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ON A VERNAL MARSH GALERINA

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(With 9 Text-figures)

A new species of *Galerina* is described, intermediate between Section *Physocystis* Smith & Singer and Section *Inocyboides* Singer.

In the course of the mycological investigation of the "Naardermeer", a famous marsh area near Amsterdam, a very curious *Galerina* was collected in spring in marshy coppices which mainly consist of *Alnus*. It proved to be not uncommon when searched for. From a study of the literature, it seems that the species is an undescribed and rather aberrant member of the genus. It is a pleasure to me to dedicate this species to Prof. Dr. J. Heimans of the Botanical Section of the University of Amsterdam, on the occasion of his 70th birthday, in honour of his important contributions to Science and to the protection of Nature.

Galerina heimansii W. Reijnd., *spec. nov.*

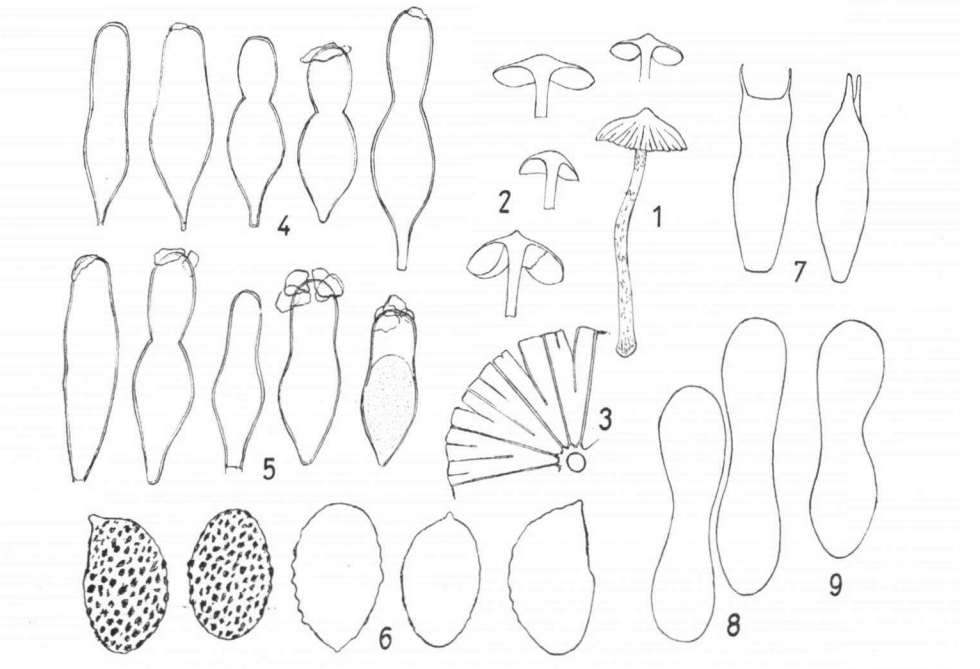
Pileo 4–8 mm lato, conico, dein irregulariter explanato, umbonato, glabro, plus minusve lubrico, hygrophano, pellucide striato-subsulcato, margine crenulato, in statu udo ochraceo, centro obscuriore, margine pallidiore, melleo. Lamellis distantibus, 13–16, adnatis vel rotundato-adnatis, lamellulis 1–2-ordinariis, fulvo-ochraceis. Stipite 15–20 × 0,6–1 mm, ad apicem melleo, deorsum obscuriore, basin versus subincrassato, parte basali subbulboso, fibrillis sparsis ornato. Odore saporeque raphanoideis. Sporis 8,2–10,5 × 4,8–6 μ, adhaerenter verrucoso-subtuberculatis, obscure ferrugineo-ochraceis. Basidiis bisporis. Pleurocystidiis numerosis, incrassatis, utriformibus, basi ventricosis, plerumque parte superiore constrictis, ad apicem late rotundatis, aetate saepius calyptra mucilaginea obtectis, 40–60 × 12–21 × 10–13 μ. Cheilocystidiis pleurocystidiis simillimis. Trama lamellarum subregulare, contexto hyphis pigmento ochraceo incrustatis, hyphis tenuibus fibuligeris.

In locis paludosis, vere. Typus in Herb. Lugd. Bat. (L 959.113–107).

Pileus 4–8(–10) mm across, conical with conspicuous small umbo, expanding and quickly becoming broadly convex, finally flat and often irregularly depressed around the umbo, hygrophanous, strongly translucently striate to sulcate up to the umbo, surface glabrous, somewhat lubricous, ochraceous tawny, centre tending to reddish brown, near edge honey colour, edge in youth showing veil remnants, soon irregularly crenulate and somewhat lacerate. Lamellae distant, (11–)13–16 reaching the stipe, 1–2 ranks of lamellulae, not regularly alternating, fulvous ochraceous, adnate to rotundato-adnate, convex, broad, edge fimbriate, faces pruinose; subcollariate, i.e. on expanding of the pileus becoming detached from the stipe, but remaining adherent to each other, leaving a star-like space between gills and stem. Stipe (10–)15–20 × 0.6–0.8(–1) mm, straight to sometimes strongly

curved, gradually enlarged towards the subbulbous base (up to 1.7 mm), honey colour with a reddish brown tinge, especially near the darker base, apex pruinose, surface covered with sparse yellowish fibrils from the veil, glabrescent with age; fibrils sometimes forming a ring-like zone, more densely coating the base. Flesh thin, watery-fragile, concolourous or slightly darker then the surface when moist, odour and taste distinctly raphanoid.

Spores 8.2–10.5 × 4.8–6 μ, ellipsoid to subamygdaliform, strongly warty, smooth plage absent (oil immersion) or else very indistinct, but suprahilar depression conspicuous, apical pore distinct, reddish brown in KOH solution (exactly the same colour as of spores of *G. marginata*). Basidia 2-spored, 20–23 × 5–7 μ, cylindrical but very often constricted near the apex, hyaline. Pleurocystidia very numerous, utriform, ventricose in lower part, apices broadly rounded, frequently constricted in the middle portion, 40–60(–70) × 12–18(–21) × 10–13 μ, at the constriction, if present, 6–8 μ wide, walls thickened, conspicuous in KOH solution (up to 1 μ), refractive, with age often covered with mucilage caps. Cheilocystidia similar to pleurocystidia, 35–55(–65) × 13–18 × (8–)10–13 μ. Trama of gills parallel or nearly so, encrusted with ochraceous brown pigment; trama of pileus hyaline to ochraceous with pigment incrustations; elements often narrowed in the middle part; clamp connections present but not frequent; caulocystidia of variable shape,



Figs. 1–9. *Galerina heimansii* W. Reijnd.: 1—carpophore × 2; 2—four sections of pilei × 2; 3—part of hymenophore of adult, expanded specimen to show the subcollariate lamellae × 5; 4—pleurocystidia × 500; 5—cheilocystidia × 500; 6—spores × 2000; 7—basidia × 1000; 8—constricted elements of trama of lamellae × 500; 9—element of trama of pileus × 500 (from the type).

rarely utriform, mostly about cylindrical and often curved, up to 80 μ long; pileocystidia not observed. Pellicle not differentiated.

Scattered to gregarious in marshy copses with *Alnus* and *Betula*, often mixed with *Salix*, in hollows of the litter, adhering to decaying leaves and fragments of stems of *Phragmites* and *Rubus* &c.

Material.—N o o r d - H o l l a n d: Naardermeer (between Naarden and Bussum); 27 May 1955, *WR 365*, eight specimens under *Alnus*, *Salix* and *Rubus*; 24 April 1956, *WR 419*, three specimens hidden in litter of *Alnus*; 3 May 1959, *WR 445* (type; L 959.113–107), 15 specimens in litter of *Betula* and *Alnus*, several near buried, decaying *Sphagnum* but not growing on it.

This species is already in the field easily recognizable by its occurrence in marshy copses in spring, the small but conspicuous umbo, the subcollariate gills, and the raphanoid smell and taste, which is a quite typical combination of characters.

Microscopically the cystidia are very outstanding. On account of their distinctly thickened walls, which are refractive in KOH solution, and the mucilage caps, the species approaches the Section *Inocyboides* Singer, of which only two species seem to be known. *Galerina heimansii*, however, instead of having a crest of crystals as in the well-known *G. nana* (Petri) Kühner, shows an amorphous mass on their apices. Also, the spores are quite different from those of Section *Inocyboides* in that there is no smooth suprahilar plage.

On the other hand, *G. heimansii* is apparently near Section *Physocystis* Smith & Singer on account of its strikingly rounded pleurocystidia and cheilocystidia. The members of this group are only known from the western United States and South America. Some of the species described by Velenovský might belong here also, e.g. *G. minima* and *G. hydrocyboides*, if they are to be placed in the genus at all. It is evident that *G. heimansii* matches none of the species of Section *Physocystis* as mentioned in the Key which Smith and Singer prepared for their forthcoming monograph of the genus *Galerina*. Since Section *Physocystis* is not defined as having spores with a smooth plage, the species under discussion might be classified here. However, it differs from the members of this section, as far as they are known, by the thickened walls of the cystidia and their mucilage caps which, as already stated, are not unlike those of Section *Inocyboides*. Thus, the species seems rather aberrant and intermediate between the two sections mentioned; its position is as yet far from clear.

A curious feature of the present *Galerina* seems to be in the constriction of basidia, cystidia and many of the tramal elements, as shown in the figures.

Galerina heimansii seems to have been overlooked, probably on account of its hidden growth under a thick layer (often up to four or five cm) of fallen leaves, etc., in cavities of the litter. Of the nearly fifty specimens, collected in four seasons on at least seven different spots, only two or three could be detected without carefully lifting the litter. Besides, the species fructifies in spring when collecting in marshes is not very attractive, as very few agarics occur there at that time. Although it has not yet been found outside the "Naardermeer", the species should not be rare in similar surroundings elsewhere.

I am deeply indebted to Dr. A. H. Smith for sending me his unpublished Key to the genus *Galerina*.

REFERENCE

SMITH, A. H., & SINGER, R. 1958. The genus *Galerina*: An outline of its classification. *In* Sydowia **11**: 446–453.