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Xerocomellus redeuilhii sp. nov.

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RIASSUNTO

È presentata, descritta e illustrata la nuova specie *Xerocomellus redeuilhii*, largamente diffusa in Europa meridionale, corrispondente all'errata interpretazione di *Boletus dryophilus* Thiers.

ABSTRACT

Xerocomellus redeuilhii, a widespread southern European species formerly misidentified with the North American taxon *Boletus dryophilus* Thiers is presented, described and illustrated.

Sulla base di una comunicazione e della relativa pubblicazione "ad interim" di *Xerocomus redeuilhii* presentata come Conference Paper nel corso di un meeting della Mycological Society of America, Yale University, New Haven, Connecticut, il 15-18 luglio 2012 da parte di Taylor, Eberh. & Simonini, viene qui istituita la nuova specie *Xerocomellus redeuilhii* A.F.S. Taylor, U. Eberh., Simonini, Gelardi & Vizzini.

Il nuovo taxon è basato su *Boletus dryophilus* Thiers s. Simonini 1994, erronea interpretazione della specie nordamericana affine *Boletus dryophilus* Thiers.

La nuova specie era stata in origine ascritta al Genere *Xerocomus* Quél., ma le nuove evidenze di biologia molecolare emerse negli ultimi anni (Nuhn et al., 2013; Wu et al., 2014; Vizzini et al., 2015), che restringono il Genere *Xerocomus* alle specie orbitanti attorno a *X. subtomentosus* (L.) Quél., escludono l'appartenenza di *Xerocomus redeuilhii* a tale Genere e ne motivano l'attribuzione al Genere *Xerocomellus* Šutara.

La nuova specie è già stata ampiamente descritta e documentata come *Boletus dryophilus* in Simonini (1994) e come *Xerocomus dryophilus* (Thiers) Singer in Ladurner & Simonini (2003), lavori ai quali si rimanda.

Xerocomellus redeuilhii si distingue da *Xerocomellus dryophilus* (Thiers) N. Siegel, C.F. Schwarz & J.L. Frank per le proporzioni solitamente più slanciate e per le cellule terminali della pileipellis con estremità più acuta e con incrostazioni epiparietali meno evidenti. Di fatto una confusione tra i due taxa è impossibile perché essi crescono in continenti diversi.

Di recente Moreno et al. (2016) hanno pubblicato *Xerocomellus poederi* G. Moreno, Heykoop, Esteve-Rav., P. Alvarado & Traba con l'intento di dare un nome

valido a *Xerocomus dryophilus* s. Ladurner & Simonini, 2003 [«Xerocomellus dryophilus*, a species described by Thiers (1975) from California, resembles* X. poederi *because of the dark reddish context at the base of the stem, a feature which led many authors to confuse both taxa (Simonini 1994, Pérez de Gregorio 1995, Ladurner & Simonini 2003)*»], ma hanno in realtà descritto un taxon nuovo, con microstrutture ben differenziate [spore con Q = 2,56-3,17 (8 raccolte) invece di 2,14-2,40 (28 raccolte) di *X. redeuilhii*] e caratteristiche molecolari ben diverse, ancorché molto simile dal punto di vista macroscopico a forme slanciate di *X. redeuilhii*. È molto strano che nel lavoro di Moreno et al. (2016) non compaia nel materiale studiato alcuna raccolta né sotto il nome di *X. redeuilhii* né sotto quello *di B. dryophilus* (né raccolte europee, né raccolte americane), quando una sequenza dall'Italia di *X. dryophilus* s. Simonini è disponibile anche nel database pubblico di UNITE (UDB000448 = GS0969, erbario personale G. Simonini). Nell'analisi molecolare di Vizzini et al. (2015) questa specie è rappresentata da due sequenze (UDB000448 e UDB000449). L'analisi filogenetica del complesso *Xerocomus chrysenteron* in Europa e Nord America, mediante l'utilizzo delle sequenze della regione ITS-nrDNA, ha dimostrato che il taxon europeo *X. dryophilus* s. Simonini richiede una rivisitazione tassonomica, dal momento che esso costituisce una linea evolutiva indipendente dalle altre specie del Genere.

On the basis of a communication and related publication "ad interim" of *Xerocomus redeuilhii* presented in a Conference Paper during a meeting of the Mycological Society of America, Yale University, New Haven, Connecticut, 15-18 July 2012 by Taylor, Eberh.

Xerocomellus redeuilhii (holotype) (Foto: G. Simonini)

& Simonini, the new species *Xerocomellus redeuilhii* A.F.S. Taylor, U. Eberh., Simonini, Gelardi & Vizzini is here established.

The new taxon is based on *Boletus dryophilus* (Thiers) Singer s. Simonini 1994, an erroneous interpretation of the closely allied North American taxon *Boletus dryophilus* Thiers.

The new species was originally ascribed by its authors to the Genus *Xerocomus*, but molecular phylogenetic evidence carried out in recent times (Nuhn et al., 2013; Wu et al., 2014, Vizzini et al., 2015) clearly restricts the Genus *Xerocomus* to the species orbiting around *Xerocomus subtomentosus* (L.) Quél., thus excluding the attribution of the taxon *redeuilhii* to the Genus *Xerocomus* and corroborating its placement into the Genus *Xerocomellus* Šutara.

The new species has already been extensively described and documented as *Boletus dryophilus* in Simonini (1994) and as *Xerocomus dryophilus* in Ladurner & Simonini (2003), to which works reference is made.

Xerocomellus redeuilhii differs from *Xerocomellus dryophilus* (Thiers) N. Siegel, C.F. Schwarz & J.L. Frank for a usually slenderer habit and pileipellis terminal cells with more acute apex and less evident epiparietal incrustations. However, a confusion between the two taxa is impossible because they occur in different continents.

Recently, Moreno et al. (2016) published *Xerocomellus poederi* G. Moreno, Heykoop, Esteve-Rav., P. Alvarado & Traba with the aim to supply a valid name for *Xerocomus dryophilus* s. Ladurner & Simonini 2003 [«Xerocomellus dryophilus*, a species described by Thiers (1975) from California, resembles* X. poederi *because of the dark reddish context at the base of the stem, a feature which led many authors to confuse both taxa (Simonini 1994, Pérez de Gregorio 1995, Ladurner & Simonini 2003)*»], but they actually described a new taxon, with well differentiated microstructures [spores with Q = 2,56-3,17 (8 collections) vs. 2,14-2,40 (28 collections) of *X. redeuilhii*] and clearly different phylogenetic position, very similar from the macroscopical viewpoint to slender forms of *X. redeuilhii*. It sounds very strange that in the work by Moreno et al. (2016) does not appear in the material studied any collection either under the name *X. redeuilhii* or *B. dryophilus* (either European or American collections), since a sequence of *B. dryophilus* s. Simonini from Italy is available in the public UNITE database (UDB000448 = GS0969 pers. herbarium G. Simonini). In the molecular analysis by Vizzini et al. (2015), the present species is represented by two sequences (UDB000448 and UDB000449). Phylogenetic analysis of the *Xerocomus chrysenteron* complex in Europe and North America using ITS-nrDNA region sequence data demonstrated that the European *X. dryophilus* s. Ladurner & Simonini requires a taxonomic re-evaluation, since it belongs to a well supported lineage which is separate and independent from all the other species in the genus.

Xerocomellus redeuilhii

A.F.S. Taylor, U. Eberh., Simonini, Gelardi & Vizzini sp. nov.

Misinterpreted names: *Boletus dryophilus* s. Simonini, 1994: 205
Xerocomus dryophilus s. Ladurner & Simonini , 2003: 235

Original diagnosis

Pileus 3-10 cm broad, dry, finely velvety when young, smooth and silky with age, sometimes faintly viscid, surface rarely areolate with dry weather, variably coloured: usually dark red, blood red to purplish red but also brownish red, greyish red, rosy red, rosy grey to pale pinkish-flesh, even completely fulvous, tawny,

Xerocomellus redeuilhii (paratype) (Foto: G. Simonini)

olive or buff, usually with a narrow sterile whitish band at the edge in young specimens, subcuticular layer yellowish. Stipe 3-10 × 1-2.5 cm, usually slender, cylindrical, chrome yellow in the upper part, abruptly dark red to blackish red in the lower part. Context pale chrome yellow in the cap and in the upper part of the stipe, unchanging to slightly bluing when cut, dark red to blackish red and unchanging in the lower part of the stipe. Tubes up to 15 mm long, bright yellow, then olive yellow. Pores 0.5-2 mm diam, concolorous with the tubes, unchanging to bluing when bruised. Spore print brownish with olive shade. Spores ellipsoid, smooth, 12.3–13.9 × 5.5–6.1 µm, Q = 2.14-2.40, not amyloid nor dextrinoid. Pleurocystidia fusoid-ventricose, 56.5–86.0 × 10.5–13.0 µm. Tube trama intermediate between the Phylloporus-type and the Boletus-type [according to the classification by Šutara (2008)]. Context in the stipe base inamyloid.
Pileipellis a trichoderm of cylindrical, sub-parallel to partially interwoven hyphae; terminal elements cylindrical, having a tapering, often acute apex, 31.5–82.5 × 5.8–12.6 µm, smooth or finely encrusted.
Holotype: Italy, Emilia Romagna region, Reggio Emilia, Common Casina, loc. Monte Duro, 21 Oct 2012, leg. Miranda Simonini, 44° 32' 39" N, 10° 31' 57" E, 493 m, under Quercus pubescens Willd. and Ostrya carpinifolia Scop., on calcareous soil (Monte Cassio flysch). Exsiccata in Herbarium AMB 18114. GenBank KX889920 (ITS-nrDNA sequence).
MB818381

Additional collection (paratype): Italy, Emilia Romagna region, Reggio Emilia, Common Casina, loc. Monte Duro, 7 Oct 2012, leg. Giampaolo Simonini, 44° 32'

14" N, 10° 32' 26" E, 733 m, under *Quercus pubescens* Willd., on calcareous soil (Monte Cassio flysch). Exsiccata in Herbarium STU20121007GS10074. GenBank KX905051 (ITS-nrDNA sequence).

Ecology and distribution: on calcareous soil, known from southern Europe, particularly common in the Mediterranean area, associated with broadleaved trees, mainly with oaks (*Quercus* spp.).

Etymology: dedicated to our friend Guy Redeuilh, a French mycologist (1937-2004).

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