

## *Tuber mesentericum*, an interesting species of black truffles in Poland

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*Tuber mesentericum* Vitt. is the only member of black truffles collected in Poland in the calcareous area at the Częstochowa Upland. It was discovered in 1981 in old beech wood at the Zielona Góra nature reserve (Lawrynowicz 1988, 1990). Recently it has been collected in ca 30 years old oak forest situated 13 km NE from the Częstochowa town. Taxonomic notes, description of habitat and distribution are given.

**Key words:** hypogeous fungi, black truffles, distribution of fungi.

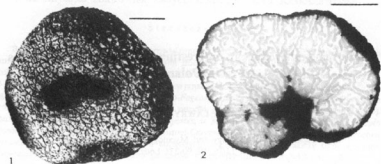
### INTRODUCTION

*Tuber mesentericum* Vitt. is closely related to *T. aestivum* Vitt. but differs in its smaller ascomata, lower surface warts, darker colour of gleba, larger spores and cavity of ascomata. Most authors recognise *T. mesentericum* as a distinct species (Knapp 1951, Ceruti 1960). Others (eg. Trappe 1979) treat it as a variety of *T. aestivum*, so the distribution of these two species is mapped together. Studies of the Polish material support the concept of *Tuber mesentericum* as a separate species adapted to more severe climatic conditions.

### DESCRIPTION OF THE SPECIMENS

*Ascomata* hypogeous, subglobose or depressed, with basal cavity, 1–3.5 (5) cm, firm, solid, black or blackish-blue when fresh and blackish-brown when dried, warted (Fig. 1). Warts 3–4 mm across, angular, pyramidal, depressed at the apex. Odour pleasant.

*Peridium* pseudoparenchymatous, 100–250  $\mu\text{m}$  thick. *Gleba* white at first (Fig. 2), becoming blue-grey, yellowish to light brown when dried, marbled with whitish veins.



Figs. 1, 2. Ascomata of *Tuber mesentericum* with basal cavity.

Fig. 1. Surface covered with warts; Fig. 2. Vertical section of ascomata. Bars=1 cm.

Asci (55-) 70–120 × (50) 60–90  $\mu\text{m}$ , broadly ellipsoid, sometimes subglobose, with a short stalk, 1–5 (6) spored. *Ascospores* 27–53 × 23–35  $\mu\text{m}$  including ornament, ellipsoid, hyaline at first, yellowish-brown at maturity, ornamented with a coarse reticulum 3–5  $\mu\text{m}$  high, usually 3–5 across the width of spore (Fig. 3).

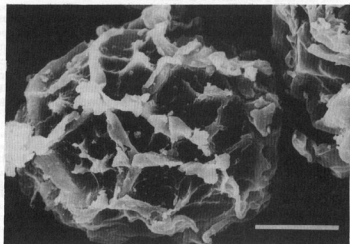


Fig. 3. Ascospore of *T. mesentericum* (SEM). Bar=10  $\mu\text{m}$ .

## HABITAT AND DISTRIBUTION

*Tuber mesentericum* was collected for the first time in 1981 under *Quercus robur* and *Carpinus betulus* in old beech wood at the Zielona Góra nature reserve (Ławrynowicz 1988, 1990). In 1996 a single fruit-body of *T. mesentericum* was collected by a student Katarzyna Salamon in young oak trees plantation. Despite extensive searching no more specimens were found till July 1999, when 53 fruit-bodies were collected. The fructification started at the beginning of the month (07-07), but the ascomata with fully mature ascospores appeared only at the end of July (28-07). Ascromata were found 0.5-3 cm deep in calcareous soil of pH 6.5-7.5 on the south slope of the hill called Góra Dobra on the left bank of the Warta River in Wancierzów village situated 13 km NE from the Częstochowa town. This hill, previously covered with xerothermic vegetation (Hereżniak et al. 1973), after afforestation in 1965 has turned into oak forest. Other two hypogeous species *T. rufum* and *Melanogaster ambiguus* as well as epigeous *Scleroderma verrucosum* and *Boletus luridus* were collected together with *T. mesentericum*.

Localities of *Tuber mesentericum* in Poland are situated NE furthestmost in Europe (Fig. 4).



Fig. 4. Distribution in Europe: 1 - localities according to Ławrynowicz (1990); 2 - discovered locality at the Częstochowa Upland.

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*Tuber mesentericum*, interesujący gatunek czarnych truflii w Polsce

## Streszczenie

Jedynie, udokumentowane materiałem zielnikowym, dwa stanowiska *Tuber mesentericum*, przedstawiciela czarnych truflii w Polsce znajdują się w północnej części Wyżyny Częstochowskiej. Pierwsze z nich, odkryte zostało w 1981 roku w rezerwacie bukowym Zielona Góra (Ławrynowicz 1988, 1990), gdzie truflia wydrążona rośnie pod *Carpinus betulus* i *Quercus robur*. Ostatnio gatunek ten pojawił się w 30-letnim drzewostanie dębowym na Górze Dobrej w przełomie Warty koło Częstochowy. Do roku 1965 teren ten, wykorzystywany jako pastwisko komunalne, pokrywała murawa kserotermiczna (Hereźniak i in. 1973). W roku 1996 natrafiono na ślad *Tuber mesentericum* w postaci jednego, niedojrzałego owocnika. Intensywne poszukiwania w kolejnych latach nie przyniosły rezultatu. Dopiero w roku 1999, w okresie długotrwałej suszy, natrafiono na masowy wysyp w sumie ponad 53 owocników.

Opisane stanowiska *T. mesentericum* są najdalej na północny wschód wysuniętymi w Europie.