

Ascocoryne microspora identical with Neobulgaria pura

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Ascocoryne microspora (Ellis & Everhart) Korf (*Coryne microspora* Ellis & Everhart) was found to be *Neobulgaria pura* (Fr.) Petrak (*Ombrophila pura* [Fr.] Fr.).

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Ellis & Everhart (1897) described *Coryne microspora*. Korf (1971) transferred the fungus to *Ascocoryne*. The description given by Ellis & Everhart seemed to fit an unidentified ombrophiloid fungus often isolated from sound-looking wood in Norwegian spruce trees.

Dr. R. P. Korf kindly arranged the loan of part of the type material of *A. microspora* for comparison. The envelope had the inscription: '2005 North American Discomycetes, Herb. E. J. Durand, Part of Type. 115-94. *Coryne microspora* E. & E. = *Ombrophila microspora* (E & E) Jrs. on decaying logs. Canada. Col. J. Maceren.' The indicated transfer on the label to *Ombrophila* is interesting.

The unidentified fungus isolated from Norway spruce was found not to be identical with *A. microspora*. But when examining the type material of *A. microspora* I found it to be identical with *Neobulgaria pura* (Fr.) Petrak (*Bulgaria pura* Fr.; *Ombrophila pura* [Fr.] Fr.). A report on the identification is given below.

Examination of part of the type of *A. microspora*

The dried ascocarps are 7 mm in diameter. A small bit of wood accompanying the type material is from a broadleaf tree.

A very small bit of one of the ascocarps was soaked in water and hand-sections examined in lactophenol-cottonblue and in Melzer's reagent. Results were:

Ectal excipulum, outer layer (cortex, outer zone) of textura intricata, similar to medullary excipulum. Thickness of the layer was measured to be 8-25 μm . Hyphae embedded in a gelatinous matrix, 0.5-2.0 μm diam.

Ectal excipulum, inner layer (cortex, inner

zone) of textura porrecta. Hyphae not embedded in a matrix, thin-walled, nearly parallel to the surface. Thickness of the somewhat collapsed layer was measured to be 19-43 μm ; the more or less collapsed hyphae seemed to be at least up to 8 μm thick.

Medullary excipulum (medulla) of textura intricata. Hyphae embedded in a gelatinous matrix, 0.5-3.0(-4) μm diam.

Asci 65-88 \times 6.3-7.0 μm , with eight spores. In Melzer's reagent bluing of pore apparatus after rehydration in 5% aqueous KOH solution.

Ascospores 5.2-7.2 \times 2.2-3.5 μm , usually containing two guttules.

Paraphyses 1.5-2.2 μm , at the apex up to 3.2 μm in diameter.

The description given above of the type material of *A. microspora* is in accordance with the diagnosis of *Coryne microspora* (Ellis & Everhart 1897).

Examination of non-type material of *A. microspora*

I also examined the following collection of the same fungus: 8545 North American Discomycetes, Herb. Elias J. Durand. *Coryne microspora* E. & E. On dead wood. Canada.

In this collection the largest dry ascocarp had a diameter of 17 mm. The asci were found to be 65-75 \times 5.0-7.5 μm , the paraphyses ca. 70 \times 2.0 μm (3 μm at the apex), and the ascospores 5.5-7.5 \times 3-3.9 μm .

The small differences from the measurements given for the type material are probably only due to chance. The anatomy of medullary and ectal excipulum seemed to be identical in the two collections.

Comparison of *A. microspora* with descriptions of *Neobulgaria pura*

Petrak's descriptions (Petrak 1914, 1921) of the genus *Neobulgaria* with *N. pura* as type species, based on *Bulgaria pura* Pers. ex. Fr., agree fairly well with the description of the type of *A. microspora* given above. The main discrepancy was Petrak's description of the inner layer of ectal excipulum: 'Die Hyphen dieser Schicht sind jenen des Hypotheziums in jeder Beziehung völlig gleich, nur schwach bräunlich gefärbt und dicht strangartig verflochten, so dass dieselben auf senkrechten Querschnitten annähernd parallel zu liegen scheinen.' In this case Petrak apparently did not perceive the true nature of the anatomy.

My data on the type material of *A. microspora* are in good accordance with descriptions of *N. pura* given by e.g. Moore (1965a, 1965b), Jahn (1967), and Dennis (1968). Gamundi & Dennis (1969) gave a relatively detailed description of *N. pura* var. *foliacea* (Bres.) Dennis & Gamundi, which comprises probably only old specimens of *N. pura*. Among the data given may be mentioned: Outer layer of ectal excipulum (cortex, outer zone) highly gelatinized, with slender hyphae, similar to medulla. Inner layer of ectal excipulum (cortex, inner zone) of *textura porrecta* with hyphae with non-gelatinized walls, parallel to the apothecial surface, 6.6–11 µm in diameter. Medullary excipulum (medulla) of *textura intricata*; hyphae embedded in gelatinous matrix, 1.1–2.2 µm in diameter, hyaline, branched. Asci claviform, truncate at the apex, slightly amyloid or non-amyloid, 8-spored, (30)50–84 × (3.3)4.4–6.6 µm. Ascospores (4.4)5.5–6.6(8.2) × 2.2–3.3(4.4) µm. Paraphyses 1.3–2.7 µm at the apex. These data fit *A. microspora* well.

Discussion

According to Korf (1973) the genus *Ascocoryne* has an 'outermost excipular layer of angular cells', whereas in *Neobulgaria* ectal excipulum consists of 'two layers, outermost layer of thin hyphae immersed in a gel, inner layer of non-gelatinized, thin-walled, broad cells'. *Ascocoryne microspora* (Ellis & Everhart) Korf is thus, according to the data given by Korf himself on the genus *Ascocoryne*, not an *Ascocoryne* sp., but might well be a *Neobulgaria* sp.

The type of *A. microspora* fits so well descriptions given of *N. pura* that it must be concluded that *A. microspora* is identical with *N. pura* (*O. pura*).

The justification for Petrak's segregation of *Neobulgaria* from *Ombrophila* may be discussed (Dennis 1968). As pointed out above, Petrak did not give a fully correct description of his genus. According to Korf (1973) the outermost excipular layer in *Ombrophila* consists of brick-shaped cells in contrast to the thin hyphae immersed in a gel in *Neobulgaria*, but the outermost layer in *Neobulgaria* is often worn away. The question of segregation might be solved by comparison of the type of the genus *Ombrophila*, *O. violacea* Fr., with the type of *O. pura* (*Bulgaria pura*).

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