

Barssia oregonensis found in the Tatra Mountains (Poland)

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The first European find of *Barssia oregonensis* Gilk. (Hypogeous *Ascomycetes*) is reported from the Tatra Mountains. The fungus has been found in the *Picea abies* forest in the calcareous soil.

INTRODUCTION

Tatra Mountains are rather rich in hypogeous fungi; the most common among them seems to be *Elaphomyces asperulus* Vitt. and *Hydnotrya tulasnei* Berk. et Br. (Ławrynowicz, in press). In the investigated area, among numerous ascocarps of the above mentioned species there occurred ascocarps of the extremely rare species *Barssia oregonensis*, similar at the first glance to *Hydnotrya tulasnei*.

DESCRIPTION OF THE POLISH MATERIAL

Ascocarps spherical to irregularly rounded, 0.5-3 cm in diam., with deep laterally-apical depression covered by the peridium, yellow-pink to brownish red, tomentose to scabrous without spoor of mycelial attachment (Fig. 1d). Peridium consisting mostly of \pm isodiametric cells and some cells with swollen, narrow tips projecting from the surface.

Gleba white, compact with appressed chambers and labyrinthiform canals, covered by hymenial layer leading to the depression of the ascocarps (Fig. 1a). Hymenium palisadeform (Fig. 1b), consisting of regularly arranged asci and

very slender paraphyse projecting the tops of asci level. Asci cylindrical to clavate, some slightly narrow at the top (Fig. 1c), $180-216 \times 19.2-36(-40) \mu\text{m}$, 8-spored. Spores smooth; under scanning electron microscope with minutely waved surface (Fig. 2), 1- or incompletely 2-seriate, nonamyloid, hyaline, $24.0-28.8 \times 14.4-16.8 \mu\text{m}$.

Polish material: Tatra Mts, Olczyska Valley, 950 m a.s.l., *Picea abies* forest, leg. K. et T. Salata, 17.08.1980; A. Skirgiello et M. Ławrynowicz, 24.08.1982, LOD 21133, WA 00000.

DISCUSSION

The literature survey permitted us to determine these fungi as *Barssia oregonensis* Gilkey 1925, known till now only from Northern America (Oregon and California), (Ławrynowicz and Skirgiello, 1983). This determination has been corroborated by comparing with the American exsiccates (USA, Oregon, Woods Creek, J. Trappe 3973, 23.07.1974), kept in the Kew Herbarium. In Europe this species has been found for the first time.

The nearest fungi known from literature with similar morphology, was described in 1936 by Mattiolo (C e r u t i 1960) under the name of *Stephensia peyronellii* from Northern Italy (Val Germanasca, Alpi Cozie). The differences consist in a darker colour of ascocarps (castaneobadius) and broader asci with loosely lying spores. It is possible that the differences arose as result of ageing ascocarps. Unfortunately no specimen was maintained till recent times, and thus it is impossible to state whether by chance this was a specimen of the genus *Barssia*.

Not long ago T r a p p e (1979) enriched the monotypic till now genus *Barssia* by joining to it a Japanese species *Phymatomyces yezo-montanus* described by Kobayasi in 1937. This is also a mountain species very similar to *Barssia oregonensis*, but differing by globose spores. The exsiccates perished during World War II (G i l k e y 1961). Both species belong to the family *Balsamiaceae* Fischer 1897 em. Trappe 1979.

HABITAT

The locality was situated in the mossy *Picea abies* forest, crossed by a touristic trail running about 30-150 cm below the level of forest. The slope of this trail was a bare clay-sandy steepness of ochre colour. Ascocarps of *Barssia* were embedded in this trail slope at a height of 30 cm.

As ascocarps of *Barssia* anatomically differed from other hypogeous ascocarps simultaneously collected, to have certitude that there is one species and not

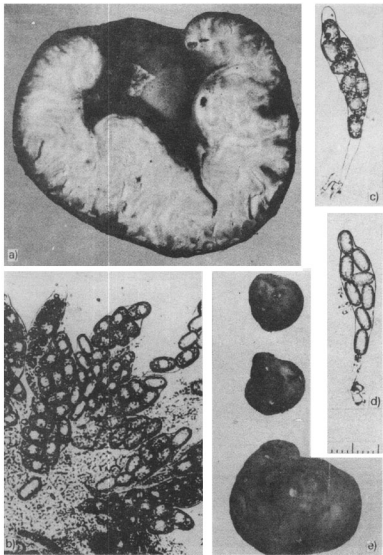


Plate I

Barssia oregonensis Gilk.

a - cross-section of the ascocarp, b - a fragment of hymenium, c - asci with spores, d - ascocarps

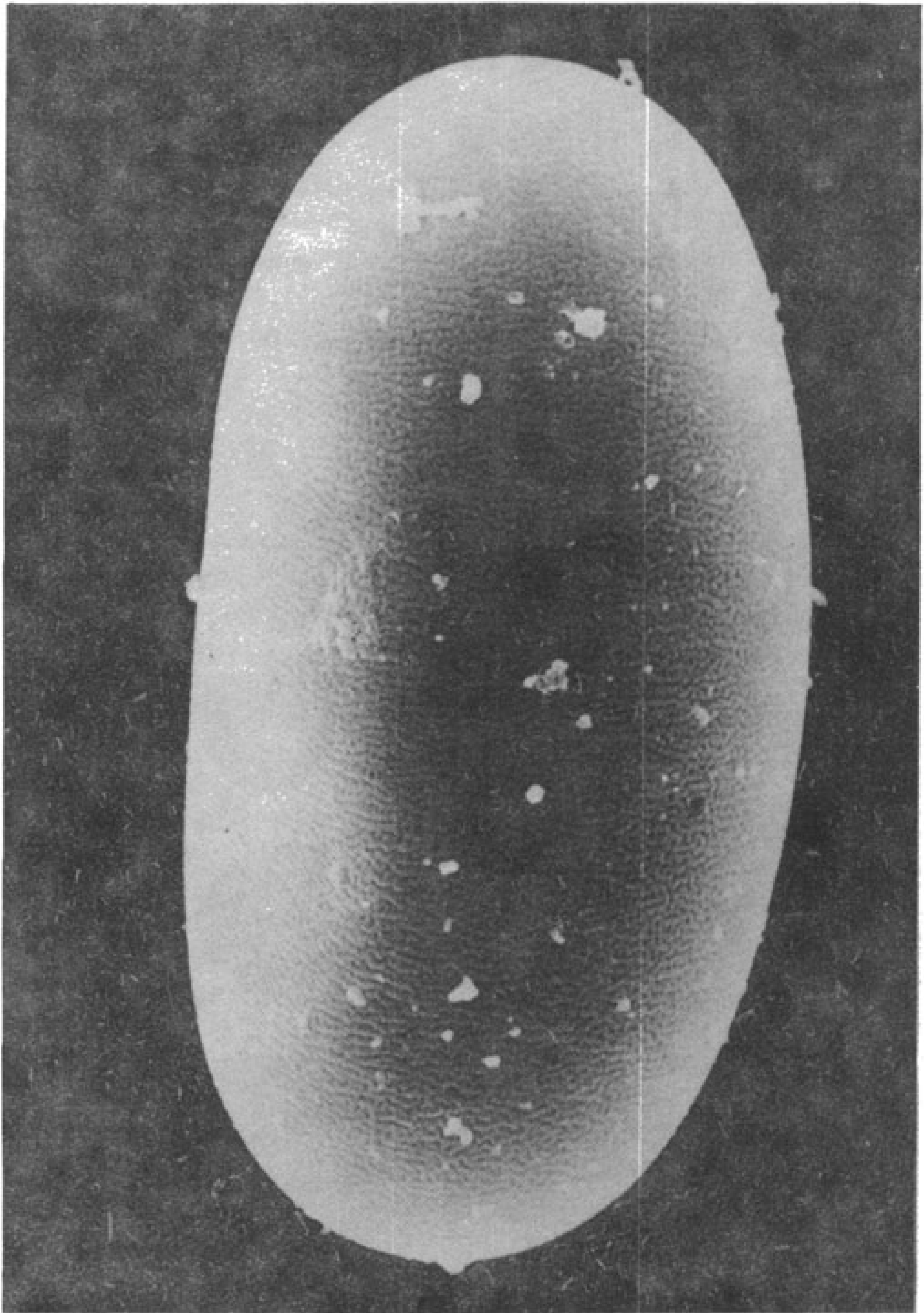


Plate II

Barssia oregonensis Gilk.

Scanning electron micrograph of a single spore.

more, in the nearest season the investigations were repeated in the same spot. Indeed, larger specimens embedded in the slope of the trail at its level were found. The pH degree of soil at the top of slope was 4-4.5, while at the place where the ascocarps were taken it amounted to 6-6.5. Such a difference of pH on the same verticality was rather interesting. An analysis of habitat showed that it was a place of on carbonate under soil with oozing spring water which flowed upon calcium carbonate and made lower layers of ground alkaline. Its flow diminished in the upper direction according to the increase of precipitation moisture in stones, litter and mosses. Among these mosses *Ditrichum homomallum* (Hedw.) Hompe and *Cephalozia bicuspidata* (L.) Dum. were distinguished.

The ascocarps of *Hydnotrya tulasnei* and *Elaphomyces asperulus* grew in the upper layer of soil, trodden by tourists who avoided wet places among polsters of mosses and liverworts.

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