

Who is who - Finally some order among fungi?

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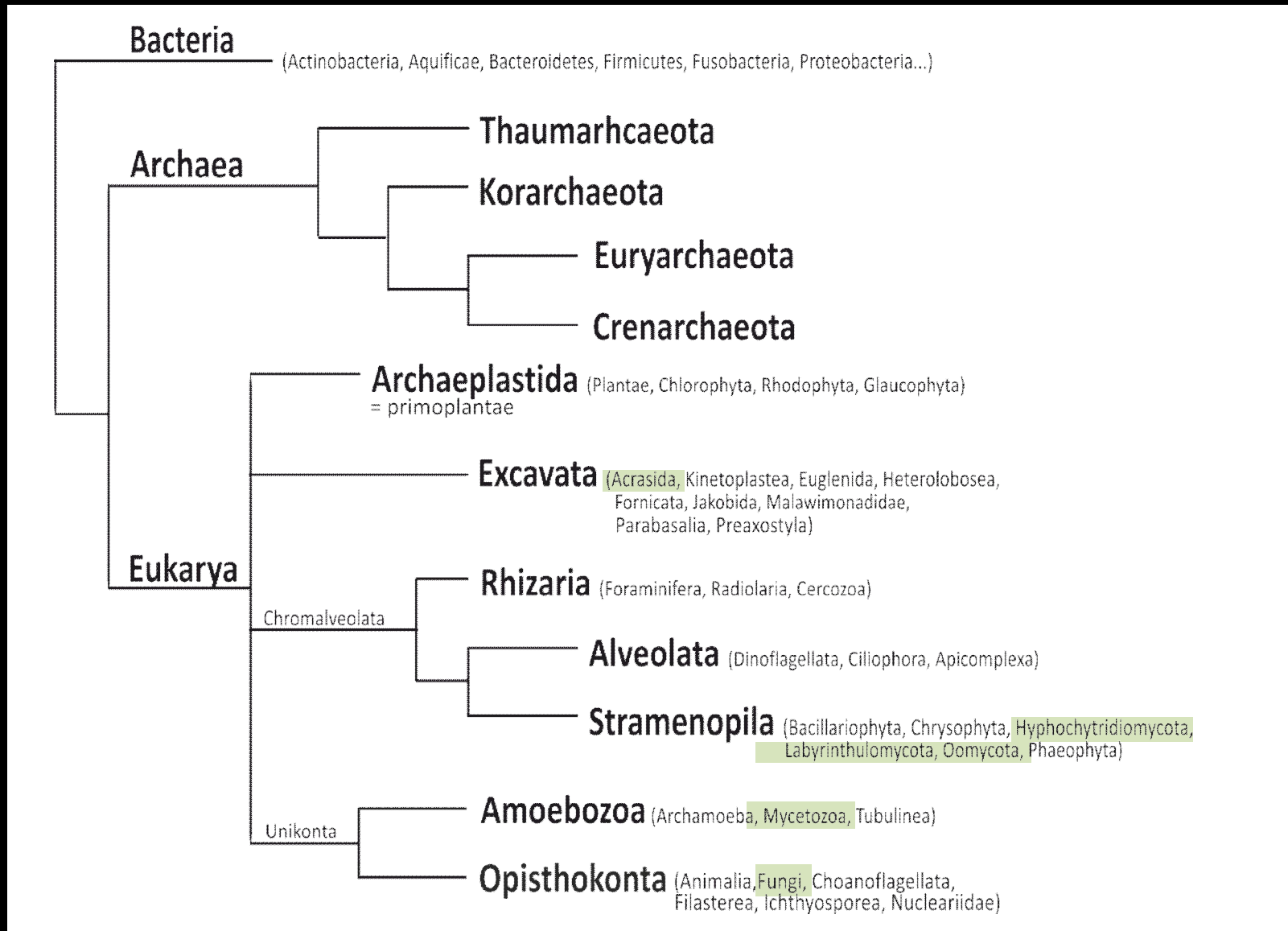
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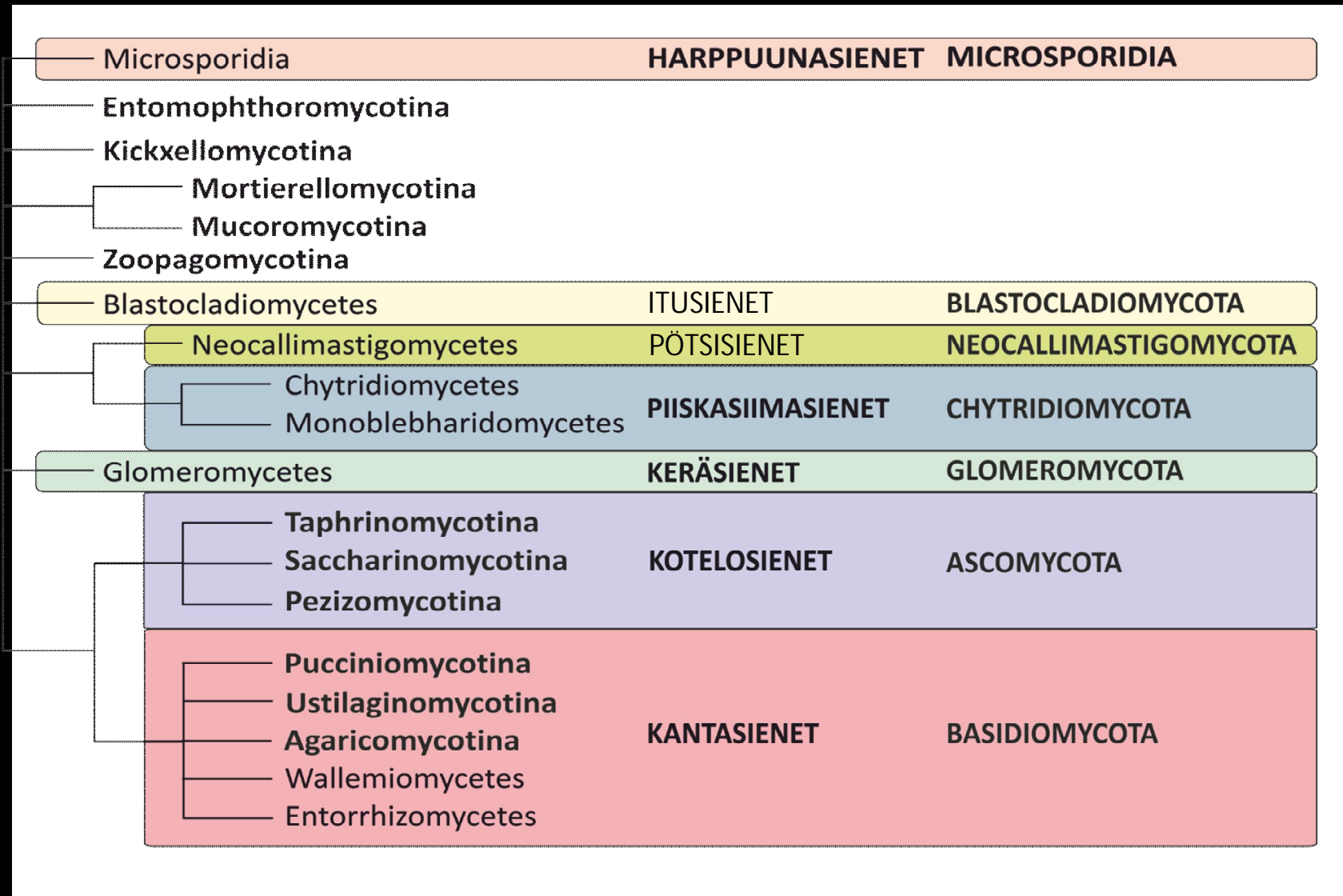


But just think how many arguments would be avoided, if you'd give us the correct system for classification of fungi

Tree of life today



Fungal taxonomy today



Microsporidia = harppuunasienet

Enterocytozoon spp., Encephalitozoon spp., Septata spp., Pleistophora sp., and Nosema spp

Kickxellomycotina

Mucoromycotina

Zoopagomycotina

Entomophthoromycotina

Blastocladiomycota = itusienet

Neocallimastigomycota = pötsisienet

Chytridiomycota = Piiskasiimasienet

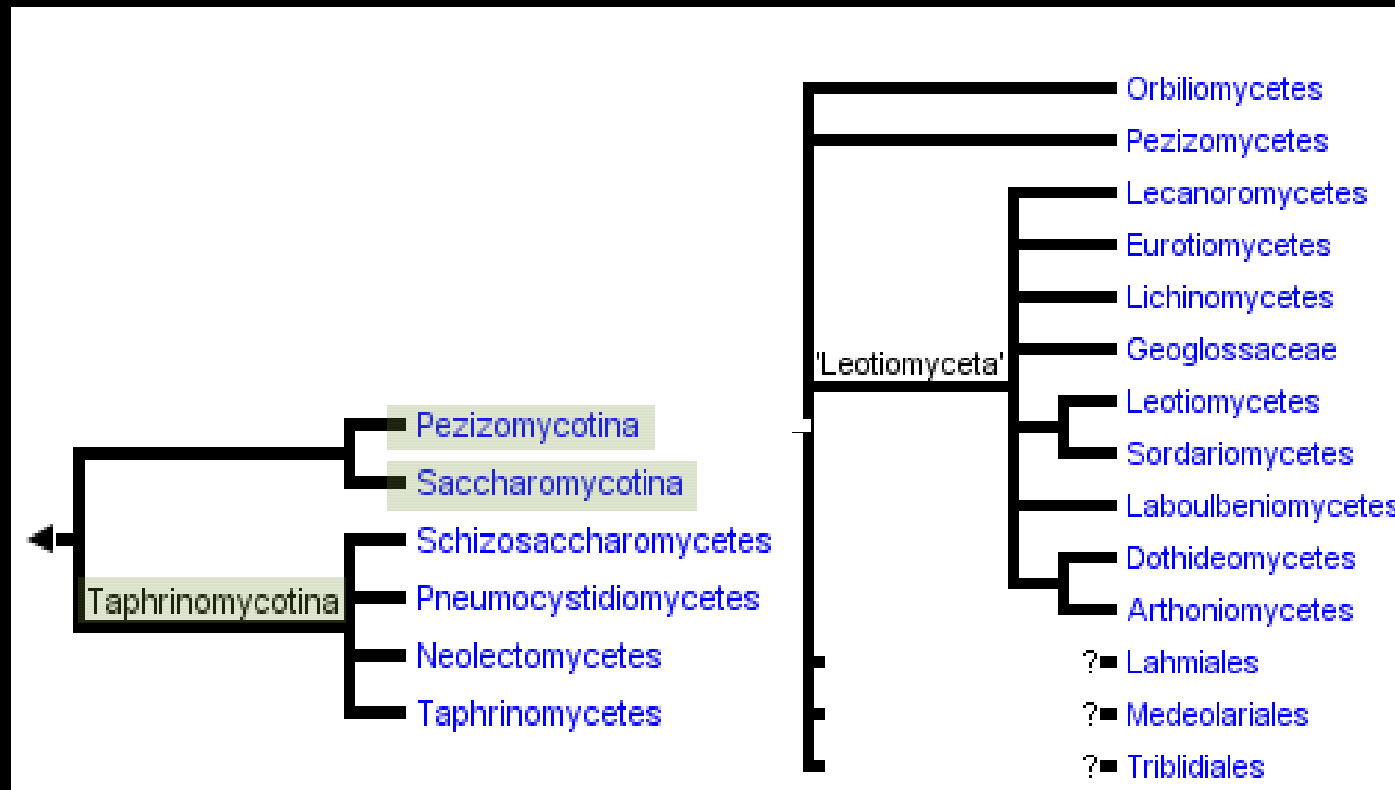
Glomeromycota = keräsienet

- * 1 class
- * 4 orders
- * n. 200 species

Glomeromycota

Ascomycota = Kotelosienet

- * 15 classes
- * 60 orders
- * n. 35.000 species
- Many more to come



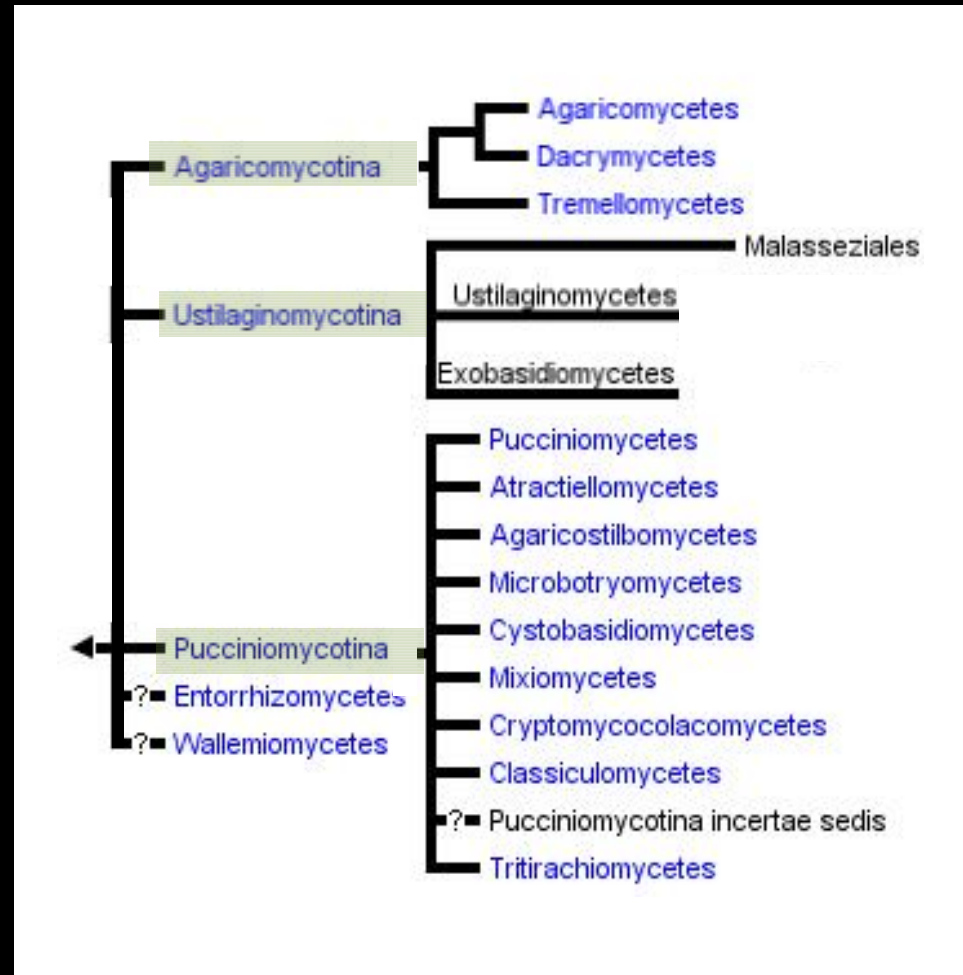
Ascomycota = Kotelosienet

Cladina stellaris

Tuber melanosporum

Basidiomycota = kantasienet

- * 3 subphyla
- * 14 classes
- * 50 orders
- * Over 30.000 species



Kantasienet = Basidiomycota

So far so good
BUT...

Species names are still a problem

Current Name:

Lichtheimia corymbifera (Cohn) Vuill., *Bull. Soc. mycol. Fr.* 19: 126 (1903)

- Synonymy:

- Absidia cornealis* (Cavara & Sacc.) C.W. Dodge, *Medical mycology. Fungous diseases of men and other mammals*: 114 (1935)
- Absidia corymbifera* (Cohn) Sacc. & Trotter, in Saccardo, *Syll. fung.* (Abellini) 21: 825 (1912)
- Absidia corymbifera* (Cohn) Sacc. & Trotter, in Saccardo, *Syll. fung.* (Abellini) 21: 825 (1912) var. *corymbifera*
- Absidia corymbifera* var. *regnieri* (Lucet & Costantin) Coudert, *Guide pret. mycol. med.*: 120 (1955)
- Absidia corymbifera* var. *truchisii* (Lucet & Costantin) Coudert [as '*truchisi*'], *Guide pret. mycol. med.*: 120 (1955)
- Absidia ginsan* Komin., Kobayasi & Tubaki, *Mycol. J. Nagao Inst.* 2: 56 (1952)
- Absidia gracilis* Linnem., *Flora, Jena* 130: 203 (1936)
- Absidia italiana* (Costantin & Perin) C.W. Dodge, *Medical mycology. Fungous diseases of men and other mammals*: 112 (1935)
- Absidia lichtheimii* (Lucet & Costantin) Lendn. [as '*lichtheimi*'], *Mat. fl. crypt. Suisse* 3(1): 143 (1908)
- Absidia lichtheimii* (Lucet & Costantin) Lendn., *Mat. fl. crypt. Suisse* 3(1): 143 (1908) var. *lichtheimii*
- Absidia ornata* A.K. Sarbhoy, *Can. J. Bot.* 43: 999 (1965)
- Absidia regnieri* (Lucet & Costantin) Lendn., *Mat. fl. crypt. Suisse* 3(1): 146 (1908)
- Absidia truchisii* (Lucet & Costantin) Lendn. [as '*truchisi*'], *Mat. fl. crypt. Suisse* 3(1): 146 (1908)
- Lichtheimia cornealis* (Cavara & Sacc.) Naumov, *Opred. Mukor.*, Edn 2: 80 (1935)
- Lichtheimia italiana* Costantin & Perin, in Perin & Costantin, *Boll. Soc. med.-chir. Pavia* 35: 5 (1922)
- Lichtheimia italiana* Pollacci & Nann. [as '*italica*'], *Miceti. pat. Uomo. Anim.*, fasc.: fasc. 3, no. 26 (1926) [1922-26]
- Lichtheimia regnieri* (Lucet & Costantin) Vuill., *Bull. Soc. mycol. Fr.* 19: 126 (1903)
- Lichtheimia truchisii* (Lucet & Costantin) Naumov [as '*Truchisi*'], *Tab. Opred. Predst. Mucor.*: 41 (1915)
- Lichtheimia ucrainica* Naumov, *Opred. Mukor.*, Edn 2: 80 (1935)
- Mucor cornealis* Cavara & Sacc., *Annls mycol.* 11(3): 321 (1913)
- Mucor corymbifer* Cohn, in Lichtheim, *Z. klin. Med.* 7: 149 (1884)
- Mucor corymbifer* var. *regnieri* (Lucet & Costantin) Sartory, *Champ. paras. homme anim.* 3: 92 (1921)
- Mucor corymbifer* var. *truchisii* (Lucet & Costantin) Sartory [as '*truchisi*'], *Champ. paras. homme anim.* 3: 91 (1920)
- Mucor lichtheimii* Lucet & Costantin, *Archs Parasit.* 4: 380 (1901)
- Mucor regnieri* Lucet & Costantin, *Archs Parasit.* 4(3): 378 (1901)
- Mucor truchisii* Lucet & Costantin [as '*truchisi*'], *Archs Parasit.* 4(3): 377 (1901)
- Mycocladus corymbifer* (Cohn) Váňová, *Česká Mykol.* 45(1-2): 26 (1991)
- Rhizopus umbellatus* A.L. Sm., *J. Roy. Microscop. Soc.* 1: 193 (1901) [1900-1901]
- Tieghemella italiana* (Costantin & Perin) Naumov [as '*italica*'], *Opred. Mukor.*, Edn 2: 83 (1935)

Different forms of fungi

Asexual (anamorph)

Rhizoctonia solani

Sexual (teleomorph)

Thanateporus cucumeris

Both forms are known and have been connected to same strain(holomorph)

Thanateporus cucumeris

Dimorphic fungi

Unicellular

Hyphae

Rules

- Priority rule 1813
- Modified priority rule 1930
- Holomorph rule 1981
- One fungus - one name rule 2013

(most used name arguments)

Modified priority rule allows use of holomorph rule

- *Oidium* (asexual) 1824
 - type species *Oidium monilioides*
- *Blumeria* (sexual) 1970
 - type species *Blumeria graminis*

Blumeria more used -> name *Blumeria graminis*

But when the asexual name is the approved name, there can be problems

- *Aspergillus fischeri* (1907, asexual) – approved (priority rule)
- *Neosartorya fischeri* (1973, sexual) – not approved despite holomorph rule

Problem:

- Many species which have originally been named *Aspergillus* actually belonging to different genera
- Which species will get the name *Aspergillus*?

Check names here!

All fungi, tells current name

<http://www.indexfungorum.org/names/names.asp>

Ascomycota, approved sexual names

<http://www.fieldmuseum.org/myconet>

Lots of detail

<http://www.mycobank.org/>



It is easy for people like you to call teleomorph stages by anamorph stage names, but people like me can't get away with it.

Sienten biologia

TOIMITTANEET
SARI TIMONEN &
JARI VALKONEN

GAUDEAMUS



Thank you!

More stuff about fungi