

(2210–2232) Proposals to conserve the teleomorph-typified name *Blumeria* against the anamorph-typified name *Oidium* and twenty-two teleomorph-typified powdery mildew species names against competing anamorph-typified names (*Ascomycota: Erysiphaceae*)

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Proposals are presented to conserve *Blumeria* against *Oidium*, *Erysiphe arcuata* against *Oidium carpini*, *Microsphaera azaleae* (*Erysiphe azaleae*) against *Oidium ericinum*, *Erysiphe buhrrii* against *Oidium dianthi*, *Erysiphe catalpae* against *Oidium bignoniae*, *Erysiphe celosiae* against *Oidium amaranthi*, *Microsphaera oehrensii* (*Erysiphe oehrensii*) against *Oidium robustum*, *Erysiphe quercicola* against *Oidium anacardii*, *Erysiphe biocellata* (*Golovinomyces biocellatus*) against *Oidium erysiphoides*, *Erysiphe magnicellulata* (*Golovinomyces magnicellulatus*) against *Oidium drummondii*, *Golovinomyces sonchicola* against *Oidium sonchi-arvensis*, *Erysiphe verbasci* (*E. cichoracearum* f. *verbasci*; *Golovinomyces verbasci*) against *Oidium balsamii*, *Leveillula rutae* (*L. taurica* f. *rutae*) against *Oidium haplophylli*, *Phyllactinia alni* against *Ovulariopsis alni-formosanae*, *Phyllactinia ampelopsidis* against *Ovulariopsis ampelopsidis-heterophyllae*, *Phyllactinia chubutiana* against *Oidium insolitum*, *Phyllactinia dalbergiae* against *Phyllactinia subspiralis*, *Phyllactinia gmelinae* against *Ovulariopsis gmelinae-arboreae*, *Phyllactinia populi* (*P. suffulta* f. *populi*) against *Ovulariopsis salicis-warburgii*, *Sphaerotheca leucotricha* (*Podosphaera leucotricha*) against *Oidium farinosum*, *Sphaerotheca euphorbiae-hirtae* (*Podosphaera euphorbiae-hirtae*) against *Oidium pedilanthei*, *Sphaerotheca filipendulae* (*Podosphaera filipendulae*) against *Torula botryoides*, and *Podosphaera solanacearum* against *Oidium saeforthiani*.

Powdery mildews (*Ascomycota: Erysiphales: Erysiphaceae*) represent one of the largest groups of phytopathogenic fungi including causal agents of very numerous economically relevant diseases of cultivated plants. A total of 873 species, on a wide range of hosts and almost worldwide in distribution, are described and illustrated in a monograph of this fungal group recently published by Braun & Cook (Taxonomic Manual of the *Erysiphales* (Powdery Mildews) [CBS Biodiversity Series 11]. 2012). The nomenclature of powdery mildews is also affected by the drastic changes in the naming of

pleomorphic fungi adopted by the XVIII International Botanical Congress in Melbourne in 2011. Impacts of the discontinuation of dual nomenclature of pleomorphic fungi and proposals to cope with the new situation were discussed by Braun (in IMA Fungus 3(1): 81–86. 2012). Powdery mildews were used as example to discuss certain problems, and it was proposed to give in this fungal group general preference to teleomorph-typified names. Teleomorphs prevail in the taxonomy of *Erysiphaceae*. It is relatively easy now to assign asexual powdery mildews to particular teleomorph genera, but at species level anamorphs are mostly poorly differentiated and of little diagnostic value. Even results of molecular sequence analyses are often of little help at species level due to a lack of data from other specimens for comparison or other problems. All anamorph-typified powdery mildew generic names are younger than the corresponding teleomorph-typified names (except for *Oidium*). On the other hand, there are twenty-two teleomorph-typified species names threatened by conspecific anamorph-typified names, which are older and have, according to the new Art. 59 of the ICN (McNeill & al. in Regnum Veg. 154. 2012), priority, at least formally. Following the provisions of Art. 57.2, proposals to reject the anamorph-typified names are, in any case, necessary when the teleomorph-typified names are preferred.

It would have been possible to prepare a complete list of names of *Erysiphales* proposed for acceptance and submit this under Art. 14.13 of the ICN to the General Committee for consideration by the Nomenclature Committee for Fungi, but, as noted above, the *Erysiphales* comprise 873 accepted species, whereas there are only 22 cases in which teleomorph-typified species names are endangered by competing anamorph-typified species names (only 2.6%). I think it would be a waste of time and printing capacity to prepare and submit a complete list and so I prefer to submit the 23 proposals below in the regular way under Art. 14.1.

Among powdery mildews, *Oidium* is the only older anamorph-typified genus name that threatens a younger teleomorph-typified genus. *Oidium monilioides*, the type of *Oidium*, is now a heterotypic synonym of *Blumeria graminis*, the type of *Blumeria*. Therefore, *Blumeria* and *Oidium* are heterotypic synonyms as well. *Oidium* has previously been used in an extremely broad sense, covering all kinds of powdery mildew anamorphs (Braun & Cook, l.c.: 29). *Blumeria graminis*, the name of which indicates the type of the monotypic genus *Blumeria*, is the causal agent of powdery mildew on cereals and grasses, and undoubtedly the economically and phytopathologically most important species of the *Erysiphaceae*. A replacement of *Blumeria* by *Oidium* would not make any sense and is not desirable. In the case of the twenty-two endangered teleomorph-typified species names, it can be said that all competing anamorph-typified names are less widely used. Besides the proposal to give general preference to teleomorph-typified names in this fungal group, this is an additional argument for the rejection of the anamorph-typified names concerned.

- (2210) *Blumeria* Golovin ex Speer in Sydowia 27: 2. 1974, nom. cons. prop.
Typus: *Erysiphe graminis* DC. (*Blumeria graminis* (DC.) Speer).
- (=) *Oidium* Link in Willdenow, Sp. Pl. 6(1): 121. 1824, nom. cons., nom. rej. prop.
Typus: *O. monilioides* (Nees:Fr.) Link (*Acrosporium monilioides* Nees:Fr.).
- (2211) *Erysiphe arcuata* U. Braun & al. in Schlechtendalia 16: 99. 2007, nom. cons. prop.
Holotypus: on *Carpinus betulus*, Ukraine, Kiev, 2 Tereshchenkivska Street, close to the Institute of Botany, 26 October 2005, V. Heluta (KW No. 30172).
- (=) *Oidium carpini* Foitzik in Braun, Powdery Mildews (*Erysiphales*) Eur.: 222. 1995, nom. rej. prop.
Holotypus: on *Carpinus betulus*, Germany, Sachsen-Anhalt, Sangerhausen, central Jüdengrund, 24 August 1989, O. Foitzik (JE).
- (2212) *Microsphaera azaleae* U. Braun in Mycotaxon 14(1): 370. 1982, nom. cons. prop.
Holotypus: on *Rhododendron nudiflorum*, U.S.A., Pennsylvania, Delaware Co., Wm. Trimble, Ellis, North Amer. Fungi 770 (PH).
- (=) *Oidium ericinum* Erikss. in Meddeland. Kungl. Landtbr.-Akad. Experimentalfält 1: 47. 1885, nom. rej. prop.
Neotypus (hic designatus): on *Erica gracilis*, Germany, Niedersachsen, Braunschweig, November 2002, U. Brielmaier-Liebetanz (HAL No. 2610 F).

Microsphaera azaleae is currently included in *Erysiphe* as *E. azaleae* (U. Braun) U. Braun & S. Takam. in Schlechtendalia 4: 5. 2000. Type material of *Oidium ericinum* is not preserved in Eriksson's herbarium (S).

- (2213) *Erysiphe buhrii* U. Braun in Česká Mykol. 32(2): 80. 1978, nom. cons. prop.
Holotypus: on *Silene alba*, Germany, Sachsen-Anhalt, Halle (Saale), Dörlauer Heide, 1975, U. Braun (PRM No. 781039).
- (=) *Oidium dianthi* Jacz., Karmanny Opredelitel' Gribov, 2, Muchnisto-rosyanye Griby: 461. 1927, nom. rej. prop.

Lectotypus (hic designatus): on *Dianthus* sp., Ukraine, Odessa, Botanical Garden, 1923, I.L. Serbinov (LEP).

- (2214) *Erysiphe catalpae* S. Simonyan in Mikol. Fitopatol. 18(6): 463. 1984, nom. cons. prop.
Holotypus: on *Catalpa bignonioides*, Armenia, Yerevan Botanical Garden, 9 October 1957, S. Simonyan (EREM No. 1710).
- (=) *Oidium bignoniae* Jacz. in Ezheg. S.-Peterburgsk. Lesn. Inst. 5: 247. 1909, nom. rej. prop.
Holotypus: on *Bignonia catalpa* [*Catalpa ovata*], Autonomous Republic of Crimea, Yalta, Botanical Garden, 1909, A.A. Jaczewski (LEP).
- (2215) *Erysiphe celosiae* Tanda in Mycoscience 41: 155. 2000, nom. cons. prop.
Holotypus: on *Celosia argentea*, Japan, Tokyo, Setagaya-ku, Tokyo University Campus, 12 October 1997, S. Tanda (TUAMH 5129).
- (=) *Oidium amaranthi* R. Mathur & al. in Indian Phytopathol. 24(1): 64. 1971, nom. rej. prop.
Holotypus: on *Amaranthus caudatus*, India, Rajasthan, Jaipur, Durgapura, 14 Jan. 1969, L.G. Bhargavan (HC No. 847).
- (2216) *Microsphaera oehrensii* Havryl. in Mycotaxon 49: 259. 1993, nom. cons. prop.
Holotypus: on *Maytenus magellanica*, Argentina, Prov. Río Negro, Llao Llao, 1993, M. Havrylenko 26 (LPS No. 45138).
- (=) *Oidium robustum* U. Braun & Oehrens in Mycotaxon 25: 268. 1986, nom. rej. prop.
Holotypus: on *Maytenus boaria*, Argentina, Prov. Río Negro, Villa Tacul, Llao-Llao, 19 Mar. 1984, E. Oehrens B. (HAL No. 1438 F).

Microsphaera oehrensii is currently included in *Erysiphe* as *E. oehrensii* (Havryl.) U. Braun & S. Takam. in Schlechtendalia 4: 11. 2000.

- (2217) *Erysiphe quercicola* S. Takam. & U. Braun in Mycol. Res. 111: 819. 2007, nom. cons. prop.
Holotypus: on *Quercus phillyraeoides*, Japan, Nara, Ikoma Mt., 27 November 1999, S. Takamatsu (MUMH No. 885).
- (=) *Oidium anacardii* Noack in Bol. Inst. Estado São Paulo 9(2): 77. 1898, nom. rej. prop.
Neotypus (hic designatus): on *Anacardium occidentale*, Panama, 19 February 1923, C.V. Piper (BPI No. 409098).

Type material of *O. anacardii* could not be traced.

- (2218) *Erysiphe biocellata* Ehrenb. in Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 10: 211. 1821, nom. cons. prop.
Lectotypus (vide Braun in Beih. Nova Hedwigia 89: 244. 1987): [icon in] Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 10: t. 13. 1821.
- (=) *Oidium erysiphoides* Fr., Syst. Mycol. 3: 432. 1832, nom. rej. prop.
Neotypus (vide Braun & Cook in CBS Biodiversity Series 11: 294. 2012): on *Lycopus europaeus*, Germany, Sachsen-Anhalt, Halle (Saale), Dörlauer Heide, near "Waldkater", 24 October 1976, U. Braun (HAL No. 1051 F).

The anamorph-typified name *O. erysiphoides* is younger than *E. biocellata* but sanctioned. *Erysiphe biocellata* is currently included in *Golovinomyces* as *G. biocellatus* (Ehrens.) Heluta in Ukrayins'k. Bot. Zhurn. 45(5): 62. 1988.

- (2219) *Erysiphe magnicellulata* U. Braun in Feddes Repert. 88: 656. 1978, nom. cons. prop.
Holotypus: on *Phlox paniculata*, Germany, Brandenburg, Rehfelde near Berlin, garden, 25 September 1976, U. Braun (HAL No. 1516 F).
(=) *Oidium drummondii* Thüm., Mycoth. Univ., Cent. XII, No. 1177. 1878.
Lectotypus (hic designatus): on *Phlox drummondii*, U.S.A., South Carolina, Aiken, H.W. Ravenel, Thüm., Mycoth. Univ. 1177 (BPI No. 409389).

Erysiphe magnicellulata is currently included in *Golovinomyces* as *G. magnicellulatus* (U. Braun) Heluta in Ukrayins'k. Bot. Zhurn. 45(5): 63. 1988.

- (2220) *Golovinomyces sonchicola* U. Braun & R.T.A. Cook, in Cook & Braun, Mycol. Res. 113: 629. 2009, nom. cons. prop.
Holotypus: on *Sonchus oleraceus*, the Netherlands, Utrecht, Oorsprong Park, 23 July 2008, U. Braun (HAL No. 2245 F).
(=) *Oidium sonchi-arvensis* Sawada, Bull. Dept. Agric. Gov. Res. Inst. Formosa 24: 49. 1927, nom. rej. prop.
Lectotypus (hic designatus): on *Sonchus arvensis*, Taiwan, Taipei, 12 November 1925, K. Sawada (TNS-F-220736).
(2221) *Erysiphe verbasci* (Jacq.) S. Blumer in Beitr. Krypt.-Fl. Schweiz 7(1): 284. 1933 ≡ *E. cichoracearum* f. *verbasci* Jacq., Karmanny Opreditel' Gribov, 2, Muchnisto-rosyanye Griby: 224. 1927, nom. cons. prop.
Lectotypus (vide Braun in Beih. Nova Hedwigia 89: 266. 1987): on *Verbascum* sp., Germany, Klotzsch, Herb. Viv. Mycol. 945 (HAL).
(=) *Oidium balsamii* Mont. in Ann. Mag. Nat. Hist., 2 Sér., 13: 463. 1854, nom. rej. prop.
Lectotypus (hic designatus): on *Verbascum nigrum*, England, Wothorpe, Northamptonshire, 23 August 1853, ex herb. C.E. Broome (K(M) 188069). Isolectotypus: ex herb. M.J. Berkeley (K(M) No. 188068).

Erysiphe verbasci is currently included in *Golovinomyces* as *G. verbasci* (Jacq.) Heluta in Ukrayins'k. Bot. Zhurn. 45(5): 63. 1988.

- (2222) *Leveillula rutae* (Jacq.) U. Braun in Braun & Cook, CBS Biodiversity Series 11: 205. 2012 ≡ *L. taurica* f. *rutae* Jacq., Karmanny Opreditel' Gribov, 2, Muchnisto-rosyanye Griby: 417. 1927, nom. cons. prop.
Lectotypus (vide Braun in Braun & Cook, CBS Biodiversity Series 11: 205. 2012): on *Haplophyllum latifolium*, Kazakhstan, Semireshensk, Vernyj (= Almaty), 5 November 1926, V. Titov, det. A. Jaczewski (LEP).
(=) *Oidium haplophylli* Magnus in Verh. K. K. Zool.-Bot. Ges. Wien 50: 444. 1900, nom. rej. prop.
Holotypus: on *Haplophyllum buxbaumii* [*Ruta buxbaumii*], Israel, Tel Aviv (Jaffa), April 1897, J.F.N. Bornmüller 1034 (HBG).

- (2223) *Phyllactinia alni* Y.N. Yu & S.J. Han in Acta Microbiol. Sin. 19(1): 13. 1979, nom. cons. prop.
Holotypus: on *Alnus crematogynis*, China, Prov. Sichuan, Chengdu, 11 October 1933, W.C. Ho (HMAS No. 11543).
(=) *Ovulariopsis alni-formosanae* Sawada in Bull. Dept. Agric. Gov. Res. Inst. Formosa 49: 77. 1930, nom. rej. prop.
Holotypus: on *Alnus formosana*, Taiwan, Taipei, 31 October 1923, K. Sawada (Herbarium K. Sawada, National Taiwan Univ., Department of Plant Pathology and Microbiology).
(2224) *Phyllactinia ampelopsidis* Y.N. Yu & Y.Q. Lai in Acta Microbiol. Sin. 19(1): 14. 1979, nom. cons. prop.
Holotypus: on *Ampelopsis humulifolia*, China, Prov. Hebei, Changli, 18 October 1951, S.J. Han & al. 161 (HMAS No. 35230).
(=) *Ovulariopsis ampelopsidis-heterophyllae* Sawada in Bull. Dept. Agric. Gov. Res. Inst. Formosa 49: 79. 1930, nom. rej. prop.
Syntypes: on *Ampelopsis heterophylla* var. *hancei*, Taiwan, Hsinchu, Zhudong, 7 February 1924, 15 February 1924 and 27 April 1930, K. Sawada (Herbarium K. Sawada, National Taiwan Univ., Department of Plant Pathology and Microbiology).
(2225) *Phyllactinia chubutiana* Havryl. & al. in Mycoscience 47: 238. 2006, nom. cons. prop.
Holotypus: on *Lycium chilense*, Argentina, Prov. Chubut, Dep. Languiño, Piedra Parada, 4 April 2005, M. Havrylenko (BCRU No. 4634).
(=) *Oidium insolitum* U. Braun & al. in Sydowia 53(1): 35. 2001, nom. rej. prop.
Holotypus: on *Lycium chilense*, Argentina, Prov. Buenos Aires, Bahía Blanca, 23 March 2000, U. Braun & R. Delhey (HAL No. 392 F).
(2226) *Phyllactinia dalbergiae* Piroz. in Mycologia 57: 827. 1965, nom. cons. prop.
Holotypus: on *Dalbergia sissoo*, Pakistan, Lahore, 2 January 1950, Ahmad 2988 (IMI No. 84840, now K).
(=) *Phyllactinia subspiralis* (E.S. Salmon) Sawada, Special Bull. Agric. Exp. Sta. Formosa 9: 75. 1914 (*Phyllactinia corylea* var. *subspiralis* E.S. Salmon in Ann. Mycol. 3: 501. 1905), nom. rej. prop.
Neotypus (hic designatus): on *Dalbergia sissoo*, India, Bihar, Pusa, 16 January 1906, E.J. Butler (BPI No. 606447).

Phyllactinia corylea var. *subspiralis* is an anamorph-typified name. Type material collected on *D. sissoo* in India, Poona, by G. Marshal Woodrow, March 1899 and Dehra Dun, by E.J. Butler, 7 February 1905, could not be traced.

- (2227) *Phyllactinia gmelinae* U. Braun & Bagyan. in Sydowia 51: 1. 1999, nom. cons. prop.
Holotypus: on *Gmelina arborea*, India, M.S., Sinhgad, Pune, 1972, V.G. Rao (AMH No. 2026).
(=) *Ovulariopsis gmelinae-arboreae* Hosag. & al. in Indian J. Trop. Biol. 1: 316. 1993, nom. rej. prop.
Holotypus: on *Gmelina arborea*, India, Kombaikadu, Kodaikanal, Dindigul Anna Dt., 12 February 1993, M. Bappammal (HCIO No. 41390).

- (2228) *Phyllactinia populi* (Jacz.) Y.N. Yu in Yu & Lai in Acta Microbiol. Sin. 19(1): 18. 1979 ≡ *P. suffulta* f. *populi* Jacz., Karmanny Opredelitel' Gribov, 2, Muchnisto-rosyanye Griby: 439. 1927, nom. cons. prop.
Holotypus: on *Populus* sp., Uzbekistan, Ferganskaya Oblast', Chikabod, 5 Nov 1926, A. Pospelov (LEP).
- (=) *Ovulariopsis salicis-warburgii* Sawada in Bull. Dept. Agric. Gov. Res. Inst. Formosa 49: 82. 1930, nom. rej. prop.
Holotypus: on *Salix warburgii*, Taiwan, Taipei, 15 Oct. 1927, K. Sawada (Herbarium K. Sawada, National Taiwan University, Department of Plant Pathology and Microbiology).
- (2229) *Sphaerotheca leucotricha* Ellis & Everh. in J. Mycol. 4: 58. 1888, nom. cons. prop.
Holotypus: on *Malus sylvestris*, U.S.A., Missouri, Concordia, Dec 1881, C.H. Demetrio (NY).
- (=) *Oidium farinosum* Cooke in Grevillea 16: 10. 1887, nom. rej. prop.
Lectotypus (hic designatus): on *Pyrus* sp., without locality and without date, D. Yorke (J.E. Vize, Micro-fungi Britannici 78), issued in 1878 (K(M) No. 178310).
- J.E. Vize, Micro-fungi Britannici 78, was one of the collections cited in the original description of *Oidium farinosum*. *Sphaerotheca leucotricha* is currently included in *Podospaera* as *P. leucotricha* (Ellis & Everh.) E.S. Salmon in Mem. Torrey Bot. Club 9: 40. 1900.
- (2230) *Sphaerotheca euphorbiae-hirtae* U. Braun & Somani in Mycotaxon 25: 263. 1986, nom. cons. prop.
Holotypus: on *Euphorbia hirta*, India, Akola, November 1984, Somani (HAL No. 1653 F)
- (=) *Oidium pedilanthi* J.M. Yen in Cah. Pacifique 11: 104. 1967, nom. rej. prop.
Holotypus: on *Euphorbia tithymaloides*, Taiwan, Taichung, 2 September 1966, S.K. Sun 19 (PC).
- Sphaerotheca euphorbiae-hirtae* is currently included in *Podospaera* as *P. euphorbiae-hirtae* (U. Braun & Somani) U. Braun & S. Takam. in Schlechtendalia 4: 28. 2000. The type of *Oidium pedilanthi* was seen previously at PC, but is currently not traceable.
- (2231) *Sphaerotheca filipendulae* Z.Y. Zhao in Acta Microbiol. Sin. 21(4): 439. 1981, nom. cons. prop.
Holotypus: on *Filipendula ulmaria*, China, Xinjiang Uygur Autonomous Region, Ili Kazakh Autonomous Prefecture, Habahe County, 28 August 1975, Z.Y. Zhao (HMAS No. 39000).
- (=) *Torula botryoides* Corda in Sturm, Deutschl. Fl., Abt. III. Pilze Deutschl. 2: 77 t. 35. 1829, nom. rej. prop.
Neotypus (hic designatus): on *Filipendula ulmaria*, Germany, "in sylvia Hostrichensi, autumno" (as *Sphaerotheca castagnei* f. *Spiraeae Ulmariae*), Fuckel, Fungi Rhen. 2234 (HAL).
- Sphaerotheca filipendulae* is currently included in *Podospaera* as *P. filipendulae* (Z.Y. Zhao) T.Z. Liu & U. Braun, in Liu, Erysiphaceae Inner Mongolia: 205. 2010. *Torula botryoides* is currently included in *Oidium* as *O. botryoides* (Corda) Ces., in Rabenh., Klotzschii Herb. Viv. Mycol., Cent. XVII, No. 1671. 1852. Type material of *Torula botryoides* is not preserved in Corda's herbarium at PRM.
- (2232) *Podospaera solanacearum* U. Braun, in Braun & Cook, CBS Biodiversity Series 11: 160. 2012, nom. cons. prop.
Holotypus: on *Solanum dulcamara*, Armenia, Idzhevan, Dendropark, 3 October 1973, S. Simonyan (HAL No. 487 F).
- (=) *Oidium saeforthiani* Hosag. & al. in Indian J. Forest. 15(2): 161. 1992, nom. rej. prop.
Holotypus: on *Solanum saeforthianum*, India, Coimbatore, Anamalais, on the way to Kadamparai, 28 March 1990, V.B. Hosagoudar (HCIO No. 30401).