Somnuk Promdang 2007: Comparative and Phytochemical Analysis of *Aglaia* (Meliaceae) in Trat Agroforestry Research Station, Trat Province. Master of Science (Botany), Major Field: Botany, Department of Botany. Thesis Advisor: Assistant Professor Srunya Vajrodaya, Dr.rer.nat. 187 pages.

Diversity and comparative phytochemical study of *Aglaia* species in Trat Agroforestry Research Station, Trat province had been investigated during August 2005-December 2006 by using classical taxonomy and chromatographic techniques with different plant parts, i.e. leaves, stem bark and root bark of *Aglaia* species. It was found that there are five *Aglaia* species i.e *A. elaeagnoidea* (A. Juss.) Benth., *A. grandis* Korth. ex Miq., *A. leptantha* Miq., *A. silvestris* (M. Roemer) Merrill and *A. spectabilis* (Miq.) Jain & Bennet. From Thin Layer Chromatography (TLC), chemical profiles of alkaloids in lipophilic extracts from stem bark and root bark of *A. elaeagnoidea* , leaves, stem bark and root bark of *A. grandis* and leaves and root bark of *A. leptantha* could be detected as well as terpenoids in lipophilic extract from leaves, stem bark and root bark of all five *Aglaia* species. The High Performance Liquid Chromatography (HPLC) profiles of stem bark and root bark from each individual of all *Aglaia* species are similar, but different from leaves. The HPLC profiles from the same plant parts (leaves, stem bark and root bark) of all *Aglaia* species are different as well as the results from TLC profiles. Hence, these chemical profiles can be used as chemotaxonomic evidences in order to support the classical taxonomy of these five *Aglaia* species. By using Medium Pressure Liquid Chromatography (MPLC), furofuran lignan, yangambin was isolated from stem bark of *A. leptantha* and the novel triterpenoid with aldehyde functional group, aglaterpenal, was isolated from the stem bark of *A. silvestris*. Both chemical structures were elucidated through extensive analyses of their UV, FT-IR, MS, ^{1}H, ^{13}C NMR spectral, especially 1-D and 2-D NMR.

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