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Fungicolous fungi of Primeval Beech and Spruce Forests of Ukrainian Carpathians and Perspectives of Their In-depth Study

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Fungicolous fungi is a large ecological group of fungi that inhabit other fungi (Gams et al. 2004). The term “fungicolous” covers all forms of relationships between partner’s fungi: neutralism, saprotrophy, commensalism, mutualism, and parasitism in various forms (Jeffries, Young 1994; Dighton et al. 2005). According to the degree of specialization these fungi can be divided into fungicolous in a narrow sense (that can to develop solely on other fungi), facultative fungicolous fungi (prefer fungi, but can colonize other substrates), as well as polyphagous fungi (that may occur on different substrates, including fungi) (Arnold, 1971). Because of the unique biological characteristics and extraordinary taxonomic diversity, fungicolous fungi remain insufficiently studied in comparison with other ecological groups. According to Gams et al. (2004), at present, in total about 900 species of specialized fungicolous fungi are described, among which 643 are sporocarp-inhabiting (colonize fruit bodies of macromycetes). However, there is no doubt that their real species richness is much higher. During our expeditions to primeval beech and spruce forests of Ukrainian Carpathians (Carpathian Biosphere Reserve, Natural Reserve “Gorgany”, National Nature Park “Synevyr”, 2010–2012) more than a hundred species of sporocarp-inhabiting fungicolous fungi were identified. Among them there is a number of species rare at the European scale. The presence of unique records together with high rates of fungicolous fungi species richness and abundance in the studied forests, in comparison with other regions of Ukraine, makes them a “hot spot” of fungal diversity. We believe that this group of fungi in primeval beech and spruce forests of Ukrainian Carpathians is a very promising object for deep mycofloristic and environmental research.

Keywords: Fungicolous fungi, Biodiversity, Carpathians, Ukraine