Kazuhiko OGINO*: Human influence on the occurrence of deciduous forest vegetation in Thailand

In the present paper the writer wishes to discuss human influences on the occurrence of deciduous forest vegetation in Thailand. A full paper on this subject was given in OGINO (1976).

The dominant vegetation is high forest of various types. Evergreen forests predominate in the humid regions. As the environment becomes drier, the more deciduous elements appear. In the humid regions the canopies are made up of closely packed multi-storied crowns, in the drier regions loosely packed, open and single storied.

According to the forest classification given by the Royal Forest Department, forest vegetation in Thailand is divided into three categories, i.e. (A) Evergreen Forest, (B) Deciduous Forest and (C) Others. In category (A), Tropical Evergreen Forest, Dry Evergreen Forest, Hill Evergreen Forest, Coniferous Forest and Mangrove are included. (B) is subdivided into Mixed Deciduous Forest and Deciduous Dipterocarp Forest. (C) involves Beach Forest and Swamp Forest.

The difference of mean annual temperature by location is not very great. Generally speaking, isotherms show a lateral pattern from north to south. There seems to be little relationship between the isotherm pattern and vegetation distribution. Humidity is undoubtedly the more important factor influential in vegetation distribution. Annual precipitation distribution roughly corresponds to the vegetation map, although contradictions are seen in details.

Incorporating soil water conditions in humidity, the length of humid season is calculated through Thornwaite’s method. And it is found that tropical evergreen forest prevails in those area where the humid season exceeds 8 months, dry evergreen 6–8 months, mixed deciduous 4–8 months. Deciduous dipterocarp forest appears even in those area where humid season is less than 4 months. The lines representing 8, 6, and 4 months seem to give the lower limits of tropical evergreen, dry evergreen and mixed deciduous forest, respectively. Deciduous dipterocarp forest undoubtedly tolerates such arid conditions as humid season of less than 4 months.

On the frequency distribution in terms of area ratio of each type under certain humidity to total land, the mode of the tropical evergreen forest appears in the most humid region. It seems curious that the mode of other forests occurs simultaneously in the range of 6–8 months of humid season duration.

Comparing the population density with vegetation, we may notice very interesting

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the fact that in those areas where population is fairly high deciduous dipterocarp forest occurs, even where humidity is high. In order to examine the effects of high population density on vegetation, the frequency distribution of forest vegetation against population density was plotted (Ogino, 1976: fig. 10). Tropical evergreen, dry evergreen, mixed deciduous and hill evergreen forests tend to occur in areas of low population, while cultivated land and deciduous dipterocarp forest occur in areas of high population. Population density of 50 per km$^2$ seems critical to this vegetation change.

Vegetation subject to human disturbance is dominated by either cultivated land or deciduous dipterocarp forest. The former appears in slightly drier regions than the latter. Apparently the top of the distribution curve of deciduous dipterocarp forest moves from drier regions to more humid regions with increase of human population. The influence of human activities obviously affects the distribution of the vegetation types.

References


Yoshikazu Takaya*: Thailand as divided into land systems

高谷好一：タイ国の地形と植生

A geological survey was given for Central Plain in Thailand. Comparing with the topography and geology on a variety of maps prepared, the vegetation and several representative species were discussed mostly based on the description given in Ogawa, H. et al.: A preliminary survey on the vegetation of Thailand, Nature and Life in Southeast Asia Vol. 1. 1961.

Bertel Hansen**: The Genus Xyris in Thailand and Indochina.

バーテル ハンセン：タイとインドシナのトウエンソウ属

$Xyris$ belongs in its own family, Xyridaceae and has about 270 species in tropical Asia, Australia, Africa and America. In a recent revision for the Flora of Thailand and Flore du Cambodge du Laos et du Vietnam I recognize 12 species on the Indochinese

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