

Vegetation and Vascular Flora of Doi Sutep–Pui National Park, Northern Thailand

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Cover: *Dipterocarpus costatus* Gaertn. f. (Dipterocarpaceae) is one of the most obvious a spectacular indicator species of mixed evergreen + deciduous, seasonal, hardwood forest northern Thailand. In Doi Sutep-Pui National Park it is found from 500 to 1150 m elevation. It flowers from December to February, fruits during May-August, and is evergreen. Photo: Warr Brockelman, east side of Doi Sutep, along the road to Montatahn Falls, c. 700 m, April 1997.

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Abstract

Many systems of forest classification have been proposed for Thailand, but almost all are impractical because of their complexity, botanical inconsistency and/or impracticability, incredibility, or ecological unsuitability. A new system is proposed in which seasonality, vegetational structure, floristic composition, and elevation are the salient parameters. The original interpretation of rain forest as ever-wet forest is adopted here; thus because of seasonality throughout Thailand, rain forests are not considered to exist in the kingdom. The results of a 13 year study of the flora and vegetation in Doi Sutep-Pui National Park are highlighted in order to explain and give credibility to the forest types of northern Thailand which are the most complex and diverse in the country.

There are two basic forest types in Thailand, *viz.* deciduous and evergreen. Deciduous forests, especially in northern Thailand, are found from sea level to *c.* 850 m. Evergreen forests can be found from sea level to 2231 m—the highest point in Thailand. The dry season in northern, central, and north-eastern Thailand lasts from about November to May, while in the peninsula it lasts for 4–8 weeks during March–May. There is a mixed evergreen + deciduous, seasonal forest in some lowland forested areas from *c.* sea level to *c.* 850 m, while in northern Thailand it is from *c.* 850 to 1000 m. Above 1000 m is primary, evergreen, seasonal forest. The two species of pine found in Thailand can be found from about 600 to 1800 m in northern Thailand and from lower than 100 m in the Northeast. Forest destruction along with fires in the dry season have resulted in secondary and tertiary growth throughout the country.

An annotated enumeration of 2247 species, *etc.* of vascular plants found in the national park is given. The compilation includes habit, habitat, forest type, elevation, abundance, and flowering, fruiting, and leafing phenologies.

At least 512 species, *etc.* of vascular plants have been described during the past *c.* 90 years, that is since the first botanists started collecting, from the national park—the most from any single locale in Thailand. The enumeration includes 457 of these species while 55 were not rediscovered. Forest destruction and excessive exploitation are the main reasons why 55 of these new species, in addition to several other species recorded earlier, have become either very rare or extirpated from the national park.

One new species (since synonymized), two new combinations, and new records of one family, two genera, and 14 species are given here, along with emended descriptions/taxonomic notes on 13 species based on specimens collected during this reasearch in the national park.

Conservation of diminished biodiversity in the national park is discussed where various aspects of exploitation, *e.g.* deforestation, 'development,' fire, hunting, *etc.* are highlighted. Reforestation, an essential part of alleviating and rehabilitating the vast amount of environmental destruction which has occurred in the national park, is also included.