

CHAPTER 1

INTRODUCTION

Crustose discolichens are lichens, which are recognized by their disc-like ascocarp, and a thallus tightly attached to the substrate by the lower surface and therefore cannot be removed from it without destruction. Thallus is made up from algae and fungi lying in stratified layers (Büdel & Scheidegger, 1996, pp. 37-64). One group is characterized by a disc shaped and colored apothecium, with a margin containing algae called “lecanorine apothecium” (Rogers, 1982). If the margin of apothecia is without algae, it is called “lecideine or biatorine apothecium” (Lumbsch, 2004, pp. 11-12).

Ascospores of discolichens are vary variable in size, type and shape, some are simple others are transversely septate or muriform. Photobionts often belong to green algae, e.g. in the lichenized families of the Lecanorales (Poelt, 1973, pp. 599-631) as well as the Telochistales (Kirk, Cannon, David, & Stalpers, 2001).

Discolichens usually grow on bark, rock and other substrates and are distributed in various ecosystems ranging from tundra, temperate, desert to tropical zones (see Appendix A). The great variation of morphological structure, chemical compounds and the developmental stage (age) complicate the identification of species. The difficulties are to determine key characters and to overcome technical problems in observing morphological structures.

Recently, discolichens were classified into 4 order 29 families, 190 genera and 2,281 species which are distributed worldwide (Kirk et al., 2001).

The aims of this study were to assess taxonomy, diversity and distribution of discolichens at Phu Luang Wildlife Sanctuary (PLWS). All data provides the information for conservation and sustainable utilization of biodiversity resources in Thailand.

Objectives

The aims of the present study included:

1. Identifications and descriptions of discolichens at PLWS and their systematic arrangements in genera and families.
2. Record the occurrence of discolichens in various forest types at PLWS.
3. Construction of keys to genera and species of discolichens at PLWS.
4. Preserve the collected specimens in the herbarium for future references.

Hypothesis

Fourteen families, 21 genera and 48 species of discolichens were reported from Chiang Mai (Aptroot, Saipunkaew, Sipman, Sparrius, & Wolseley, 2007). In this study, due to intensive investigation of about 700

collections from PLWS more than 11 families, 15 genera and 50 species are expected. New records for Thailand and new species for science should be discovered. Specific species in each forest type were determined and used as bioindicator for the relevant forest type.

Word Definitions

Biatorine	A lecideine apothecium, which is soft-textured, and light-colored.
Crustose lichens	A crust-like thallus. A crustose thallus lacks a lower cortex and special holdfasts and is firmly attached to the substratum.
Apothecium	An ascoma, usually round, plate-like, or with a \pm flat, disc-like fruit, either round or elongate in which the hymenium is uncovered.
Lecanorine apothecium	An apothecium with a thalline margin (exciple) containing photobiont cells.
Lecideine apothecium	An apothecium with a proper margin (exciple) lacking photobiont cells.