

NOTES AND BRIEF ARTICLES

MYCENA GALERICULATA—USUALLY 2-SPORED?

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Oegstgeest

Mycena galericulata (Scop. ex Fr.) S. F. Gray is a common agaric, widely distributed in Europe and readily recognized. Whether this also applies to extra-European areas is here left out of consideration, while the actual investigation is concerned only with the situation in the Netherlands.

As far as I have been able to check, the general opinion in Europe has been and still is that *M. galericulata* occurs predominantly with 2-spored basidia. A few references may be cited to substantiate this statement; some care had to be taken in consulting those authors who regarded *M. galericulata* and *M. rugosa* Fr. (now considered to represent one and the same species) as distinct.

Hennig (1958: 108): 'Basidien zweisporig'; Horak (1968: 391): 'Basidien 2sporig (selten 4sporig)'; Konrad & Maublanc (1948: 311): '... le plus souvent bisporique...'; Kühner (1938: 324): '[forme tétrasporique] Octobre-Décembre ... aux environs de Paris..., où il semble moins commun que le *M. galericulata* bisporique'; (1938: 326): '[forme bisporique] Très commun ... de mars à décembre...'; Kühner & Romagnesi (1953: 108): '... race bisporique, la plus commune...'; Lange (1936: 47): 'Basidia 2-spored'; Oort (1928: 241): 'Basidiën 2-sporig' (23 collections); he (p. 230) also recorded a single, 4-spored collection of what he took to be *M. rugosa*, but he felt uncertain about his own identification. His description does not suggest *M. galericulata*, and this find seems best disregarded. Patouillard (1885: 145) proves to be an exception in European literature in that he is the only author to have illustrated 4-spored basidia: '... hyménium grossi montrant des basides à 4 stérigmates...'; Pearson (1955: 56-57); '... basidia usually 2-spored ...'; Rea (1922: 383): 'Basidia generally with 2-sterigmata only'; alongside of *M. galericulata* he also recognized a *M. rugosa* with 2-4-spored basidia. Ricken (1915: 439), too, distinguished *M. galericulata* and *M. rugosa*, the former 2-spored and exceedingly common, the latter 4-spored and rather rare. Viennot-Bourgin (1959: 79): 'Basides typiquement à 2 spores'; Wakefield & Dennis (1950: 89): 'The basidia are almost always two-spored'.

Some of the less sophisticated questions that may be asked are (i) whether it is true that the 2-spored forms are more numerous than the 4-spored, and if so (ii) in what ratio they occur. No doubt questions of such or a similar nature have been posed in the past, but I am unaware of a definite answer having been published. The following investigation, carried out on herbarium material, confirms to some extent the general opinion, partially answers the second question and, above all, seems to offer interesting prospects for experimentalists.

For the present examination I assembled 72 collections from the Netherlands and one drawing showing microscopic details. Of the former 19 proved unsuitable for various reasons (the month of collecting was not stated; one collection belonged to a different genus; some collections proved to have been misidentified; others were immature or their basidia lacked sterigmata; etc.). The data derived from the drawing and the remaining 53 collections are presented in Fig. 1, in which the collections with 2-spored basidia are indicated by the symbol o, those with 4-spored basidia by ●.

As can be seen at a glance, all collections of *Mycena galericulata* gathered from May to September (V–IX) are of the 2-spored form. Apparently no basidiomes of *M. galericulata* were collected in June. October (X) is the month when a few collections of the 4-spored form make their appearance for the first time, while the following two months (XI and XII) show a considerable numerical increase of the 4-spored form. In December there usually occur some days of frost which put an end to most agarics. In order to express more clearly the ratio of the numbers of the 2-spored and the 4-spored forms, the following graph (Fig. 2) is presented, in which rather than the collections being indicated by their actual numbers, their relative proportions are expressed by percentages, correlated with the month of collecting.



Fig. 1. *Mycena galericulata*. Collections arranged according to the month of collecting; the symbol o denoting a collection with 2-spored basidia ● denoting one with 4-spored basidia.

If, as I am inclined to assume, the lower temperatures during the last months of the year have something to do with the conspicuous decline of the 2-spored form (and the corresponding increase of the 4-spored form), it may well be pointed out that the curves as drawn have but an approximative value. The data used have been derived from collections which span a period of more than 110 years, the oldest collection being from 1864. It is beyond doubt that the temperatures of the fungus seasons in those years must have varied a great deal. Perhaps even more important than the influence of the macroclimate ought to be considered that of the microclimate. It is not known, however, at what stage in its development the temperature may cause *Mycena galericulata* to produce either 2-spored or 4-spored basidia. General information, therefore, on the fluctuations of the temperature as may be provided by a meteorological institute is not likely to be of great help. In order to understand the processes that determine the nature of the phenomenon discussed above, experiments will be needed under strict control of all environmental factors.

Thus far, the 2- and 4-spored basidiomes have been regarded as simple forms of the taxonomic entity *Mycena galericulata*, but there is yet another possibility which requires serious attention, and which suggests that the basidiomes referred to belong to genetically different taxa.

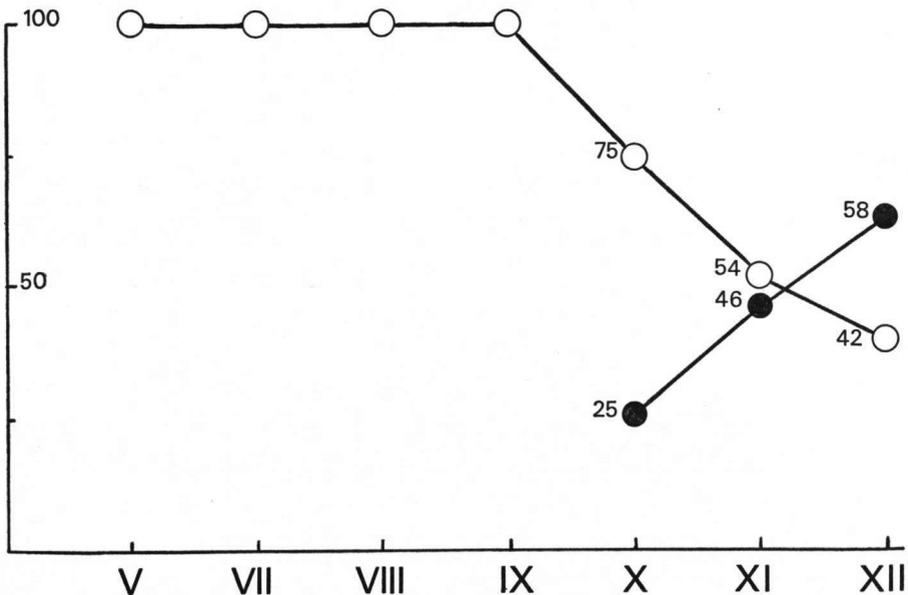


Fig. 2. *Mycena galericulata*. Graph illustrating the different course of the percentages of the collections with 2- and 4-spored basidia during the fungus season.

Apart from the collections preserved in the Rijksherbarium (also housing the collections of the Royal Dutch Botanical Society, the Dutch Mycological Society, and Herb. Oudemans), material has been examined from Centraalbureau voor Schimmelcultures (CBS), Biologisch Station Dr. W. Beyerinck, Wijster (WBS), Dr. H. A. van der Aa (Baarn), Mr. P. B. Jansen (Breda), and Dr. E. Kits van Waveren (Amsterdam). To all these I tender my best thanks.

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