

Draft minutes of the meeting of the International Commission of *Penicillium* and *Aspergillus*

Saturday 14 2012 at the CBS-KNAW Fungal Biodiversity Centre, Utrecht, The Netherlands

Present: Jens C. Frisvad (JCF), Seung-Beom Hong (SH), Jos Houbraken (JH), Corne H.W. Klaassen (CK), Giancarlo Perrone (GP), John Pitt (JP), Robert Samson – chair (RS), Keith A. Seifert (KS), Janos Varga (JV)

Not present: Takashi Yaguchi and Steve Peterson

Agenda:

11.00–11.20: Robert A Samson — Introduction

11.20–11.40: John Pitt — The List of Names in Current Use for the Trichocomaceae: a short history and how it forms a basis for the future.

11.40–12.00: Giancarlo Perrone and Robert A. Samson — What is a phylopecies in *Aspergillus*? The example of cryptic species in *Aspergillus* Sect. *Nigri*.

12.00–13.00 lunch

13.00– 13.20: Corné H.W. Klaassen — AFLP as a molecular tool for *Aspergillus* and *Penicillium* taxonomy

13.20–13.40: Seung-Beom Hong — *Aspergillii* associated with traditional meju

13.40–14.00: Janos Varga — One Fungus which *Aspergillus* name

14.00–14.20: Jos Houbraken — Phylogeny of *Penicillium* and the segregation of *Trichocomaceae* into three families

14.20–14.40: Piet van Dijck — Names of *Penicillium* and *Aspergillus* in biotechnology?

14.40 — 16.00 The new International Code and its implication for *Penicillium* and *Aspergillus* systematic – General discussion

One Fungus which *Penicillium* name

One Fungus which *Aspergillus* name

Opening

RS opened the meeting which was also open for other mycologists than those in ICPA. He gave an overview what ICPA is and discussed the membership. Since several members are not active or are retired via email correspondence with the active members, and five new members were elected. With the exception of Takashi Yaguchi who could not attend, the new members presented their current research (see Agenda)

Giancarlo Perrone was elected as new secretary.

General Discussion

1. Neo and epitypification

KS: Do not need to neotypify. In the accepted NCU species list, typification was done by Pitt et al. (1993, 2000). In the code, if the type is missing, then we need to use an image as the lectotype and then culture as the epitype. Now, we do not have to do this, since in the process of creating the lists we are protecting the typification. RS: there are some small issues, i.e. *P. minioluteum* need to be rectified. Propose representative cultures that display correct information or characters for the species. KS: Synonyms: Previous list did not include the synonyms. We do not have to sequence fungi that are

regarded as real synonyms. Do we protect a name that might have an older name? Representative strains need to be submitted with barcodes attached. JP: Who will make the list? RS: On the web site www.aspergilluspenicillium.org everyone can/will work on the list. JP: agreed. RS: To summarize: Typification and representative strains and barcodes are accepted. KS We also need to correct the different databases. RS: Representative strains can be used for proficiency testing. Send strains (no names) to labs and if they can identify them they can get certificate from ICPA. JP: Great idea. This will be run from the CBS.

2. One Fungus which *Penicillium* name?

JP: Good job. Keep as it is. KS mentioned the *Talaromyces* conservation and *Lasioderma* story, which is summarized in the *Talaromyces* conservation paper as well as in a paper soon to be published as a *P. aureocephalum* to *T. flavovirens* recombination paper. RS: What about *Penicillium* and *Talaromyces* situation? Formulize or not? JP: Not necessary. RS: Write paper that mentions the name changes, then maybe send to Mycopathologia or other journals.

3. One Fungus which *Aspergillus* name? (see also Appendix).

RS: Mentioned the various options. Majority of the users go for option 5 in the pol. JP: Do not like option 5. It is labor intensive for reports and a database needs a name, which will create problems if option 5 is employed. Two questions were raised. Can we use synonym names? Propose one more option, use the teleomorph names. Not *A. niger* as a type culture. We should choose an *Aspergillus* species without a teleomorph. The problem with *Aspergillus* is that it is a big genus and ecologically diverse. If we keep teleomorph name we keep the information on the ecology of those species which are important for food microbiology for instance. RS: Changes to the teleomorph names require a lot of name changes. JP: *Aspergillus* tells nothing about the ecology. RS: it is nomenclature. JF: It is only nomenclature and we need a stable name and can see John's point. It is just a name and is nice if it contains info. However, I would propose to keep *Aspergillus*. RS: John if you agree with *Penicillium* and *Eupenicillium* situation, why not for *Aspergillus*? JP: Agree, but there is not so diverse nature in *Penicillium*, compared to *Aspergillus*. Ecological info will be in the future very important for the list, etc. CK: Never understood why different names were used for different functions. Why not have a three name system such as *A. fumigatus* (*Neosartorya*). GP: Confused. Option 5 seems acceptable unless John's statement about ecology hold true. Do not like the trinomial (used in bacteriology by Fred Cohan) names though. CK: Trinomial for 10-20 years and then transition into name changes. GP: Transition is a good idea but still have to choose the correct option. JH: In between. Agrees with John. On the other hand if no one will use the names, then change to *Aspergillus*. We want names that people will use. CK: Medical people always wanted to use the name *Aspergillus*. JP: Names of important species will change but in the long term teleomorph name will be better. RS: Pessimistic about it. KS: Get the tree up. *Phialosimplex* is an issue. How do we argue that this is an *Aspergillus*? Maybe a *Torulomyces*-like argument? Putting ecological argument on tree you would find it difficult to argue against it. JP: Not such a big problem since we can keep it against it. Ulf Thrane: we can keep it as *Phialosimplex*. KS: Back bone not strong enough, which might have effect on the clades, and thus ecological information in the tree. RS: Important thing is what the user wants. Must be *Aspergillus*. KS: Need to counter the ecological argument because it is strong. JF: Make classification with all characters to see clades. JV: The phylogenetic tree presented for Aspergilli clearly shows that the genus is monophyletic. However, it includes only ca. 40 species representing the main sections of Aspergilli. A more comprehensive treatise is needed including the outliers (e.g. *A. raperi*, *A. silvaticus*, etc.) before splitting the genus. Be careful to rename things based on pure sequence based phylogeny. On the other hand, conidiophore morphology will not guarantee that a strain belongs to *Aspergillus*. However, the simple conidiophore of

Phialosimplex or *Dichotomomyces* could be treated as degenerate forms of *Aspergillus* conidial heads, so it is not a problem. CK: Think of next generation that will use it in the end. Maybe split it then? RS: the purpose of 1F=1N to make nomenclature simpler. By splitting you make it more complex. CK: Educate them about changes. JP: Always had choice between two names. In time people would move to the right names. Morphology corresponds to the proposed genera. KS: One option. Use *Eurotium* and retypefy as mentioned above. Someone will change these names in the future. JV: *A. fumigatus* as type? RS: get the opinion of users. Someone from the audience: I am a user and it does not matter which name, it just needs to be communicated. RS: The polls among *Aspergillus* researchers favours option 5. KS: Everything in *Aspergillus*. In 10 years someone will change part of the genus. Ulf Thrane: Based on practical taxonomy it is obvious to use *Aspergillus*, even though in the future someone will surely change that taxonomy.

RS: are we making the list? KS Make the list of *Aspergillus sensu lato*, then the commission can decide in the future. RS: We are therefore not sure about the phylogeny and need bases for splitting which is not there. We need to proceed in order to make it 2013 date. The user wants *Aspergillus*. KS: not a lot of new combinations needed if we keep *Aspergillus*. JP: Will have to go back to make sure about correct *Aspergillus* names. Most will go for option 2.

RS proposed to vote for the options for the single name in *Aspergillus*.

Result of the voting by members of ICPA

Option 1: 0

Option 2: 3 (KAS, JCF, T Yaguchi vote by email)

Option 3: 2 (JP, CK)

Option 4: 0

Option 5: 5 (RS, GP, JH, JV, SH)

Conclusion: Option 5 received most votes. Option 2 is in principal the same as option 5 (see appendix) and received 3 votes. The majority of the votes of ICPA members is for keeping the name *Aspergillus*.

RS: We also need representative cultures for *Aspergillus*. How will we change the other genera? JP: *Byssochlamys* and *Paecilomyces* only problem. Pretty small genus. Have to go for *Byssochlamys* and if Rob agrees we can go for it. RS: Agree. KS Type? RS: *B. spectabilis*

RS: Shows the ICPA website. KS Please add genomics button to the website.

Closing

RS thanked the members of ICPA for their contribution and the meeting was adjourned at 16.00