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เรื่อง Diversity of Araceae in the National Parks of Kanchanaburi, Chiang Mai and Kamphaeng Petch Province in Thailand

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Mini Review

## Diversity of Araceae in the National Parks of Kanchanaburi, Chiang Mai and Kamphaeng Petch Province in Thailand

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### Abstract

Araceae is a family of monocotyledonous plants and has been recorded first time since 1789 by A. L. de Jussieu [1]. Kew Science reported 159 genera 4,246 species followed the authorities of *Angiosperms phylogeny* group (APG IV) [2], instead of 140 genera 4,167 species [3]. Nevertheless, the Centers of Araceae had been reported 125 genera 3,750 species in 2011 [4], but the Global Biodiversity Information Facility has recently reported 3,959 species in more than 210 genera [5]. The accepted genera and species are still checked correctly by the taxon experts. Araceae in Thailand has been studied and reported by Bangkok Herbarium since 1921 [6]. In 2012, Flora of Thailand Journal, volume 12 reported 209 species in 76 genera, which did not still comprise the genus *Lemna*, *Najas* and *Selaginella* in subfamily Lemnaceae [7]. Nowadays, the record of Araceae diversity should be more than in 2012. Araceae is used for food, medicine, industry and decorative place by local people [8].

### Introduction

Diversity of Araceae were surveyed along the nature trails of four national parks in Kanchanaburi Province, western Thailand, Chalaemtratakosin National Park, Lamkhonggao and Su Yoi. The altitudes in these areas were not high, 150-700 m a.s.l. The forest types were deciduous dry evergreen forest (DDE) and mixed deciduous forest (MDF) [9, 10, 11]. Habitats of individual species in Chiang Mai Province, northern Thailand, Doi Inthanon, Doi Suthep-Pui and Mae Taeng were recorded during 2013 to 2018 [12, 13, 14]. From 2018-2019, Khlong Wang Chan and Khlong Lan National Park in Kamphaeng Petch Province, lower northern Thailand were surveyed [15, 16]. In 2012, Flora of Thailand Journal, volume 12 reported 209 species, 20 species of *Acorophthalis*, *Arisaema*, 6 species, *Rhaphidophora* 1 species, *Calceolaria* 2 species, *Alocasia*, *Lemna*, *Peltandra*, *Renealmia*, *Saurauitaceae* and *Typhonium* 2 species each, and found only one species each of *Aglaonema*, *Begonia*, *Haploche*, *Hemantaria*, *Lasia*, *Lesconesia*, *Schismatoglottis* and *Scindapsus* (Table 1).

### Discussion

In Kanchanaburi Province, 9 genera 24 species were found. We had reported all

Araceae only in Chalaemtratakosin National Park, but especially recorded the genus *Acorophthalis* in three national parks: Erawan, Lamkhonggao and Su Yoi. The altitudes in these areas were not high, 150-700 m a.s.l. The forest types were deciduous dry evergreen forest (DDE) and mixed deciduous forest (MDF) [9, 10, 11]. Habitats of individual species in Chiang Mai Province varied to the altitude and forest types. Thirty-five species in sixteen genera found at Doi Inthanon, Doi Suthep-Pui and Mae Taeng National parks, in elevation 300-2,565 m a.s.l. in moisture soil and along the rivers in DDE, MDF, dry evergreen forest (DEF), lower montane forest (LMF) and upper montane forest (UMF) [12, 13, 14]. In Kamphaeng Petch Province, we found 21 species in 16 genera, at 200-300 m a.s.l. in KWP and DWP of Khlong Wang Chan and Khlong Lan National Park [15, 16]. Habit and life form of Araceae [17] were also reported. We found 16 species in 11 genera were evergreen, growing all year. The deciduous 35 species were in 9 genera (Table 1). Life forms of 42 species were geophyte (terrestrial) with underground storage organ, rhizome or tuber. One species, *Renealmia holosericea* was also epiphyte (climbing on tree) and six species were also liophyte (grow or climbing on the rock), *Alocasia acuminata*, *Acorophthalis longistylis*, *A. macrocarpa*, *A. umbrosericea*, *Calceolaria fallax*, *Hemantaria aromatica* (Table 1). Four species were hyllophyte (grow in marshy ground), *Calceolaria maculata* and *Lemna sp.* were found along the rivers, but *Renealmia pumila* and *Schismatoglottis rotundata* were helophyte and also liophyte, found only on the rock along the water-fall. Two *Lemna* species were hyllophyte (aquatic plant), floating in the basin along the rivers (Table 1). Four *Rhaphidophora* species were evergreen, epiphyte and/or liophyte. Another climbing species, *Scindapsus obtusiloba* was found only in the rainy season in only wetter, creeping on the ground, climbing on the tree or rock (geophyte, epiphyte and liophyte). Almost Araceae in our studies grew in deciduous forest and had the dormancy stage in the arid season. While the climbing species need high relative humidity in habitats along the rivers.

Ecological study was reported to species index with highest values in the rainy season. The importance value index of most species found in the rainy season, but many species were disappeared in the winter and summer after the dormant stage [9-16]. The seasonal change in most areas were the same. Almost species grow well in the rainy season. It rained hardly and

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