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Ascus Development in *Chaetomium bostrychodes* Zopf

Vývin vřecek u *Chaetomium bostrychodes* Zopf

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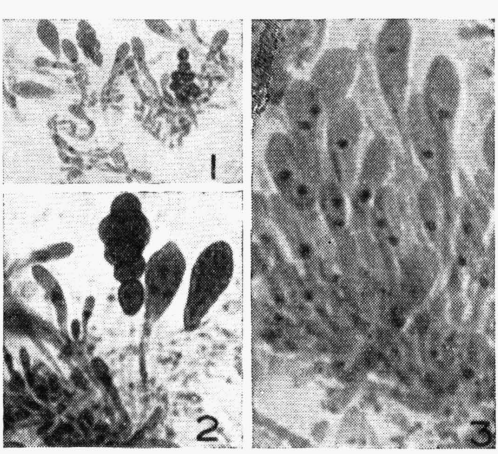
Abstract — Development of asci in *Chaetomium bostrychodes* Zopf has been studied. The asci develop directly from the ascogenous cells, without forming croziers. The nucleus divides and eight uninucleate ascospores are formed in each ascus.

Details of the ascus development have been studied in some species of *Chaetomium* by earlier workers. Page (1939) working on the development of the ascus in *C. bostrychodes* admitted that the nuclei were too small to be observed. Whiteside (1961) reported that chromatin contracts around the nucleolus in *C. globossum* and takes red stain. The present note describes the further details of the development of the ascus in a strain of *C. bostrychodes* Zopf isolated from rabbit dung.



Figs. 1—3. Development of asci in *Chaetomium bostrychodes* Zopf. 1. One-, two- and four-nucleate asci. 783×. 2. Four- and eight-nucleate asci 2808×. 3. Asci each with one nucleus. 2808×.

Perithecia were cultured on Potato Dextrose Agar (PDA) as also on sterilised rabbit dung. Perithecia were fixed in Carnoy's fluid for 18—20 hours and transfered to 70% alcohol for further observations. A few perithecia were removed and placed in a drop of propionocarmine. When gently pressed under a coverslip the asci emerged from the perithecia. The slides were inverted over a blotting paper and excess of propionocarmine was removed by pressure. Such a preparation gave a fine spread of asci and ascogenous cells.

The ascogenous cells are uninucleate (2×) to begin with and develop into asci directly without forming croziers. Karyogamy probably precedes meiosis. The uninucleate ascus is elongate with a centrally located nucleus. The nucleus divides to form 2, 4 and eventually 8 nuclei (Figs. 1, 2, 3). At the four-nucleate stage of the ascus the nuclei are quite prominent, less densely stained than the mother nucleus (Fig. 2). Wall formation starts after 8-nucleate stage with a simultaneous increase in the size of the ascus and eventually eight ascospores are demarcated in the club-shaped ascus.

Among clusters of asci certain long aseptate cells arise which contain a few faintly stained nuclei and sparse cytoplasm. These sterile cells constitute the paraphyses, which degenerate at the maturity of the perithecia.

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Souhrn

Autoři sledovali vývin vřecek u houby *Chaetomium bostrychodes* Zopf. Vřecka se vyvíjejí přímo z askogenních buněk, aniž vznikají háky. Jádro buněčné se dělí a v každém vřecku vzniká osm jednojaderných askospor.

Literature

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