

ไลเคนวงศ์เพอทูซารีเชียที่พบในเขตรักษาพันธุ์สัตว์ป่าภูหลวง จังหวัดเลย
**Pertusariaceae Lichens at Phu Luang Wildlife Sanctuary,
Loei Province**

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บทคัดย่อ

การศึกษาคความหลากหลายทางชีวภาพของไลเคนวงศ์เพอทูซารีเชีย (Pertusariaceae) ในเขตรักษาพันธุ์สัตว์ป่าภูหลวง จังหวัดเลย จากระบบนิเวศ 5 สภาพป่า ได้แก่ ป่าดิบชื้น ป่าดิบเขาต่ำ ป่าเต็งรัง ป่าไม้พุ่มและป่าเบญจพรรณ ระหว่างเดือนพฤศจิกายน 2551 – พฤศจิกายน 2552 พบไลเคนบนหินและพันธุ์ไม้ ทั้งหมด 158 ตัวอย่าง นำมาวิเคราะห์สกุลและชนิดตามหลักอนุกรมวิธาน ทราบชนิด 124 ตัวอย่าง สามารถจำแนกได้ 32 ชนิด และไม่ทราบชนิด 29 ตัวอย่าง คาดว่าจะเป็นชนิดใหม่ที่ยังไม่เคยมีการรายงานในประเทศไทย 4 ชนิด นอกจากนี้ยังพบตัวอย่างที่คาดว่าน่าจะเป็นชนิดใหม่ของการค้นพบทางวิทยาศาสตร์ 3 ชนิด โดยป่าเบญจพรรณพบความหลากหลายชนิดของไลเคนเพอทูซารีเชียเป็นจำนวนมาก

คำสำคัญ: เพอทูซารีเชีย, ไลเคนบนพันธุ์ไม้, ไลเคนบนหิน

Abstract

Study on biodiversity of corticolous and saxicolous lichens in the family Pertusariaceae at Phu Luang Wildlife Sanctuary of Loei Province from 5 ecoforest types, tropical rainforest, lower montane rainforest, dry dipterocarp forest, bush forest and mixed deciduous forest, during November 2008 - November 2009, were compiled totally 158 samples. Basically of taxonomy identifications of 124 samples were known 32 species and 29 unknown samples were identified for 4 new record species of science. However 3 species were expected to be new of the world. Mixed deciduous forest were found to plenty of lichens diversity of pertusarian taxa.

Key words: Pertusariaceae, corticolous, saxicolous

Introduction

Phu Luang Wildlife Sanctuary (PLWS) is located at 17° 3' longitude and 101° 16' latitude in the north-eastern part of Thailand. It covers an area of about 897 square kilometers with different elevations 400-1,500 meters above sea-level. The temperature were 10-15°C throughout the year. There are 7 forest types, bush forest, coniferous forest, dry dipterocarp forest, dry evergreen forest, hill evergreen forest, mixed deciduous forest and tropical rainforest in the area. The environment conditions promote flora and fauna diversity, particularly in the case of the orchid, rhododendrons, fern, mosses, liverworts and lichens. The Pertusariaceae are one cosmopolitan crustose lichens family which distribute in all five continents, Asia, Australia, Europe, North America and Africa (Archer, 2004). They adhered to rocks or barks and consist of

four genera, *Pertusaria* DC., *Ochrolechia* A. Massal., *Thamnochrolechia* Aptroot and Sipman. and *Varicellularia* Nyl. and more than 600 species (Archer,1997). The thalli may be thin or thick, dispersed or continuous and may range in colour from grey through greenish grey, white or greenish yellow to bright yellow. Isidia or soredia may present in thallus. Two types of apothecium are formed, disciform and verruciform. Disciform apothecia are much less frequently fertile than verruciform apothecia. The number, shape, size, ascospore arrangement in ascus as well as natural substances composition of thallus are important taxonomic characters (Jariangprasert, 2005). Recently, Aptroot reported new lichens from Chiang Mai of Pertusariaceae in 2 genera, *Ochrolechia* and *Pertusaria*, 8 species. Two taxa including *Pertusaria buloloensis* and *P.subventosa* were not recorded of 97 species of which Jariangprasert investigation in Thailand (Aptroot *et al.*, 2007), However this study is a performing at PLWS in order to compile the pertusarian genus and species and construct a local systematic key for Pertusariaceae lichen at PLWS.

Methodology

Lichen specimens were collected from 5 ecoforest types; bush forest, dry dipterocarp forest, lower montane rainforest, mixed deciduous forest and tropical rainforest and were identified in to genus species according to Archer, (2004), Jariangprasert (2005), Purvis (1992) and Zhao *et al.* (2004). Identification of lichen substances performs by spot test and thin layer chromatography. Thin layer chromatography were conducted with two standard solvent (A and G) system. solvent systems were prepared according to White and James (1985).

Result, Discussion and Conclusion

The preliminary study of 124 from 158 lichen collecting samples of the five ecoforest types at Num Jun, Phu Ho, Phu Khon, Lon Tae and Khok Nok Kraba Forest Ranger Station areas in Phu Luang Wildlife Sanctuary revealed 32 species, belonging to *Ochrolechia* and *Pertusaria* (Tab.1). From the field and laboratory investigation found that light intensity vegetation landscapes and altitude (600-1,500 m) of the study areas varied, hence taxa of lichen habitates (Nash III, 2008). The high diversity of taxa condensed in mixed deciduous forest and dry dipterocarp forest. However the pertusarian species in mixed deciduous forest were 17 species namely, *P. amara*, *P. ceylonica*, *P. cf. ceylonica*, *P. cf. subplanaica* var. *subplanaica*, *P. hermaka*, *P. heterochroa*, *P. krabiensis*, *P. leioplaca*, *P. leucostoma*, *P. mattogrossensis*, *P. pertusa*, *P. pertusella*, *P. radiata*, *P. ramuensis*, *P. scaberula*, *P. subplanaica* and *P. xylophyes* which greater than in dry dipterocarp forest (Fig.1). Since they produced fertile verruciform apothecia not isidia or soredia and protective chemical constitution of thalli for surviving in all circumstances (Archer, 1997). Then three taxa, *P. hermaka*, *P. heterochroa* and *P. leucostoma* of mixed deciduous forest and one taxon, *P. amarescens* of dry dipterocarp forest were found to be new record species of science (Wolseley *et al.*, 2002). The lowest diversity of lichen species were in lower montane rainforest including *P. archeri*, *P. velata* and common taxon

P. leioplaca. *P. velata* was normally found in the bush forest and dry dipterocarp forest, whereas *P. leioplaca* and *P. radiata* were commonly found in the mixed deciduous forest type. Besides of 124 lichen collecting samples, there are 29 specimens of 17 unknown taxa, which are expected to be new species of science.

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Tab. 1 The pertusarian lichens of 124 collecting samples from five forest types were found at PLWS.

Known species	number of specimens in forest type				
	BF	DDF	LMRF	MDF	TRF
<i>Ochrolechia androgyna</i>		3			
<i>Pertusaria amara</i>	1			2	
<i>P. amarescens</i>		3			
<i>P. angabangensis</i>					1
<i>P. archeri</i>			1		
<i>P. ceylonica</i>	1	1		2	
<i>P. cf. ceylonica</i>				1	
<i>P. cf. hypostictica</i>		1			2
<i>P. cf. moreliensis</i>	1				
<i>P. cf. psoromica</i>	2	1			
<i>P. cf. subplanaica</i> var. <i>subplanaica</i>				1	
<i>P. cf. uttaradittensis</i>		1			
<i>P. cicatricosa</i> var. <i>deficiencia</i>	1				
<i>P. hermaka</i>				1	
<i>P. heterochroa</i>				1	
<i>P. krabiensis</i>				1	
<i>P. leioplaca</i>	1	2	1	15	
<i>P. leucostoma</i>				7	
<i>P. mattogrossensis</i>				5	
<i>P. moreliensis</i>	1	5			1
<i>P. ophthalamiza</i>					1
<i>P. pertusa</i>				5	
<i>P. pertusella</i>				1	
<i>P. pilosula</i>					1
<i>P. radiata</i>		1		10	1
<i>P. ramuensis</i>		1		5	1
<i>P. scaberula</i>	4			2	
<i>P. subplanaica</i>				1	
<i>P. tetrathalamia</i>		1			1
<i>P. thwaitesii</i>					2
<i>P. velata</i>	9	8	1		
<i>P. xylophyes</i>				1	
Total	21	28	3	61	11

BF=bush forest, DDF= dry dipterocarp forest, LMRF=lower montane rainforest, MDF=mixed deciduous forest, TRF= tropical rainforest

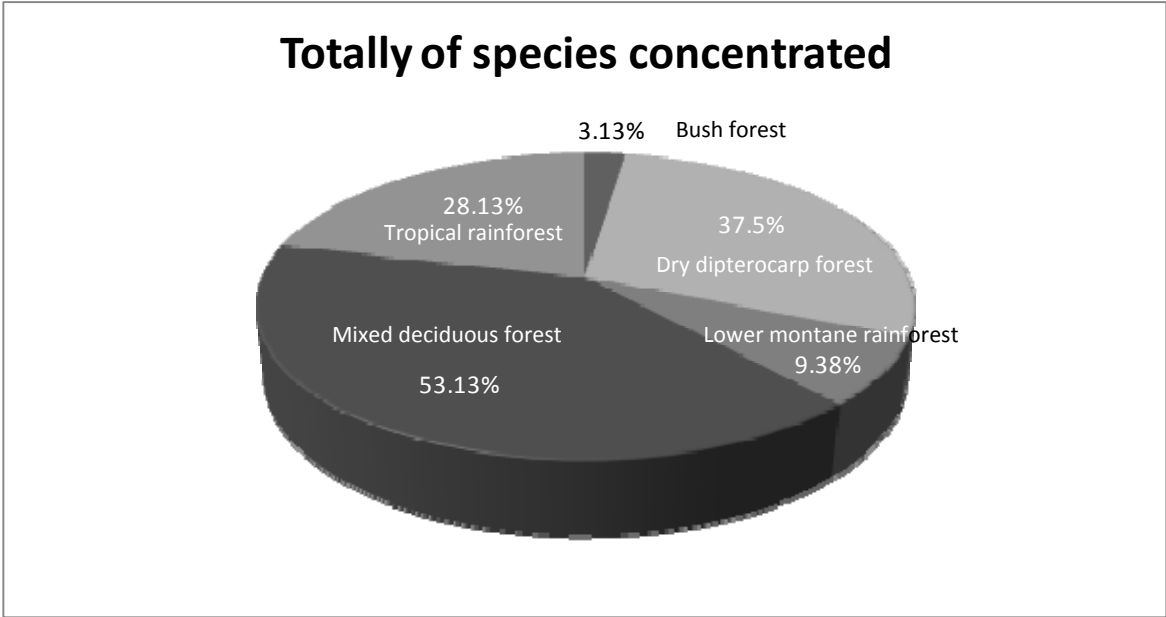


Fig. 1 The percentage of pertusarian taxa in each forest type