Inocybe parvicystis
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F.J. Rodr.-Camпо & Esteve-Rav., sp. nov.

Etymology. From Latin parvus and cystidium, referring to the small size of cystidia.

Classification — Inocybaceae, Agaricales, Agaricomycetes.

Basidiomata agaricoid and stipitate. Pleus 15–40 mm, convex to plano-convex, not or hardly umbonate, not or very slightly hypogynous; margin deflexed to straight, often wavy with age, in young basidiomata often showing appendiculate rests of the velipellis; colour initially very pale, cream whitish (Mu 7.5Y 9/2), then yellow ochraceous (Mu 10YR 6/6) or pale yellowish brown (Mu 7.5Y 8/4), in old or washed specimens often becoming copperish yellow to orange yellow (Mu 7.5YR 3/6), often paler at the centre or in areas where velipellis is present; surface smooth, becoming rapidly fibrillose at margin but never rimose, often agglutinating soil remains, when young covered by white to greyish velipellis, often persisting in old specimens, especially towards the centre. Lamellae rather crowded (L = 36–44), adnexe to emarginate, ventricose, with lamellulae (l = 1–2), initially pale grey to beige, then yellowish brown with a faint olivaceous reflection at maturity, edge whitish to concolorous, crenulate. Stipe 3.5–55 × 5–8 mm, straight to curved towards base, cylindrical with a bulbous to abruptly bulbous base, less often subbulbous or clearly marginate bulbous, bulb 8–10.2 mm wide; colour whitish (Mu 7.5YR 9/2), ochraceous (Mu 7.5YR 6/6) or even yellowish brown (Mu 7.5YR 8/4) in old basidiomata, often concolorous to pleus in aged specimens, especially towards base; surface sparsely fibrillose, fibrillose-pruinose towards the apex (descending to 1/6–1/4, rarely –1/3), sometimes covered by abundant fibrillose veil towards the lower half in young basidiomata. Context fibrose, whitish, unchanging. Smell slightly spormatic, taste slightly raphanoid. Spores (7.5–)8.5–9.5–9.75–10 × (4.5–)5.5–6–7 (–6.5) µm, Qm: 1.25–1.6–2 (n = 165), smooth, yellowish, ellipsoid to mostly amygdaliform to rhomboid in most cases, are distinct features of I. parvicystis because they probably represent an independent phylogenetic lineage different from I. parvicystis, as the ITS sequence produced from one of them had up to 19562 bp different from the other I. parvicystis samples (including 4 bp and 7 bp insertions, and a 3 bp deletion not observed in any other sequence of the latter species). Collections studied by the authors are indicated in bold in the phylogenetic tree for ITS sequences (see figure in MycoBank).

Notes — Colour codes are taken from Munsell (1988) and Kuyper (1986). The presence of a well-developed velipellis, pale yellow-ochraceous colour, bulbous stipe, caulopectydia reduced to the upper 1/4 of the stipe, hymenial cystidia short, narrow, pedicellate and very crystalliferous, and spores provided with a ‘pseudopore’ in most cases, are distinct features of I. parvicystis. It grows in acidic soils in evergreen oak forests (Quercus ilex, Q. suber), often mixed with maquis (Cistus spp.) vegetation in the western Mediterranean areas. Among other leiosporeous species showing short cystidia and a bulbous stipe, I. mystica is devoid of velipellis, its colours are warmer orange-ochraceous, the spores are devoid of a germ pore and smaller (7.5–)8.5–9.4–9.7 × (4.7–)5.2–5.7–5.8 µm, Qm: 1.45–1.6–1.8 (n = 30), holotype measurements; it develops in frondose temperate forests in Europe (Stangl & Glowinski 1980). Kuyper (1986) considered the American species I. cryptocystis conspecific with I. mystica, but the results of our ITS analyses from both prove that, though phylogenetically closely related, they are distinct species. Inocybe cryptocystis (Stuntz 1954) is also devoid of a distinct velipellis and shows very short, mostly subutriform to oblong-ellipsoid cystidia, with obtuse to truncate, non-pedicellate base. The interpretation of I. confusa in Heim (1931), could well be referred to I. parvicystis; Heim’s description fits the general characters of the new species, and the habitat is said to be ‘Mediterranean, under evergreen oaks’; unfortunately, no voucher material has been preserved of Heim’s collections. ITS sequences of I. parvicystis do not seem related to those generated from I. cryptocystis or I. mystica type collections. The most closely related ITS sequences come from ectomycorrhiza studies in Californian oaks (KC791069, Taniguchi et al. 2013) and Pakistani Himalayan pine forests (KF679813, Hanif & Khalid, unpubl.). Both collections gathered under Abies pinsapo (AH 18898, 18899) differ from I. parvicystis because of their paler colour. They probably represent an independent phylogenetic lineage different from I. parvicystis, as the ITS sequence produced from one of them had up to 19562 bp different from the other I. parvicystis samples (including 4 bp and 7 bp insertions, and a 3 bp deletion not observed in any other sequence of the latter species). Collections studied by the authors are indicated in bold in the phylogenetic tree for ITS sequences (see figure in MycoBank).