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Xerocomus fennicus, first record in the Czech Republic

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ANTONÍN V. & VÁGNER A. 2006: *Xerocomus fennicus*, first record in the Czech Republic. *Acta Musei Moraviae, Scientiae biologicae* (Brno) **91:** 159–164. – The first record of *Xerocomus fennicus* (Harmaja) Ladurner, Simonini & Peintner from the vicinity of the city of Brno is published. A macro- and microscopic description of it is given and some microscopic characters are discussed. A light photo-micrograph of the basidiospores and an SEM photomicrograph are also presented.

Key words. *Xerocomus fennicus*, SEM photomicrograph, Czech Republic

Introduction

In the course of field research in the vicinity of Útěchov, an outlying part of the city of Brno, the second author found a single basidiocarp of a red *Xerocomus* species. On inspection in the laboratory, we were very surprised to find truncate basidiospores. This typical character, together with the colour of the basidiocarp, led us to *Xerocomus fennicus,* a recently described species.

Its microscopic characters are described from material mounted in Melzer's reagent, Congo-red, and c. 5% KOH.

The following factors are used for the basidiospores: **E** (quotient of length and width in any one spore) and **Q** (mean of E-values).

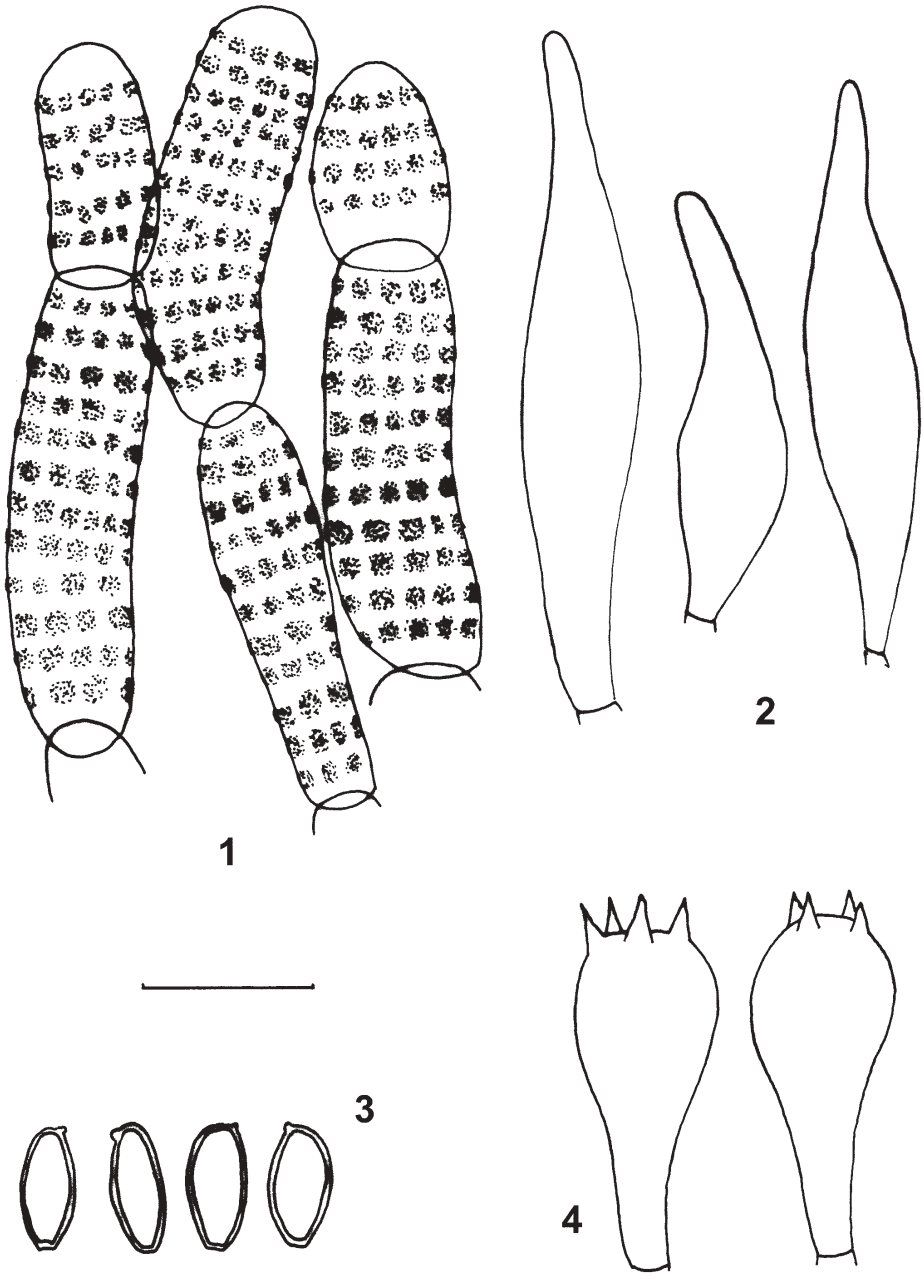
Authors of fungal names are cited according to KIRK & ANSELL (1992) and herbarium abbreviations follow HOLMGREN (2003).

Xerocomus fennicus (Harmaja) Ladurner, Simonini & Peintner

Boletellus fennicus Harmaja, *Karstenia* **39:** 37. 1999. – *Xerocomus fennicus* (Harmaja) Ladurner, Simonini & Peintner, *Mycol. Res.* **107:** 672. 2003.

Misapplied name. *Boletellus ripariellus* s. Harmaja, *Karstenia* **38:** 45. 1998.

Description of the basidiocarp collected: Pileus 40 mm broad, convex, tomentose, cracking, vinaceous red (a similar colour to *Tricholomopsis rutilans* seen from above), lemon yellow in cracks. Tubes up to 7 mm deep, yellow-green, pores 0.3–0.6 mm in diameter, both round and elongated, yellowish-greenish, turning somewhat bluish after touching. Stipe 70×8 mm, cylindrical in upper part, slightly broadened and then fusoid, attenuated towards base, curved, finely striate, with very small scales and lemon yellow at apex, vinaceous red squamulose, longitudinally striate and vinaceous red streaked towards base. Context lemon yellow in pileus and upper part of stipe, vinaceous red



Figs 1–4. *Xerocomus fennicus*: 1 – pileipellis hyphae, 2 – hymenial cystidia, 3 – basidiospores, 4 – basidia. Scale bar = 20 µm.

towards stipe base, without pure red line under pileipellis; context and tubes turning slightly bluish after cutting.

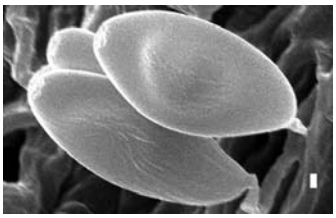


Fig. 5. *Xerocomus fennicus*: basidiospores in SEM photomicrograph (scale bar = 1 μm).

Basidiospores 13–16.5×6.0–7.5 μm, E = 2.0–2.5, Q = 2.19, fusoid to subfusoid, rarely almost ellipsoid, mostly with truncate, up to slightly depressed, apex, longitudinally striate (see Figs 5, 6), thick-walled. Basidia 37–46×16–19 μm, tetrasporic, clavate to (sub)capitate. Basidioles 15–30×5.0–10 μm, cylindrical, clavate, (sub)capitate. Hymenial cystidia 34–80×10–17 μm, fusoid, sublageniform, rostrate, obtuse, thin-walled. Trama hyphae cylindrical to fusoid, thin-walled, up to 20 μm wide. Pileipellis a trichoderm consisting of cylindrical to ellipsoid, ± thin-walled, 9–25 μm wide cells; terminal cells 23–80×12–20 μm, conical, cylindrical, ellipsoid, encrusted; encrustation yellowish-brownish in KOH. Stipe surface

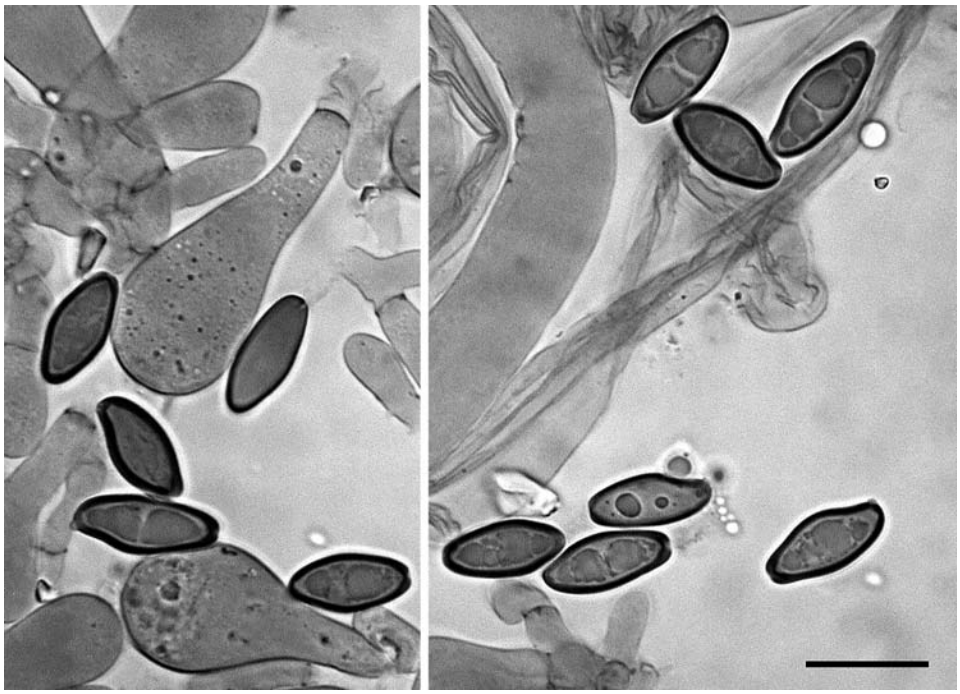


Fig. 6. *Xerocomus fennicus*: basidiospores in the light microscope (scale bar = 15 μm).

covered with caulohymenium composed of basidia and basidioles of the same size and shape as hymenial ones. Clamp-connections absent.

Habitat. On soil in fallen leaves under *Fagus sylvatica, Quercus petraea* and *Tilia* sp. An old beech forest (mixed with scattered other broadleaved trees) on a clay-sandy soil on a slope.

Locality. Brno-Útěchov, location known as "Obora" ("The Enclosure") c. 2–2.5 km to SE, N 49°16´10´´, E 16°38´55´´, mapping grid 6765b, 9 July 2000 leg. A. Vágner , det. V. Antonín (BRNM 693777).

Remarks. *Xerocomus fennicus* is characterised by having vinaceous red ageing to olivaceous to grey pileus (Ladurner & Simonini 2003), and truncate basidiospores with longitudinal ornamentation. In these characters, it differs distinctly from two other red European species, *Xerocomus ripariellus* Redeuilh and *X. rubellus* Quél. Conversely, the terminal cells of the pileipellis hyphae are variable from smooth to encrusted (Ladurner & Simonini 2003).

This species was first recorded in the literature by Harmaja (1998) as *Boletellus ripariellus* with a description, colour photographs and SEM photomicrographs of the basidiospores. These photomicrographs clearly showed distinct longitudinal ornamentation of the basidiospores. It was described as a new species (*Boletellus fennicus* Harmaja) a year later (Harmaja 1999). Lannoy & Estades (2001) mentioned the fungus only in notes, as a different and unclearly known taxon. Later, it was transferred in the genus *Xerocomus* as *Xerocomus fennicus* (Harmaja) Ladurner, Simonini & Peintner (Peintner & al. 2003).

We assumed a wider distribution for *Xerocomus fennicus* here because of its presumable misidentification as *Xerocomus rubellus* or *X. ripariellus*. Therefore, using the characters mentioned by Ladurner & Simonini (2003), we revised all (72 in total) specimens identified as *Xerocomus* (*Boletus*) *ripariellus*, *X.* (*B.*) *rubellus*, and *X.* (*B.*) *armeniacus* preserved in the herbarium of the Moravian Museum in Brno (BRNM). However, we found no other collection of it. It has not yet been re-collected in the Útěchov locality. We consider *X. fennicus* a very rare fungus in southern Moravia.

So far, *Xerocomus fennicus* is only known from Finland, Austria and possibly also from Belgium (Ladurner & Simonini 2003); it has not previously been recorded in the literature from the Czech Republic.

List of revised specimens

Xerocomus (*Boletus*) *armeniacus*

CZECH REPUBLIC: between Radostice and Silůvky, 21 Sept. 1969 leg. E. Lejsková, det. K. Kříž (BRNM 289883). – Střelice, 18 Aug. 1972 leg. M. Stuchlíková, det. K. Koncerová (BRNM 265493). – Křtiny, 1 Sept. 1974 leg. S. Spiegl, det. K. Koncerová (BRNM 289824). – between Kuřim and Česká, 2 Sept. 1974 leg. P. Šafařík, det. K. Koncerová (BRNM 289826). – Kuřim, Zlobice hill, 5 July 1953 leg. et det. F. Šmarda (BRNM 265523). – ditto, 28 July 1972 leg. S. Vlk, det. K. Kříž (BRNM 265487). – Kuřim, Cimperk hill, 27 July 1946 leg. et det. F. Šmarda (BRNM 266049). – Kuřim, Kuřimská hora hill, Numerky forest, 6 Sept. 1969 leg. J. Bartoň, det. F. Šmarda (BRNM 265532). – Veverská Bítýška, 9 Sept. 1951 leg. et det. K. Kříž (BRNM 265533). – ditto, Obora forest, Tři Kříže (Three Crosses), 2 Oct. 1952 leg. M. Fišer, det. F. Šmarda (BRNM 265525). –

Brno-Medlánky, 28 July 1972 leg. J. Minks, det. K. Koncerová (BRNM 265483). – Lelekovice, 1974 leg. ???, det. K. Kříž (BRNM 289993). – Kníničky, 24 July 1974 leg. J. Příhoda, det. K. Kříž (BRNM 289992). – Rozdrojovice, 14 Sept. 1975 leg L. Škvaříková, det. K. Kříž (BRNM 289638). – ditto, 8 Sept. 1974 leg. M. Antonínová, det. V. Antonín (BRNM 289679). – ditto, Trnůvka hill, 12 July 1970 leg. V. Procházka, det. K. Kříž (BRNM 265504). – ditto, place called Osada, 6 Sept. 1970 leg. Z. Neumanová, det. K. Kříž (BRNM 265484). – Žebětín, 25 Aug. 1968 leg. M. Hloušek, det. K. Kříž (BRNM 265490). – ditto, Líchy forest, 6 Sept. 1974 leg. A. Křivánková, det. V. Antonín (BRNM 289825). – between Brno-Lesná and Soběšice, 2 Aug. 1972 leg. Z. Fišer, det. A. Vágner (BRNM 265486). – Brno-Komín, Holedná hill, 23 Aug. 1970 leg. O. Synková, det. A. Vágner (BRNM 265503). – ditto, 17 June ???? (without a year) leg. et det. F. Valkoun (BRNM 265524). – Brno, Hády, 25 Aug. 1974 leg. P. Šafařík, det. A. Vágner (BRNM 265496). – Brno-Řečkovice, 1 Sept. 1974 leg. J. Prchal, det. V. Antonín (BRNM 289822). – between Brno-Řečkovice and Soběšice, 24 July 1967 leg. L. Hyklová, det. J. Lazebníček (BRNM 265522). – ditto, 21 July 1975 leg. B. Štursová, det. K. Koncerová (BRNM 265495). – ditto, 6 Aug. 1970 leg. et det. A. Vágner (BRNM 265521). – Brno-Řečkovice, 9 Sept. 1974 leg. Š. Zámečník, det. K. Kříž (BRNM 289821). – between Brno-Soběšice and Mokrá Hora, 1 Sept. 1974 leg. Č. Jílek, det. V. Antonín (BRNM 289831). – ditto, 9 July 1973 leg. A. Čermáková, det. K. Kříž (BRNM 265491). – Brno-Mokrá Hora, 4 Sept. 1974 leg. K. Beran, det. V. Antonín (BRNM 289823). – Bílovice nad Svitavou, 28 Aug. 1974 leg. O. Vaníček, det. K. Koncerová (BRNM 289820). – between Bílovice nad Svitavou and Soběšice, 18 Aug. 1974 leg. D. Vágnerová, det. A. Vágner (BRNM 265505). – Brno-Bystrc, place called Rakovec, 29 July 1963 leg. L. Marvanová (BRNM 313411, as *B. versicolor*). – Brno-Lesná, 26 Aug. 1970 leg. J. Tlapáková, det. K. Kříž (BRNM 235503). – between Brno-Líšeň and Ochoz, 16 June 1972 leg. et det. A. Vágner (BRNM 265492). – Mokrá, 26 July 1974 leg. Čermák and Fiala, det. K. Koncerová (BRNM 289990). – ditto, 2 Aug. 1974 leg. Z. Severa, det. K. Kříž (BRNM 265481). – Moravský Krumlov, 28 June ???? (without a year) leg. L. Machová, det. F. Šmarda (BRNM 265526). – Starý Poddvorov, Horní Kapansko forest, 28 June 1975 leg. et det. K. Kříž (BRNM 265489). – Lanžhot, Ranšpurk National Nature Reserve, 27 July 1993 leg. et det. V. Antonín (BRNM 576533).

SLOVAKIA: Jakubov, Feld forest, 19 Sept. 1975 leg. et det. K. Kříž and J. Lazebníček (BRNM 289994). – Záhorská nížina lowland, Šajdíkové Humence, 10 Sept. 1963 leg. K. Koncerová and F. Šmarda, det. J. Herink (BRNM 265529).

Xerocomus (*Boletus*) *ripariellus*

CZECH REPUBLIC: Kuřim, Cimperk hill, 10 July ???? (without a year) leg. et det. F. Šmarda (BRNM 50446, as *B. sanguineus*). – Kuřim, Babí lom hill, Kopaniny, 1 Nov. 1944 leg. F. Šmarda, rev. V. Antonín (BRNM 50449, as *B. sanguineus*). – Brno-Soběšice, Suchá hora hill, 30 July 1972 leg. D. Vágnerová, det. A. Vágner (BRNM 265520, as *X. rubellus*).

SLOVAKIA: Záhoří Landscape Protected Area, Abrod National Nature Reserve, 6 Oct. 2000 leg. L. Hagara, det. V. Antonín 00.155 (BRNM 653016).

Xerocomus (*Boletus*) *rubellus*

CZECH REPUBLIC: Veverská Bítýška, Veveří enclosure, 26 July 1964 leg. O. Nováková, det. F. Valkoun (BRNM 313384, as *X. versicolor*). – Kuřim, Babí lom hill, 17 June 1948 leg. et det. F. Šmarda (BRNM 26651). – Kuřim, pod Babím lomem (under Babí lom hill), 14 Aug. 1944 leg. et det. F. Šmarda (BRNM 266047). – Kuřim, Kuřimská hora hill, 4 July 1943 leg. et det. F. Šmarda (BRNM 50447, as *B. sanguineus*). – between Brno-Líšeň and Ochoz, 24 Aug. 1963 leg. F. Tesařová, det. J. Špaček (BRNM 313385). – Brno-Řečkovice, Baba hill, 20 Aug. 1962 leg. F. Valkoun, det. F. Šmarda (BRNM 265506). – Brno-Kohoutovice, Bašeho pomníček (Monument of Baše), 20 Aug. 1970 leg. et det. E. Horníček and F. Šmarda (BRNM 266742). – Rakšice, Krumlovský les forest, 12 Aug. 1959 leg. et det. F. Šmarda (BRNM 265542). – Pálava Landscape Protected Area, Dolní Věstonice, Děvičky hill, 13 July 1955 leg. et det. K. Kříž (BRNM 266050, as *X. versicolor*). – Vranovice, Plačkův les Nature Monument, 26 July 2000 leg. et det. A. Vágner (BRNM 665326). – Ivaň, Dolní Mušovský luh Nature Monument, 3 Aug. 2000 leg. et det. A. Vágner (BRNM 665330). –

Strachotín, 5 Aug. 1956 leg. et det. K. Kříž (BRNM 266046, as *X. versicolor*). – Nové Mlýny, Křivé jezero National Nature Reserve, 19 July 1996 leg. et det. V. Antonín 96.45 (BRNM 612077). – Lanžhot, Sekulská Morava National Nature Reserve, 14 Aug. 1996 leg. et det. A. Vágner (BRNM 611970). – Lanžhot, Ranšpurk National Nature Reserve, 4 July 1967 leg. et det. J. Lazebníček (BRNM 266053, as *X. versicolor*). – ditto (BRNM 266052, as *B. versicolor*). – ditto, 24 July 1968 leg. J. Lazebníček and Z. Schaefer (BRNM 265537). – Lanžhot, place called Myslivecký palouk, 27 July 1993 leg. et det. V. Antonín 93.99 (BRNM 576536). – Lanžhot, Cahnov National Nature Reserve, 6 Oct. 1967 leg. et det. K. Koncerová, A. Vágner and J. Lazebníček (BRNM 266048, as *X. versicolor*). – ditto, 21 Aug. 1967 leg. J. Dvořák, det. F. Šmarda (BRNM 266045, as *B. versicolor*). – ditto, 9 July 1968 leg. J. Lazebníček and L. Stankovičová, det. J. Lazebníček (BRNM 265483). – Bílé Karpaty (White Carpathian Mts.), Tvarožná Lhota, Čertoryje National Nature Reserve, 16 Aug. 2000 leg. et det. V. Antonín 00.74 (BRNM 652838, as *B. ripariellus*).

SLOVAKIA: Bajč, 15 June 1969 leg. et det. E. Futó (BRNM 265783, as *B. sanguineus*). – Kováčovské kopce (Kováčov hills), between Laľa and Kamenice n. Hr., 7 July 1967 leg. et det. J. Lazebníček and A. Vágner (BRNM 266043).

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