

New combinations of plant-associated fungi resulting from the change to one name for fungi

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Abstract: In advancing to one scientific name for each fungus species, a number of name changes are required especially for plant-associated fungi. These include species names that are not in the correct genus. For example, the generic name *Elsinoë* is used for fungi causing scab diseases but a number of these species were described in the asexually typified genus *Sphaceloma* and must be placed in *Elsinoë*. In other cases species names were determined to be unrelated to the type species of the genus in which they are currently placed and are placed in a more appropriate genus. For each new name the history, rationale and importance of the name is discussed. The following new combinations are made: *Acanthohelicospora aurea*, *A. scopula*, *Bifusella ahmadii*, *Botryobasidium capitatum*, *B. rubiginosum*, *Colletotrichum magnum*, *Crandallia acuminata*, *C. antarctica*, *Elsinoë arachadis*, *E. freyliniae*, *E. necator*, *E. perseae*, *E. poinsettiae*, *E. puniceae*, *Entyloma gibbum*, *Harknessia farinosa*, *Passalora alocasiae*, *Protoventuria veronicae*, *Pseudocercospora ranunculi*, *Psillogonium stygium*, *Ramularia pseudomaculiformis*, *Seimatosporium tostum*, *Thielaviopsis radicola* combs. nov., and *Venturia effusa*.

Key words:

Fungi
nomenclature
plant pathogens
pleomorphic fungi
scientific names

Article info: Submitted: 10 November 2015; Accepted: 7 January 2016; Published: 11 January 2016.

INTRODUCTION

In the course of updating the scientific names of plant-associated fungi in the Systematic Mycology & Microbiology Laboratory Fungal Databases (SMML) to conform with one scientific name for fungi as required by the *International Code of Nomenclature for algae, fungi and plants* (ICN; McNeill *et al.* 2012), a number of instances were encountered in which the oldest epithet was not placed in the oldest or preferred genus or for other reasons a name change is required. In the case of species in which the scientific name should be changed but is widely used and applies to economically important plant pathogenic fungi, the name is placed on a list of species names to be protected. This list of proposed protected species names will be evaluated and accepted or declined by the Nomenclature Committee for Fungi (NCF) and put to the 2017 International Botanical Congress for approval. Examples of names proposed for protection are: *Balansia claviceps*, *Helicobasidium purpureum*, *Lasiodiplodia theobromae*, *Phanerochaeta chrysosporium*, and *Venturia inaequalis*. A number of lesser known plant-associated fungal

names exist for which a new combination is needed and these are made here. Both ascomycetes and basidiomycetes are included, but no members of the *Erysiphales*, *Eurotiales*, *Saccharomycetales* or *Uredinales*; these groups have been or will be considered elsewhere. In making these new combinations, the basionym and commonly used synonyms are listed but more synonyms may exist as provided in the SMML Fungal Databases (url: <http://nt.ars-grin.gov/fungaldatabases/index.cfm>). Here the names are arranged by class. For each name the source of the synonymy is provided as well as the rationale for selection of the genus in which the name is placed.

In this paper there are three situations for which new names are needed. In one case a name was described in a genus but that genus does not have priority or will not be used, thus the name must be placed in the genus to be used. As an example most species originally described in the asexually typified genus *Sphaceloma* belong in the sexually typified genus *Elsinoë* because *Sphaceloma* is now considered a synonym of *Elsinoë* (Wijayawardene *et al.* 2014, Rossman *et al.* 2015). In the second case the sexual and asexual names for a species are synonyms and the oldest epithet is not in the correct genus. This is the situation for *Bifusella ahmadii* based on *Leptostroma admadii* for which the younger name *B. superba* is a synonym. The third case is that in which the species are not congeneric with the genus in which they were originally

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placed. As an example *Venturia effusa*, originally described in *Fusicladium*, was determined to belong in the genus *Venturia* but the combination has never been made.

Leotiomyces

***Bifusella ahmadii* (Petr.) Rossman & W.C. Allen, comb. nov.**

Mycobank MB815413

Basionym: *Leptostroma ahmadii* Petr., *Sydowia* **8**: 181 (1954).

Synonym: *Bifusella superba* P.F. Cannon & Minter, *Mycol. Pap.* **155**: 27 (1986).

Notes: When Cannon & Minter (1986) described *Bifusella superba* from India, they listed *Leptostroma ahmadii* as the asexual morph based on their examination of two isosytype specimens. They also noted that this asexual morph was observed in the type collection of *B. superba*. Minter (1988) suggested that this fungus causes a disease called needle blight of mountain pines known from India and Pakistan. *Bifusella* Höhn. 1917, typified by *B. linearis* (Peck) Höhn. 1917, is an accepted genus in *Rhytismataceae* known primarily from conifers (Hou et al. 2005). The type species of *Leptostroma* Fr. 1815, *L. scirpinum* Fr. 1823 on *Scirpus*, is a synonym of *Hypohelion* P.R. Johnst. 1990 typified by *H. scirpinum* (DC.) P.R. Johnst. 1990, based on *Hypoderma scirpinum* DC. 1815, with preference now given to the later generic name (Johnston et al. 2014). Thus, *L. ahmadii* does not belong in *Leptostroma*. With the change to one name for fungi, the oldest epithet for the species, *L. ahmadii*, should be placed in *Bifusella*.

***Crandallia acuminata* (Ellis & Everh.) Rossman & W.C. Allen, comb. nov.**

Mycobank MB815414

Basionym: *Duplicaria acuminata* Ellis & Everh., *Proc. Acad. Nat. Sci. Philadelphia* **47**: 429 (1895).

Synonyms: *Bifusella acuminata* (Ellis & Everh.) Bonar & W.B. Cooke, *Mycologia* **34**: 665 (1942).

Crandallia juncicola Ellis & Sacc., *Bull. Torrey Bot. Club* **24**: 466 (1897).

***Crandallia antarctica* (Speg.) Rossman & W.C. Allen, comb. nov.**

Mycobank MB 815415

Basionym: *Lophodermium antarcticum* Speg., *Boln. Acad. Nac. Cienc. Córdoba* **11**: 249 (1887).

Synonym: *Duplicaria antarctica* (Speg.) P.R. Johnst., *Mycol. Pap.* **176**: 89 (2001).

Notes: The type species of *Crandallia* Ellis & Everh. 1897, *C. juncicola*, is considered the asexual morph of *Duplicaria acuminata* (Powell 1973), a species that is known from both living and dead stems of primarily *Juncus* (*Juncaceae*), also *Carex* (*Cyperaceae*), in western North America (Farr & Rossman 2015, Powell 1973). Through careful developmental studies, Powell (1973) unraveled the relationship of the asexual and sexual morphs of this species, which occur on the same type specimen. The genus *Duplicaria* Fuckel 1870 is typified by *D. empetri*

(Pers.) Fuckel 1870 on *Empetrum* (*Ericaceae*), a species about which little is known. The asexual morph of *D. empetri* was placed in *Melasmia* by Powell (1973), a genus quite unlike *Crandallia*. Based on the differences in host family and asexual morphs, it would appear that *D. empetri* is unrelated to *C. acuminata*, thus *Duplicaria* and *Crandallia* are not synonyms. Johnston (2001) compared *D. acuminata* and *D. antarctica*, the two species of *Duplicaria* on *Juncaceae*, suggesting that they were congeneric. Although *D. acuminata* was placed in *Bifusella* by Bonar & Cooke (1942), Powell (1973) distinguished these three generic names and rejected *Bifusella* for *Duplicaria acuminata*. In addition species of *Bifusella* including the type species occur only on conifers. Thus *Bifusella* and *Duplicaria* are rejected as the possible generic placement for these species. Rather the oldest epithet of each species, including the type species, are now placed in the genus *Crandallia*.

Dothideomyces

***Acanthohelicospora aurea* (Corda) Rossman & W.C. Allen, comb. nov.**

Mycobank MB815416

Basionym: *Helicomycetes aureus* Corda, *Icon. fung.* **1**: 9 (1837).

Synonyms: *Helicosporium aureum* (Corda) Linder, *Ann. Mo. Bot. Gdn.* **16**: 279 (1929).

Helicosporium citreoviride Tubaki, *Trans. Mycol. Soc. Japan* **5**: 2 (1964).

***Acanthohelicospora scopula* (Peck) Rossman & W.C. Allen, comb. nov.**

Mycobank MB815417

Basionym: *Acanthostigma scopulum* Peck, *Bull. N.Y. St. Mus. nat. Hist.* **1**(2): 22 (1887).

Synonyms: *Helicosporium pilosum* Ellis & Everh., *Bull. Torrey bot. Club* **24**: 476 (1897).

[*Sphaeria scopula* Cooke & Peck 1880 non Sowerby 1803.]

[*Acanthostigmia scopula* (Cooke & Peck) J.L. Crane et al., *Canad. J. Bot.* **76**: 606 (1998).]

[*Lasiosphaeria scopula* (Cooke & Peck) Sacc., *Syll. Fung.* **9**: 852 (1891).]

[*Tubeufia scopula* (Cooke & Peck) M.E. Barr, *Mycotaxon* **12**: 164 (1980).]

Notes: The genus *Acanthohelicospora* Boonmee & K.D. Hyde 2014 was established by Boonmee et al. (2014) based on *A. pinicola* Boonmee & K.D. Hyde 2014. They showed that *A. aurea* and *A. scopula* were congeneric but distinct species in this genus, but did not formally make the new combinations. The other potential generic names such as *Acanthostigma*, *Helicomycetes*, *Helicosporium*, and *Tubeufia* were each shown to be distinct from this genus based on the phylogenetic placement of their respective type species. The basionym for *A. scopula* had previously been considered to be *Sphaeria scopula* Cooke & Peck 1880 (Réblová & Barr 2000) but that name is a later homonym of *S. scopula* Sowerby 1803, thus the basionym for this species dates from the next available name, *Acanthostigma scopulum* Peck 1887. Both of these epithets are therefore now placed in *Acanthohelicospora*.

Elsinoë arachidis (Bitanc. & Jenkins) Rossman & W.C. Allen, **comb. nov.**

MycoBank MB815418

Basionym: *Sphaceloma arachidis* Bitanc. & Jenkins, *Archos Inst. biol., S. Paulo* **11**: 45 (1940).

Elsinoë freyliniae (Crous) Rossman & W.C. Allen, **comb. nov.**

MycoBank MB815419

Basionym: *Sphaceloma freyliniae* Crous, *Persoonia* **25**: 125 (2010).

Elsinoë necator (Ellis & Everh.) Rossman & W.C. Allen, **comb. nov.**

MycoBank MB815420

Basionym: *Gloeosporium necator* Ellis & Everh., *J. Mycol.* **3**(11): 129 (1887).

Synonyms: *Sphaceloma necator* (Ellis & Everh.) Jenk. & Shear, *Phytopathology* **36**: 1047 (1946).

Plectodiscella veneta Burkholder, *Phytopathology* **7**: 91 (1917).

Elsinoë veneta (Burkh.) Jenkins, *J. Agric. Research* **44**: 696 (1932).

Elsinoë perseae (Jenkins) Rossman & W.C. Allen, **comb. nov.**

MycoBank MB815421

Basionym: *Sphaceloma perseae* Jenkins, *Phytopathology* **24**: 84 (1934).

Elsinoë poinsettiae (Jenkins & Ruehle) Rossman & W.C. Allen, **comb. nov.**

MycoBank MB815422

Basionym: *Sphaceloma poinsettiae* Jenkins & Ruehle, *Proc. Wash. Acad. Sci.* **55**: 83 (1942).

Elsinoë punicae (Bitanc. & Jenkins) Rossman & W.C. Allen, **comb. nov.**

MycoBank MB815423

Basionym: *Sphaceloma punicae* Bitanc. & Jenkins, *Proc. Amer. Sci. Congr.* **8**: 163 (1942).

Notes: The generic names *Elsinoë* and *Sphaceloma* have been applied to the sexual and asexual morphs of the fungi causing scab diseases, which occur primarily in subtropical and tropical regions. In advancing to one scientific name for fungi, it was decided to propose the generic name *Elsinoë* Racib. 1900, based on *E. canavaliae* Racib. 1900, for protection over the name used for asexual morphs, *Sphaceloma* de Bary 1874 based on *S. ampelina* de Bary 1874 (Wijayawardene *et al.* 2014, Rossman *et al.* 2015). Although many names in *Sphaceloma* need to be recognized in *Elsinoë*, only the most economically important names of *Elsinoë* are considered here. *Elsinoë arachidis* causes a scab disease of peanut in South America that threatens the US peanut industry (Kokalis-Burelle *et al.* 1997). *Elsinoë freyliniae* (as *S. freyliniae*) was recently described causing a scab disease of *Freylinia* (Crous & Groenewald 2010). *Elsinoë necator* causes a cane spot or anthracnose of raspberry that occurs in warm temperate and subtropical regions (Sivanesan

& Critchett 1974). A scab disease of avocado is caused by *E. perseae*, which is widespread in subtropical and tropical regions including Florida (Ploetz *et al.* 1994). A scab disease on the fruit, leaves and petioles of pomegranate is caused by *E. punicae*, which occurs throughout its growing range (Farr & Rossman 2015).

Passalora alocasiae (Syd. & P. Syd.) Rossman & W.C. Allen, **comb. nov.**

MycoBank MB815424

Basionym: *Mycosphaerella alocasiae* Syd. & P. Syd., *Philipp. J. Sci., C, Bot.* **8**(3): 195 (1913).

Synonyms: *Sphaerella alocasiae* (Syd. & P. Syd.) Trotter, *Syll. Fung.* **24**(2): 850 (1928).

Cercospora caladii var. *colocasiae* Höhn., *Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1* **116**: 150 (1907).

Cercospora colocasiae (Höhn.) Chupp, *Monograph of Cercospora*: 58 (1954).

Passalora colocasiae (Höhn.) U. Braun, *New Zealand J. Bot.* **37**: 308 (1999).

Phyllosticta colocasiae Höhn., *Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1* **116**: 142 (1907).

Notes: When Braun *et al.* (2014) reviewed the phylogenetic placement and taxonomy of this species, they considered *Cercospora caladii* var. *colocasiae* to be the oldest name for this taxon. Because taxa only compete at the same rank (McNeill *et al.* 2012), the earliest species name available is *Phyllosticta colocasiae*. However, as that name is already used at species rank in *Passalora*, the next oldest epithet is provided by *Mycosphaerella alocasiae*. Based on the generic placement and synonymy in Braun *et al.* (2014), this oldest available epithet is here placed in *Passalora*.

Protoventuria veronicae (Bat.) Rossman & W.C. Allen, **comb. nov.**

MycoBank MB815425

Basionym: *Ramalia veronicae* Bat., *Revta Biol. (Lisbon)* **1**(2): 111 (1957).

Synonyms: *Fusicladium veronicae* (Bat.) B. Sutton & Pascoe, *Aust. Syst. Bot.* **1**: 81 (1988).

Protoventuria parahebicola Pascoe & B. Sutton, *Aust. Syst. Bot.* **3**: 281 (1990).

Notes: The sexual morph of *Fusicladium veronicae* was described as *Protoventuria parahebicola* (Pascoe & Sutton 1990), a fungus causing brown leaf blight on *Parahebe* (Sutton & Pascoe 1988). With the change to one name for fungi, the oldest epithet must be placed in the accepted genus unless conserved or protected. The genus *Protoventuria* Berl. & Sacc. 1887 is typified by *P. rosae* (De Not.) Berl. & Sacc. 1887, based on *Venturia rosae* De Not. 1844, and includes 46 names. Most recently this type species has been regarded as *Gibbera rosae* (De Not.) E. Müll. & R. Menon 1955. Zhang *et al.* (2011) demonstrated that this species, together with *P. alpina* (Sacc.) M.E. Barr 1971, formed a distinct lineage in *Dothideomycetes* that should be regarded as *Protoventuria*. The genus *Ramalia* Bat. 1957, typified by *R. veronicae*, includes only one additional species and has not been widely used. Further, *Protoventuria* has priority over *Ramalia*. *Fusicladium* based on *F. pomi* is

considered a synonym of *Venturia*, a generic name that is proposed for protection (Wijayawardene et al. 2014, Rossman et al. 2015) and is not the correct genus for this species. The name *Ramalia veronicae* provides the oldest epithet for this species in *Protoventuria*.

Pseudocercospora ranunculi (P. Karst.) Rossman & W.C. Allen, **comb. nov.**

Mycobank MB815426

Basionym: *Sphaerella ranunculi* P. Karst., *Öfvers. K. Svensk. Vetensk.-Akad. Förhandl.* **29** (2): 105 (1872).

Synonyms: *Mycosphaerella ranunculi* (P. Karst.) Lind, *Meddr Grønland, Biosc.* **71**: 167 (1926).

Pseudocercospora ranunculacearum U. Braun, *Mycotaxon* **51**: 50 (1994).

Notes: Braun (1994, 1995) described the asexual morph *Pseudocercospora ranunculacearum* associated with *Mycosphaerella ranunculi*. *Mycosphaerella*, typified by *M. punctiformis*, is now considered a synonym of *Ramularia* based on *R. pusilla* (Crous et al. 2011), thus the oldest epithet for this species belongs in *Pseudocercospora*.

Psilogonium stygium (Berk. & M.A. Curtis) Rossman & W.C. Allen, **comb. nov.**

Mycobank MB815427

Basionym: *Sporidesmium stygium* Berk. & M.A. Curtis, *Grevillea* **3**: 17 (1874).

Synonyms: *Piricauda stygia* (Berk. & M.A. Curtis) R.T. Moore, *Rhodora* **61**: 104 (1959).

Glonium clavisorum Seaver, *Mycologia* **17**: 4 (1925).

Psilogonium clavisorum (Seaver) E. Boehm et al., *Mycol. Res.* **113**: 469 (2009).

Notes: The generic name *Psilogonium* Höhn. 1918, based on *P. lineare* (Fr.) Petr. 1923, was reinstated by Boehm et al. (2009a, b) including *P. clavisorum* and its asexual morph, *Sporidesmium stygium*, which provides an older epithet for this species. The genus *Sporidesmium*, typified by *S. atrum*, is considered a synonym of *S. ehrenbergii* and has been shown to have species scattered throughout *Dothideomycetes* and *Sordariomycetes* (Shenoy et al. 2006), but the type was not included in that study. Given the polyphyletic nature of the genus, it would not compete for use with the well-defined *Psilogonium*. The genus *Piricauda*, based on *P. uleanum* (Sacc. & P. Syd.) Bubák 1914, now regarded as *P. paraguayensis* (Speg.) R.T. Moore 1959, occurs on the leaf hairs of a tropical tree quite unlike *Psilogonium stygium*, which occurs on dead bark (Mercado Sierra et al. 2005). The oldest epithet, *S. stygium*, must be placed in *Psilogonium* and the new combination is made here.

Ramularia pseudomaculiformis (Desm.) Rossman & W.C. Allen, **comb. nov.**

Mycobank MB815428

Basionym: *Sphaeria pseudomaculiformis* Desm., *Ann. Sci. Nat., Bot., sér. 3* **6**: 83 (1846).

Synonyms: *Mycosphaerella pseudomaculiformis* (Desm.) J. Schröt., in Cohn, *Krypt.-Fl. Schlesien* **3** (2–3): 337 (1894).

Scoliotrichum bulbigerum Fuckel, *Fungi rhenani exsic.* no. 1910 (1867).

Phacellium bulbigerum (Fuckel) U. Braun, *Nova Hedwigia* **50**: 509 (1990).

Ramulaspora poterii Ranoj., *Bull. Soc. mycol. Fr.* **35**: 24 (1919).

Notes: Braun (1990) recognized the genus *Phacellium* Bonord. 1860, based on *P. dishonestum* Bonord. 1860 and now *P. alborosellum* (Desm.) U. Braun 1990, for synnematosus ramularia-like fungi. The genus was monographed by Braun (1998) who included 22 species. He listed *Phacellium bulbigerum* with *Mycosphaerella pseudomaculiformis* as the sexual morph with additional synonyms. The genus *Phacellium* is now considered a synonym of *Ramularia* based on *R. pusilla* (Crous et al. 2011). In addition, *Mycosphaerella* typified by *M. punctiformis* is also considered a synonym of *Ramularia* (Videira et al. 2015). With the change to one name for species of fungi, this morph provides the oldest epithet for the species, which is here placed in *Ramularia*.

Venturia effusa (G. Winter) Rossman & W.C. Allen, **comb. nov.**

Mycobank MB815429

Basionym: *Fusicladium effusum* G. Winter, *J. Mycol.* **1**: 101 (1885).

Synonyms: *Fusicladosporium effusum* (G. Winter) Partridge & Morgan-Jones, *Mycotaxon* **85**: 364 (2003).

Fusicladium caryigenum Ellis & Langl., *J. Mycol.* **4**: 124 (1888).

Cladosporium caryigenum (Ellis & Langl.) Gottwald, *Mycologia* **74**: 388 (1982).

Notes: This widespread species causes pecan scab and other leaf spot diseases of *Juglandaceae* (Gottwald 1982, Partridge & Morgan-Jones 2003). It had previously been referred to as *Cladosporium caryigenum* by Gottwald (1982) while Schubert et al. (2003) considered it a synonym of the older name *Fusicladium effusum*. Crous et al. (2007) confirmed that *Fusicladium effusum* belonged in *Venturia*. Given the extensive use of *Venturia*, such as *V. inaequalis* for the cause of apple scab and *V. pyrina* for the cause of pear scab, the generic name *Venturia* is proposed for protection over the generic synonym *Fusicladium* (Wijayawardene et al. 2014, Rossman et al. 2015). Several species names already placed in *Venturia* will be protected over their names in *Fusicladium*, but *F. effusum* does not have a name in *Venturia*, thus a new combination is made here.

Sordariomycetes

Colletotrichum magnum (S.F. Jenkins & Winstead) Rossman & W.C. Allen, **comb. nov.**

Mycobank MB815430

Basionym: *Glomerella magna* S.F. Jenkins & Winstead, *Phytopathology* **54**: 453 (1964).

Notes: An anthracnose disease of cucurbits was first reported by Jenkins & Winstead (1964) caused by *Colletotrichum magnum* (as *Glomerella magna*). This fungus was the basis

for a study of appressorium formation (Bhairi *et al.* 1990) and was recently reported on *Lobelia* in China (Li *et al.* 2013). With the change to one name for fungal species, the generic name *Glomerella* is now considered a synonym of *Colletotrichum* (Cannon *et al.* 2012). Bhairi *et al.* (1990: 208) cited the name *C. magnum*, but did not formally combine this epithet in *Colletotrichum* nor did they cite the basionym as required for valid publication of new combinations by the ICN (McNeill *et al.* 2012), thus this new combination is formally made here.

Harknessia farinosa (Ellis) Rossman & W.C. Allen, **comb. nov.**

MycoBank MB815431

Basionym: *Valsa farinosa* Ellis, *Bull. Torrey bot. Club* **9**: 99 (1882).

Synonyms: *Cryptosporella farinosa* (Ellis) Sacc., *Syll. Fung.* **2**: xxxv (1883).

Cryptospora farinosa (Ellis) Ellis & Everh., *N. Amer. Pyren.*: 532 (1892).

Wuestneia farinosa (Ellis) J. Reid & C. Booth, *Canad. J. Bot.* **67**: 889 (1989).

Harknessia caudata Ellis & Everh., *J. Mycol.* **1**: 92 (1885).

Mastigonetron caudatum (Ellis & Everh.) Höhn., *Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1* **123**: 134 (1914).

Notes: The synonymy presented here follows Nag Raj & Di Cosmo (1981) and Reid & Booth (1989) as *Harknessia caudata*. The type species of *Wuestneia* Auersw. ex Fuckel 1864, *W. aurea* Auersw. 1869, belongs in *Cryphonectriaceae* (Rossman *et al.* 2007), while most species of *Wuestneia* have been found to belong in *Harknessia* (Crous *et al.* 2012). *Harknessia* Cooke 1881, typified by *H. eucalypti* Cooke 1881, is included in *Harknessiaceae* (Crous *et al.* 2012) in *Diaporthales*; *Wuestneia* is not, therefore, the appropriate generic name for this species. The genus *Mastigonetron* Kleb. 1914, based on *M. fuscum* Kleb. 1914, was considered a synonym of *Harknessia* by Nag Raj & Di Cosmo (1981). This species belongs in the genus *Harknessia* and is combined into it here using the oldest epithet.

Seimatosporium tostum (Berk. & Broome) Rossman & W.C. Allen, **comb. nov.**

MycoBank MB815432

Basionym: *Sphaeria tosta* Berk. & Broome, *Ann. Mag. nat. Hist., ser. 2* **9**: 381 (1852).

Synonymys: *Didymella tosta* (Berk. & Broome) Sacc., *Syll. Fung.* **1**: 556 (1882).

Paradidymella tosta (Berk. & Broome) Petr., *Ann. mycol.* **25**: 238 (1927).

Leiosphaerella tosta (Berk. & Broome) E. Müll., *Beitr. Kryptfl. Schweiz* **11**(2): 672 (1962).

Clethridium tostum (Berk. & Broome) E. Müll. & Shoemaker, *Canad. J. Bot.* **43**: 1343 (1965).

Discostroma tostum (Berk. & Broome) Brockmann, *Sydowia* **28**: 319 (1976).

Didymosphaeria fuckeliana Pass. ex Sacc., *Michelia* **1**: 440 (1878).

Didymella fuckeliana (Pass.) Sacc., *First List Cyprus Fungi* **1**: 556 (1882).

Discosia passerinii Sacc., *Syll. Fung.* **3**: 656 (1884).

Seimatosporium passerinii (Sacc.) Brockmann, *Sydowia* **28**: 320 (1976).

Notes: Brockmann (1976) provided the extensive synonymy for this species, as *Discostroma tosta*, listing *Seimatosporium passerinii* as the name for the asexual morph. The generic names *Discostroma* and *Seimatosporium* have long been considered names for comparable sexual and asexual morphs (Brockmann 1976, Nag Raj 1993). The type species of *Discostroma* Clem. 1909, *D. rehmii* (Schnabl) Clem. 1909, is regarded as *Seimatosporium salicinum* (Corda) Nag Raj 1993. The type of *Seimatosporium* Corda 1833, *S. rosae* Corda 1833, is a well-known name with many synonyms having a sexual morph described as *D. rosae* Brockmann 1976 (Shoemaker 1964, Brockmann 1976, Nag Raj 1993). Although neither of the type species of *Discostroma* or *Seimatosporium* were included, Tanaka *et al.* (2011) used three species of *Discostroma*, including *D. tostum* and 11 species of *Seimatosporium*, to show that representatives of these genera form a monophyletic genus that should be regarded as *Seimatosporium*. Norphanphoun *et al.* (2015) added four more isolates of *Seimatosporium*, including one for the type species *S. rosae*, and also concluded that this genus was monophyletic. Given that *Seimatosporium* is the oldest name, has priority, has the greater number of species, and is most commonly used, this generic name should be used. A new combination for this common species is therefore required.

Thielaviopsis radicola (Bliss) Z.W. De Beer & W.C. Allen, **comb. nov.**

MycoBank MB815433

Basionym: *Ceratostomella radicola* Bliss, *Mycologia* **33**: 468 (1941).

Synonyms: *Ceratocystis radicola* (Bliss) C. Moreau, *Revue Mycol.* **17** (Suppl. Colon. 1): 22 (1952).

Ophiostoma radicola (Bliss) Arx, *Antonie van Leeuwenhoek* **18**: 211 (1952).

Chalaropsis punctulata Hennebert, *Antonie van Leeuwenhoek* **33**: 334 (1967).

Thielaviopsis punctulata (Hennebert) A.E. Paulin *et al.*, *Mycologia* **94**: 70 (2002).

Notes: In their revision of *Thielaviopsis* and related genera, De Beer *et al.* (2014) neglected to place the oldest epithet in the correct genus although this was recognized as necessary. This species causes a serious wilt and root rot disease of palms throughout the world.

Basidiomycota

Botryobasidium capitatum (Link) Rossman & W.C. Allen, **comb. nov.**

MycoBank MB815436

Basionym: *Acladium capitatum* Link, *Mag. Gesell. naturf. Freunde, Berlin* **3**(1-2): 10 (1809).

Synonyms: *Haplotrichum capitatum* (Pers.) Link, *in Willdenow, Sp. pl.*, edn 4 **6**(1): 52 (1824).

Botryobasidium candicans J. Erikss., *Svensk bot. Tidskr.* **52**(1): 6 (1958).

Botryobasidium rubiginosum (Fr.) Rossman & W.C. Allen, **comb. nov.**

Mycobank MB815434

Basionym: *Sporotrichum rubiginosum* Fr., *Syst. Mycol.* **3**: 417 (1832) : Fr.*Synonyms:* *Haplotrichum rubiginosum* (Fr.) Hol.-Jech., *Česká Mykol.* **30**: 4 (1976).*Oidium rubiginosum* (Fr.) Linder, *Lloydia* **5**: 191 (1942).*Botryobasidium robustior* Pouzar & Hol.-Jech., *Česká Mykol.* **21**: 69 (1967).

Notes: The type of *Botryobasidium* Donk 1931 is *B. subcoronatum* (Höhn. & Litsch.) Donk 1931, while *Haplotrichum* Link 1824, typified by *H. capitatum* Link 1824, has a sexual morph identified as *B. candicans* J. Erikss. 1959 (Partridge et al. 2001a). With the change to one name for one fungus, *Haplotrichum* and *Botryobasidium* are synonyms. Although *Haplotrichum* is older, *Botryobasidium* includes more names and is more widely used, thus *Botryobasidium* is to be proposed for protection over *Haplotrichum*. Both names are included in Kirk et al. (2013). The connection between *B. candicans* and *H. capitatum* follows Partridge et al. (2001a). The connection between *B. robustior* and *H. rubiginosum* was first discovered by Pouzar & Holubová-Jechová (1967) who described *B. robustior* as the sexual morph of *Oidium rubiginosum*, later placing the name in *Haplotrichum* (Holubová-Jechová 1976). Additional synonyms of this species are included in Partridge et al. (2001b). These new names in *Botryobasidium* are needed for the above two commonly reported species.

Entyloma gibbum (Fuckel) Rossman & Castl., **comb. nov.**

Mycobank MB815435

Basionym: *Ramularia gibba* Fuckel, *Fungi rhenani exsiccate*, no. 1636 (1866).*Synonyms:* *Entylomella gibba* (Fuckel) U. Braun, *Monogr. Cercospora*, *Ramularia Allied Genera* **2**: 298 (1998).*Entyloma ranunculi-repentis* Sternon, *L'heterogenite du Genre Ramularia*: 34 (1925).*Entyloma wroblewskii* Kochman, *Acta Soc. Bot. Pol.* **11**: 289 (1934).*Entyloma ranuncolorum* Liro, *Ann. Acad. Sci. Fenn.*, A **42**: 111 (1935).*Entyloma ranunculacearum* Kochman, *Pl. Polon.* **4**: 105 (1936).*Entyloma ranunculi-sclerati* Kochman, *Pl. Polon.* **4**: 105 (1936).

Notes: The genus *Entyloma* de Bary 1874, based on *E. microsporum* (Unger) J. Schröt. 1874, is a well-known member of *Ustilaginales* for which the asexual morphs were placed in *Entylomella* Hohn. 1924, typified by *E. ranunculi* (Bonord.) Cif. 1924, and now considered *Entyloma ficariae* A.A. Fisch. Waldh. 1877. *Entyloma* has priority and is more commonly used than *Entylomella*. The synonymy for this species is based on Vánky (2011) who recognized *Entylomella gibba* for the asexual morph of *Entyloma ranunculi-repentis*. With the change in the ICN (McNeill 2012), the oldest epithet must be placed in the correct genus.

ACKNOWLEDGEMENTS

We are grateful for the pre-submission comments provided by Pedro Crous and Peter Johnston. In addition we thank Christian Feuillet for assistance with Latin endings.

REFERENCES

- Bhairi S, Buckley EH, Staples RC (1990) Protein synthesis and gene expression during appressorium formation in *Glomerella magna*. *Experimental Mycology* **14**: 207–217.
- Boehm EWA, Mugambi GK, Miller AN, Huhndorf SM, Marincowitz S, et al. (2009a) A molecular phylogenetic reappraisal of the *Hysteriaceae*, *Mytiliniaceae* and *Gloniaceae* (*Pleosporomycetidae*, *Dothideomycetes*) with keys to world species. *Studies in Mycology* **64**: 49–83.
- Boehm EWA, Schoch CL, Spatafora JW (2009b) On the evolution of the *Hysteriaceae* and *Mytiliniaceae* (*Pleosporomycetidae*, *Dothideomycetes*, *Ascomycota*) using four nuclear genes. *Mycological Research* **113**: 461–479.
- Bonar L, Cooke WB (1942) Some new and interesting fungi from Mt. Shasta. *Mycologia* **34**: 663–668.
- Boonmee S, Rossman AY, Lin J-K, Li W-J, Dau D-Q, et al. (2014) *Tubeufiales* ord. nov, integrating sexual and asexual generic names. *Fungal Diversity* **68**: 239–298.
- Braun U (1990) Studies on *Ramularia* and allied genera (III). *Nova Hedwigia* **50**: 499–521.
- Braun U (1994) Studies on *Ramularia* and allied genera (VII). *Nova Hedwigia* **58**: 191–222.
- Braun U (1995) *A monograph of Cercospora, Ramularia and allied genera (phytopathogenic hyphomycetes)*. Vol. 1. Eching: IHW-Verlag.
- Braun U (1998) *A monograph of Cercospora, Ramularia and allied genera (phytopathogenic hyphomycetes)*. Vol. 2. Eching: IHW-Verlag.
- Braun U, Crous PW, Nakashima C (2014) Cercosporoid fungi (*Mycosphaerellaceae*) 2. Species on monocots (*Acoraceae* to *Xyridaceae*, excluding *Poaceae*). *IMA Fungus* **5**: 203–390.
- Brockmann I (1976). Untersuchungen ueber die Gattung *Discostroma* Clements (*Ascomycetes*). *Sydowia* **28**: 275–338.
- Cannon PF, Minter DW (1986) The *Rhytismataceae* of the Indian subcontinent. *Mycological Papers* **155**: 1–123.
- Cannon PF, Damm U, Johnston PR, Weir B (2012) *Colletotrichum* current status and future directions. *Studies in Mycology* **73**: 181–213.
- Crous PW, Groenewald JZ (2010) *Sphaceloma freyliniae* Crous, sp. nov. *Fungal Planet* **52**: 1–2.
- Crous PW, Schubert K, Braun U, de Hoog GS, Hocking AD, et al. (2007) Opportunistic, human-pathogenic species in the *Herpotrichiellaceae* are phenotypically similar to saprobic or phytopathogenic species in the *Venturiaceae*. *Studies in Mycology* **58**: 185–217.
- Crous PW, Summerell BA, Shivas RG, Carnegie AJ, Groenewald JZ (2012). A re-appraisal of *Harknessia* (*Diaporthales*), and the introduction of *Harknessiaceae* fam. nov. *Persoonia* **28**: 49–65.
- Crous PW, Tanaka K, Summerell BA, Groenewald JZ (2011) Additions to the *Mycosphaerella* complex. *IMA Fungus* **2**: 49–64.
- De Beer ZW, Duong TA, Barnes I, Wingfield BD, Wingfield MJ (2014) Redefining *Ceratocystis* and allied genera. *Studies in Mycology* **79**: 187–219.

- Farr DF, Rossman AY (2015) *Fungal Databases, Systematic Mycology and Microbiology Laboratory, ARS, USDA*. <http://nt.ars-grin.gov/fungaldatabases/>
- Gottwald TR (1982) Taxonomy of the pecan scab fungus *Cladosporium caryigenum*. *Mycologia* **74**: 382–390.
- Holubová-Jechová V (1976) *Haplotrichum* Link instead of *Oidium* Link, a necessary nomenclatural change. *Česká Mykol* **30**: 3–4.
- Hou C-L, Lin Y-R, Piepenbring M (2005) Species of *Rhytismataceae* on needles of *Juniperus* spp. from China. *Canadian Journal of Botany* **83**: 37–46.
- Jenkins Jr SF, Winstead NN (1964) *Glomerella magna*, cause of a new anthracnose of cucurbits. *Phytopathology* **54**: 452–454.
- Johnston PR (2001) Monograph of the monocotyledon-inhabiting species of *Lophodermium*. *Mycological Papers* **176**: 1–239.
- Johnston PR, Seifert KA, Stone JK, Rossman AY, Marvanova L (2014) Recommendations on generic names competing for use in *Leotiomyces* (Ascomycota). *IMA Fungus* **5**: 91–120.
- Kirk PM, Stalpers JA, Braun U, Crous PW, Hansen K, et al. (2013) A without-prejudice list of generic names of fungi for protection under the *International Code of Nomenclature for algae, fungi, and plants*. *IMA Fungus* **4**: 381–443.
- Kokalis-Burelle N, Porter DM, Rodriguez-Kabana R, Smith DH, Subrahmanyam P (1997) *Compendium of Peanut Diseases*, 2nd edn. St Paul, MN: American Phytopathological Society Press.
- Li Q-L, Mo J-Y, Huang S-P, Guo T-X, Pan Z-B (2013) First report of leaf spot disease caused by *Glomerella magna* on *Lobelia chinensis* in China. *Plant Disease* **97**: 1383.
- McNeill J, Barrie FF, Buck WR, Demoulin V, Greuter W, et al. (eds.) (2012) *International Code of Nomenclature for algae, fungi, and plants (Melbourne Code)*. [Regnum Vegetabile no. 154.] Königstein: Koeltz Scientific Books.
- Mercado Sierra A, Guarro J, Heredia G (2005) The hyphomycete genus *Piricauda*, with the description of a new species. *Mycological Research* **108**: 723–728.
- Minter DW (1988) *Bifusella superba*. *Descriptions of Pathogenic Fungi and Bacteria* **941**: 1–2.
- Nag Raj TR (1993) *Coelomycetous Anamorphs with appendage-bearing conidia*. Waterloo, ON: Mycologue Publications.
- Nag Raj TR, Di Cosmo F (1981) A monograph of *Harknessia* and *Mastigospora*, with notes on associated teleomorphs. *Bibliotheca Mycologica* **80**: 1–62.
- Norphanphoun C, Maharachchikumbura SSN, Daranagama A, Bulgakov TS, Bhat DJ, et al. (2015) Towards a backbone tree for *Seimatosporium*, with *S. physocarpis* sp. nov. *Mycosphere* **6**: 385–400.
- Partridge EC, Baker WA, Morgan-Jones G (2001a) Notes on hyphomycetes. LXXIX. Concerning the *Acladium-Alysidium-Haplotrichum* complex; nomenclatural and taxonomic considerations, with redescriptions of respective type species. *Mycotaxon* **77**: 201–214.
- Partridge EC, Baker WA, Morgan-Jones G (2001b) Notes on hyphomycetes. LXXXII. A further contribution toward a monograph of the genus *Haplotrichum*. *Mycotaxon* **78**: 127–160.
- Partridge EC, Morgan-Jones G (2003) Notes on Hyphomycetes. XC. *Fusicladosporium*, a new genus for cladosporium-like anamorphs of *Venturia*, and the pecan scab-inducing fungus. *Mycotaxon* **85**: 357–370.
- Pascoe IG, Sutton BC (1990) *Protoventuria parahebecola* sp. nov. (*Venturiaceae*), the teleomorph of *Fusicladium veronicae* on *Parahebe perfoliata*. *Australian Systematic Botany* **3**: 281–285.
- Ploetz RC, Zentmyer GA, Nishijima WT, Rohrbach KG, Ohr HD (1994) *Compendium of Tropical Fruit Diseases*. St Paul, MN: American Phytopathological Society Press.
- Pouzar Z, Holubová-Jechová V (1967) *Botryobasidium robustior* spec. nov., a perfect state of *Oidium rubiginosum* (Fr.) Linder. *Česká Mykol* **23**: 97–101.
- Powell PE (1973) The genera *Duplicaria* (*Rhytismataceae*) and *Crandallia* (*Leptostromataceae*). *Mycologia* **65**: 1356–1370.
- Réblová M, Barr ME (2000) The genus *Acanthostigma* (*Tubeufiaceae, Pleosporales*). *Sydowia* **52**: 258–285.
- Reid J, Booth C (1989) On *Cryptosporella* and *Wuestneia*. *Canadian Journal of Botany* **67**: 879–908.
- Rossman AY, Farr DF, Castlebury LA (2007) A review of the phylogeny and biology of the *Diaporthales*. *Mycoscience* **48**: 135–144.
- Rossman AY, Crous PW, Hyde KD, Hawksworth DH, Aptroot A, et al. (2015) Recommended names for pleomorphic genera in *Dothideomycetes*. *IMA Fungus* **6**: 507–523.
- Schubert K, Ritschel A, Braun U (2003) A monograph of *Fusicladium* s. lat. (hyphomycetes). *Schlechtendahlia* **9**: 1–132.
- Shenoy BD, Jeewon R, Wu WP, Bhat DJ, Hyde KD (2006) Ribosomal and RPB2 DNA sequence analyses suggest that *Sporidesmium* and morphologically similar genera are polyphyletic. *Mycological Research* **110**: 916–928.
- Shoemaker RA (1964) *Seimatosporium* (= *Cryptostictis*) parasites of *Rosa*, *Vitis*, and *Cornus*. *Canadian Journal of Botany* **42**: 411–421.
- Sivanesan A, Critchett C (1974) *Elsinoë fawcetti*. *Descriptions of Pathogenic Fungi and Bacteria* **484**: 1–2.
- Sutton BC, Pascoe IG (1988) *Fusicladium veronicae* (Batista), comb. nov., causing brown leaf blight of *Parahebe* species. *Australian Systematic Botany* **1**: 79–86.
- Tanaka K, Endo M, Hirayama K, Okane I, Hosoya T, et al. (2011) Phylogeny of *Discosia* and *Seimatosporium* and introduction of *Adisco* and *Immersidisco* genera nova. *Persoonia* **26**: 85–98.
- Vánky K (2011) *Smut Fungi of the World*. St Paul, MN: American Phytopathological Society Press.
- Videira SIR, Groenewald JZ, Verkley GJM, Braun U, Crous PW (2015) The rise of *Ramularia* from the *Mycosphaerella* labyrinth. *Fungal Biology* **119**: 823–843.
- Wijayawardene NN, Crous PW, Kirk PM, Wang Y, Woudenberg JHC, et al. (2014) Naming and outline of *Dothideomycetes*-2014 including proposals for the protection or suppression of generic names. *Fungal Diversity* **69**: 1–55.
- Zhang Y, Crous PW, Schoch CL, Bahkali AH, Guo LD, et al. (2011) A molecular, morphological and ecological re-appraisal of *Venturiales*-a new order of *Dothideomycetes*. *Fungal Diversity* **51**: 249–277.