

Autumnal nodules of *Gyromitra esculenta* photographed in the following spring

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Appearance of small initials of *Gyromitra esculenta* (Pers.) Fr. was studied in a Central Finnish spruce forest in connection of semi-cultivation experiments. An earlier report on the occurrence of autumnal initials was confirmed. The small initials were marked and their development was followed by photographing them in both the autumn and spring. These nodules were as small in December as the nodules two years earlier in October. The initials developed into young fruit bodies under the snow in spring, but not during an unusually warm autumn. The observations support the theory that the fruit body production is regulated by a mycochrome-like pigment depending on day length.

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Gyromitra esculenta (Pers.) Fr. is a common edible spring fungus in Finland and Scandinavia. Though it needs special treatments to remove the poisonous substances, it is so favoured for food, and of commercial importance, that efforts are made to improve the natural yield by various methods to secure its availability even in seasons with poor

production. Better yields in forests can be obtained by breaking the soil surface (Jalkanen 1978) or by adding organic material into the soil (Jalkanen 1983).

In the semi-cultivation experiments with organic material in a Central Finnish stand of the Norway spruce, *Picea abies* (L.) H. Karsten (at Laukaa), only a few millimeter high nodules or initials of the *G.*



Figs. 1—2. *Gyromitra esculenta*, growth of a nodule in a semi-cultivation plot. — 1: December 6, 1982; height of the nodule ca. 4 mm. — 2: The same, May 5, 1983; fruit body size ca. 12 × 15 mm.

esculenta fruit bodies were first seen in the autumn 1980 (Jalkanen & Jalkanen 1981). From the group of thousands of autumnal nodules only a very small part developed into fruit bodies in the following spring.

After the first discoveries in 1980 the semi-cultivation experiment plots were surveyed every autumn. The plots were empty in the autumn 1981, but a year after there were again some nodules in three plots as late as in December (Fig. 1). The nodules were as small as in October 1980. Some nodules were marked before they were covered by snow in the autumn, and after the snow melted in the following spring the same marked nodules were seen as small fruit bodies (Fig. 2).

Interesting is that during the unusually long, warm and snowless autumn 1982 the nodules did not enlarge into true fruit bodies, although the ground was unfrozen. But again in the spring, the nodules had enlarged and were already fruit bodies in the time

of the thaw. The enlargement must have happened under the snow cover. These discoveries support the suggestions made by Jalkanen and Jalkanen (1981) about the existence of a mycochrome-like pigment, which would regulate the growth of the *G. esculenta* initials in the autumn and the following spring according to day length.

References

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