НАЦИОНАЛЬНАЯ АКАДЕМИЯ НАУК БЕЛАРУСИ
НАУЧНО-ПРАКТИЧЕСКИЙ ЦЕНТР ПО БИОРЕСУРСАМ
ИНСТИТУТ ЭКСПЕРИМЕНТАЛЬНОЙ БОТАНИКИ ИМ В.Ф. КУПРЕВИЧА
ЦЕНТРАЛЬНЫЙ БОТАНИЧЕСКИЙ САД
ИНСТИТУТ ЛЕСА

ПРОБЛЕМЫ СОХРАНЕНИЯ БИОЛОГИЧЕСКОГО РАЗНООБРАЗИЯ И ИСПОЛЬЗОВАНИЯ БИОЛОГИЧЕСКИХ РЕСУРСОВ

Материалы Международной научно-практической конференции и X зоологической конференции

18-20 ноября 2009 г.

Часть 1

Минск
ООО «Мэджик»
ИП Вараксин
2009

УДК 574
ББК 28.088
П 78

П 78 **Проблемы** сохранения биологического разнообразия и использования биологических ресурсов: Материалы Международной научно-практической конференции и X зоологической конференции. Часть 1. Сб. науч. работ / Под общей ред. М.Е. Никифорова – Минск, ООО «Мэджик», ИП Вараксин, 2009. – 308 с.

ISBN 978-985-6473-19-0
ISBN 978-985-6929-36-9

УДК 574
ББК 28.088

ISBN 978-985-6473-19-0
ISBN 978-985-6929-36-9

SOME ASPECTS OF THE GENUS ATHELIA (BASIDIOMYCOTA) DIVERSITY IN BELARUS

E.O. Yurchenko
(V.F. Kuprevich Institute of Experimental Botany, Minsk, Belarus, eugene_yu@tut.by)

The genus *Athelia* Pers. (Atheliaceae, Atheliales, Agaricomycetes sec. *Classification based on 10th edition of the Dictionary of the fungi*, 2008) is a middle-sized genus of non-poroid resupinate fungi, earlier classified in the Aphyllophorales. It includes 30 currently accepted species according to *Cortbase vers. 2* (Parmasto et al., 2004), plus two species described recently from Russia (Zmitrovich, 2001, 2004). In boreonemoral biome *Athelia* species are quite common, but, except of *A. arachnoidea*, they occur in forest communities and occasionally in orchards, saprobically on predominantly small-sized fallen wood (twigs), on soft part of upper litter stratum and on ground mosses.

The generic concept of *Athelia* is uniform in the recent treatments, but some workers (Zmitrovich, 2008) include here also the members of the genus *Cristinia* Parmasto (=*Dacryobasidium* Jülich pro parte). The taxonomy of the genus was strongly influenced by a monograph of Jülich (1972), who described and combined there 10 species, mostly with indistinct hiatuses. For practical convenience, and until the finding more sufficient proves of species independence, than morphological characters, the workers on fungal ecology use the concept of *Athelia epiphylla* complex. This complex unites the species with (2–)4-sterigmatic basidia and scattered or rare clamps, observing on subicular and vegetative hyphae only.

Based on the analysis of species diagnoses, published in Jülich (1984, Die Nichtblätterpilze...) along with herbarium material from Belarus (MSK herbarium samples), we have distinguished the following characters, which are useful for species identification in *Athelia epiphylla* complex: (1) upper limit of subicular hyphae width, (2)subbasidial hyphae width, **(3) basidia length**, (4) basidia width, (5) spore shape, (6) spore length, **(7) spore width**. The most valuable characters are emboldened here. Due to sufficent variation, no a character can be applied solely to judge the species belonging of a sample, and it is better to involve in an identification the all seven characters. Shape of basidia was not observed as diagnostic due to it varies sufficiently within the same sample. E.g. in *Athelia epyphylla* s. str. MSK 6966 basidia were irregularly-subcylindrical, bent narrowly clavate, clavate, without waist or with very little pronounced middle waist. The shape of spores varies between samples and also within a sample – in *A. epiphylla* s. str. it was from cylindrical to oblong and narrowly ellipsoid, basally rounded or slightly tapering, adaxially convex, straight (MSK 6966) or slightly concave (MSK 6327).

The problematic taxa in *A. epyphylla* complex are *A. alnicola* and *A. ovata*. Jülich (1972, 1984) distinguished them by the next characteristics:

* Fruitbody usually cream-colored; hyphae rather wide (5–8 мм); basidia long (15–25 μm); spores ellipsoid, 6.5–8.5 x 3.6–4.4 μm ... *A. alnicola* (Bourdot & Galzin) Jülich

– Fruitbody white to cream; hyphae narrow (4–5 μm); basidia shorter (16–18 μm); spores ovoid, 8–9 x 3.8–4.2 μm ... *A. ovata* Jülich

Athelia alnicola was not published earlier for the area of Belarus. When dealing with collections similar with *A. alnicola* and *A. ovata*, from Prypyatski National Park in southern Belarus (MSK 6898, 6983, 7036), it was stated, that there is no a hiatus between these two taxa, especially in basidia length, which were longer in seemingly older basidiomata (Table). Among these three samples, MSK 7036 fitted to *A. alnicola* concept; MSK 6983 has ovoid spores, like in *A. ovata*, but they are shorter, and basidia longer; MSK 6898 has spores like in *A. alnicola*, but shorter basidia. Based on these observations, we consider them as a united taxon, naming it *A. alnicola-ovata* or *A. alnicola-ovata* gr., and propose here a key, taking into account these data.

Table. Morphometry in Athelia samples from alnicola-ovata group

Sample / host	Subicular hyphae width, μm	Basidia size, μm	Spore shape	Spore size, μm
MSK 6898 / *Alnus glutinosa*	2.8–5.7(–7)	15–19 × (4.2–) 5–5.5	ellipsoid or subovoid	5–7.2 × 2.7–4.2
MSK 6983 / *Alnus glutinosa*	3.2–5.7	15.5–25 × 4.7–6	ovoid, narrowly ovoid, ellipsoid	5.6–8.5 × (2.7–) 3.2–4
MSK 7036 / *Betula pubescens*	(2.2–)3.2–5.2 (–6.7)	13.2–24 × (5.7–)7.7–9.2	ellipsoid, slightly subovoid, oblong	6.5–8.5 × 4–4.7

Key to the species of Athelia in Belarus

1. Clamps on the hyphae completely lacking; hyphae narrow or rather narrow (3–5 μm); basidia short, oblong-ovoid to clavate, 10–14(–15) x 5–6 μm; spores small, ellipsoid or ovoid, 4.5–6(–6.5) x 3–3.8 μm ... ***A. decipiens*** (Höhn. & Litsch.) J. Erikss.

– Clamps at subicular hyphae scattered to very rare, or present at many septa in subiculum and subhymenium; hyphae from rather narrow (4–5 μm) to wide (5–10 μm in subiculum); basidia usually clavate, in limits 10–33 x 5–8 μm; spores usually middle-sized to big (in limits 6–12 x 2.8–6 μm), ovoid, narrowly ellipsoid, oblong, cylindrical ... 2

2. Clamps present at many septa in subiculum and subhymenium, and also at base of basidia ... ***A. fibulata*** M.P. Christ.

– Clamps present only on subicular hyphae or on vegetative mycelium, from scattered to very rare; basidia always clampless at base ... 3