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Phylogeny of *Erysiphe, Microsphaera, Uncinula* (Erysipheae) and *Cystotheca, Podosphaera, Sphaerotheca* (Cystotheceae) inferred from rDNA ITS sequences – some taxonomic consequences

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Abstract: BRAUN, U. & TAKAMATSU, S. 2000: Phylogeny of *Erysiphe, Microsphaera, Uncinula* (Erysipheae) and *Cystotheca, Podosphaera, Sphaerotheca* (Cystotheceae) inferred from rDNA ITS sequences – some taxonomic consequences. Schlechtendalia **4**: 1-33.

The very close relationship between the genera *Erysiphe* s.str. (≡ *Erysiphe* sect. *Erysiphe*), *Microsphaera*, and *Uncinula*, which are connected by numerous intermediate taxa, is strongly supported by light as well as scanning electron microscopical features and has recently been confirmed by examinations of nucleotide sequences of rDNA internal transcribed spacers (ITS). *Erysiphe* s.str. and *Microsphaera* did not group into separate monophyletic lineage, but formed several small mixed clusters. It turned out that the formation of branched ascoma appendages does not have any taxonomic value on generic level. Therefore, *Microsphaera* is reduced to synonymy with *Erysiphe* s.str., and the new combinations, which are necessary, are introduced. *Uncinula* spp. form a basal subclade of the *Erysiphe* s.str./*Microsphaera* (*Pseudoidium*) clade, but since some species of *Erysiphe* s.str. belong in this subclade, it is necessary to reduce *Uncinula* to synonymy with the latter genus, too. *Erysiphe* emend. is formally divided into sections for non-phylogenetical, but morphological groups of species, viz. *Erysiphe* sect. *Erysiphe*, *E.* sect. *Microsphaera*, and *E.* sect. *Uncinula*.

Furthermore, examinations of nucleotide sequences of rDNA ITS regions of numerous taxa belonging to tribe Cystotheceae showed that *Podosphaera* and *Sphaerotheca* did not form separate monophyletic clades. Taxa of *Sphaerotheca* sect. *Sphaerotheca* and sect. *Magnicellulatae* grouped together with two different sets of *Podosphaera* spp. in two separate subclades of a single *Podosphaera/Sphaerotheca* clade. Based on these results and since *Podosphaera* and *Sphaerotheca* are morphologically only distinguished by having appendages which are branched and simple, respectively, it is proposed to merge the two genera. New combinations for *Sphaerotheca* spp. under *Podosphaera* are introduced. *Podosphaera* is formally divided into sections and subsections for non-phylogenetical, but morphological groups of species, viz. *Podosphaera* sect. *Podosphaera*, *P.* sect. *Sphaerotheca* subsect. *Sphaerotheca*, and subsect. *Magnicellulatae*.

Furthermore, some changes of the classification of the Erysiphaceae are proposed. The following new combinations are introduced: Erysiphaceae tribe Cystotheceae subtribe Sawadaeinae, Erysiphaceae tribe Golovinomyceteae, Erysiphaceae tribe Golovinomyceteae subtribe Arthrocladiellinae and subtribe Neoerysiphinae.

Zusammenfassung: BRAUN, U. & TAKAMATSU, S. 2000: Phylogeny of *Erysiphe, Microsphaera, Uncinula* (Erysipheae) and *Cystotheca, Podosphaera*, and *Sphaerotheca* (Cystotheceae) inferred from rDNA ITS sequences – some taxonomic consequences. Schlechtendalia **4**: 1-33.

Die enge Verwandtschaft zwischen den Gattungen *Erysiphe* s.str. (≡ *Erysiphe* Sektion *Erysiphe*), *Microsphaera* und *Uncinula*, die durch zahlreiche morphologisch untermediäre Taxa verbunden sind, wird stark durch licht- und elektronenmikroskopische Merkmale unterstützt und durch neue Untersuchungen der Nukleotidsequenzen der rDNA-ITS-Region bestätigt, da diese Gattungen nicht zu verschiedenen monophyletischen Linien gehören. *Erysiphe* s.str. und *Microsphaera* bilden jedoch verschiedene kleine, gemischte Gruppen. Es hat sich herausgestellt, dass die Bildung verzweigter Fruchtkörperanhängsel keinen taxonomischen Wert auf Gattungsebene hat. Deshalb wird vorgeschlagen, *Microsphaera* als Synonym von *Erysiphe* zu betrachten. Die notwendigen Neukombinationen werden eingeführt. *Uncinula*-

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Arten bilden ein „Subclade" an der Basis des „*Erysiphe* s.str./*Microsphaera* (*Pseudoidium*)-Clades". Da auch einige *Erysiphe* s.str.-Arten in dieses „Subclade" gehören, ist es notwendig, diese beiden Gattungen zu vereinigen. *Erysiphe* emend. wird formal in folgende morphologisch, aber nicht phylogenetisch begründete Sektionen gegliedert: *Erysiphe* Sektion *Erysiphe*, *E.* Sektion *Microsphaera* und *E.* Sektion *Uncinula*.

Untersuchungen von Nukleotidsequenzen ribosomaler DNA (ITS) zahlreicher Taxa der Cystotheceae zeigten, dass *Podosphaera* und *Sphaerotheca* keine getrennten „Clades" bilden. Taxa von *Sphaerotheca* Sektion *Sphaerotheca* und Sektion *Magnicellulatae* bilden zusammen mit zwei verschiedenen Gruppen von *Podosphaera*-Arten getrennte „Subclades". Auf Grundlage dieser Befunde und da *Podosphaera*- und *Sphaerotheca*-Arten morphologisch nur durch verzweigte und einfache Fruchtkörperanhängsel unterschieden sind, wird vorgeschlagen, beide Gattungen zu vereinigen. Neukombinationen von *Sphaerotheca*-Arten unter *Podosphaera* werden eingeführt. *Podosphaera* wird formal in folgende morphologisch, aber nicht phylogenetisch begründete Sektionen und Subsektionen gegliedert: *Podosphaera* Sektion *Podosphaera*, *P.* Sektion *Sphaerotheca* Subsektion *Sphaerotheca* und Subsektion *Magnicellulatae*. Weiterhin werden einige Änderungen der Klassifizierung der Erysiphaceae vorgeschlagen. Folgende Kombinationen werden eingeführt: Erysiphaceae Tribus Cystotheceae Subtribus Sawadaeinae, Erysiphaceae Tribus Golovinomyceteae, Erysiphaceae Tribus Golovinomyceteae Subtribus Arthrocladiellinae und Subtribus Neoerysiphinae.

Comprehensive examinations of nucleotide sequences of the rDNA ITS region of powdery mildew fungi have recently been carried out (TAKAMATSU et al. 1998, 1999, 2000; SAENZ & TAYLOR 1999; MORI et al. 2000). The results of these studies provide numerous data for a better insight into phylogenetic relationships of powdery mildew genera. Based on these molecular data as well as new SEM examinations (COOK et al. 1997), it was possible to reassess the genus *Erysiphe* DC. s.lat. and to re-arrange the classification of the Erysiphaceae (BRAUN 1999). TAKAMATSU et al. (1999) examined the phylogenetic relationships between *Erysiphe* s.str., *Microsphaera* Lév., and *Uncinula* Lév., and TAKAMATSU et al. (2000) dealt with *Cystotheca* Berk. & M.A. Curtis, *Podosphaera* Kunze, and *Sphaerotheca* Lév. Some taxonomic consequences of these molecular studies are discussed in the present paper.

1. *Erysiphe* s.str., *Microsphaera*, and *Uncinula*

Based on new SEM examinations as well as molecular data, BRAUN (1999) recognized *Erysiphe* s.str. (≡ *Erysiphe* sect. *Erysiphe*), the genus *Golovinomyces* (U. Braun) V.P. Gelyuta (≡ *Erysiphe* sect. *Golovinomyces* U. Braun), and introduced the new genus *Neoerysiphe* U. Braun (≡ *Erysiphe* sect. *Galeopsidis* U. Braun). *Erysiphe* s.str. is morphologically very close to *Microsphaera* and *Uncinula* and connected with these genera by numerous intermediate taxa (BRAUN 1987). The anamorphs of the three genera are uniform and belong in *Oidium* subgen. *Pseudoidium* Jacz. (COOK et al. 1997). A clear morphological differentiation between *Erysiphe* s.str. and *Microsphaera* is hardly possible. TAKAMATSU et al. (1999) carried out comprehensive examinations of nucleotide sequences of the rDNA ITS region of numerous species of the genera *Erysiphe* s.str. and *Microsphaera* and some *Uncinula* spp. The results of these studies have been well demonstrated (TAKAMATSU et al. 1999: Figs 1-2) and discussed in detail, and have been supported by molecular investigations recently carried out by SAENZ & TAYLOR (1999). *Erysiphe* s.str. and *Microsphaera* did not group into separate monophyletic lineages, but the species of these genera formed several small, mixed clusters, which cannot be phylogenetically distinguished from each other (TAKAMATSU et al. 1998, 1999). It turned out that the formation

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of branched ascoma appendages does not have any taxonomic value on generic level. Thus, it is not tenable to maintain *Microsphaera* as a separate genus. The latter genus must be reduced to synonymy with *Erysiphe* s.str.

BRAUN (1987) described *Medusosphaera* Golovin & Gamalizk. in detail, and BRAUN (1999) briefly discussed the taxonomy of this genus. The anamorph belongs undoubtedly in *Oidium* subgen. *Pseudoidium* and the formation of short bristle-like secondary appendages is hardly tenable as feature on generic level, which could be demonstrated within *Uncinula/ Uncinuliella* by molecular examinations (TAKAMATSU et al. 1999). Hence, it is proposed to reduce *Medusosphaera* to synonymy with *Erysiphe* (incl. *Microsphaera*).

The anamorphs of *Uncinula* belong in *Oidium* subgen. *Pseudoidium*, too, and *Erysiphe* s.str. and *Uncinula* are also connected by some intermediate taxa (BRAUN 1987). *Uncinula* spp. form a basal subclade of the „*Pseudoidium* clade" of powdery mildews (SAENZ & TAYLOR 1999; MORI et al. 2000), which is composed of *Uncinula* as well as some *Erysiphe* s.str. species, e.g., *Erysiphe gracilis* R.Y. Zheng & G.Q. Chen , *E. rodgersiae* (Y. Nomura) U. Braun, and *E. ulmariae* Desm. (S. Takamatsu, unpublished data). Hence, *Uncinula* cannot be maintained as a genus of it own. There are numerous *Microsphaera* spp. with apically uncinate-circinate appendages which are only distinguished from *Uncinula* spp. by having dichotomous branchings of the appendages. But, based on molecular examinations, it turned out that the formation of branchings does not have any taxonomic value on generic level. BRAUN (1995) reduced *Uncinuliella* R.Y. Zheng & G.Q. Chen to synonymy with *Uncinula*. This treatment has been fully confirmed by molecular examinations of MORI et al. (2000). Hence, the latter genus is to be considered now as a synonym of *Erysiphe*. *Bulbouncinula* R.Y. Zheng & G.Q. Chen must be reduced to synonymy with *Erysiphe* (incl. *Uncinula*), too, since its anamorph belongs in *Oidium* subgen. *Pseudoidium* (KUO 1993).

Uncinula septata E.S. Salmon must be excluded from the *Pseudoidium* lineage, since this species takes a position at the primitive base of the whole powdery mildew clade (MORI et al. 2000). This is somewhat surprising, but, on the other hand, there are various unrelated powdery mildew genera with similar teleomorphs and quite distinct anamorphs, e.g., *Uncinula/Pleochaeta* and *Golovinomyces/Leveillula*. It is possible that *Uncinula septata* has to be placed in a separate new genus, but to solve this problem it is necessary to find the anamorph of this species. WADA (1989) described two-celled blastoconidia for *U. septata*, but this very unusual feature has not been confirmed yet.

Brasiliomyces Viégas and *Typhulochaeta* S. Ito & Hara belong in the *Pseudoidium* lineage, too (MORI et al. 2000), but the two genera are tentatively maintained and not reduced to synonymy with *Erysiphe* emend. Additional examinations are necessary. *Brasiliomyces trina* (Harkn.) R.Y. Zheng, the only member of this genus which has been examined molecularly, differs from the type species in having two-spored asci and is the type species of *Californiomyces* U. Braun. It would be useful to include in molecular studies some additional species of the genera concerned, above all the type species of *Brasiliomyces*.

***Erysiphe* DC. emend. U. Braun & S. Takamatsu**

(incl. *Bulbomicrosphaera* A.Q. Wang, *Bulbouncinula* R.Y. Zheng & G.Q. Chen, *Furcouncinula* Z.X. Chen, *Medusosphaera* Golovin & Gamalizk., *Microsphaera* Lév., *Setoerysiphe* Y. Nomura, *Uncinula* Lév., and *Uncinuliella* R.Y. Zheng & G.Q. Chen).

Anamorph: *Oidium* subgen. *Pseudoidium* Jacz.

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Teleomorph: Ascomata subglobose to somewhat depressed, non to slightly dorsiventral, peridium multilayered, pigmented, dark; with appendages, simple, irregularly to dichotomously branched, apex straight or uncinate to circinate; pluriascal; asci (2-)3-8-spored.
Type species: *Erysiphe polygoni* DC.

Since the whole *Pseudoidium* clade and its subclades are composed of mixed groups of *Erysiphe-*, *Microsphaera-*, and *Uncinula*-like species, there is no evidence for a phylogenetic division of *Erysiphe* emend. into smaller units. *Uncinula*-like taxa occur, for instance, in the basal *Uncinula* subclade as well as in a distinct group together with *Erysiphe gracilis, Typhulochaeta japonica,* and *Brasiliomyces trina* (Mori et al. 2000). Hence, a separation of *Erysiphe* emend. in subgeneric units, founded upon phylogenetic results, is not justified, but a formal division based on morphological differentiations of the ascoma appendages (morphological groups) is possible and seems to be desirable, above all for practical purposes. Names of species can be cited then in the following way: *Erysiphe* (*Microsphaera*) *alphitoides*, *Erysiphe* (*Uncinula*) *necator*, etc. Therefore, it is proposed to divide the genus *Erysiphe* emend. into three morphological sections: (1) *Erysiphe* sect. *Erysiphe* [ascoma appendages mycelioid, simple or irregularly branched; comprising species of *Erysiphe* s.str. and *Setoerysiphe*], (2) *Erysiphe* sect. ***Microsphaera*** (Lév.) U. Braun & N. Shishkoff **comb. et stat. nov.** (Bas.: *Microsphaera* Lév., Ann. Sci. Nat., Bot., 3 Sér., 15: 154 (381), 1851) [ascoma appendages apically dichotomously branched, sometimes with a second type of short appendages; comprising *Bulbomicrosphaera*, *Microsphaera* s.str., and *Medusosphaera*], (3) *Erysiphe* sect. ***Uncinula*** (Lév.) U. Braun & N. Shishkoff **comb. et stat. nov.** (Bas.: *Uncinula* Lév., Ann. Sci. Nat., Bot., 3 Sér., 15: 151 (133), 1851) [ascoma appendages simple, rarely forked, more or less setiform, apex uncinate-circinate, sometimes with a second type of short appendages; comprising *Bulbouncinula*, *Furcouncinula*, *Uncinula* s.str., and *Uncinuliella*].

The following list contains all names of *Microsphaera* spp. and *Uncinula* spp. and the adequate denominations under *Erysiphe.* Most of these species have been fully described and illustrated in Braun's (1987, 1995) monographs of powdery mildews.

(A) *Microsphaera*

Medusosphaera rosae Golovin & Gamalizk.:
***Erysiphe rosae* (Golovin & Gamalizk.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Medusosphaera rosae* Golovin & Gamalizk., Bot. Mat. Otd. Spor. Rast. Bot. Inst. AN SSSR **15**: 92 (1962).
= *Microsphaera indica* N. Ahmad, D.K. Agarwal & A.K. Sarbhoy, Mycotaxon **29**: 68 (1987).

Microsphaera abbreviata Peck:
***Erysiphe abbreviata* (Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera abbreviata* Peck, Rep. N.Y. State Mus. Nat. Hist. 28: 64 (1876).

Microsphaera abeliae Homma:
***Erysiphe abeliicola* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Microsphaera abeliae* Homma, J. Fac. Agric. Hokkaido Imp. Univ. 38: 392 (1937), non *Erysiphe abeliae* R.Y. Zheng & G.Q. Chen 1980.

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Microsphaera acaciae (S. Blumer) U. Braun:
***Erysiphe acaciae* S. Blumer**, Ann. Mycol. 24: 182 (1926).

Microsphaera aceris Bunkina:
***Erysiphe acerina* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Microsphaera aceris* Bunkina, Komarovskiye Čteniya (Vladivostok) 21: 82 (1974), non *Erysiphe aceris* DC. 1815.

Microsphaera akebiae Sawada:
***Erysiphe akebiae* (Sawada) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera akebiae* Sawada, Bull. Govt. Forest. Exp. Stat. Tokyo 50: 116 (1951).

Microsphaera alhagi (Golovin) U. Braun:
***Erysiphe bremeri* U. Braun**, Mycotaxon 15: 133 (1982).
≡ *Erysiphe alhagi* Bremer et al., Rev. Fac. Sci. Univ. Istanbul, Ser. B, 12: 140 (1947), non *Erysiphe alhagi* Sorokin 1889.
= *Trichocladia alhagi* Golovin, Trudy Sredneaz. Gos. Univ., N.S., Biol. Nauki, 14, 5: 7 (1950).

Microsphaera alphitoides Griffon & Maubl.:
***Erysiphe alphitoides* (Griffon & Maubl.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera alphitoides* Griffon & Maubl., Bull. Soc. Mycol. Fr. 28: 100 (1912).

Microsphaera alphitoides var. *chenii* U. Braun:
***Erysiphe alphitoides* var. *chenii* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera alphitoides* var. *chenii* U. Braun, Mycotaxon 15: 139 (1982).
Notes: The taxonomic positions of *M. hypophylla* Nevodovskiy and *M. sinensis* Y.N. Yu, which are very close to *M. alphitoides*, are not yet clear.

Microsphaera aristolochiae Y.N. Yu:
***Erysiphe aristolochiae* (Y.N. Yu) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera aristolochiae* Y.N. Yu, in Yu & Lai, Acta Microbiol. Sinica 21(1): 15 (1989).

Microsphaera astragali (DC.) Trevis.:
***Erysiphe astragali* DC.**, Fl. Fr. 6: 105 (1815).

Microsphaera atraphaxidis Schmied.:
***Erysiphe atraphaxidis* (Golovin) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Trichocladia atraphaxidis* Golovin, Trudy Sredneaz. Gos. Univ., N.S., Biol. Nauki, 14, 5: 6 (1950).
= *Microsphaera atraphaxidis* Schmied., Feddes Repert. 73(3): 164 (1966).

Microsphaera azaleae U. Braun:
***Erysiphe azaleae* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera azaleae* U. Braun, Mycotaxon 14(1): 370 (1982).

Microsphaera baeumleri Magnus:
***Erysiphe baeumleri* (Magnus) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera baeumleri* Magnus, Ber. Dt. Bot. Ges. 17: 148 (1899).

Microsphaera begoniae Sivan.:
***Erysiphe begoniicola* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Microsphaera begoniae* Sivan., Trans. Br. Mycol. Soc. 56(2): 304 (1971), non *Erysiphe begoniae* R.Y. Zheng & G.Q. Chen 1980.

Microsphaera benzoinis F.L. Tai:
***Erysiphe benzoinis* (F.L. Tai) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera benzoinis* F.L. Tai, Bull. Chinese Bot. Soc. 1: 23 (1935).

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Microsphaera berberidicola F.L. Tai:
***Erysiphe berberidicola* (F.L. Tai) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera berberidicola* F.L. Tai, Bull. Torrey Bot. Club 73(2): 115 (1946).

Microsphaera berberidis (DC.) Lév.:
***Erysiphe berberidis* DC.**, Fl. Fr. 2: 275 (1805).

Microsphaera berberidis var. *asiatica* U. Braun:
***Erysiphe berberidis* var. *asiatica* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera berberidis* var. *asiatica* U. Braun, Mycotaxon 18(1): 114 (1983).

Microsphaera berchemiae Sawada:
***Erysiphe berchemiae* (Sawada) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera berchemiae* Sawada, Bull. Govt. Forest. Exp. Stat. Tokyo 50: 118 (1951).

Microsphaera blasti F.L. Tai:
***Erysiphe blasti* (F.L. Tai) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera blasti* F.L. Tai, Lingnan Sci. J. 18(4): 458 (1939).

Microsphaera bulbosa U. Braun:
***Erysiphe bulbosa* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera bulbosa* U. Braun, Mycotaxon 31(1): 171 (1988).
≡ *Bulbomicrosphaera magnoliae* A.G. Wang, Acta Mycol. Sinica 6(2): 74 (1987), non *Microsphaera magnoliae* Sawada 1951, nec *Erysiphe magnoliae* (Sawada) U. Braun & S. Takamatsu 2000.

Microsphaera calocladophora G.F. Atk.:
***Erysiphe calocladophora* (G.F. Atk.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera calocladophora* G.F. Atk., J. Elisha Mitchell Sci. Soc. 7: 73 (1891).

Microsphaera caprifoliacearum U. Braun:
***Erysiphe caprifoliacearum* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera caprifoliacearum* U. Braun, Mycotaxon 14: 369 (1982).

Microsphaera caprifoliacearum var. *flexuosa* U. Braun:
***Erysiphe caprifoliacearum* var. *flexuosa* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera lonicerae* var. *flexuosa* U. Braun, Mycotaxon 15: 129 (1982).
≡ *M. caprifoliacearum* var. *flexuosa* (U. Braun) U. Braun, Nova Hedwigia 39: 229 (1984).

Microsphaera caryae U. Braun:
***Erysiphe caryae* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera caryae* U. Braun, Feddes Repert. 92(7-8): 509 (1981).

Microsphaera ceanothi (Schwein.) U. Braun:
***Erysiphe ceanothi* Schwein.**, Trans. Amer. Phil. Soc. 4: 269 (1834).

Microsphaera celastri Y.N. Yu & Y.Q. Lai:
***Erysiphe celastri* (Y.N. Yu & Y.Q. Lai) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera celastri* Y.N. Yu & Y.Q. Lai, Acta Microbiol. Sinica 21(1): 17 (1981).

Microsphaera chouardii Durrieu:
***Erysiphe chouardii* (Durrieu) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera chouardii* Durrieu, Bull. Soc. Hist. Nat.Toulouse 104(3-4): 443 (1968).

Microsphaera cinnamomi (Olive) U. Braun:
***Erysiphe cinnamomicola* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Microsphaera alni* var. *cinnamomi* Olive, Mycologia 40: 8 (1948), non *Erysiphe cinnamomi* Sawada 1919.
≡ *Microsphaera cinnamomi* (Olive) U. Braun, Mycotaxon 15: 132 (1982).

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Microsphaera cladrastidis Jacz.:
***Erysiphe cladrastidis* (Jacz.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera cladrastidis* Jacz., Karmannyj opredelitel´gribov II, mučnisto-rosyanye griby: 339, Leningrad 1927.

Microsphaera clethrae U. Braun:
***Erysiphe clethrae* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera clethrae* U. Braun, Mycotaxon 15: 121 (1982).

Microsphaera coluteae Kom.:
***Erysiphe coluteae* (Kom.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera coluteae* Kom., Scr. Bot. Hort. Univ. Petropol. 4: 270 (1895).

Microsphaera coriariae Y. Nomura:
***Erysiphe coriariae* (Y. Nomura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera coriariae* Y. Nomura, Taxonomical study of Erysiphaceae of Japan: 118-119, Tokyo 1997.

Microsphaera coryli Homma:
***Erysiphe corylicola* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Microsphaera coryli* Homma, J. Fac. Agric. Hokkaido Imp. Univ. 38: 388 (1937), non *Erysiphe coryli* DC. 1805.

Microsphaera cotini Eliade:
***Erysiphe cotini* (Eliade) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera cotini* Eliade, Acta Bot. Hort. Bucurestiensis 1985-1986: 133 (1986).

Microsphaera crispula U. Braun:
***Erysiphe crispula* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera crispula* U. Braun, Mycotaxon 15: 132 (1982).

Microsphaera decaisoreae F.L. Tai:
***Erysiphe decaisoreae* (F.L. Tai) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera decaisoreae* F.L. Tai, Lingnan Sci. J. 18(4): 459 (1939).

Microsphaera deutziae Bunkina:
***Erysiphe deutziae* (Bunkina) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera deutziae* Bunkina, Nov. Sist. Niz. Rast. 10: 80 (1973).

Microsphaera diffusa Cooke & Peck:
***Erysiphe diffusa* (Cooke & Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera diffusa* Cooke & Peck, J. Bot., II, 1: 13 (1872).

Microsphaera dimorpha (Y.N. Yu & Z.Y. Zhao) U. Braun:
***Erysiphe dimorpha* (Y.N. Yu & Z.Y. Zhao) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera berberidis* var. *dimorpha* Y.N. Yu & Z.Y. Zhao, Acta Microbiol. Sinica 21(2): 145 (1981).
≡ *Microsphaera dimorpha* (Y.N. Yu & Z.Y. Zhao) U. Braun, Mycotaxon 18(1): 115 (1983).

Microsphaera dipeltae Y.N. Yu & Y.Q. Lai:
***Erysiphe dipeltae* (Y.N. Yu & Y.Q. Lai) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera dipeltae* Y.N. Yu & Y.Q. Lai, Acta Mycol. Sinica 2(2): 89 (1983).

Microsphaera discariae Havryl.:
***Erysiphe discariae* (Havryl.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera discariae* Havryl., Nova Hedwigia 61(3-4): 448 (1995).

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Microsphaera divaricata (Wallr.) Lév.:
***Erysiphe divaricata* (Wallr.) Schltdl.,** Fl. Berol. 2: 169 (1824).

Microsphaera elevata Burrill:
***Erysiphe elevata* (Burrill) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera elevata* Burrill, Bull. Ill. State Lab. Nat. Hist. 1: 58 (1876).

Microsphaera ellisii U. Braun:
***Erysiphe ellisii* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera ellisii* U. Braun, Mycotaxon 14: 372 (1982).

Microsphaera erineophila Peck:
***Erysiphe erineophila* (Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera erineophila* Peck, Bull. Torrey Bot. Club 10: 75 (1883).

Microsphaera erlangshanensis Y.N. Yu:
***Erysiphe erlangshanensis* (Y.N. Yu) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera erlangshanensis* Y.N. Yu, Acta Mycol. Sinica 2(2): 91 (1983).

Microsphaera euonymi (DC.) Sacc.:
***Erysiphe euonymi* DC.,** Fl. Fr. 6: 105 (1815).

Microsphaera euonymi-japonici Vienn.-Bourg.:
***Erysiphe euonymi-japonici* (Vienn.-Bourg.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera euonymi-japonici* Vienn.-Bourg., Bull. Soc. Mycol. Fr. 84(1): 118 (1968).

Microsphaera euphorbiae Berk. & M.A. Curtis:
***Erysiphe euphorbiicola* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Microsphaera euphorbiae* Berk. & M.A. Curtis, Grevillea 4: 160 (1876), non *Erysiphe euphorbiae* Peck, 1874.

Microsphaera exochordae Q.X. Lu & G.Z. Lü:
***Erysiphe exochordae* (Q.X. Lu & G.Z. Lü) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera exochordae* Q.X. Lu & G.Z. Lü, Acta Mycol. Sinica 14(3): 176 (1995).

Microsphaera extensa Cooke & Peck:
***Erysiphe extensa* (Cooke & Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera extensa* Cooke & Peck, J. Bot. II, 1: 12 (1872).

Microsphaera extensa var. *curta* U. Braun:
***Erysiphe extensa* var. *curta* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera extensa* var. *curta* U. Braun, Mycotaxon 15: 130 (1982).

Microsphaera ferruginea Erikss.:
***Erysiphe verbenicola* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Microsphaera ferruginea* Erikss., Fungi paras. Scand. 145 (1883), non *Erysiphe ferruginea* (Wallr.): Fr. 1829.

Microsphaera flacourtiae N. Ahmad, A.K. Sarbhoy & Kamal:
***Erysiphe flacourtiae* (N. Ahmad, A.K. Sarbhoy & Kamal) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera flacourtiae* N. Ahmad, A.K. Sarbhoy & Kamal, Mycol. Res. 99(3): 374 (1995).

Microsphaera friesii Lév.:
***Erysiphe friesii* (Lév.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera friesii* Lév., Ann. Sci. Nat., Bot., 3 Sér., 15: 155, 381 (1851).

Microsphaera friesii var. *dahurica* U. Braun:
***Erysiphe friesii* var. *dahurica* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera friesii* var. *dahurica* U. Braun, Mycotaxon 16(2): 420 (1983).

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Microsphaera golovinii (Domashova) U. Braun:
***Erysiphe golovinii* (Domashova) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Trichocladia golovinii* Domashova, Bot. Mat. Otd. Spor. Rast. Bot. Inst. AN SSSR 12: 161 (1959).
≡ *Microsphaera golovinii* (Domashova) U. Braun, Nova Hedwigia 34: 709 (1981).

Microsphaera grossulariae (Wallr.) Lév.:
***Erysiphe grossulariae* (Wallr.) de Bary**, Beitr. Morphol. Phys. Pilze I: 52 (1870).

Microsphaera guarinonii Briosi & Cavara:
***Erysiphe guarinonii* (Briosi & Cavara) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera guarinonii* Briosi & Cavara, Funghi Parassiti delle Piante Coltivate od Utili 172 (1892) and Hedwigia 31: 142 (1892).

Microsphaera hedwigii Lév.:
***Erysiphe hedwigii* (Lév.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera hedwigii* Lév., Ann. Sci. Nat., Bot., 3 Sér., 15: 155, 381 (1851).

Microsphaera hedysari U. Braun:
***Erysiphe hedysari* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera hedysari* U. Braun, Mycotaxon 19: 376 (1984).

Microsphaera helwingiae Sawada:
***Erysiphe helwingiae* (Sawada) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera helwingiae* Sawada, Bull. Govt. Forest. Exp. Stat. Tokyo 50: 119 (1951).

Microsphaera himalayensis A.K. Sharma:
***Erysiphe himalayensis* (A.K. Sharma) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera himalayensis* A.K. Sharma, Indian Phytopathol. 39(3): 451 „1986" (1987).

Microsphaera hommae U. Braun:
***Erysiphe hommae* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera hommae* U. Braun, Mycotaxon 15: 124 (1982).

Microsphaera hypericacearum U. Braun:
***Erysiphe hyperici* (Wallr.) S. Blumer**, Beitr. Krypt.-Fl. Schweiz 7(1): 106 (1933).
≡ *Alphitomorpha hyperici* Wallr., Ann. Wetter. Ges., N.F., 4: 239 (1819).
≡ *Microsphaera hypericacearum* U. Braun, Nova Hedwigia 34: 686 (1981).

Microsphaera hyperici Y.N. Yu & Y.Q. Lai:
***Erysiphe hypericicola* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Microsphaera hyperici* Y.N. Yu & Y.Q. Lai, Acta Microbiol. Sinica 21(1): 12 (1981), non *Erysiphe hyperici* (Wallr.) S. Blumer 1933.

Microsphaera indigoferae H.D. Shin & Y.J. La:
***Erysiphe indigoferae* (H.D. Shin & Y.J. La) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera indigoferae* H.D. Shin & Y.J. La, in Shin, Erysiphaceae of Korea (Major in Plant Pathology, Department of Agricultural Biology, The Graduate School of Seoul National University): 112 (1988).

Microsphaera itoana Y. Nomura, S. Tanda & U. Braun:
***Erysiphe itoana* (Y. Nomura, S. Tanda & U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera itoana* Y. Nomura, S. Tanda & U. Braun, Trans. Mycol. Soc. Japan 25(3): 479 (1984).

Microsphaera izuensis Y. Nomura:
***Erysiphe izuensis* (Y. Nomura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera izuensis* Y. Nomura, Trans. Mycol. Soc. Japan 25(3): 479 (1984).

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Microsphaera juglandis Golovin:
***Erysiphe juglandis* (Golovin) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera juglandis* Golovin, Trudy Sredneaz. Gos. Univ., N.S., 14, Biol. Nauki, 5: 8 (1950).

Microsphaera juglandis-nigrae U. Braun:
***Erysiphe juglandis-nigrae* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera juglandis-nigrae* U. Braun, Mycotaxon 15: 124 (1982).

Microphaera katumotoi U. Braun:
***Erysiphe katumotoi* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera katumotoi* U. Braun, Mycotaxon 15: 122 (1982).

Microsphaera lianyungangensis S.R. Yu:
***Erysiphe lianyungangensis* (S.R. Yu) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera lianyungangensis* S.R. Yu, in Yu & Tian, Acta Mycol. Sinica 14(3): 164 (1995).

Microsphaera ligustri Homma:
***Erysiphe ligustri* (Homma) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera ligustri* Homma, J. Fac. Agric. Hokkaido Imp. Univ. 38: 386 (1937).

Microsphaera longissima M.Y. Li:
***Erysiphe longissima* (M.Y. Li) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera longissima* M.Y. Li, Acta Mycol. Sinica 17(2): 96 (1977).

Microsphaera lonicerae (DC.) G. Winter:
***Erysiphe lonicerae* DC.**, Fl. Fr. 6: 107 (1815).

Microsphaera lonicerae var. *ehrenbergii* (Lév.) U. Braun:
***Erysiphe lonicerae* var. *ehrenbergii* (Lév.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera ehrenbergii* Lév., Ann. Sci. Nat., Bot., 3 Sér., 15: 155, 381 (1851).
≡ *Microsphaera lonicerae* var. *ehrenbergii* (Lév.) U. Braun, Mycotaxon 15: 127 (1982).

Microsphaera ludens (E.S. Salmon) S. Blumer:
***Erysiphe ludens* (E.S. Salmon) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera alni* var. *ludens* E.S. Salmon, Mem. Torrey Bot. Club 9: 154 (1900).
≡ *Microsphaera ludens* (E.S. Salmon) S. Blumer, Beitr. Krypt.-Fl. Schweiz 7(1): 351 (1933).

Microsphaera ludens var. *lathyri* U. Braun:
***Erysiphe ludens* var. *lathyri* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera ludens* var. *lathyri* U. Braun Mycotaxon 15: 127 (1982).

Microsphaera magnifica U. Braun:
***Erysiphe magnifica* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera magnifica* U. Braun, Mycotaxon 16(2): 418 (1983).

Microsphaera magnoliae Sawada:
***Erysiphe magnoliae* (Sawada) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera magnoliae* Sawada, Bull. Govt. Forest. Exp. Stat. Tokyo 50: 120 (1951).

Microsphaera magnusii S. Blumer:
***Erysiphe magnusii* (S. Blumer) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera magnusii* S. Blumer, Beitr. Krypt.-Fl. Schweiz 7(1): 299 (1933).

Microsphaera mayumi Y. Nomura:
***Erysiphe mayumi* (Y. Nomura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera mayumi* Y. Nomura, Trans. Mycol. Soc. Japan 25: 477 (1984).

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Microsphaera meliosmae S. Tanda & Y. Nomura:
***Erysiphe meliosmae* (S. Tanda & Y. Nomura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera meliosmae* S. Tanda & Y. Nomura, Trans. Mycol. Soc. Japan 24: 310 (1983).

Microsphaera menispermi Howe:
***Erysiphe menispermi* (Howe) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera menispermi* Howe, Bull. Torrey Bot. Club 5: 3 (1874).

Microsphaera menispermi var. *dahurica* U. Braun & Y. Nomura:
***Erysiphe menispermi* var. *dahurica* (U. Braun & Y. Nomura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera menispemi* var. *dahurica* U. Braun & Y. Nomura, Mycotaxon 22(1): 88 (1985).

Microsphaera menispermi var. *sinomenii* (Y.N. Yu) U. Braun:
***Erysiphe menispermi* var. *sinomenii* (Y.N. Yu) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera sinomenii* Y.N. Yu, Acta Microbiol. Sinica 21(1): 10 (1981).
≡ *Microsphaera menispermi* var. *sinomenii* (Y.N. Yu) U. Braun, Mycotaxon 22(1): 88 (1985).

Microsphaera mirandae V.P. Gelyuta:
***Erysiphe mirandae* (V.P. Gelyuta) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera mirandae* V.P. Gelyuta, Ukr. Bot. Ž. 47(5): 80 (1990).

Microsphaera miurae U. Braun:
***Erysiphe miurae* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera miurae* U. Braun, Mycotaxon 16(2): 420 (1983).

Microsphaera miyabeana U. Braun:
***Erysiphe miyabeana* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera miyabeana* U. Braun, Mycotaxon 15: 122 (1982).

Microsphaera multappendicis Z.Y. Zhao & Y.N. Yu:
***Erysiphe multappendicis* (Z.Y. Zhao & Y.N. Yu) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera multappendicis* Z.Y. Zhao & Y.N. Yu, Acta Microbiol. Sinica 21(2): 146 (1981).

Microsphaera myoschili Neger:
***Erysiphe myoschili* (Neger) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphara myoschili* Neger, Ber. Dt. Bot. Ges. 17 (Ergänzungsheft): (241) (1900).

Microsphaera myzodendri Speer & Oehrens:
***Erysiphe myzodendri* (Speer & Oehrens) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera myzodendri* Speer & Oehrens, Sydowia 27: 128 (1975).

Microsphaera neglecta U. Braun:
***Erysiphe neglecta* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera neglecta* U. Braun, Mycotaxon 16(2): 417 (1983).

Microsphaera nemopanthis Peck:
***Erysiphe nemopanthis* (Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera nemopanthis* Peck, Rep. N.Y. Stat. Mus. Nat. Hist. 38: 102 (1886).

Microsphaera neomexicana U. Braun:
***Erysiphe neomexicana* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera neomexicana* U. Braun, Mycotaxon 16(2): 418 (1983).

Microsphaera oehrensii Havryl.:
***Erysiphe oehrensii* (Havryl.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera oehrensii* Havryl., Mycotaxon 49: 259 (1993).

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Microsphaera orixae U. Braun & S. Tanda:
***Erysiphe orixae* (U. Braun & S. Tanda) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera orixae* U. Braun & S. Tanda, Mycotaxon 25: 260 (1986).

Microsphaera ornata U. Braun:
***Erysiphe ornata* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera ornata* U. Braun, Mycotaxon 14(1): 370 (1982).

Microsphaera ornata var. *europaea* U. Braun:
***Erysiphe ornata* var. *europaea* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera ornata* var. *europaea* U. Braun, Mycotaxon 16(2): 422 (1983).

Microsphaera ovidiae Havryl.:
***Erysiphe ovidiae* (Havryl.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera ovidiae* Havryl., Mycotaxon 49: 260 (1993).

Microsphaera palczewskii Jacz.:
***Erysiphe palczewskii* (Jacz.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera palczewskii* Jacz., Karmannyj opredelitel´ gribov II, mučnisto-rosjannye griby: 339, Leningrad 1927.

Microsphaera peckii U. Braun:
***Erysiphe peckii* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera peckii* U. Braun, Mycotaxon 15: 125 (1982).

Microsphaera penicillata (Wallr.: Fr.) Lév.:
***Erysiphe penicillata* (Wallr.) Link**, in L., Sp. Pl. 4, 6(1): 113 (1824).

Microsphaera phyllanthi S. Tanda & U. Braun:
***Erysiphe phyllanthi* (S. Tanda & U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera phyllanthi* S. Tanda & U. Braun, Trans. Mycol. Soc. Japan 26: 317 (1985).

Microsphaera picrasmae Sawada:
***Erysiphe picrasmae* (Sawada) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera picrasmae* Sawada, Bull. Govt. Forest. Exp. Stat. Tokyo 50: 121 (1951).

Microsphaera platani Howe:
***Erysiphe platani* (Howe) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera platani* Howe, Bull. Torrey Bot. Club 5: 4 (1874).

Microsphaera prasadii M.K. Bhatn. & K.L. Kothari:
***Erysiphe prasadii* (M.K. Bhatn. & K.L. Kothari) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera prasadii* M.K. Bhatn. & K.L. Kothari, Curr. Sci. 35: 370 (1966).

Microsphaera pseudolonicerae (E.S. Salmon) S. Blumer:
***Erysiphe pseudolonicerae* (E.S. Salmon) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera alni* var. *pseudolonicerae* E.S. Salmon, Ann. Mycol. 6: 4 (1908).
≡ *Microsphaera pseudolonicerae* (E.S. Salmon) S. Blumer, Beitr. Krypt.-Fl. Schweiz 7(1): 351 (1933).

Microsphaera pseudacaciae (Marchenko) U. Braun:
***Erysiphe pseudacaciae* (Marchenko) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Trichocladia pseudacaciae* Marchenko, Ukr. Bot. Ž. 36(3): 256 (1979).
≡ *Microsphaera pseudacaciae* (Marchenko) U. Braun, Feddes Repert. 92: 507 (1981).

Microsphaera pulchra Cooke & Peck:
***Erysiphe pulchra* (Cooke & Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera pulchra* Cooke & Peck, J. Bot. II, 1: 12 (1872).

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Microsphaera pusilla U. Braun:
***Erysiphe pseudopusilla* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Microsphaera pusilla* U. Braun, Mycotaxon 15: 124-125 (1982), non *Erysiphe pusilla* S. Tanda & Y. Nomura 1992.

Microsphaera ravenelii Berk.:
***Erysiphe ravenelii* (Berk.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera ravenelii* Berk., Grevillea 4: 160 (1876).

Microsphaera rayssiae Mayor:
***Erysiphe rayssiae* (Mayor) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera rayssiae* Mayor, Bull. Res. Counc. Israel, Sect. D, Botany, 10D: 203 (1961).

Microsphaera rhamnicola Y.N. Yu:
***Erysiphe rhamnicola* (Y.N. Yu) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera rhamnicola* Y.N. Yu, in Yu & Lai, Acta Microbiol. Sinica 21(1): 18 (1981).

Microsphaera ribicola Havryl.:
***Erysiphe ribicola* (Havryl.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera ribicola* Havryl., Mycotaxon 49: 262 (1993).

Microsphaera robiniae F.L. Tai:
***Erysiphe robiniicola* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Microsphaera robiniae* F.L. Tai, Bull. Torrey Bot. Club 73: 118 (1946), non *Erysiphe robiniae* Grev. 1824.

Microsphaera rosae H. Karis:
***Erysiphe karisiana* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Microsphaera rosae* H. Karis, Eesti NSV Tead. Akad. Toimet., Biol., 29: 244 (1980), non *Erysiphe rosae* (Golovin & Gamalizk.) U. Braun & S. Takamatsu 2000.

Microsphaera russellii Clinton:
***Erysiphe russellii* (Clinton) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera russellii* Clinton, in Peck, Rep. N.Y. State Mus. Nat. Hist. 26: 80 (1874).

Microsphaera schizandrae Sawada:
***Erysiphe schizandrae* (Sawada) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera schizandrae* Sawada, Bull. Govt. Forest. Exp. Stat. Tokyo 50: 123 (1951).

Microsphaera securinegae F.L. Tai & C.T. Wei:
***Erysiphe securinegae* (F.L. Tai & C.T. Wei) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera securinegae* F.L. Tai & C.T. Wei, Sinensia 3: 120 (1932).

Microsphaera semitosta Berk. & M.A. Curtis ex Cooke & Peck:
***Erysiphe semitosta* (Berk. & M.A. Curtis ex Cooke & Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera semitosta* Berk. & Curtis ex Cooke & Peck, J. Bot. II, 1: 13 (1872).

Microsphaera sequinii Y.N. Yu & Y.Q. Lai:
***Erysiphe sequinii* (Y.N. Yu & Y.Q. Lai) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera sequinii* Y.N. Yu & Y.Q. Lai, J. North Eastern Forestry Inst. (China) 4: 124 (1982).

Microsphaera seravschanica Korbonskaya:
***Erysiphe seravschanica* (Korbonskaya) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera seravschanica* Korbonskaya, Dokl. Akad. Nauk. Tadzh. SSSR 4(3): 46 (1961).

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Microsphaera shinanoensis S. Tanda:
***Erysiphe shinanoensis* (S. Tanda) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera shinanoensis* S. Tanda, Mycoscience 35(1): 51 (1994).

Microsphaera sichuanica Y.N. Yu:
***Erysiphe sichuanica* (Y.N. Yu) U. Braun & S. Tanda comb. nov.**
Bas.: *Microsphaera sichuanica* Y.N. Yu, in Yu & Zhao, Acta Microbiol. Sinica 21(2): 149 (1981).

Microsphaera sparsa Howe:
***Erysiphe viburni* Duby**, Bot. Gall. 2: 872 (1830).

Microsphaera staphyleae Sawada:
***Erysiphe staphyleae* (Sawada) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera staphyleae* Sawada, Bull. Govt. Forest. Exp. Stat. Tokyo 50: 124 (1951).

Microsphaera subtrichotoma U. Braun:
***Erysiphe subtrichotoma* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera subtrichotoma* U. Braun, Mycotaxon 22(1): 90 (1985).

Microsphaera swainsonae Y.N. Yu & Y.Q. Lai:
***Erysiphe swainsonae* (Y.N. Yu & Y.Q. Lai) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera swainsonae* Y.N. Yu & Y.Q. Lai, Acta Bot. Yunnanica 3(1): 40 (1981).

Microsphaera sydowiana U. Braun:
***Erysiphe sydowiana* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera sydowiana* U. Braun, Mycotaxon 15: 139 (1982).

Microphaera symphoricarpi Howe:
***Erysiphe symphoricarpi* (Howe) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera symphoricarpi* Howe, Bull. Torrey Bot. Club 5: 3 (1874).

Microsphaera symploci Y.N. Yu & Y.Q. Lai:
***Erysiphe symplocicola* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Microsphaera symploci* Y.N. Yu & Y.Q. Lai, Acta Microbiol. Sinica 21(1): 19 (1981), non *Erysiphe symploci* Kapoor 1965.

Microsphaera syringae (Schwein.) Magnus:
***Erysiphe syringae* Schwein.**, Trans. Amer. Phil. Soc. 4: 270 (1834).

Microsphaera syringae-japonicae U. Braun:
***Erysiphe syringae-japonicae* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera syringae-japonicae* U. Braun, Mycotaxon 15: 121 (1982).

Microsphaera thaxteri Havryl. & U. Braun:
***Erysiphe thaxteri* (Havryl. & U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera thaxteri* Havryl. & U. Braun, Nova Hedwigia 66(3-4): 515 (1998).

Microsphaera thermopsis U. Braun:
***Erysiphe thermopsis* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera thermopsis* (as „*thermopsidis*“) U. Braun, Mycotaxon 20: 491 (1984).

Microsphaera tiliae Eliade:
***Erysiphe tiliae* (Eliade) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera tiliae* Eliade, Acta Bot. Hort Bucurestiensis 1985-1986: 133 (1986).

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***Erysiphe tortilis* (Wallr.) Link**, in L., Sp. Pl. 4, 6(1): 111 (1824).

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Microsphaera trifolii (Grev.) U. Braun:
***Erysiphe trifolii* Grev.**, Fl. Edin.: 459 (1824).

Microsphaera trifolii var. *intermedia* U. Braun:
***Erysiphe trifolii* var. *intermedia* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera trifolii* var. *intermedia* U. Braun, Zbl. Mikrobiol. 140: 416 (1985).

Microsphaera trifolii var. *desmanthi* U. Braun:
***Erysiphe trifolii* var. *desmanthi* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera trifolii* var. *desmanthi* U. Braun, Mycotaxon 19: 375 (1984).

Microsphaera umbilici Kom.:
***Erysiphe umbilici* (Kom.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera umbilici* Kom., Scr. Bot. Univ. Petropol. 4: 270 (1895).

Microsphaera vaccinii (Schwein.) Cooke & Peck:
***Erysiphe vaccinii* Schwein.**, Trans. Amer. Phil. Soc. 4: 270 (1834).

Microsphaera vanbruntiana W.R. Gerard:
***Erysiphe vanbruntiana* (W.R. Gerard) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera vanbruntiana* W.R. Gerard, Bull. Torrey Bot. Club 6: 31 (1875).

Microsphaera vanbruntiana var. *sambuci-racemosae* U. Braun:
***Erysiphe vanbruntiana* var. *sambuci-racemosae* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera vanbruntiana* var. *sambuci-racemosae* U. Braun, Mycotaxon 19: 376 (1984).
= *Microsphaera sambucicola* Henn., Bot. Jahrb. 29: 148 (1901).

Microsphaera verruculosa Y.N. Yu & Y.Q Lai:
***Erysiphe verruculosa* (Y.N. Yu & Y.Q. Lai) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera verruculosa* Y.N. Yu & Y.Q Lai, Acta Microbiol. Sinica 21(1): 8 (1981).

Microsphaera wallrothii U. Braun & S. Tanda:
***Erysiphe wallrothii* (U. Braun & S. Tanda) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera wallrothii* U. Braun & S. Tanda, Mycotaxon 25: 262 (1986).

Microsphaera weigelae Y. Nomura & S. Tanda:
***Erysiphe weigelae-decorae* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Microsphaera weigelae* Y. Nomura & S. Tanda, in Nomura, Taxonomical study of Erysiphaceae of Japan: 130, Tokyo 1997, non *Erysiphe weigelae* Z.X. Chen & S.B. Luo 1984.

Microsphaera yamadai (E.S. Salmon) Syd.:
***Erysiphe yamadai* (E.S. Salmon) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Microsphaera alni* var. *yamadai* E.S. Salmon, Ann. Mycol. 6: 3 (1908).
≡ *Microsphaera yamadai* (E.S. Salmon) Syd., Ann. Mycol. 12: 160 (1912).

(B) *Uncinula*

Uncinula actinidiae Miyabe ex Jacz.:
***Erysiphe actinidiae* (Miyabe ex Jacz.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula actinidiae* Miyabe ex Jacz., Karmannyj opredelitel' gibov II, Mučnisto-rosjannye griby: 369, Leningrad 1927.

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***Erysiphe actinidiae* var. *argutae* (Y. Nomura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula actinidiae* var. *argutae* Y. Nomura, Taxonomical study of Erysiphaceae of Japan: 82-83, Tokyo 1997.

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Uncinula adunca (Wallr.: Fr.) Lév.:
***Erysiphe adunca* (Wallr.) Fr.**, Syst. Mycol. 3: 245 (1829).

Uncinula adunca var. *mandshurica* (Miura) R.Y. Zheng & G.Q. Chen:
***Erysiphe adunca* var. *mandshurica* (Miura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula mandshurica* Miura, Fl. Manchuria East Mongol. III, Crypt., Fungi: 127, S. Manchuria Railway Co. 1930.

Uncinula adunca var. *regularis* (R.Y. Zheng & G.Q. Chen) U. Braun:
***Erysiphe adunca* var. *regularis* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula regularis* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 17(3): 208 (1977).
≡ *Uncinula adunca* var. *regularis* (R.Y. Zheng & G.Q. Chen) U. Braun, Mycotaxon 15: 147 (1982).

Uncinula adunca var. *salici-gracilistylae* (Homma) U. Braun:
***Erysiphe adunca* var. *salici-gracilistylae* (Homma) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula salici-graciliystylae* Homma, Trans. Sapporo Nat. Hist. Soc. 11(3): 173 (1930).
≡ *Uncinula adunca* var. *salici-gracilistylae* (Homma) U. Braun, Mycotaxon 15: 147 (1982).

Uncinula afrormosiae (Piroz.) U. Braun:
***Erysiphe afrormosiae* (Piroz.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula incrassata* var. *afrormosiae* Piroz., Mycol. Pap. 101: 18 (1965).
≡ *Uncinula afrormosiae* (Piroz.) U. Braun, Mycotaxon 15: 147 (1982).

Uncinula alangii T. Xu:
***Erysiphe alangii* (T. Xu) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula alangii* T. Xu, Acta Mycol. Sinica 2(3): 143 (1983).

Uncinula alchorneae R.Y. Zheng & G.Q. Chen:
***Erysiphe alchorneae* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula alchorneae* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 17(4): 283 (1977).

Uncinula alchorneae var. *elliptispora* R.Y. Zheng & G.Q. Chen:
***Erysiphe alchorneae* var. *elliptispora* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula alchorneae* var. *elliptispora* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 17(4): 285 (1977).

Uncinula aleuritis (C.T. Wei) U. Braun:
***Erysiphe aleuritis* (C.T. Wei) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula miyabei* var. *aleuritis* C.T. Wei, Nanking J. 11(3): 109 (1942).
≡ *Uncinula aleuritis* (C.T. Wei) U. Braun, Beih. Nova Hedwigia 89: 494 (1987).

Uncinula alvimii A.C. Dianese & Dianese:
***Erysiphe alvimii* (A.C. Dianese & Dianese) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula alvimii* A.C. Dianese & Dianese, Mycol. Res. 99(7): 823 (1995).

Uncinula amanoi Y. Nomura:
***Erysiphe amanoi* (Y. Nomura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula amanoi* Y. Nomura, Taxonomical study of Erysiphaceae of Japan: 69, Tokyo 1997.

Uncinula angusiana Piroz.:
***Erysiphe angusiana* (Piroz.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula angusiana* Piroz., Mycol. Pap. 101: 6 (1965).

Uncinula aspera Doidge:
***Erysiphe aspera* (Doidge) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula aspera* Doidge, Trans. Roy. Soc. S. Afr. 5: 240 (1915).

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Uncinula aspera var. *clavulata* R.Y. Zheng & G.Q. Chen:
***Erysiphe aspera* var. *clavulata* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula aspera* var. *clavulata* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 18(1): 18 (1978).

Uncinula aspera var. *sparsichaeta* G.J.M. Gorter & Marasas:
***Erysiphe aspera* var. *sparsichaeta* (G.J.M. Gorter & Marasas) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula aspera* var. *sparsichaeta* G.J.M. Gorter & Marasas, Phytophylactica 20(4): 393 (1988).

Uncinula australiana McAlpine:
***Erysiphe australiana* (McAlpine) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula australiana* McAlpine, Proc. Linn. Soc. N.S. Wales 24: 302 (1899).

Uncinula australis Speg.:
***Erysiphe australis* (Speg.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula australis* Speg., Fungi guaranitici pugillus I: 66 (1883-1886) [Anal. Soc. Cient. Argent. 17: 129 (1884)].

Uncinula betulae Homma:
***Erysiphe betulina* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Uncinula betulae* Homma, J. Fac. Agric. Hokaido Imp. Univ. 38: 362 (1937), non *Erysiphe betulae* DC. 1805.

Uncinula bifurcata Homma:
***Erysiphe bifurcata* (Homma) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula bifurcata* Homma, J. Fac. Agric. Hokkaido Imp. Univ. 38: 349 (1937).

Uncinula bischofiae C.T. Wei:
***Erysiphe bischofiae* (C.T. Wei) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula bischofiae* C.T. Wei, Bot. Bull. Acad. Sinica 1: 209 (1947).

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***Erysiphe brachystegiae* Doidge**, Bothalia 4: 838 (1948).

Uncinula buckleyae Y. Nomura & S. Tanda:
***Erysiphe buckleyae* (Y. Nomura & S. Tanda) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula buckleyae* Y. Nomura & S. Tanda, Trans. Mycol. Soc. Japan 26: 120 (1985).

Uncinula bulbosa (F.L. Tai & C.T. Wei) F.L. Tai:
***Erysiphe bulbouncinula* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Uncinula clintonii* var. *bulbosa* F.L. Tai & C.T. Wei, Sinensia 3: 104 (1932), non *Erysiphe bulbosa* (U. Braun) U. Braun & S. Takamatsu 2000.
≡ *Uncinula bulbosa* (F.L. Tai & C.T. Wei) F.L. Tai, Bull. Chinese Bot. Soc. 1: 16 (1935).
≡ *Bulbouncinula bulbosa* (F.L. Tai & C.T. Wei) R.Y. Zheng & G.Q.Chen, Acta Microbiol. Sinica 19(4): 376 (1979).

Uncinula carpinicola (Hara) Hara:
***Erysiphe carpinicola* (Hara) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula geniculata* var. *carpinicola* Hara, J. Forest. Assoc. Japan 382: 62 (1915).
≡ *Uncinula carpinicola* (Hara) Hara, Dendropathol.: 16 (1923).

Uncinula cedrelae F.L. Tai:
***Erysiphe cedrelae* (F.L. Tai) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula cedrelae* F.L. Tai, Bull. Chinese Bot. Soc. 2: 20 (1936).

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Uncinula cedrelae var. *nodulosae* F.L. Tai:
***Erysiphe cedrelae* var. *nodulosae* (F.L. Tai) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula cedrelae* var. *nodulosae* F.L. Tai, Bull. Chinese Bot. Soc. 2: 21 (1936).

Uncinula ceibae Viégas:
***Erysiphe ceibae* (Viégas) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula ceibae* Viégas, Bragantia 4: 28 (1944).

Uncinula celtidis Shvartsman & Kusnezowa:
***Erysiphe celtidis* (Shvartsman & Kusnezowa) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula celtidis* Shvartsman & Kusnezowa, in Vasyagina et al., Fl. Spor. Rast Kazakhstana III: 213, Alma-Ata 1961.

Uncinula chionanthi R.Y. Zheng & G.Q. Chen:
***Erysiphe chionanthi* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula chionanthi* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 17(4): 288 (1977).

Uncinula circinata Cooke & Peck:
***Erysiphe circinata* (Cooke & Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula circinata* Cooke & Peck, J. Bot. II, 1: 12 (1872).

Uncinula clandestina (Biv.) J. Schröt.:
***Erysiphe clandestina* Biv.**, Stirp. rar. Sicilia 3: 20 (1815).

Uncinula clandestina var. *ulmi-foliaceae* (Dzhaf.) R.Y. Zheng & G.Q. Chen:
***Erysiphe clandestina* var. *ulmi-foliaceae* (Dzhaf.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula clandestina* f. *ulmi-foliaceae* Dzhaf., Bot. Mat. Otd. Spor. Rast. Bot. Inst. AN SSSR 12: 266 (1959).
≡ *Uncinula clandestina* var. *ulmi-foliaceae* (Dzhaf.) R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 18(1): 20 (1978).

Uncinula clintonii Peck:
***Erysiphe clintonii* (Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula clintonii* Peck, Trans. Albany Inst. 7: 216 (1872).

Uncinula clintoniopsis R.Y. Zheng & G.Q. Chen:
***Erysiphe clintoniopsis* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula clintoniopsis* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 17(4): 289 (1977).

Uncinula combreticola Doidge:
***Erysiphe combreticola* (Doidge) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula combreticola* Doidge, Bothalia 4: 844 (1948).

Uncinula coriariae R.Y. Zheng & G.Q. Chen:
***Erysiphe coriariicola* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Uncinula coriariae* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 17(4): 281 (1977), non *Erysiphe coriariae* (Y. Nomura) U. Braun & S. Takamatsu 2000.

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***Erysiphe crataegi* (Bunkina) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula crataegi* Bunkina, Nov. Sist. Niz. Rast. 1967: 176 (1967).

Uncinula crotonis Piroz.:
***Erysiphe crotonis* (Piroz.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula crotonis* Piroz., Mycol. Pap. 101: 13 (1965).

Uncinula curvispora (Hara) Hara:
***Erysiphe curvispora* (Hara) U. Braun & S. Takamatsu comb. nov.**

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Bas.: *Uncinula septata* var. *curvispora* Hara, J. Forest. Assoc. Japan 392: 62 (1915).
≡ *Uncinula curvispora* (Hara) Hara, in Tanaka, Mycologia 11: 80 (1919).

Uncinula dabashanensis R.Y. Zheng & G.Q. Chen:
***Erysiphe dabashanensis* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula dabashanensis* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 18(1): 13 (1978).

Uncinula delavayi Pat.:
***Erysiphe delavayi* (Pat.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula delavayi* Pat., J. Bot. 2: 217 (1888).

Uncinula ehretiae Keissl.:
***Erysiphe ehretiae* (Keissl.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula ehretiae* Keissl., Österr. Bot. Z. 73: 123 (1924).

Uncinula ehretiae var. *taiwanensis* S. Tanda:
***Erysiphe ehretiae* var. *taiwanensis* (S. Tanda) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula ehretiae* var. *taiwanensis* S. Tanda, J. Agric. Sci. Tokyo 40(2): 79 (1995).

Uncinula embliae R.K. Verma, R. Chand & Kamal:
***Erysiphe embliae* (R.K. Verma, R. Chand & Kamal) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula embliae* R.K. Verma, R. Chand & Kamal, Mycol. Res. 94(1): 128 (1990).

Uncinula euphorbiacearum R.Y. Zheng & G.Q. Chen:
***Erysiphe euphorbiacearum* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula euphorbiacearum* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 17(3): 194 (1977).

Uncinula euscaphidis D.Z. Xie:
***Erysiphe euscaphidis* (D.Z. Xie) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula euscaphidis* D.Z. Xie, Acta Mycol. Sinica 6(2): 77 (1987).

Uncinula evodiae R.Y. Zheng & G.Q. Chen:
***Erysiphe evodiae* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula evodiae* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 21(3): 303 (1981).

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***Erysiphe flexuosa* (Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula flexuosa* Peck, Trans. Albany Inst. 7: 215 (1872).

Uncinula floccosa Piroz.:
***Erysiphe floccosa* (Piroz.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula floccosa* Piroz., Mycol. Pap. 101: 15 (1965).

Uncinula forestalis Mena:
***Erysiphe forestalis* (Mena) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula forestalis* Mena, Revt. Agron. N. Argent. 7(3-4): 599 (1970).

Uncinula fragilis R.Y. Zheng & G.Q. Chen:
***Erysiphe fragilis* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula fragilis* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 17(3): 202 (1977).

Uncinula fraxini Miyabe:
***Erysiphe fraxinicola* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Uncinula fraxini* Miyabe, in E.S. Salmon, Mem. Torrey Bot. Club 9: 119 (1900), non *Erysiphe fraxini* DC. 1805.

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Uncinula fusca Piroz.:
***Erysiphe allophyli* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Uncinula fusca* Piroz., Mycol. Pap. 101: 15 (1965), non *Erysiphe fusca* Fr. 1829.

Uncinula geniculata W.R. Gerard:
***Erysiphe geniculata* (W.R. Gerard) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula geniculata* W.R. Gerard, Bull. Torrey Bot. Club 4: 48 (1873).

Uncinula heringeriana U. Braun ex Dianese & A.C. Dianese:
***Erysiphe heringeriana* (U. Braun ex Dianese & A.C. Dianese) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula heringeriana* U. Braun ex Dianese & A.C. Dianese, Mycol. Res. 99(7): 821 (1995).

Uncinula himalayensis Y.S. Paul:
***Erysiphe paulii* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Uncinula himalayensis* Y.S. Paul, Indian Phytopathol. 39(11): 111 „1986" (1987), non *Erysiphe himalayensis* (A.K. Sharma) U. Braun & S. Takamatsu 2000.

Uncinula hydrangeae Z.X. Chen & R.X. Gao:
***Erysiphe hydrangeae* (Z.X. Chen & R.X. Gao) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula hydrangeae* Z.X. Chen & R.X. Gao, Acta Mycol. Sinica 3(2): 78 (1984).

Uncinula idesiae D.Z. Xie:
***Erysiphe idesiae* (D.Z. Xie) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula idesiae* D.Z. Xie, Acta Mycol. Sinica 6(2): 79 (1987).

Uncinula incrassata E.S. Salmon:
***Erysiphe incrassata* (E.S. Salmon) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula incrassata* E.S. Salmon, Ann. Mycol. 6: 525 (1908).

Uncinula irregularis R.Y. Zheng & G.Q. Chen:
***Erysiphe irregularis* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula irregularis* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 18(1): 16 (1978).

Uncinula jaborosae Seaver:
***Erysiphe jaborosae* (Seaver) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula jaborosae* Seaver, Mycologia 32(5): 649 (1940).

Uncinula kenjiana Homma:
***Erysiphe kenjiana* (Homma) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula kenjiana* Homma, Trans. Sapporo Nat. Hist. Soc. 11(3): 172 (1930).

Uncinula kusanoi Syd.:
***Erysiphe kusanoi* (Syd.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula kusanoi* Syd., Mem. Herb. Boiss. 4: 4 (1900).

Uncinula kusanoi var. *aphananthes* U. Braun:
***Erysiphe kusanoi* var. *aphananthes* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula kusanoi* var. *aphananthes* U. Braun, Mycotaxon 15: 144 (1982).
= *Uncinula aphananthes* Jacz., Karmannyj opredelitel' gribov II, mučnisto-rosjanye griby: 389, Leningrad 1927.

Uncinula kusanoi var. *zelkowae* (Henn.) U. Braun:
***Erysiphe kusanoi* var. *zelkowae* (Henn.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula zelkowae* Henn., Bot. Jahrb. 29: 149 (1901).
≡ *Uncinula kusanoi* var. *zelkowae* (Henn.) U. Braun, Mycotaxon 15: 143 (1982).

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Uncinula kydiae R.K. Verma, R. Chand & Kamal:
***Erysiphe kydiae* (R.K. Verma, R. Chand & Kamal) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula kydiae* R.K. Verma, R. Chand & Kamal, Mycol. Res. 94(1): 129 (1990).

Uncinula lata Y. Nomura & S. Tanda:
***Erysiphe lata* (Y. Nomura & S. Tanda) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula lata* Y. Nomura & S. Tanda, in Nomura, Taxonomical study of Erysiphaceae of Japan: 73, Tokyo 1997.

Uncinula liquidambaris R.Y. Zheng & G.Q. Chen:
***Erysiphe liquidambaris* (R.Y. Zheng & G.Q. Chen) U. Braun comb. nov.**
Bas.: *Uncinula liquidambaris* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 18(1): 12 (1978).

Uncinula ljubarskii Golovin:
***Erysiphe ljubarskii* (Golovin) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula ljubarskii* Golovin, Bot. Mat. Otd. Spor. Rast. Bot. Inst. AN SSSR 8: 92 (1952).

Uncinula ljubarskii var. *aduncoides* (R.Y. Zheng & G.Q. Chen) R.Y. Zheng & G.Q. Chen:
***Erysiphe ljubarskii* var. *aduncoides* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula aduncoides* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 17(3): 192 (1977).
≡ *Uncinula ljubarskii* var. *aduncoides* (R.Y. Zheng & G.Q. Chen) R.Y. Zheng & G.Q. Chen, Acta Mycol. Sinica 4(3): 144 (1985).

Uncinula maackii R.Y. Zheng & G.Q. Chen:
***Erysiphe maackii* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula maackii* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 21(3): 300 (1981).

Uncinula macrospora Peck:
***Erysiphe macrospora* (Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula macrospora* Peck, Trans. Albany Inst. 7: 215 (1872).

Uncinula magellanica Thaxt.:
***Erysiphe magellanica* (Thaxt.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula magellanica* Thaxt., Bot. Gaz. 50: 440 (1910).

Uncinula mori Miyake:
***Erysiphe mori* (Miyake) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula mori* Miyake, Bot. Mag. Tokyo 21: 1 (1907).

Uncinula matsunamiana Y. Nomura, S. Tanda & U. Braun:
***Erysiphe matsunamiana* (Y. Nomura, S. Tanda & U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula matsunamiana* Y. Nomura, S. Tanda & U. Braun, Mycotaxon 25: 264 (1986).

Uncinula miyabei (E.S. Salmon) Sacc. & Syd.:
***Erysiphe miyabei* (E.S. Salmon) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula salicis* var. *miyabei* E.S. Salmon, Mem. Torrey Bot. Club 9: 88 (1900).
≡ *Uncinula miyabei* (E.S. Salmon) Sacc. & Syd., in Sacc., Syll. Fung. 16: 401 (1902).

Uncinula nankinensis F.L. Tai:
***Erysiphe nankinensis* (F.L. Tai) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula nankinensis* F.L. Tai, Contr. Biol. Lab. Sci. Soc. China, Bot. Ser., 6(1): 2 (1930).

Uncinula nishidana Homma:
***Erysiphe nishidana* (Homma) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula nishidana* Homma, J. Fac. Agric. Hokkaido Imp. Univ. 38: 367 (1937).

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Uncinula necator (Schwein.) Burrill:
***Erysiphe necator* Schwein.**, Trans. Amer. Phil. Soc. 4: 270 (1834).

Uncinula necator var. *ampelopsidis* (Peck) U. Braun:
***Erysiphe necator* var. *ampelopsidis* (Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula ampelopsidis* Peck, Trans. Albany Inst. 7: 216 (1872).
≡ *Uncinula necator* var. *ampelopsidis* (Peck) U. Braun, Mycotaxon 16(2): 427 (1983).

Uncinula nothofagi Thaxt.:
***Erysiphe nothofagi* (Thaxt.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula nothofagi* Thaxt., Bot. Gaz. 50: 439 (1910).

Uncinula oleosa R.Y. Zheng & G.Q. Chen:
***Erysiphe oleosa* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula oleosa* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 17(4): 290 (1977).

Uncinula oleosa var. *zhengii* U. Braun:
***Erysiphe oleosa* var. *zhengii* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula oleosa* var. *zhengii* U. Braun, Mycotaxon 16(2): 427 (1983).

Uncinula paradoxa Simonyan:
***Erysiphe paradoxa* (Simonyan) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula paradoxa* Simonyan, Izvest. Akad. Nauk. Armjan. SSR, Biol. Nauk., 12(2): 88 (1959).

Uncinula parvula Cooke & Peck:
***Erysiphe parvula* (Cooke & Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula parvula* Cooke & Peck, J. Bot. II, 1: 170 (1872).

Uncinula peristrophes N. Ahmad, A.K. Sarbhoy & Kamal:
***Erysiphe peristrophes* (N. Ahmad, A.K. Sarbhoy & Kamal) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula peristrophes* N. Ahmad, A.K. Sarbhoy & Kamal, Mycol. Res. 99(3): 375 (1995).

Uncinula peruviana Syd.:
***Erysiphe peruviana* (Syd.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula peruviana* Syd., Ann. Mycol. 28: 433 (1930).

Uncinula picrasmae Homma:
***Erysiphe picrasmae* (Homma) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula picrasmae* Homma, J. Fac. Agric. Hokkaido Imp. Univ. 38: 353 (1977).

Uncinula pirottiana Bacc.:
***Erysiphe pirottiana* (Bacc.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula pirottiana* Bacc., Annali Bot. 4: 273 (1906).

Uncinula pistaciae (J.Y. Lu & K.R. Wang) U. Braun:
***Erysiphe pistaciae* (J.Y. Lu & K.R. Wang) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinuliella pistaciae* J.Y. Lu & K.R. Wang, Acta Mycol. Sinica 6(3): 133 (1987).
≡ *Uncinula pistaciae* (J.Y. Lu & K.R. Wang) U. Braun, The powdery mildews (Erysiphales) of Europe: 335, Jena, Stuttgart, New York 1995.

Uncinula praelonga (S.R. Yu) U. Braun:
***Erysiphe praelonga* (S.R. Yu) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinuliella praelonga* S.R. Yu, Acta Mycol. Sinica 12(4): 261 (1993).
≡ *Uncinula praelonga* (S.R. Yu) U. Braun, The powdery mildews (Erysiphales) of Europe: 335, Jena, Stuttgart, New York 1995.

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Uncinula prunastri (DC.) Sacc.:
***Erysiphe prunastri* DC.**, Fl. Fr. 6: 108 (1815).

Uncinula pseudocarpinicola Y. Nomura & S. Tanda:
***Erysiphe pseudocarpinicola* (Y. Nomura & S. Tanda) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula pseudocarpinicola* Y. Nomura & S. Tanda, in Nomura, Taxonomical study of Erysiphaceae of Japan: 76, Tokyo 1997.

Uncinula pseudocedrelae R.Y. Zheng & G.Q. Chen:
***Erysiphe pseudocedrelae* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula pseudocedrelae* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 17(3): 205 (1977).

Uncinula pseudoehretiae R.Y. Zheng & G.Q. Chen:
***Erysiphe pseudoehretiae* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula pseudoehretiae* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 18(1): 19 (1978).

Uncinula pyrenaica Vienn.-Bourg.:
***Erysiphe pyrenaica* (Vienn.-Bourg.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula pyrenaica* Vienn.-Bourg., Bull. Soc. Mycol. Fr. 84: 118 (1968).

Uncinula salmonii Syd.:
***Erysiphe salmonii* (Syd.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula salmonii* Syd.. Ann. Mycol. 11: 114 (1912).

Uncinula sapindi S.R. Yu:
***Erysiphe sapindi* (S.R. Yu) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula sapindi* S.R. Yu, Acta Mycol. Sinica 12(4): 259 (1993).

Uncinula schizophragmatis S. Tanda & Y. Nomura:
***Erysiphe schizophragmatis* (S. Tanda & Y. Nomura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula schizophragmatis* S. Tanda & S. Takamatsu, Trans. Mycol. Soc. Japan 33(2): 212 (1992).

Uncinula sengokui E.S. Salmon:
***Erysiphe sengokui* (E.S. Salmon) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula sengokui* E.S. Salmon, Mem. Torrey Bot. Club 9: 120 (1900).

Uncinula sibiliae Ciccar.:
***Erysiphe sibiliae* (Ciccar.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula sibiliae* Ciccar., Ann. Cent. Sper. Agr. A.O.I. 1: 6 (1940).

Uncinula sinensis F.L. Tai & C.T. Wei:
***Erysiphe sinensis* (F.L. Tai & C. T. Wei) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula sinensis* F.L. Tai & C.T. Wei, Sinensia 3: 112 (1932).

Uncinula simulans E.S. Salmon:
***Erysiphe simulans* (E.S. Salmon) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula simulans* E.S. Salmon, Ann. Mycol. 6: 2 (1908).

Uncinula simulans var. *pruni* (Z.Y. Zhao & Y.Q. Yuan) U. Braun:
***Erysiphe simulans* var. *pruni* (Z.Y. Zhao & Y.Q. Yuan) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinuliella rosae* var. *pruni* Z.Y. Zhao & Y.Q. Yuan, Acta Mycol. Sinica 11(4): 268 (1992).
≡ *Uncinula simulans* var. *pruni* (Z.Y. Zhao & Y.Q. Yuan) U. Braun, The powdery mildews (Erysiphales) of Europe: 335, Jena, Stuttgart, New York 1995.

Uncinula simulans var. *rosae-rubi* (R.Y. Zheng & G.Q. Chen) U. Braun:
***Erysiphe simulans* var. *rosae-rubi* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**

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Bas.: *Uncinuliella simulans* var. *rosae-rubi* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 19(3): 288 (1979).
≡ *Uncinula simulans* var. *rosae-rubi* (R.Y. Zheng & G.Q. Chen) U. Braun, The powdery mildews (Erysiphales) of Europe: 335, Jena, Stuttgart, New York 1995.

Uncinula simulans var. *tandae* (U. Braun) U. Braun:
***Erysiphe simulans* var. *tandae* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinuliella simulans* var. *tandae* U. Braun, Mycotaxon 22(1): 92 (1985).
≡ *Uncinuliella rosae* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 19(3): 284 (1979).
≡ *Uncinula simulans* var. *tandae* (U. Braun) U. Braun, The powdery mildews (Erysiphales) of Europe: 335, Jena, Stuttgart, New York 1995.

Uncinula tectonae E.S. Salmon:
***Erysiphe tectonae* (E.S. Salmon) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula tectonae* E.S. Salmon, Ann. Mycol. 5: 479 (1907).

Uncinula togashiana U. Braun:
***Erysiphe togashiana* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula togashiana* U. Braun, Mycotaxon 15: 141 (1982).

Uncinula togashiana var. *rigida* U. Braun & S. Tanda:
***Erysiphe togashiana* var. *rigida* (U. Braun & S. Tanda) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula togashiana* var. *rigida* U. Braun & S. Takamatsu, Mycotaxon 22(1): 92 (1985).

Uncinula toxicodendricola Z.X. Chen & Y.J. Yao:
***Erysiphe toxicodendricola* (Z.X. Chen & Y.J. Yao) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula toxicodendricola* Z.X. Chen & Y.J. Yao, Wuyi Sci. J. 8: 157 (1991).

Uncinula udaipurensis M.K. Bhatn. & K.L. Kothari:
***Erysiphe udaipurensis* (M.K. Bhatn. & K.L. Kothari) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula udaipurensis* M.K. Bhatn. & K.L. Kothari, Curr. Sci. 35: 417 (1966).

Uncinula udaipurensis var. *praeterita* (Marasas & I.H. Schum.) U. Braun:
***Erysiphe udaipurensis* var. *praeterita* (Marasas & I.H. Schum.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula praeterita* Marasas & I.H. Schum., Bothalia 9: 249 (1966).
≡ *Uncinula udaipurensis* var. *praeterita* (Marasas & I.H. Schum.) U. Braun, Beih. Nova Hedwigia 89: 484 (1987).

Uncinula variabilis R.Y. Zheng & G.Q. Chen:
***Erysiphe variabilis* (R.Y. Zheng & G.Q. Chen) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula variabilis* R.Y. Zheng & G.Q. Chen, Acta Microbiol. Sinica 21(2): 299 (1981).

Uncinula verniciferae Henn.:
***Erysiphe verniciferae* (Henn.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula verniciferae* Henn., Bot. Jahrb. 29: 149 (1901).

Uncinula verniciferae var. *shennongjiana* G.Q. Chen & R.Y. Zheng:
***Erysiphe verniciferae* var. *shennongjiana* (G.Q. Chen & R.Y. Zheng) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula verniciferae* var. *shennongjiana* G.Q. Chen & R.Y. Zheng, Fungi and Lichens of Shennongjian: 90 (1989).

Uncinula vernoniae Viégas:
***Erysiphe vernoniae* (Viégas) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula vernoniae* Viégas, Bragantia 4: 29 (1944).

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Uncinula viburni Y. Nomura, S. Tanda & U. Braun:
***Erysiphe viburnicola* U. Braun & S. Takamatsu nom. nov.**
Bas.: *Uncinula viburni* Y. Nomura, S. Tanda & U. Braun, Mycotaxon 25: 264 (1986), non *Erysiphe viburni* Duby 1830.

Uncinula viegasii Dianese & A.C. Dianese:
***Erysiphe viegasii* (Dianese & A.C. Dianese) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula viegasii* Dianese & A.C. Dianese, Mycol. Res. 99(7): 821 (1995).

Uncinula wuyiensis (Z.X. Chen & R.X. Gao) U. Braun:
***Erysiphe wuyiensis* (Z.X. Chen & R.X. Gao) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Furcouncinula wuyiensis* Z.X. Chen & R.X. Gao, Acta Mycol. Sinica 1(1): 11 (1982).
≡ *Uncinula wuyiensis* (Z.X. Chen & R.X. Gao) U. Braun, Mycotaxon 21(1): 92 (1985).

Uncinula yaanensis J.F. Tao & T.J. Li:
***Erysiphe yaanensis* (J.F. Tao & T.J. Li) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Uncinula yaanensis* J.F. Tao & T.J. Li, Acta Microbiol. Sinica 17(4): 295 (1977).

2. *Cystotheca, Podosphaera*, and *Sphaerotheca*

The genera *Cystotheca*, *Podosphaera*, and *Sphaerotheca* are closely allied and connected by having uniform anamorphs with catenate conidia and fibrosin bodies as well as ascomata with a single, (6-)8-spored ascus (BRAUN 1987). *Cystotheca* differs from *Podosphaera* and *Sphaerotheca* in having special aerial hyphae and an ascoma wall composed of two layers that easily separate from each other. *Sphaerotheca* is only distinguished from *Podosphaera* by having fruitbodies with unbranched appendages, which is comparable with the differentiation between *Erysiphe* and *Microsphaera*.
However, molecular examinations within the *Cystotheca-Podosphaera-Sphaerotheca* complex (tribe Cystotheceae), recently carried out by SAENZ & TAYLOR (1999) and TAKAMATSU et al. (2000), showed that the differentiation of simple and dichotomously branched ascoma appendages in this group of taxa is also not suitable as taxonomic feature at generic rank. SAENZ & TAYLOR (1999) demonstrated that *Podosphaera* and *Sphaerotheca* do not form distinct clades and concluded that all *Sphaerotheca* species could be changed to *Podosphaera*. TAKAMATSU et al. (2000) carried out comprehensive examinations, based on 30 taxa of *Cystotheca*, *Podosphaera*, and *Sphaerotheca*, and fully confirmed the results of SAENZ & TAYLOR (1999).
The hypothesis that *Podosphaera* and *Sphaerotheca* form separate monophyletic clades has been clearly rejected by the Kishino-Hasegawa test. Tribe Cystotheceae is characterized by having two distinct clades, viz. the *Cystotheca* clade and the *Podosphaera-Sphaerotheca* clade, which is separated into two subclades. One of these subclades is composed of *Podosphaera clandestina*, a member of *Podosphaera* sect. *Podosphaera* and some additional taxa, including *Podosphaera leucotricha* which is usually placed in *Podosphaera* sect. *Tridactyla* Homma ex U. Braun, and species of *Sphaerotheca* sect. *Sphaerotheca*. The second clade consists of *Podosphaera tridactyla* (Wallr.) de Bary, the type species of *Podosphaera* sect. *Tridactyla*, and some other taxa on hosts belonging to the genus *Prunus* and species of *Sphaerotheca* sect. *Magnicellulatae* U. Braun. *Podosphaera* spp. take a basal position in both subclades. Hence, it is not tenable to maintain the genus *Sphaerotheca* in the present way. Taxa of *Sphaerotheca* sect. *Sphaerotheca* and sect. *Magnicellulatae* have been derived from *Podosphaera*-like ancestors independently from each other and

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form an intricated complex which is hardly separable into smaller units on generic level. Therefore, it is proposed to reduced *Sphaerotheca* to synonymy with *Podosphaera*. The classical separation of *Podosphaera* into two sections is also not tenable. Additional examinations of the structure of the two subclades within the *Podosphaera-Sphaerotheca* clade are necessary.

Sawadaea Miyabe spp. possess conidia with fibrosin bodies, too. Based on molecular examinations, the latter genus pertains to the „fibrosin lineage" (Mori et al. 2000) and takes a basal position within the *Cystotheca* clade (Takamatsu et al. 1998). However, *Sawadaea* and *Cystotheca* spp. are separated and do not form mixed groups (Mori et al. 2000). Furthermore, species of *Sawadaea* are clearly distinguished from *Cystotheca* and *Podosphaera* (incl. *Sphaerotheca*) spp. by having polyascal ascomata with distinct appendages and a different type of conidiophores and conidia, belonging in *Oidium* subgen. *Octagoidium* R.T.A. Cook et al. Hence, *Sawadaea* should be maintained as a separate genus.

***Podosphaera* Kunze emend. U. Braun & S. Takamatsu**
(incl. *Kokkalera* Ponnappa, *Sphaerotheca* Lév.)
Anamorph: *Oidium* subgen. *Fibroidium* R.T.A. Cook et al.
Teleomorph: Ascomata subglobose, non-dorsiventral to slightly dorsiventral, wall multilayered, pigmented, with appendages, mycelioid, simple or irregularly branched to setiform, apically dichotomously branched; pluriascal; asci (6-)8-spored.
Type species: *Podosphaera myrtillina* (C. Schub.: Fr.) Kunze.

Podosphaera emend. is also formally divided into non-phylogenetical, but morphological sections and subsections: (1) *Podosphaera* sect. *Podosphaera* [ascoma appendages apically dichotomously branched], (2) *Podosphaera* sect. ***Sphaerotheca*** (Lév.) U. Braun & N. Shishkoff **comb. et stat. nov.** (Bas.: *Sphaerotheca* Lév., Ann. Sci. Nat., Bot., 3 Sér., 15: 133 (138), 1851) [ascoma appendages mycelioid, simple or irregularly branched], subsect. *Sphaerotheca* [peridial cells of the ascomata small, about 5-25 µm diam.], subsect. ***Magnicellulatae*** (U. Braun) U. Braun & N. Shishkoff **comb. et stat. nov.** (Bas.: *Sphaerotheca* sect. *Magnicellulatae* U. Braun, Feddes Repert. 88: 660, 1978) [peridial cells of the ascomata large, (10-)20-55 µm diam.].

The following list contains all names of *Sphaerotheca* spp. and the adequate denominations under *Podosphaera*.

Sphaerotheca alpina S. Blumer:
***Podosphaera alpina* (S. Blumer) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca alpina* S. Blumer, Beitr. Krypt.-Fl. Schweiz 7(1): 116 (1933).

Sphaerotheca alpina f. *macrospora* U. Braun:
***Podosphaera alpina* f. *macrospora* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca alpina* f. *macrospora* U. Braun, Zbl. Mikrobiol. 140: 164 (1985).

Sphaerotheca aphanis (Wallr.) U. Braun:
***Podosphaera aphanis* (Wallr.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Alphitomorpha aphanis* Wallr., Ann. Wetter. Ges., N.S., 4: 242 (1819).
≡ *Sphaerotheca aphanis* (Wallr.) U. Braun, Mycotaxon 15: 136 (1982).

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Sphaerotheca aphanis var. *hyalina* U. Braun:
***Podosphaera aphanis* var. *hyalina* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca aphanis* var. *hyalina* U. Braun, Zbl. Mikrobiol. 140: 240 (1985).

Sphaerotheca aphanis var. *physocarpi* U. Braun:
***Podosphaera aphanis* var. *physocarpi* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca aphanis* var. *physocarpi* U. Braun, Mycotaxon 20: 484 (1984).

Sphaerotheca astilbicola (Z.Y. Zhao) U. Braun:
***Podosphaera astilbicola* (Z.Y. Zhao) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca mors-uvae* var. *astilbicola* Z.Y. Zhao, Acta Microbiol. Sinica 21(3): 295 (1981).
≡ *Sphaerotheca astilbicola* (Z.Y. Zhao) U. Braun, Zbl. Mikrobiol. 140: 164 (1985).

Sphaerotheca astragali L. Junell:
***Podosphaera astragali* (L. Junell) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca astragali* L. Junell, Sv. Bot. Tidskr. 60(3): 376 (1966).

Sphaerotheca balsaminae Kari ex U. Braun:
***Podosphaera balsaminae* (Kari ex U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca balsaminae* Kari ex U. Braun, The powdery mildews (Erysiphales) of Europe: 333, Jena, Stuttgart, New York 1995.
This species is morphologically very close to *Podosphaera xanthii* (Castagne) U. Braun & N. Shishkoff (≡ *Sphaerotheca xanthii* (Castagne) L. Junell, *Sphaerotheca fusca* auct. p.p.), but germination experiments with conidia from *Impatiens noli-tangere*, recently carried out by SCHMIDT (1999), showed that the germination patterns are distinct in the two species.

Sphaerotheca callicarpae S. Tanda & Y. Nomura:
***Podosphaera callicarpae* (S. Tanda & Y. Nomura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca callicarpae* S. Tanda & Y. Nomura, Trans. Mycol. Soc. Japan 24: 307 (1983).

Sphaerotheca cardamines Y. Nomura:
***Podosphaera cardamines* (Y. Nomura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca cardamines* Y. Nomura, Taxonomical study of Erysiphaceae of Japan: 19-20, Tokyo 1997.

Sphaerotheca caricae-papayae S. Tanda & U. Braun:
***Podosphaera caricae-papayae* (S. Tanda & U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca caricae-papayae* S. Tanda & U. Braun, Trans. Mycol. Soc. Japan 26: 316 (1985).

Sphaerotheca cassiae Pandotra & Ganguly:
***Podosphaera cassiae* (Pandotra & Ganguly) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca cassiae* Pandotra & Ganguly, Mycopathol. Mycol. Appl. 22(2-3): 107 (1964).

Sphaerotheca cayratiae Z.Q. Yuan & A.Q. Wang:
***Podosphaera cayratiae* (Z.Q. Yuan & A.Q. Wang) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca cayratiae* Z.Q. Yuan & A.Q. Wang, Acta Mycol. Sinica 10(3): 182 (1991).

Sphaerotheca celastracearum U. Braun:
***Podosphaera celastracearum* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca celastracearum* U. Braun, Beih. Nova Hedwigia 89: 657 (1987).

Sphaerotheca collomiae U. Braun:
***Podosphaera collomiae* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca collomiae* U. Braun, Zbl. Mikrobiol. 140: 162 (1985).

Sphaerotheca crotonis (Ponnappa) U. Braun:
***Podosphaera crotonis* (Ponnappa) U. Braun & S. Takamatsu comb. nov.**

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Bas.: *Kokkalera crotonis* Ponnappa, Sydowia 23(1-6): 5 „1969" (1970).
≡ *Sphaerotheca crotonis* (Ponnappa) U. Braun, Mycotaxon 20: 484 (1984).

Sphaerotheca delphinii (P. Karst.) S. Blumer:
***Podosphaera delphinii* (P. Karst.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca castagnei* ssp. *delphinii* P. Karst., Ofv. Finsk. Vet.-Soc. Förh. 46(11): 5 (1904).
≡ *Sphaerotheca delphinii* (P. Karst.) S. Blumer, Beitr. Krypt.-Fl. Schweiz 7(1): 129 (1933).

Sphaerotheca diclipterae Y. Nomura:
***Podosphaera diclipterae* (Y. Nomura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca diclipterae* Y. Nomura, Taxonomical study of Erysiphaceae of Japan: 34, Tokyo 1997.

Sphaerotheca dipsacearum (Tul. & C. Tul.) L. Junell:
***Podosphaera dipsacearum* (Tul. & C. Tul.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Erysiphe dipsacearum* Tul. & C. Tul., Select. fung. carpol. 1: 210 (1861).
≡ *Sphaerotheca dipsacearum* (Tul. & C. Tul.) L. Junell, Sv. Bot. Tidskr. 62(1): 227 (1967).

Sphaerotheca drabae Juel:
***Podosphaera drabae* (Juel) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca drabae* Juel, Bot. Not. 1890: 9 (1890).

Sphaerotheca epilobii (Wallr.) Sacc.:
***Podosphaera epilobii* (Wallr.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Alphitomorpha epilobii* Wallr., Ann. Wetter. Ges., N.F., 4: 243 (1819).
≡ *Sphaerotheca epilobii* (Wallr.) Sacc., Syll. Fung. 1: 4 (1882).

Sphaerotheca erodii (Durrieu & Mont.) Rayss:
***Podosphaera erodii* (Durrieu & Mont.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Erysiphe erodii* Durrieu & Mont., Expl. Sci. de l'Algérie, Fl. d'Algérie 1: 567 (1849).
≡ *Sphaerotheca erodii* (Durrieu & Mont.) Rayss, Palestina J. Bot. 1: 322 (1940).

Sphaerotheca euphorbiae (Castagne) E.S. Salmon:
***Podosphaera euphorbiae* (Castagne) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Botrytis euphorbiae* Castagne, Suppl. Cat. Pl. Mars.: 8 (1851).
≡ *Sphaerotheca euphorbiae* (Castagne) E.S. Salmon, Bull. Torrey Bot. Club 29: 95 (1902).

Sphaerotheca euphorbiae-helioscopiae S. Tanda & Y. Nomura:
***Podosphaera euphorbiae-helioscopiae* (S. Tanda & Y. Nomura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca euphorbiae-helioscopiae* S. Tanda & Y. Nomura, Trans. Mycol. Soc. Japan 27: 22 (1986).

Sphaerotheca euphorbiae-hirtae U. Braun & S. Somani:
***Podosphaera euphorbiae-hirtae* (U. Braun & S. Somani) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca euphorbiae-hirtae* U. Braun & S. Somani, Mycotaxon 25: 263 (1986).

Sphaerotheca ferruginea (Schltdl.: Fr.) L. Junell:
***Podosphaera ferruginea* (Schltdl.: Fr.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Alphitomorpha ferruginea* Schltdl., Verh. Ges. Naturf. Freunde Berlin 1: 47 (1819).
≡ *Erysiphe ferruginea* (Schltdl.): Fr., Syst. mycol. 3: 238 (1829).
≡ *Sphaerotheca ferruginea* (Schltdl.: Fr.) L. Junell, Trans. Br. Mycol. Soc. 48: 574 (1965).

Sphaerotheca ferruginea var. *albiflorae* Y. Nomura:
***Podosphaera ferruginea* var. *albiflorae* (Y. Nomura) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca ferruginea* var. *albiflorae* Y. Nomura, Taxonomical study of Erysiphaceae of Japan: 38-39, Tokyo 1997.

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Sphaerotheca fugax Penz. & Sacc.:
***Podosphaera fugax* (Penz. & Sacc.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca fugax* Penz. & Sacc., Atti R. Ist. Ven. Sci. 6(2): 586 (1884).

Sphaerotheca fusca (Fr.) S. Blumer:
***Podosphaera fusca* (Fr.) U. Braun & N. Shishkoff comb. nov.**
Bas.: *Erysiphe fusca* Fr., Syst. mycol. 3: 242 (1829). Neotype: on *Doronicum austriacum*, Austria, Rehm, Ascomyceten 1349c (HAL), selected here. Isoneotypes: Rehm, Ascomyceten 1349c.
≡ *Sphaerotheca fusca* (Fr.) S. Blumer, Beitr. Krypt.-Fl. Schweiz 7(1): 117 (1933).
= *Sphaerotheca erigerontis-canadensis* (Lév.) L. Junell, Sv. Bot. Tidskr. 60(3): 387 (1966).
Notes: N. Shishkoff (Cornell University, Long Island Horticultural Research Laboratory, Riverhead, N.Y., USA) is engaged in comprehensive examinations of *Sphaerotheca fusca* s.lat. and allied taxa, including morphological, host range, mating, and inoculation studies. The results of these examinations will be published elsewhere, but taxonomical and nomenclatural consequences are discussed here. *Sphaerotheca fusca* sensu BRAUN (1987) has to be divided into two species which are differentiated by the size of the ascomata and, above all, the diameter of the thin-walled apical part of the asci (oculus). *S. fusca* was described from France on *Doronicum austriacum*, but *Doronicum* spp. are known to be hosts of both taxa. Since type material of *Erysiphe fusca* is not preserved, a neotypification is urgently necessary to establish the application of this name. *Sphaerotheca* is very common on various *Doronicum* spp., and almost all collections belong to the taxon with small ascomata and asci with small oculi, whereas the taxon with large fruitbodies and large oculi is rare. Therefore, it is proposed to neotypify *E. fusca* with a collection of the common *Doronicum* powdery mildew, so that *Sphaerotheca erigerontis-canadensis* (Lév.) L. Junell must be reduced to synonymy with this species. *Sphaerotheca xanthii* (Castagne) L. Junell (≡ *Podosphaera xanthii* (Castagne) U. Braun & N. Shishkoff) is the correct name for the other taxon with large ascomata and asci with large oculi. Collections on *Verbena* spp. (*Sphaerotheca verbenae* Săvul. & Negru) and cucurbits (*Sphaerotheca cucurbitae* (Jacz.) Z.Y. Zhao) are conspecific. *Podosphaera fusca* and *P. xanthii* seem to be biologically differentiated by being homothallic and heterothallic, respectively.

Sphaerotheca fuliginea (Schltdl.: Fr.) Pollacci:
***Podosphaera fuliginea* (Schltdl.: Fr.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Alphitomorpha fuliginea* Schltdl., Verh. Ges. Naturf. Freune Berlin 1: 47 (1819).
≡ *Erysiphe fuliginea* (Schltdl.): Fr., Syst. mycol. 3: 238 (1829).
≡ *Sphaerotheca fuliginea* (Schltdl.: Fr.) Pollacci, Atti R. Ist. Univ. Pavia 2(9): 8 (1905).

Sphaerotheca fuliginea var. *sibirica* U. Braun:
***Podosphaera sibirica* (U. Braun) U. Braun & S. Takamatsu comb. et stat. nov.**
Bas.: *Sphaerotheca fuliginea* var. *sibirica* U. Braun, Zbl. Mikrobiol. 140: 238 (1985).
S. fuliginea var. *sibirica* is confined to *Veronicastrum sibiricum* and differs from *S. fuliginea* s.str. in having ascomata with smaller peridial cells (BRAUN 1987) and a conidial germination pattern which is close to the Pannosa-type (TAKAMATSU et al. 2000). These features strongly support the phylogenetic placement of this taxon between *Podosphaera* sect. *Tridactyla* and *Sphaerotheca* sect. *Magnicellulatae* (TAKAMATSU et al. 2000). Based on these results, this taxon has to be excluded from *P. fuliginea* and should be considered as a separate species.

Sphaerotheca gunnerae Havryl. & U. Braun:
***Podosphaera gunnerae* (Havryl. & U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca gunnerae* Havryl. & U. Braun, Nova Hedwigia 66(1-2): 173 (1998).

Sphaerotheca helianthemi L. Junell:
***Podosphaera helianthemi* (L. Junell) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca helianthemi* L. Junell, Sv. Bot. Tidskr. 60(3): 379 (1966).

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Sphaerotheca hibiscicola Z.Y. Zhao:
***Podosphaera hibiscicola* (Z.Y. Zhao) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca hibiscicola* Z.Y. Zhao, Acta Microbiol. Sinica 21(3): 294 (1981).

Sphaerotheca intermedia U. Braun:
***Podosphaera intermedia* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca intermedia* U. Braun, Zbl. Mikrobiol. 140: 161 (1985).

Sphaerotheca koreana H.D. Shin & U. Braun:
***Podosphaera koreana* (H.D. Shin & U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca koreana* H.D. Shin & U. Braun, Internat. J. Mycol. Lichenol. 4(3): 403 (1992).

Sphaerotheca lini Tsvetkova:
***Podosphaera lini* (Tsvetkova) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca lini* Tsvetkova, Mikol. i Fitopatol. 4(5): 484 (1970).

Sphaerotheca macularis (Wallr.: Fr.) Lind:
***Podosphaera macularis* (Wallr.: Fr.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Alphitomorpha macularis* Wallr., Verh. Naturf. Freunde Berlin 1: 35 (1819).
≡ *Erysiphe macularis* (Wallr.): Fr., Syst. mycol. 3: 237 (1829).
≡ *Sphaerotheca macularis* (Wallr.: Fr.) Lind, Danish fungi: 160 (1913).

Sphaerotheca malloti Z.Y. Zhao:
***Podosphaera malloti* (Z.Y. Zhao) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca malloti* Z.Y. Zhao, Acta Microbiol. Sinica 21(3): 284 (1981).

Sphaerotheca mors-uvae (Schwein.) Berk. & M.A. Curtis:
***Podosphaera mors-uvae* (Schwein.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Erysiphe mors-uvae* Schwein., Trans. Amer. Phil. Soc. 4: 270 (1834).
≡ *Sphaerotheca mors-uvae* (Schwein.) Berk. & M.A. Curtis, Grevillea 4: 158 (1876).

Sphaerotheca niesslii Thüm.:
***Podosphaera niesslii* (Thüm.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca niesslii* Thüm., Verh. Zool.-Bot. Ges. Wien 1879: 524 (1879).

Sphaerotheca paeoniae Z.Y. Zhao:
***Podosphaera paeoniae* (Z.Y. Zhao) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca paeoniae* Z.Y. Zhao, Acta Microbiol. Sinica 19(2): 147 (1979).

Sphaerotheca pannosa (Wallr.: Fr.) Lév.:
***Podosphaera pannosa* (Wallr.: Fr.) de Bary**, Abh. Senkenb. Naturf. Ges. 7: 48 (1870).

Sphaerotheca papaveris Simonyan:
***Podosphaera papaveris* (Simonyan) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca papaveris* Simonyan, Mikol. i Fitopatol. 18(6): 465 (1984).

Sphaerotheca parietariae (Shvartsman) U. Braun & Simonyan:
***Podosphaera parietariae* (Shvartsman) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca macularis* f. *parietariae* Shvartsman, in Vasyagina et al., Fl. Spor. Rast. Kazakhstana, T. III: 72, Alma-Ata 1961.
≡ *Sphaerotheca parietariae* (Shvartsman) U. Braun & Simonyan, Zbl. Mikrobiol. 140: 163 (1985).

Sphaerotheca phaseoli (Z.Y. Zhao) U. Braun:
***Podosphaera phaseoli* (Z.Y. Zhao) U. Braun & S. Takamtsu comb. nov.**
Bas.: *Sphaerotheca astragali* var. *phaseoli* Z.Y. Zhao, Acta Microbiol. Sinica 21(3): 286 (1981).
≡ *Sphaerotheca phaseoli* (Z.Y. Zhao) U. Braun, Zbl. Mikrobiol. 140: 166 (1985).

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Sphaerotheca phytoptophila Kellerm. & Swingle:
***Podosphaera phytoptophila* (Kellerm. & Swingle) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca phytoptophila* Kellerm. & Swingle, J. Mycol. 4: 93 (1888).

Sphaerotheca plantaginis (Castagne) L. Junell:
***Podosphaera plantaginis* (Castagne) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Erysiphe plantaginis* Castagne, Cat. Pl. Mars.: 188 (1845).
≡ *Sphaerotheca plantaginis* (Castagne) L. Junell, Sv. Bot. Tidskr. 60(3): 382 (1966).

Sphaerotheca polemonii L. Junell:
***Podosphaera polemonii* (L. Junell) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca polemonii* L. Junell, Symb. Bot. Upsal. 19(1): 82 (1967).

Sphaerotheca pruinosa Cooke & Peck:
***Podosphaera pruinosa* (Cooke & Peck) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca pruinosa* Cooke & Peck, J. Bot. II, 1: 11 (1872).

Sphaerotheca pseudofusca U. Braun:
***Podosphaera pseudofusca* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca pseudofusca* U. Braun, Zbl. Mikrobiol. 140: 162 (1985).

Sphaerotheca savulescui Sandu:
***Podosphaera savulescui* (Sandu) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca savulescui* Sandu, in Sandu et al., St. Cerc. Biol., Ser. Bot., 20(1): 3 (1968).

Sphaerotheca shepherdiae U. Braun:
***Podosphaera shepherdiae* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca shepherdiae* U. Braun, Zbl. Mikrobiol. 140: 237 (1985).

Sphaerotheca sparsa U. Braun:
***Podosphaera sparsa* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca sparsa* U. Braun, Zbl. Mikrobiol. 140: 163 (1985).

Sphaerotheca spiraeae Sawada:
***Podosphaera spiraeae* (Sawada) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca spiraeae* Sawada, Bull. Govt. Forest. Exp. Stat. Tokyo 50: 104 (1951).
= *Sphaerotheca filipendulae* Z.Y. Zhao, Acta Microbiol. Sinica 21(4): 439 (1981).

Sphaerotheca stephanandrae Jacz.:
***Podosphaera stephanandrae* (Jacz.) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca stephanandrae* Jacz., Karmannyj opredelitel' gribov, II, mučnisto-rosyannye griby: 60, Leningrad 1927.

Sphaerotheca thalictri L. Junell:
***Podosphaera thalictri* (L. Junell) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca thalictri* L. Junell, Sv. Bot. Tidskr. 60(3): 375 (1966).

Sphaerotheca violae U. Braun:
***Podosphaera violae* (U. Braun) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca violae* U. Braun, Zbl. Mikrobiol. 140: 238 (1985).

Sphaerotheca volkartii S. Blumer:
***Podosphaera volkartii* (S. Blumer) U. Braun & S. Takamatsu comb. nov.**
Bas.: *Sphaerotheca volkartii* S. Blumer, Beitr. Krypt.-Fl. Schweiz 7(1): 115 (1933).

Sphaerotheca xanthii (Castagne) L. Junell:
***Podosphaera xanthii* (Castagne) U. Braun & N. Shishkoff comb. nov.**
Bas.: *Erysiphe xanthii* Castagne, Cat. Pl. Mars.: 188 (1845).

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≡ *Sphaerotheca xanthii* (Castagne) L. Junell, Sv. Bot. Tidskr. 60(3): 382 (1966).
= *Sphaerotheca verbenae* Săvul. & Negru, Bull. Stiint. Acad. R.P.R. V, 3: 415 (1953).
= *Sphaerotheca cucurbitae* (Jacz.) Z.Y. Zhao, Acta Microbiol. Sinica 19(2): 148 (1979), nom. inval.
Notes: see *Sphaerotheca fusca* (≡ *Podosphaera fusca*).

3. The classification of the Erysiphaceae – additions and corrections

Braun (1999) discussed the classification of the Erysiphaceae proposed by Cook et al. (1997) and introduced some corrections and alterations. The following changes are proposed to reflect results of new molecular examinations. Since *Sawadaea* belongs into the „Fibrosin lineage" of powdery mildew fungi, it is not justified to maintain tribe Sawadaeae V.P. Gelyuta. *Sawadaea* should be referred to tribe Cystotheceae in a separate subtribe. *Arthrocladiella* Vassilkov, *Golovinomyces* (U. Braun) V.P. Gelyuta, and *Neoerysiphe* U. Braun form a separate clade („*Euoidium* lineage", Mori et al. 2000) which is clearly distinct from the „*Pseudoidium* clade" by having catenate conidia. Therefore, these genera should be placed in a tribe of its own.

Erysiphaceae tribe Cystotheceae **subtribe Sawadaeinae** (U. Braun) U. Braun & S. Takamatsu **comb. nov.**
Bas.: Erysiphaceae tribe Erysipheae subtribe Sawadaeinae U. Braun, Beih. Nova Hedwigia **89**: 40 (1987).
= Erysiphaceae tribe Sawadaeae V.P. Gelyuta, Biol. Ž. Armenii 41(5): 357 (1988).

Erysiphaceae **tribe Golovinomyceteae** (U. Braun) U. Braun & S. Takamatsu **comb. et stat. nov.**
Bas.: Erysiphaceae tribe Erysipheae subtribe Golovinomycetinae U. Braun, Schlechtendalia **3**: 52 (1999).

Erysiphaceae tribe Golovinomyceteae **subtribe Arthrocladiellinae** (R.T.A. Cook, A.J. Inman & C. Billings) U. Braun & S. Takamatsu **comb. nov.**
Bas.: Erysiphaceae tribe Erysipheae subtribe Arthrocladiellinae R.T.A. Cook, A.J. Inman & C. Billings, Mycol. Res. **101**(8): 993 (1997).

Erysiphaceae tribe Golovinomyceteae **subtribe Neoerysiphinae** (U. Braun) U. Braun & S. Takamatsu **comb. nov.**
Bas.: Erysiphaceae tribe Erysipheae subtribe Neoerysiphinae U. Braun, Schlechtendalia **3**: 52 (1999).

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Braun, U. 1999: Some critical notes on the classification and generic concept of the Erysiphaceae. Schlechtendalia **3**: 48-54.
Cook, R.T.A., Inman, A.J. & Billings, C. 1997: Identification and classification of powdery mildew anamorphs using light and scanning electron microscopy and host range data. Mycological Research **101**(8): 975-1002.
Kuo, K.-C. 1993: A revision of *Bulbouncinula bulbosa*: a new powdery mildew record from Taiwan, and ist presumed anamorph. Mycotaxon **46**: 93-96.
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