

First European records of *Hohenbuehelia angustata* (Berk.) Sing.

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First European records of *Hohenbuehelia angustata* (Berk.) Sing. from Austria and the Czech Republic are published. Macroscopical and microscopical features are described according to collected specimens. European findings are compared with North American collection and with description in recent literature.

Key words: Basidiomycetes, Tricholomataceae, *Hohenbuehelia angustata*, Austria, the Czech Republic

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Autoři publikují první evropské nálezy hlívy úzkolupenné – *Hohenbuehelia angustata* (Berk.) Sing. z Rakouska (Dolní Rakousko) a České republiky (jižní Morava). Je dán podrobný makroskopický a mikroskopický popis a srovnání znaků nalezených plodnic s materiálem sbíraným v USA a americkou literaturou.

A very interesting *Hohenbuehelia* species has been collected during mycofloristical research in the riverside forests near Vienna (Austria), and in southern Moravia (the Czech Republic). Macroscopically, it resembled more intensive-coloured *H. mastrucata* (Fr.) Sing. or pale-coloured *H. atrocoerulea* (Fr.) Sing., but it differs especially by very small spores. In comparison with the own collection from the U.S.A. of the first author, and with literature, we determined this species as *Hohenbuehelia angustata* (Berk.) Sing. This species grows in North America, and, our collections represent the first records in Europe.

Collections from Danubial riverside forests in Austria has already been described, and a colour photo has been published in the macromycetes flora of Vienna (Krisai-Greilhuber 1992). The small differences between North-America and European collections are discussed below.

Description of European collections of *Hohenbuehelia angustata* (Berk.) Sing.:

Pileus 15–45(–60) mm broad, hemispherical when young, then subflabelliform to spathuliform, with inflexed to involute, not striate margin, slightly white tomentose in young stages only, old specimens (almost) absolutely smooth, hygrophanous; very young and fresh pilei pale ochraceous brown (near 5D4, Kornerup & Wanscher 1975), soon pallescent (ochraceous, 4A3) to nearly yellowish white (3A2) or carneous, never pure white. Lamellae moderately to very close, with lamellulae, decurrent to one point near pileus attachment, or, if short stipe developed, then

decurrent in low veins, white to pale yellowish grey, with white, slightly pubescent edge. Stipe absent or very short (up to 10×5 mm), white tomentose. Context whitish, with indistinct to quite distinct farinaceous smell.

Basidiospores $4.8-5.7(-6.3) \times 3.4-4.2 \mu\text{m}$, $E = 1.3-1.7$, $Q = 1.4$, subglobose to broadly ellipsoid, thin-walled, non-dextrinoid, hyaline. Basidia $15.2-20.2 \times 5.1-7.6 \mu\text{m}$, clavate, 4-spored. Basidioles $11.4-20.5 \times 2.5-7.0 \mu\text{m}$, clavate or cylindrical-clavate. Cheilocystidia $(11.4-14.6-24.7) \times 5.7-8.5(-10.1) \mu\text{m}$, clavate, sublageniform, broadly fusoid, often irregular, often with capitate or strangulate rostrum, thin-walled, in rostrum sometimes slightly thick-walled (addressed dry gelatinous cap?). Metuloids $44.3-65.8 \times (9.0-12.0-18.4) \mu\text{m}$, fusoid to sublageniform, thick-walled (up to $2.5(-4) \mu\text{m}$), with (rarely without) a distinct crystalliferous cap. Hyphae non-dextrinoid, clamped, thin-walled, up to $11 \mu\text{m}$ wide. Pileipellis a trichoderm, terminal hyphae erect to suberect, thin-walled to thick-walled, rounded to furcate at apex, clamped, hyaline, non-dextrinoid, $2.5-5.0 \mu\text{m}$ wide. Gelatinous layer in pileus $140-160 \mu\text{m}$ deep.

MATERIAL STUDIED

AUSTRIA: Vienna, Lobau, N. Uferhaus (MTB 7865/1), on decaying logs and stumps of *Ulmus*, possibly also *Fraxinus* or *Populus*, 13. VIII. 1982 leg. A. Hausknecht (WU 2195); ditto, 21. IX. 1983 leg. A. Hausknecht (WU 3060); ditto, 27. VII. 1984 leg. A. Hausknecht (WU 3452); ditto, 10. VIII. 1984 leg. A. Hausknecht (herb. Hausknecht 1883.1); ditto, 14. VI. 1985 leg. A. Hausknecht (herb. Hausknecht 1883.2); ditto, 12. VI. 1987 leg. A. Hausknecht (WU 6111); Lower Austria, Großenzersdorf, Herrnau (MBT 7865/1), on dead log of broadleaved tree, 27. VII. 1984 leg. A. Hausknecht (WU 4120); ditto, 9. VI. 1989 leg. A. Hausknecht (WU 7522); Lower Austria, Krems, Grafenwörth (MTB 7560/3), on dead stump of broadleaved tree in Danube riverside forest, 16. VII. 1989 leg. A. Hausknecht (WU 7726).

CZECH REPUBLIC: Lanžhot (distr. Břeclav), riverside forest Ranšpurk, on decaying stem of a broadleaved tree, 26. VI. 1992 leg. & det. V. Antonín 92.28, A. Hausknecht & A. Vágner, BRNM 576441.

U.S.A.: Georgia, Rabun Co., Blue Ridge, Big Creek Area, on decaying stem of *Carya*, 11. VII. 1991 leg. & det. V. Antonín 91.161 BRNM 552745.

Hohenbuehelia angustata is characterized especially by very small spores, rather narrow gelatinized layer in pileus and moderately to very crowded lamellae. According to its features, it belongs in subgen, *Hohenbuehelia*, stirps *Petaloides* (Singer 1975).

This species does not seem to be extremely rare in southern regions of the Czech Republic and Eastern Austria in riverside forests. However, it probably is

confused with apparently similar and rather common *H. atrocoerulea*. All European *Hohenbuehelia* species need other detailed monographic studies.

Miller (1984) published this species as *H. stratosa* (Atk.) Sing. and mentioned its probable conspecificity with *H. angustata*. His description differs by describing paler coloured pileus (dull white to pale tawny), and slightly smaller spores ($3.5\text{--}5.5 \times 3.0\text{--}4.4 \mu\text{m}$); he has not described any presence of metuloids, however, metuloids without terminal incrustation are drawn in an accompanying table.

Singer & Kuthan (1980) synonymized *H. angustata* with *H. stratosa* and with *Pleurotus petaloides* f. *americana* Pilát. They described *Hohenbuehelia recedens* Sing. & Kuthan as a new species from Mexico nad Russia also with small spores ($5.5\text{--}6.5\text{--}(7) \times 3.5\text{--}4.0\text{--}(5.5) \mu\text{m}$). However, it distinctly differs from our fungus especially by darker (fuscous, ochraceous- or melleous-fuscous, and macroscopically glabrous pileus (except for near base), well-developed stipe, more thick-walled and acute metuloids and narrower gelatinous layer ($70\text{--}80 \mu\text{m}$).

Thorn & Barron (1986) also synonymized *H. angustata* with *H. stratosa* based on type studies. Their description of *H. angustata* agrees very well with our fungus except for slightly smaller spores ($2.5\text{--}3\text{--}5.5 \times (2.5\text{--})3.0\text{--}4.0 \mu\text{m}$, and slightly deeper gelatinous layer ($180\text{--}250 \mu\text{m}$).

Singer (1989) published a new combination *H. tenuissima* (Schw.) Sing. which is very close to *H. angustata*. It should differ by the less deep gelatinous zone ($10\text{--}50 \mu\text{m}$) and very diluted pigment in pileipellis. Also close is *H. delasotae* Sing. (Singer 1989) from Argentina but it differs especially by having acute and very thick-walled (up to $5 \mu\text{m}$) metuloids, narrower gelatinous layer ($20\text{--}30 \mu\text{m}$) and slightly larger spores ($5\text{--}6.7 \times 3\text{--}4.5 \mu\text{m}$).

Hohenbuehelia spathulina Huijsm, (Huijsman 1961) described in France differs especially by smaller pileus (up to 5 mm broad), well-developed stipe, different shape of cheilocystidia, very acute metuloids, and narrower gelatinous layer ($40\text{--}50 \mu\text{m}$).

Pegler (1977) described *H. aurantiopsis* Pegler from East Africa which differs especially by having pale brown coloured pileus, slightly smaller spores ($4\text{--}6 \times 3\text{--}4 \mu\text{m}$), different shape of cheilocystidia, and reddish metuloids.

The North-American collection of *H. angustata* of the first author agrees well the original description and European fungi. The European findings show broader variability of size and form of carpophores. However, microfeatures are rather constant except for the gelatinized layer which seems to be wider in moist conditions. Therefore, we believe that collections from the Czech Republic and Austria belong to American *Hohenbuehelia angustata*, and differences discussed by Krisai-Greilhuber (1992) are too small for the delimitation of a separate species.

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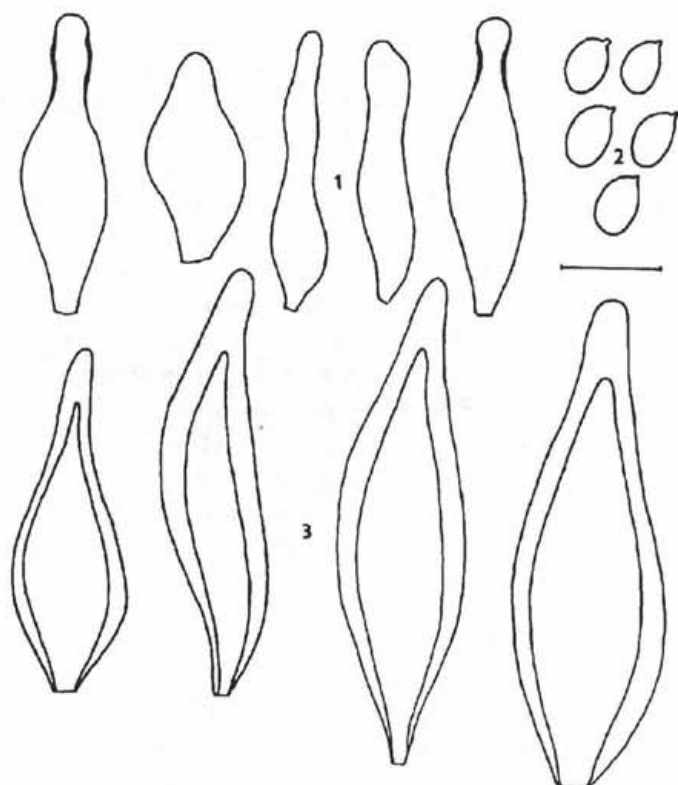


Fig. 1. *Hohenbuehelia angustata* (Lobau, Ranšpurk): 1. cheilocystidia; 2. basidiospores; 3. metuloids. Scale bar - 10 μ m.

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