference to the similarity of the two epithets cited above, “fallax” (deceptive) deceiving their respective authors, and to avoid producing a homonym with the earlier *R. fallax* (Schaef.) Fr. (1874).

FERRUGINASCENS

**Russula ferruginascens** (Singer & A.H. Sm.) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB821363.

*Basionym:* Gymnomycetes ferruginascens Singer & A.H. Sm., *Mem. Torrey Bot. Club* **21**: 54. 1960.

FLAVOVIRES

**Russula olivaceoflava** T. Lebel, *Muelleria* **36**: 12. 2017. MycoBank MB821532.

*Replaced synonym:* Cystangium flavovirens T. Lebel, *Austral. Syst. Bot.* **16**: 377. 2003, non *Russula flavovirens* J. Bommer & M. Rousseau, *Bull. Soc. Roy. Bot. Belgique* **23**(1): 310. 1884.
Russula taetra Trappe & T.F. Elliott, nom. nov. MycoBank MB821365. 

Replaced synonym: Martellia foetens Singer & A.H. Sm., Mem. Torrey Bot. Club 21: 36. 1960, non Russula foetens Pers., Observ. Mycol. (Lipsiae) 1: 102. 1796. 

Synonym: Gymnomyces foetens (Singer & A.H. Sm.) Trappe et al., Mycotaxon 81: 199. 2002.

Etymology and note: taetra (“foul, offensive”), a related term to express the original epithet foetens (“stinking”) to avoid producing a homonym of the earlier Russula foetens Pers. (1796).

Russula aromatica Trappe & T.F. Elliott, nom. nov. MycoBank MB821366. 

Replaced synonym: Martellia fragrans A.H. Sm., Mycologia 55: 437. 1963. 

Synonym: Gymnomyces fragrans (A.H. Sm.) Trappe, T. Lebel & Castellano, Mycotaxon 81: 199. 2002, non Russula fragrans Romagn., Bull. Mens. Soc. Linn. Soc. Bot. Lyon 23: 112. 1954.

Etymology and note: “aromatica”, a related term to express the original epithet fragrans “becoming fragrant” to avoid producing a homonym of the earlier Russula fragrans Romagn. (1954).

Russula vilgalysii Trappe & T.F. Elliott, nom. nov. MycoBank MB821367. 

Replaced synonym: Macowanites fulvescens Singer & A.H. Sm., Mem. Torrey Bot. Club 21: 84. 1960, non Russula fulvescens Burl., N. Amer. Fl. (New York) 9: 229. 1915.

Etymology and note: In honor of Dr. Rytas Vilgalys for his research and teaching of all aspects of mycology. This new name is erected to avoid producing a homonym of the earlier Russula fulvescens Burl. (1915).

Russula fulvispora (A.H. Sm.) Trappe & T.F. Elliott, comb. nov. MycoBank MB821368. 

Basionym: Martellia fulvispora A.H. Sm., Mycologia 55: 438. 1963. 

Synonym: Gymnomyces fulvisporus (A.H. Sm.) Trappe, T. Lebel & Castellano, Mycotaxon 81: 199. 2002.

Russula furcatispina (T. Lebel) T. Lebel, Muellera 36: 12. 2017. MycoBank MB8820025.

Basionym: Gymnomyces furcatispinus T. Lebel, Austral. Syst. Bot. 16: 411. 2003.

Russula fuscoviolaceus (Singer & A.H. Sm.) Trappe & T.F. Elliott, comb. nov. MycoBank MB821371.

Basionym: Macowanites fuscoviolaceus Singer & A.H. Sm., Mem. Torrey Bot. Club 21: 87. 1960.

Russula sparsipora T. Lebel, Muellera 36: 12. 2017. MycoBank MB821534.

Replaced synonym: Gymnomyces fuscus T. Lebel, New Zealand J. Plant Dis. 35: 361. 1960.

Russula ilicis (Singer & A.H. Sm.) Trappe & T.F. Elliott, comb. nov. MycoBank MB821378.

Basionym: Martellia idahoensis Singer & A.H. Sm., Mem. Torrey Bot. Club 21: 43. 1960.

Synonym: Cystangium idahoense (Singer & A.H. Sm.) Trappe et al. [as ‘idahoensis’], Mycotaxon 81: 197. 2002.

Russula vidalii Trappe & T.F. Elliott, nom. nov. MycoBank MB821379.

Replaced synonym: Gymnomyces ilicis J.M. Vidal & Llistos., Rivista Micol. 38: 160. 1995, non Russula ilicis Romagn. et al., Bull. Trimestriel Soc. Mycol. France 88: 33. 1972.

Etymology and note: In honor of J.D. Vidal, Spanish Catalan mycologist who has specialized in taxonomy of sequestrate fungi. This new name is erected to avoid producing a homonym with the earlier Russula ilicis Romagn. (1972).
IODIOLENS

*Russula iodiolen* (A.H. Sm. & V.L. Wells) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB821380.
Basionym: *Macowanites iodiolen*, A.H. Sm. & V.L. Wells, *Mycoflora* 55: 425. 1963.

JAVANICA

*Russula boedijnii* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB823199.
*Replaced synonym: Hydnangiurn javanicum* Henn., *Hedwigia* 40(1877): 27. 1901, non *Russula javanica* Sacc. & P. Syd., *Syll. Fung.* (Abellini) 16: 46. 1902.
Synonym: *Gymnomyces javanicus* (Henn.) M.E. Sm. & Schmull, *Mycolet* 10: 253. 2011.

Etymology and note: In honor of Dutch mycologist K.B. Boedijn, who specialized in taxonomy of Indonesian fungi including hypogeous species. This new name is erected to avoid producing a homonym with the earlier *Russula javanica* Sacc. & P. Syd. (1902).

KERMESINA

*Russula kermesina* T. Lebel, *Austral. Syst. Bot.* 20: 377. 2007.
MycoBank MB853111.
*Replaced synonym: Macowanites carmineus* McNabb, *New Zealand J. Bot.* 9: 359. 1971, non *Russula carminea* (Jul. Schäff.) Kühner & Romagn., in Romagnesi, *Russules d’Europe Afr. Nord*, Essai sur la Valeur Taxinomique et Specifique des Characteres des Spores et des Revetements: 447. 1967.

KRIJKOWENSIS

*Russula krijkowensis* (Bucholtz) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB882514.
Basionym: *Scotium kriukowense* Bucholtz, *Hedwigia* 40: 314. 1901.
Synonym: *Scotium michailowskianum* Bucholtz [as ‘michailowskianum’], *Hedwigia* 40: 315. 1901.
Elasmomyces michailowskianus (Bucholtz) Sacc. & D. Sacc. [as ‘michailowskianus’], *Syll. Fung.* (Abellini) 17: 218. 1905.
Elasmomyces kriukowensis f. pleurotopsis Bucholtz, *Bull. Soc. Imp. Naturalistes Moscou*, ser. 2, 24: 463. 1907.
Bucholtzia kriukowensis (Bucholtz) Lohwag, *Oesterr. Bot. Z.* 73(7-9): 173. 1924.
Arcangeliiella kriukowensis var. michailowskiana (Bucholtz) Zeller & C.W. Dodge, *Ann. Missouri. Bot. Gard.* 22: 368. 1935.
Arcangeliiella kriukowensis (Bucholtz) Zeller & C.W. Dodge, *Ann. Mo. Bot. Gard.* 22: 368. 1935. *var. kriukowensis*.
Hydnangiurn kriukowense (Bucholtz) Svrček, Fl. ČSR, B-1, Gasteromycetes: 206. 1958. var. kriukowense.
Macowanites kriukowensis (Bucholtz) Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21: 77. 1960.

LEUCOCARPUS

*Russula leucocarpa* (T. Lebel) T. Lebel, *Muelleria* 36: 12. 2017.
MycoBank MB8820035.
Basionym: *Gymnomyces leucocarpus* T. Lebel, *New Zealand J. Bot.* 40: 497. 2002.

LONGISPORUS

*Russula longispora* (T. Lebel) T. Lebel, *Muelleria* 36: 12. 2017.
MycoBank MB8820036.
Basionym: *Gymnomyces longisporus* T. Lebel, *Austral. Syst. Bot.* 16: 415. 2003.

LONGISTERGUMATUM

*Russula longisterigmata* (Nouhra & Trierv.-Per.) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB8821384.
Basionym: *Cystangium longisterigmatum* Nouhra & Trierv.-Per., *Mycoflora* 107: 97. 2014.

LUTEIROSEA

*Russula luteirosea* (Bouhier) T. Lebel, *Muelleria* 36: 13 (2017).
MycoBank MB8822048.
Basionym: *Macowanites luteiroseus* Bouhier, *Mycotaxon* 63: 38. 1997.
Synonym: *Russula luteirosea* (Bouhier) T. Lebel, *Austral. Syst. Bot.* 20(4): 378. 2007, *nom. inval*.

LUTEOBRUNNEUM

*Russula luteobrunnea* (T. Lebel) T. Lebel, *Muelleria* 36: 12. 2017.
MycoBank MB8820037.
Basionym: *Cystangium luteobrunneum* T. Lebel, *Austral. Syst. Bot.* 16: 380. 2003.

LUTEOLUS

*Russula luteola* (Harkn.) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB8821386.
*Replaced synonym: Macowanites luteolus* A.H. Sm. & Trappe, *Mycologia* 55: 427. 1963, non *Russula luteola* (Harkn.) Trappe & T.F. Elliott (this paper, see preceding entry).

Etymology and note: *stricklandorum*, in honor of Bob and Babs Strickland for their support of the natural sciences and contributions to conservation. This new name is erected to avoid producing a homonym with the preceding *Russula luteola* (Harkn.) Trappe & T.F. Elliott (2017).

LYMANENSE

*Russula lymanensis* (Cázares & Trappe) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB8821388.
Basionym: *Macowanites lymanensis* Cázares & Trappe, *Mycotaxon* 42: 335. 1991.
Synonym: *Cystangium lymanense* (Cázares & Trappe) Trappe et al. [as ‘lymanensis’], *Mycotaxon* 81: 197. 2002.

MACROCYSTIDIUM

*Russula macrocystdia* (T. Lebel) T. Lebel, *Muelleria* 36: 12. 2017.
MycoBank MB8820038.
Basionym: *Cystangium macrocystidium* T. Lebel, *Austral. Syst. Bot.* 16: 380. 2003.

MACULATA

*Russula extramaculata* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB8821390.
*Replaced synonym: Martellia maculata* Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21: 28. [1960] 1961, non *Russula maculata* Quél., *Bull. Soc. Bot. France* 24: 323. [1877] 1878.
Synonym: Cystangiun muculatum (Singer & A.H. Sm.) Trappe et al., Mycotaxon 81: 197. 2002.

Etymology and note: extramacularum (“outside macula”) to avoid producing a homonym with the earlier Russula maculata Quél. (1878).

MATTIROLOANUS

Russula mattiroloana (Cavara) T. Lebel, Muellera 36: 12. 2017. MycoBank MB820039. Basionym: Elasmomyces mattiroloanus Cavara [as ‘mattirolianus’], Malpighia 11(9–10): 426. 1897. Synonyms: Secotium mattiroloanum (Cavara) E. Fisch., in Engler & Prantl, Nat. Pflanzenfam., Teil. I (Leipzig) 1: 301. 1900. Macowanites mattiroloanus (Cavara) T. Lebel & Trappe (as ‘mattirolianus’), Mycologia 92: 1194. 2000.

MEDITERRANEAN

Russula mediterranea (G. Moreno et al.) Trappe & T.F. Elliott, comb. nov. MycoBank MB821392. Basionym: Martellia mediterranea G. Moreno et al., Mycotaxon 42: 227. 1991.

MEDLOCKII

Russula medlockii (Trappe & Castellano) Trappe & T.F. Elliott, comb. nov. MycoBank MB821393. Basionym: Martellia medlockii Trappe & Castellano, Mycologia 78: 918. 1986. Synonym: Cystangium medlockii (Trappe & Castellano) et al., Mycotaxon 81: 197. 2002.

MEGASPORUS

Russula megaspora (Rodway) T. Lebel, Muellera 36: 12. 2017. MycoBank MB820040. Basionym: Gymnomyces megasporus Rodway, Pap. & Proc. Roy. Soc. Tasmania ‘1925’: 168. 1926 (1925). Synonyms: Octaviania megaspora (Rodway) G. Cunn., New Zealand J. Sci. Technol. 22: 300B. 1941. Cystangium megasporum (Rodway) T. Lebel & Castellano, Mycologia 94: 335. 2002.

MESSAPIOCIDES

Russula messapicoides (Llistos. & J.M. Vidal) Trappe & T.F. Elliott, comb. nov. MycoBank MB821395. Basionym: Macowanites messapicoides Llistos. & J.M. Vidal, Rivista Micol. 38: 155. 1995.

MEXICANUS

Russula guzmanii Trappe & T.F. Elliott, nom. nov. MycoBank MB821396. Replaced synonym: Macowanites mexicanus Guzmán, Revista Mex. Micr. 4: 116. 1988, non Russula mexicana Burl., Mycologia 3: 26. 1911.

Etymology and note: In honor of Prof. Gastón Guzmán, much accomplished Mexican mycologist and taxonomist. This new name is erected to avoid producing a homonym of the earlier Russula mexicana Burl. (1911).

MISTIFORMIS

Russula mistiformis (Mattir.) Trappe & T.F. Elliott, comb. nov. MycoBank MB821397. Basionym: Martellia mistiformis Mattir., Malpighia 14: 78. 1900. Synonyms: Hydnangiium mistiforme (Mattir.) Zeller & C.W. Dodge, Ann. Missouri Bot. Gard. 22: 372. 1935. Octaviania mistiformis (Mattir.) Svřekč, Fl. ČSR, B-1, Gasteromycetes: 192. 1958. Gymnomycetes mistiformis (Mattir.) T. Lebel & Trappe, Mycologia 92: 1999. 2000.

MOLLIS

Russula castellanoi Trappe & T.F. Elliott, nom. nov. MycoBank MB821398. Replaced synonym: Macowanites mollis Singer & A.H. Sm., Mem. Torrey Bot. Club 21: 79. 1960, non Russula mollis Quél., Compt. Rend. Assoc. Franç. Avancem. Sci. 11: 397. 1883 (1882). Synonym: Elasmomyces mollis (Singer & A.H. Sm.) Pegler & T.W.K. Young, Trans. Brit. Mycol. Soc. 72: 368. 1979.

Etymology and note: In honor of Dr. Michael (Caz) Castellano for his career-long fascination with and research on sequestrate fungi. This new name is erected to avoid producing a homonym with the earlier Russula mollis Quél. (1882).

MONOSPORA

Russula monospora (Boud. & Pat.) Trappe & T.F. Elliott, comb. nov. MycoBank MB821400. Replaced synonym: Gymnomycites monosporus E.L. Stewart & Trappe, Mycotaxon 2: 209. 1975.

Etymology and note: In honor of Dr. Elwin L. Stewart, mycologist and plant pathologist, for his contributions to taxonomy of sequestrate fungi. This new name is erected to avoid producing a homonym of the earlier Hydnangiium monosporum Boud. & Pat. (1888). See previous entry.

MONTICOLA

Russula monticola (Harkn.) Trappe & T.F. Elliott, comb. nov. MycoBank MB821401. Basionym: Octaviania monticola Harkn., Proc. Calif. Acad. Sci., Ser. 3, Bot. 1: 254. 1899. Synonyms: Hydnangiium monticola (Harkn.) Zeller & C.W. Dodge, Ann. Missouri Bot. Gard. 22: 372. 1935. Martellia monticola (Harkn.) Singer & A.H. Sm., Mem. Torrey Bot. Club 21: 40. 1961 (1960). Gymnomycetes monticola (Harkn.) Trappe et al., Mycotaxon 81: 200. 2002.

NANJINGENSIS

Russula nanjingensis (B. Liu & K. Tao) Trappe & T.F. Elliott, comb. nov. MycoBank MB823202. Basionym: Martellia nanjingensis B. Liu & K. Tao, Acta Mycol. Sin. 12: 103. 1993. Synonyms: Gymnomycetes nanjingensis (B. Liu & K. Tao) Trappe et al., Mycotaxon 81: 1999. 2000.
Basionym: MycoBank MB823210. 
Producing a homonym with the earlier: 

Synonym: Russula odorifera (E. Horak) Trappe et al., Mycotaxon 75: 166. 2000. 

Etymology and note: In honor of naturalist, mycologist, botanist, and philosopher Dr. Robert Hunsucker. This new name is erected to avoid producing a homonym with the earlier Russula nauseosa (Pers.) Fr. (1838).

NODISTINCTA 

Russula nondistincta (Trappe & Castellano) Trappe & T.F. Elliott, comb. nov. MycoBank MB823207. 
Basionym: Gymnomyces nondistincta Trappe & Castellano, Mycotaxon 75: 166. 2000. 

PALLIDUS 

Russula panaeoides T. Lebel, Muellera 36: 12. 2017. MycoBank MB821533. 
Replaced synonym: Gymnomycetes pallaoidus Mass. & Rodway, in Mass. Aust., Bull. Misc. Inform. Kew: 125. 1898, non Russula pallida P. Karst., Hedwigia 35: 43. 1896. 
Synonym: Octaviania pallida (Mass. & Rodway) G. Cunn., Proc. Linn. Soc. New South Wales 60: 119. 1935. 

PARVISOXIDES 

Russula parvisoxoides (Pat.) Singer, Missouri Bot. Gard. 21: 27. 1961 (1960). 

PIILA 

Russula pilosa (Pat.) Trappe & T.F. Elliott, comb. nov. MycoBank MB823216. 
Basionym: Hydnangium pilosa Pat., Bull. Soc. Mycol. France 26: 202. 1910. 
Synonyms: Octaviania pilosa (Pat.) Svrček, Fl. ČSR, B-1, Gasteromycetes: 199. 1958. 
Martellia pilosa (Pat.) J.M. Vidal, Bull. Soc. Catalana Micol. 14–15: 172. 1991. 
Gymnomyces pilosa (Pat.) Trappe, T. Lebel & Castellano, Mycotaxon 81: 200. 2002. 

PILOSUS 

Russula pilosa (Zeller & C.W. Dodge) Trappe & T.F. Elliott, comb. nov. MycoBank MB823217. 
Basionym: Arcangelieella pilosa Zeller & C.W. Dodge, Ann. Missouri Bot. Gard. 22: 368. 1935. 
Synonyms: Elasmomyces pilosus (Zeller & C.W. Dodge) Singer & A.H. Sm., Mem. Torrey Bot. Club 21: 66. 1960. 
Macowanites pilosus (Zeller & C.W. Dodge) Trappe et al., Mycotaxon 81: 202. 2002. 

PILOSELLA 

Russula pilosella T. Lebel, Austral. Syst. Bot. 20: 379. 2007. MycoBank MB532181.
Replaced synonym: *Hydnangium tomentosum* J.W. Cribb, *Pap. Dept. Bot. Univ. Queensland* 3: 251. 1958, non *Russula tomentosa* Buyck, *Bull. Jard. Bot. Nat. Belg.* 58: 476. 1988.

**PINETI**

*Russula pinetii* (Singer) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB823218.

Basionym: *Cystangium pinetii* Singer, *Mycol. Helv.* 1: 417. 1985.

**PINICOLA**

*Russula piniamans* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB823225.

Replaced synonym: *Macowanites pinicola* A.H. Sm., *Mycologia* 55: 430. 1963, non *Russula pinicola* Murrill, *Lloydia* 6: 213. 1943.

**ETYMOLGY AND NOTE:** *piniamans* ("friend of pine"), to avoid producing a homonym of the earlier *Russula pinicola* Murrill (1943)

**PISIGLAREA**

*Russula pisiglarea* (T. Lebel) T. Lebel, *Muellera* 36: 12. 2017. MycoBank MB820042.

Basionym: *Cystangium pisiglarea* T. Lebel, *Austral. Syst. Bot.* 16: 383. 2003.

**POLYCROMUM**

*Russula collubrina* T. Lebel, *Muellera* 36: 12. 2017. MycoBank MB820059.

Replaced synonym: *Cystangium polychromum* Trappe & Claridge, *Australas. Mycol.* 22: 33. 2003, non *Russula polychroma* Singer ex *Horda*, *Trans. Brit. Mycol. Soc.* 43: 457. 1960.

**PSEUDOEMETICUS**

*Russula nancyweberae* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB823545.

Replaced synonym: *Macowanites pseudoemeticus* A.H. Sm., *Mycologia* 55: 431. 1963, non *Russula pseudoemetica* Secr. ex Singer, *Hedwigia* 66: 190. 1926.

**ETYMOLGY AND NOTE:** In honor of Dr. Nancy Weber, for her extensive research on taxonomy of epigeous Ascomycetes, especially the genus *Morchella*. This new name is erected to avoid producing a homonym with the earlier *Russula pseudoemetica* Secr. ex Singer (1926).

**PTEROSPERMUS**

*Russula pterosperma* (T. Lebel) T. Lebel, *Muellera* 36: 12. 2017. MycoBank MB820043.

Basionym: *Gymnomyces pterosperma* T. Lebel, *Austral. Syst. Bot.* 16: 416. 2003.

**PUMICOIDEA**

*Russula pumicoidea* T. Lebel, *Austral. Syst. Bot.* 20: 367. 2007. MycoBank MB532182.

**REDDELLII**

*Russula reddelli* T. Lebel, *Austral. Syst. Bot.* 20: 369. 2007. MycoBank MB532183.

**REDOLENS**

*Russula osphranticarpa* T. Lebel, *Muellera* 36: 12. 2017. MycoBank MB820061.

Replaced synonym: *Octavantiana redolens* G. Cunn., *New Zealand J. Sci. Technol.* 23B: 172. 1942, non *Russula redolens* Burl., *Mycologia* 13: 133. 1921.

**ETYMOLGY AND NOTE:** *Russula osphranticarpa* ex *Bres.*, *MycoBank* MB820069.

**RODAWAYI**

*Russula rodwayi* (Masse) T. Lebel, *Muellera* 36: 12. 2017. MycoBank MB820044.

Basionym: *Secotium rodwayi* Masse, *Bull. Misc. Inform. Kew* 158. 1901.

**ETYMOLGY AND NOTE:** *Russula rodwayi* (Masse) T. Lebel, *Austral. Syst. Bot.* 16: 418. 2003, non *Russula rodwayi* (Masse) T. Lebel, *Muellera* 36: 11. 2017.

**RODGERSII**

*Russula rogersii* (Singer & A.H. Sm.) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB823546.

Basionym: *Octavantiana rogersii* Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21: 12. 1960.

**ETYMOLGY AND NOTE:** *Russula rogersii* (Singer & A.H. Sm.) T. Lebel, *Muellera* 36: 12. 2017. MycoBank MB820044.

**ROLFALEXII**

*Russula rolfalexii* (Trappe et al.) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB823552.

**ETYMOLGY AND NOTE:** *Russula rolfalexii* (Trappe et al.) Trappe & T.F. Elliott, *MycoTaxon* 81: 201. 2002.

**ROSEIPES**

*Russula spataforae* Trappe & T.F. Elliott, *nom. nov.* MycoBank MB823547.

Replaced synonym: *Elasmomyces roseipes* Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21: 64. 1960, non *Russula roseipes* Secr. ex Bres., *Fung. Trident.* 1: 37. 1881.

**ETYMOLGY AND NOTE:** *Russula spataforae* Trappe & T.F. Elliott, *MycoBank* MB823547.

**ROSEOMACULATUS**

*Russula roseomaculatus* (Singer & A.H. Sm.) Trappe & T.F. Elliott, *comb. nov.* MycoBank MB823548.

Basionym: *Gymnomyces roseomaculatus* Singer & A.H. Sm., *Mem. Torrey Bot. Club* 21: 50. 1960.
ROSTRATICYSTIDIA

Russula rostraticystidia T. Lebel, Austral. Syst. Bot. 20: 371. 2007. MycoBank MB832184.

RUBROLUTEA

Russula rubrolutea (T. Lebel) T. Lebel, Muellera 36: 14. 2017. MycoBank MB822049.
Basionym: Macowanites rubroluteus T. Lebel, New Zealand J. Bot. 40: 505. 2002.
Synonym: Russula rubrolutea (T. Lebel) T. Lebel, Austral. Syst. Bot. 20: 378. 2007, nom. inval.

RUSSULOIDES

Russula russuloides (Sectch.) Trappe & T.F. Elliott, comb. nov. MycoBank MB823549.
Basionym: Elasmomyces russuloides Sectch., J. Mycol. 13: 240. 1907.
Synonym: Macowanites russuloides (Sectch.) Trappe et al., Mycotaxon 81: 202. 2002.

SICHUANENSIS

Russula sichuanensis G.J. Li & H.A. Wen, Mycotaxon 124: 179. 2013 MycoBank MB804645.

SEMINUDUS

Russula seminuda (Massee & Rodway) G. Cunn., Misc. Inform. Kew 125. 1898.
Synonym: Russula sessilis Mycologia 8: 439. 1912.
Basionym: Cystangium seminudum (Massee & Rodway) T. Lebel, Austral. Syst. Bot. 20: 201. 2007.

SESSILE

Russula sessilis (Massee & Rodway) T. Lebel, Muellera 36: 12. 2017. MycoBank MB820046.
Basionym: Gymnomyces seminudus Massee & Rodway, Bull. Misc. Inform. Kew: 125. 1898.
Synonyms: Arcangelliella seminuda (Massee & Rodway) Zeller & C.W. Dodge, Ann. Missouri Bot. Gard. 23: 617. 1936.
Octavianna seminuda (Massee & Rodway) G. Cunn., Trans. & Proc. Roy. Soc. New Zealand 67: 408. 1938.
Cystangium seminudum (Massee & Rodway) T. Lebel & Castellano, Mycologia 94: 337. 2002.

SETCHELLIANUS

Russula setchelliana (Singer & A.H. Sm.) Trappe & T.F. Elliott, comb. nov. MycoBank MB823550.
Basionym: Macowanites setchellianus Singer & A.H. Sm., Mem. Torrey Bot. Club 21: 27. 1960.

SETIGER

Russula setigera (Zeller) Trappe & T.F. Elliott, comb. nov. MycoBank MB823551.
Basionym: Hydnangium setigerum Zeller, Mycologia 31: 14. 1939.
Synonyms: Martellia setigera (Zeller) Singer & A.H. Sm., Mem. Torrey Bot. Club 21: 39. 1960.
Gymnomyces setiger (Zeller) Trappe et al. [as ‘setigerus’], Mycotaxon 81: 201. 2002.

SHULTZIAE

Russula shultziae (T. Lebel) T. Lebel, Muellera 36: 12. 2017. MycoBank MB820047.
Basionym: Cystangium shultziae T. Lebel, Austral. Syst. Bot. 16: 385. 2003.

SICHUANENSIS

Russula sichuanensis G.J. Li & H.A. Wen, Mycotaxon 124: 179. 2013. MycoBank MB804645.

SINUATA

Russula sinuata T. Lebel, Austral. Syst. Bot. 20: 374. 2007. MycoBank MB532185.

SOLIDUS

Russula solida (Rodway) Trappe & T.F. Elliott, comb. nov. MycoBank MB823522.
Basionym: Gymnomyces solidus Rodway, Pap. & Proc. Roy. Soc. Tasmania ‘1921’: 157. 1921.

SPARSUM

Russula sparsa (T. Lebel) T. Lebel, Muellera 36: 12. 2017. MycoBank MB820048.
Basionym: Cystangium sparsum T. Lebel, Austral. Syst. Bot. 16: 388. 2003.

STIPITATUS

Russula stipitata (H.A. Peters) Trappe & T.F. Elliott, comb. nov. MycoBank MB823523.
Basionym: Elasmomyces stipitatus H.A. Peters, Mycologia 54: 112. 1962.
Synonym: Macowanites stipitatus (H.A. Peters) Trappe et al., Mycotaxon 81: 202. 2002.

SUBALPINUS

Russula orsonmilleri Trappe & T.F. Elliott, nom. nov. MycoBank MB823524.
Replaced synonym: Martellia subalpina A.H. Sm., Mycologia 55: 439. 1963, non Russula subalpina O.K. Mill., Arctic and Alpine Mycology, First International Symposium on Arcto-Alpine Mycology, 1980 (Seattle): 136. 1982.
Synonym: Gymnomyces subalpinus (A.H. Sm.) Trappe et al., Mycotaxon 81: 201. 2002.

Etymology and note: In honor of Dr. Orson K. Miller Jr. for his wide ranging contributions to taxonomy of North American fungi, including sequestrate and subalpine species. This new name is erected to avoid producing a homonym with the earlier Russula subalpina O.K. Miller (1963).

SUBFULVUS

Russula subfulva (Singer & A.H. Sm.) Trappe & T.F. Elliott, comb. nov. MycoBank MB823525.
Basionym: Martellia subfulva Singer & A.H. Sm., Mem. Torrey Bot. Club 21: 35. 1960.
Synonym: Gymnomyces subfulvus (Singer & A.H. Sm.) Trappe et al., Mycotaxon 81: 201. 2002.

SUBLEVISPORUS

Russula andaluciana T.F. Elliott & Trappe, nom. nov. MycoBank MB823526.
Replaced synonym: Gymnozymes sublevisporus Mor.-Arr. et al., Revista Catal. Micol. 24: 179. 2002, non Russula sublevispora (Romagn.) Kühner & Romagn., in Romagnesi, Russules d’Europe Afr. Nord, Essai sur la Valeur Taxinomique et Specifique des Characteres des Spores et des Revetements: 299. 1967.

Etymology and note: In reference to Andalucia, the region where it was originally collected, and to avoid producing a homonym with Russula sublevispora (Romagn.) Kühner & Romagn (1967).

SUBOCHRACEUS
Russula subochracea (A.H. Sm.) Trappe & T.F. Elliott, comb. nov. MycoBank MB823527.
Basionym: Martellia subochracea A.H. Sm., Mycologia 55: 440. 1963.
Synonym: Gymnozymes subochraceus (A.H. Sm.) Trappe et al., Mycotaxon 81: 201. 2002.

SUBOLIVACEUS
Russula subolivacea (A.H. Sm.) Trappe & T.F. Elliott, comb. nov. MycoBank MB823528.
Basionym: Macowanites subolivaceus A.H. Sm., Mycologia 55: 432. 1963.

SUBROSACEUS
Russula subrosacea (A.H. Sm.) Trappe & T.F. Elliott, comb. nov. MycoBank MB823529.
Basionym: Macowanites subrosaceus A.H. Sm., Mycologia 55: 433. 1963.

TAPAWERA
Russula tapawera (T. Lebel) T. Lebel, Austral. Syst. Bot. 20: 379. 2007. MycoBank MB851354.
Basionym: Macowanites tapawera T. Lebel, New Zealand J. Bot. 40: 507. 2002.

THAXTERI
Russula thaxteri (Singer) Trappe & T.F. Elliott, comb. nov. MycoBank MB823530.
Basionym: Martellia thaxteri Singer, Beih. Nova Hedwigia 29: 357. 1969.
Synonym: Cystangium thaxteri (Singer) Trappe et al., Mycotaxon 81: 198. 2002.

THEODOROUI
Russula theodoroui (T. Lebel) T. Lebel, Muelleria 36: 12. 2017. MycoBank MB820049.
Basionym: Cystangium theodoroui T. Lebel, Austral. Syst. Bot. 16: 390. 2003.

TRAPPEI
Russula trappei (T. Lebel) T. Lebel, Muelleria 36: 12. 2017. MycoBank MB820050.
Basionym: Cystangium trappei T. Lebel, Austral. Syst. Bot. 16: 392. 2003.

VARIABILISPORA
Russula variabilispora (Singer & A.H. Sm.) Trappe & T.F. Elliott, comb. nov. MycoBank MB823531.
Basionym: Martellia variabilispora Singer & A.H. Sm., Mem. Torrey Bot. Club 21: 27. 1960.
Synonym: Cystangium variabilisporum (Singer & A.H. Sm.) Trappe et al., Mycotaxon 81: 198. 2002.

VARIISPORA
Russula variispora T. Lebel, Austral. Syst. Bot. 20: 375. 2007. MycoBank MB532186.

VESICULOSA
Russula marshallorum T.F. Elliott & Trappe, nom. nov. MycoBank MB823553.
Replaced synonym: Martellia vesiculosa Singer & A.H. Sm., Mem. Torrey Bot. Club 21: 29. 1960, non Russula vesiculosa (Coker & Couch) Trappe & T.F. Elliott (this paper, see below).
Synonym: Cystangium vesiculosum (Singer & A.H. Sm.) Trappe et al., Mycotaxon 81: 198. 2002.

Etymology and note: In honor of Australian truffle-growing Marshall family for their strong support of Australasian truffle research and conservation. This new name is erected to avoid producing a homonym with Russula vesiculosa (see following entry).

VESICULOSUS
Russula vesiculosa (Coker & Couch) Trappe & T.F. Elliott, comb. nov. MycoBank MB823554.
Basionym: Gymnozymes vesiculosus Coker & Couch, Gasteromycetes of the Eastern U.S. and Canada (Chapel Hill): 23. 1928.
Synonym: Hydnangium vesiculosum (Coker & Couch) Zeller, Mycologia 40: 641. 1948.

VINACEODORUS
Russula vinaceodora (Calonge & J.M. Vidal) Trappe & T.F. Elliott, comb. nov. MycoBank MB823532.
Basionym: Macowanites vinaceodorus Calonge & J.M. Vidal, Mycotaxon 79: 2. 2001.

VINICOLOR
Russula vinicolor (A.H. Sm.) Trappe & T.F. Elliott, comb. nov. MycoBank MB823533.
Basionym: Macowanites vinicolor A.H. Sm., Mycologia 55: 434. 1963.

WESTRESII
Russula westresii (T. Lebel) T. Lebel, Muelleria 36: 12. 2017. MycoBank MB820051.
Basionym: Gymnozymes westresii T. Lebel, Austral. Syst. Bot. 16: 420. 2003.

WIRRABARENSIS
Russula wirrabarensis (Grgur.) T. Lebel, Muelleria 36: 12. 2017. MycoBank MB820052.
Basionym: Gymnozymes wirrabarensis Grgur., Larger Fungi of South Australia (Adelaide): 86. 1997.

XANTHOCARPUM
Russula xanthocarpa (T. Lebel) T. Lebel, Muelleria 36: 12. 2017. MycoBank MB820053.
Basionym: Cystangium xanthocarpum T. Lebel, Austral. Syst. Bot. 16: 394. 2003.

XANTHOSPORUS
Russula xanthospora (Hawker) Trappe & T.F. Elliott. comb. nov. MycoBank MB823534.
Basionym: Hydnangium carneum var. xanthosporum Hawker, Trans. Brit. Mycol. Soc. 35: 281. 1952.
Nomenclature of sequestrate Russula spp.

Synonym: Gymnomycetes xanthosporus (Hawker) A.H. Sm., Mycologia 54: 635. 1963.

XEROPHILUS

Russula xerophila (M.E. Sm. & Trappe) Trappe & T.F. Elliott, comb. nov. MycoBank MB823535.
Basionym: Gymnomycetes xerophilus M.E. Sm. & Trappe, Mycol. Res. 110: 577. 2006.

YUNNANENSIS

Russula zangii Trappe & T.F. Elliott, nom. nov. MycoBank MB823536.
Replaced synonym: Macowanites yunnanensis M. Zang, Acta Bot. Yunnan. 21: 37. 1999, non Russula yunnanensis (Singer) Singer, Mycologia 34: 72. 1942.

Etymology and note: In honor of M. Zang, original describer of the species. This new name is erected to avoid producing a homonym with the earlier Russula yunnanensis (Singer) Singer (1942).

ZELLERIANUS

Russula zelleriana (Singer & A.H. Sm.) Trappe & T.F. Elliott, comb. nov. MycoBank MB823537.
Basionym: Elasmomycetes zellerianus Singer & A.H. Sm., Mem. Torrey Bot. Club 21(3): 61. 1960.
Synonym: Macowanites zellerianus (Singer & A.H. Sm.) Trappe et al., Mycotaxon 81: 203. 2002.

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