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TRANSVERSOTROPISM SUPERPOSED BY GEOTROPISM IN THE HYMENOPHORE DEVELOPMENT IN HYDNOID APHYLLOPHORALES?

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The poroid, lamelloid or hydnoid hymenophore of the basidiomata of the Hymenomycetes is always positively geotropic (see Hawker, 1966: 460). This enables the unimpeded falling of the ripened basidiospores discharged from basidia and makes the spreading of spores by air currents possible.

Aberrant basidiomata, where the hymenophore has been formed on the upper side of a pileus are sometimes found in several species of Agaricales s. l. In some other species all the surface of a pileus is deformed sometimes to a morchelloid structure. Such abnormalities have been classified as *prolifications* and described by several authors, e. g., in Michael, Hennig & Kreisel, 1983: 53-56. As an explanation of these cases unfavourable weather conditions, genetic defects and virus infections have been mentioned (loc. cit., p. 56).

I do not know any descriptions of Aphyllophorales with distinctly disorganized structure of the hymenophore. However, recently in an alvar-type spruce forest in the Estonian SSR, Haapsalu Distr., on the island Vormsi near Förby by Maret Saar in September 21, 1986 two groups of basidiomata of *Sarcodon imbricatum* (L. : Fr.) P. Karst. in which positive geotropism of the hymenophore was obviously absent have been found. These basidiomata are conserved in the herbarium of the Institute of Zoology and Botany in Tartu (TAA nos. 148 387 and 148 388).

There were two groups of basidiomata, nearly a dozen in each, about 20 metres from one another. All the basidiomata had rather

long stipes (8-15 cm high, 2-3.5 cm in diam.) and comparatively small regularly orbicular pilei 4-12 cm in diam. The margins of both young and mature pilei were strongly incurved. The upper half of the stipe or even about two thirds of its length were covered with well-developed fertile teeth; these teeth were aligned at right angle to the stipe or were even slightly plagiotropically (see figs. 1-2). The inflexed part of the hymenophore at the marginal part of the pilei were also composed of teeth, orientated not vertically but at right angle to the incurved lower surface of the pileus. However, there were no deviations in the microscopic structure of the basidiomata in these specimens.

What may be the reason for such an abnormal development of the hymenophore in these specimens? Obviously not environmental factors, because there were numerous normally developed specimens of the same species growing in the same forest area. The curious type of hymenophore construction described above was observed in all basidiomata growing on two (formerly one?) neighbouring mycelia. Consequently, this phenomenon might be induced by some genetic defect, i. e. by the lack of genetic control of geoparallotropism of the margin of the pileus and of positive geotropism of the hymenophoral teeth.

Instead of this, some other controlling mechanism is directing the growth of hymenophore resulting in *transversotropism:* all the hymenophoral spines are orientated at right angle to their basal surface. The question arises whether this tropism is a common character in hymenophore development of hydnoid (and possibly poroid) Aphyllophorales superposed by genetically controlled positive geotropism, or we have unique case peculiar to the specimens studied. I am inclined to believe in the first explanation.

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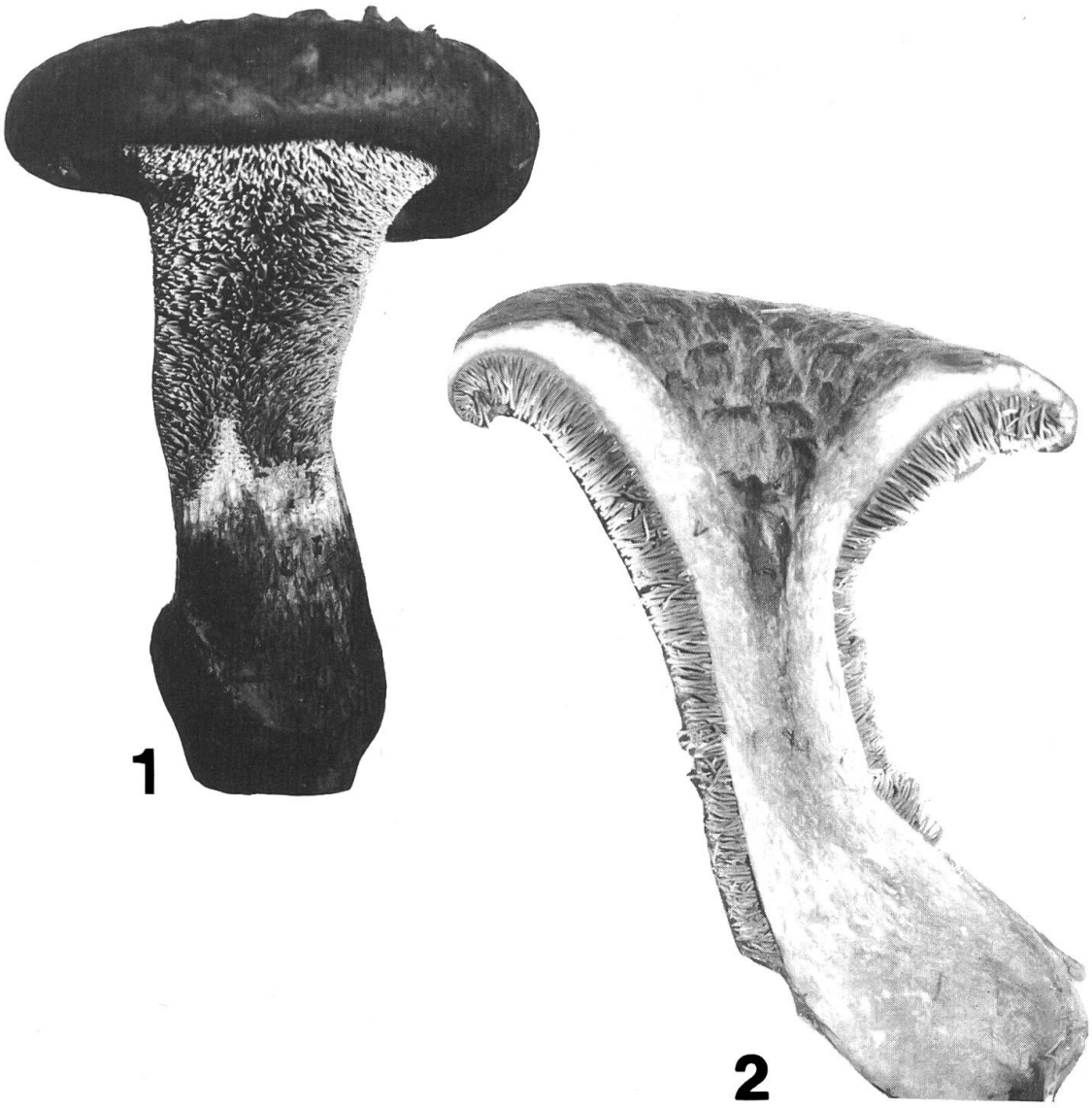

Figures 1-2: Basidiomata of *Sarcodon imbricatum* with abnormally developed hymenophoral teeth on stipes: 1 - Smaller basidiome. 2 - Section through a mature basidiome.