

Diversity and Distribution Ecology of Coprophilous Mushrooms of Family Psathyrellaceae from Punjab, India

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Abstract : Mushrooms have shaped our environment in ways that we are only beginning to understand. The weather patterns, topography, flora and fauna of Punjab state in India create favorable growing conditions for thousands of species of mushrooms, but the complete region was unexplored when it comes to coprophilous mushrooms growing on herbivorous dung. Coprophilous mushrooms are the most specialized fungi ecologically, which germinate and grow directly on different types of animal dung or on manured soil. In the present work, the diversity of coprophilous mushrooms' of Family Psathyrellaceae of the order Agaricales is explored, their relationship to the human world is sketched out, and their supreme significance to life on this planet is revealed. During the investigation, different dung localities from 16 districts of Punjab state have been explored for the collection of material. The macroscopic features of the collected mushrooms were documented on the Field key. The hand cut sections of the various parts of carpophore, such as pileus, gills, stipe and the basidiospores details, were studied microscopically under different magnification. Various authentic publications were consulted for the identification of the investigated taxa. The classification, authentic names and synonyms of the investigated taxa are as per the latest version of Dictionary of Fungi and the MycoBank. The present work deals with the taxonomy of 81 collections belonging to 39 species spread over 05 coprophilous genera, namely Psathyrella, Panaeolus, Parasola, Coprinopsis, and Coprinellus of family Psathyrellaceae. In the text, the investigated taxa have been arranged as they appear in the key to the genera and species investigated. In this work, have been thoroughly examined for their macroscopic, microscopic, ecological, and chemical reaction details. The authors dig deeper to give indication of their ecology and the dung type where they can be obtained. Each taxon is accompanied by a detailed listing of its prominent features and an illustration with habitat photographs and line drawings of morphological and anatomical features. Taxa are organized as per their status in the keys, which allow easy recognition. All the taxa are compared with similar taxa. The study has shown that dung is an important substrate which serves as a favorable niche for the growth of a variety of mushrooms. This paper shows an insight what short-lived coprophilous mushrooms can teach us about sustaining life on earth!

Keywords : abundance, basidiomycota, biodiversity, seasonal availability, systematics

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