

GALERINA BEATRICIS, A NEW SPECIES IN AGARICALES

C. BAS

Rijksherbarium / Hortus Botanicus, Leiden, The Netherlands

INTRODUCTION

In 1965 the late Mr. J. Daams, an ardent and acute fungus collector, discovered in a greenhouse at 's Graveland, the Netherlands, a baffling small agaric with a very dark red-brown pileus, dark brown (sub)decurrent lamellae, a whitish veil partly covering pileus and stipe and a bitter to even acrid taste. The microscopic characters soon revealed that a rather aberrant species of *Galerina* was involved. In later years this species has been repeatedly found in greenhouses, but also outdoors in orchards, in the same region, always on compost or blackish soil, but after 1971 it has not been recorded again.

A recent scanning of the literature on *Galerina* has shown that none of the nearly 300 species of this genus recognized in the world combines the characters of the present fungus.

Galerina beatricis Bas, *spec. nov.*

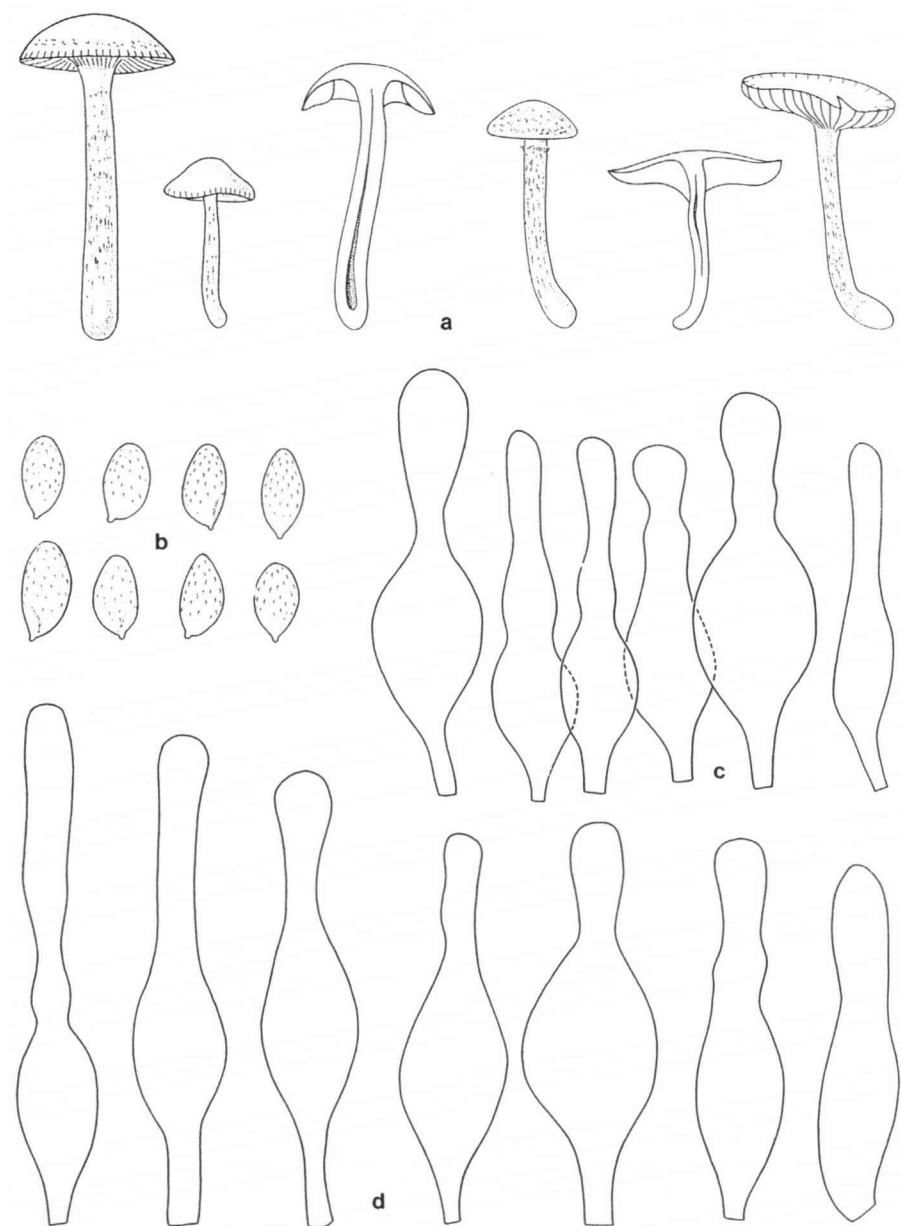
Pileus 6–17(–32) mm latus, initio margine incurvatus, hygrophanus, stato humido obscure rubrobrunneus, lubricus, margine breviter striatus, primo margine velo albido ornatus, mox glabrescens. Lamellae 15–20, 1 (1–)3–7, subconfertae vel distantes, adnatae vel decurrentes, obscure brunneae, margine pallidiores. Stipes 8–24(–30) × 1–3 mm, pallide melleus vel pallide aurantio-brunneus, demum e basi sursum obscure rubrobrunnescent, initio velo sordide albido (interdum annuli formi) obtectus, postea fragmentis veli albis decoratus. Caro concolor vel flavobrunnea, odore farinaceo, sapore amaro-farinaceo, postremo acri.

Sporae 6.9–9.0 × 4.4–5.5 µm, ellipsoideae vel amygdaliformes, brunneae, verrucosulae, area laevis 'plage' nominata vulgo indistincta; porus apicalis absens vel minutissimus. Basidia 4-sporigera. Cheilocystidia pleurocystidiaque 40–80(–90) × 8–21 µm, lageniformia collo saepe constricto et sursum amplificato instructa. Pileipellis vix differentiat, non-gelatinosus, hyphis 2–10 µm latae compositus. Fibulae abundantes.

Basidiocarpi gregarii vel subfasciculati, terrestres, ad materiam botanicam putrefactam.

Holotypus: 'Netherlands, prov. Noord-Holland, 's Graveland, in greenhouse with roses cultivated on manured compost, 4–8-XI-1965, leg. J. Daams, L.'

Pileus 6–17(–32) mm diam., convex or obtusely conical to plano-convex or plano-conical, often with low broad umbo, becoming ± flat or even planoconcave, with age with margin inflexed when young, hygrophanous, when moist very dark red-brown (Munsell 5 YR 4/4–4/6 to 5/6), sometimes even very dark chocolate-brown when young (5 YR 3/2–3/3, 7.5 YR 3/4–4/4), with short translucent striation at margin (0.1–0.3 R, in small specimens up to 0.5 R), with paler reddish brown interstriation, lubricous, when dry pale dingy ochraceous (10 YR 6/6–7/6), often with darker brownish margin, when young with thin, minutely fibrillose, sordid whitish veil caus-

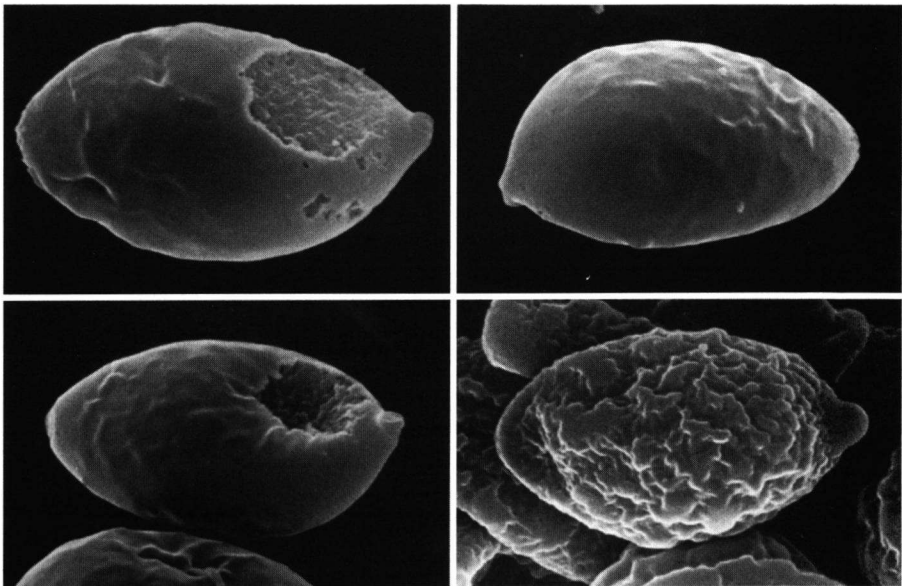


Galerina beatricis Bas. a. Basidiocarps, $\times 1$; b. spores, $\times 1500$; c. cheilocystidia, $\times 1000$; d. pleurocystidia, $\times 1000$ (all from the holotype).

ing a slightly scurfy appearance, mostly soon glabrescent but sometimes velar remnants still present on margin of mature pileus. Lamellae moderately crowded to distant, L 15–20, l (1–)3–7, broadly adnate to decurrent, 1.5–3 mm wide, rather dark

brown (7.5 YR 4/4, 10 YR 4/4–4/6) with slightly paler, even edge, minutely transversely venose in older specimens. Stipe 8–24(–30) by 0.8–3 mm, equal or thickening downwards, rarely tapering downwards, narrowly fistulose, at first densely clad with pale isabella to whitish velar fibrils sometimes also forming a slight annular zone, later with thin whitish to silvery adnate fibrillose patches on pale honey-coloured to pale yellow-brown, later pale reddish brown, at base finally dark red-brown background, entirely whitish when dry. Context moist concolorous but sometimes rather bright yellow-brown in upper half stipe, becoming dark red-brown in base of stipe. Smell strongly rancid-farinaceous when cut or crushed. Taste rancid-farinaceous to subraphanoid and bitter, burning in throat afterwards. Spore print very dark reddish brown with faint chocolate tinge (5 YR 3/4–3/3).

Spores (6.6–)6.9–9.0 by (3.8–)4.4–5.5 μm , $Q = (1.5\text{--})1.55\text{--}2.0$, average $Q = 1.60\text{--}1.75$, ellipsoid to amygdaliform, moderately to fairly rough, with small, often indistinct plage, without or with a very minute apical pore, pale golden yellow in water, slightly darker in NH_4OH , reddish brown in KOH , and then sometimes with slightly loosening perispore, weakly to rather strongly dextrinoid. Basidia: 31–36 by 7–9 μm , 4-spored (a few 2-spored observed). Cheilocystidia 40–70(–80) by 8–18 (–23) μm , neck 3.0–8.5, apex 4.0–9.5 μm , broadly lageniform with tapering neck or abrupt neck broadening towards apex, sometimes with one or two constrictions, with broadly rounded apex, rarely almost capitate, colourless to pale yellow, thin-walled to slightly thick-walled, intermixed with basidia and sometimes with a few small clavate sterile cells. Pleurocystidia similar, abundant to rather scarce, 40–80 (–90) by 10.5–21 μm , neck 3.0–8.5 μm and apex 5.0–10.0 μm wide. Hymenophoral trama regular, made up of up to 17 μm wide encrusted hyphae, pale yellow in water, yellow-brown in NH_4OH , deep yellow-brown in KOH ; subhymenium nar-



Galerina beatricis Bas. Basidiospores, from holotype (SEM, $\times 7500$).

rower than 15 μm , ramose. Pileipellis hardly differentiated, non-gelatinized, consisting of 2–10 μm wide interwoven to subradial hyphae. Pigment encrusting, in pileus particularly abundant in lower part of context. Clamp-connections abundant.

Etymology — Named after Her Majesty Queen Beatrix on the occasion of the opening of the Van Steenis Building, June 11, 1996.

Habitat & Distribution — Terrestrial on manured black soil and compost in greenhouses and orchards. Only known from a restricted area ('Het Gooi') in the province Noord-Holland (the Netherlands).

Notes — *Galerina beatricis* is easy to recognize on account of the dark red-brown pileus with inflexed margin when young, the often decurrent dark lamellae, the contrasting whitish fibrillose stipe, the rancid-farinaceous smell, the bitter to acrid taste, the small rough spores with plage and the large obtuse pleurocystidia. Neither in the monograph of Smith & Singer (1964), nor among the about 90 species published world-wide afterwards a species could be found combining this set of characters.

Galerina beatricis has to be placed in section *Naucoriopsis* Kühn. as defined by Smith & Singer and because of the type of fruit-body and the non-gelatinized pileipellis, in their stirps *Marginata*. Some of the cystidia of *G. beatricis* remind of those in section *Physocystis* Smith & Singer, but most of them are typically lageniform and agree more with those found in species of section *Naucoriopsis*.

Because of its dark colours and the often decurrent lamellae *G. beatricis* was at first not recognized as a member of the genus *Galerina*. The colour of the spore print belongs to the darkest found in this genus. All in all *G. beatricis* represents a rather extreme type. In Barkman's (1969) key to the species of *Galerina* in the Netherlands this species is referred to as '*G. fellea* nom. prov.'

Collections examined. — THE NETHERLANDS. Prov. Noord-Holland, 's Graveland, 4–8 Nov 1965 (holotype), 10 Sept. 1967, 2 Oct. 1968, 22 Oct. 1968, Kortenhoef, 27 July 1971, 8 Aug 1971, 27 Aug. 1971, all leg. J. Daams, all in L.

REFERENCES

- Barkman, J. J. 1969. Het geslacht *Galerina* in Nederland. *Coolia* 14: 49–86.
Smith, A. H., & R. Singer. 1964. A monograph of the genus *Galerina* Earle. New York, London.