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# HABITAT PREFERENCES OF THE THREATENED KNOTHOLE MOSSES *CODONOBLEPHARON FORSTERI* AND *ANACAMPTODON SPLACHNOIDES* IN ABANDONED COPPICE OAK FORESTS

A veszélyeztetett odúlakó *Codonoblepharon forsteri* és *Anacamptodon splachnoides* élőhelyi viszonyai idős, sarjaztatott tölgyesekben

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Water-filled holes in trees (dendrotelms) are rather rare microhabitats in woodlands intensively managed by rotation foresty system. However, some traditional management practices (e.g. coppicing) may provide microhabitats for knothole mosses and other water-filled tree hole specialists, increasing biodiversity in managed forest ecosystems.

*Codonoblepharon forsteri* and *Anacamptodon splachnoides* are two epiphytic habitat specialists characteristically limited to the vicinity of dendrotelms. Due to the sporadic occurrence of this special microhabitat, the distribution of these red listed moss species is rather scattered and less revealed. Therefore, we aimed to map the distribution of the species in detail across two sites where new populations were discovered and assess the microhabitat conditions of the dendrotelms the species occupy. We have surveyed two abandoned coppice oak forests in Cserhát Mts. (Bokri Hill) and Balaton Uplands (Koloska Valley), where all the dendrotelms colonized by *C. forsteri* and *A. splachnoides* were mapped and their abiotic variables were measured. The microclimatic conditions of 40 dendrotelms occupied by *C. forsteri* and 40 uncolonized dendrotelms were also measured. In Bokri Hill, 52 trees were found to be colonized by *C. forsteri,* covering ~800 $cm^2$ as mature plant and ~2900 $cm^2$ as protonema, and *A. splachnoides* on four trees covering ~180 $cm^2$. In Koloska Valley, *C. forsteri* was found on 32 trees with ~410 $cm^2$ coverage of mature plants and ~1470 $cm^2$ protonema, and *A. splachnoides* on 16 trees with ~830 $cm^2$ coverage. The relatively high total coverage of *C. forsteri* on 84 *Quercus cerris* trees is of great significance both on a European and a global scale. Three different types of microhabitats colonized by the two moss species were distinguished: 1) edge of wet tree hole with wide entrance and ± permanently filled with water (81%); 2) bare surface of the ring of callus growing around a small water-filled hole (14%); 3) in bark fissures around a wound without any visible hole (5 %). The main drivers of the colonization of *C. forsteri* seemed to be the distance from the closest colonized trees and the amount of diffuse light. Both species are pioneer with colonist life strategy and low competitiveness. For successful colonization the moisture provided by dendrotelms might be essential, as well as the bare bark surface which is maintained by the continuous leakage of alkaline water from the tree-hole interior, locally eradicating the competitor bryophyte species.