CHAPTER 1

INTRODUCTION

Hoya R.Br. is a genus of the Milkweed family, Asclepiadaceae. Hoyas are found in Asian region from Northern Australia to China. It is easily recognized from other climbing epiphyte with opposite leaves by having milky sap in all parts with rather thick and fleshy leaves, flowers in umbelliform, and with star-shaped corona. The genus consists of some 70 Indo-Malayan species (Mabbery, 1997). Of these, *Hoya parasitica* is one of the most common members of the section *Euhoya* (Hooker, 1883). The inflorescences are negatively geotropic. The corolla is glabrous, coronal scale ovate-lanceolate with acute apex (Rintz, 1978). It is the most complicated species due to their morphological variations in leaf form, venation, and flower, especially the coronal scale. Its variations have led to the complexity of botanical names.

Recently, three varieties were recognized for *Hoya parasitica* (Roxb.) Wall. ex Wight. Firstly, *Hoya parasitica* var. *parasitica* which is a relatively widespread variety, occurring from E. India-Assam through Myanmar, Thailand, Indo-china, Malay Peninsula, and Sumatra to N. Borneo. The second variety, *Hoya parasitica* (Roxb.) Wall. ex Wight var. *citrina* (Ridl.) Rintz is naturally in peninsular Thailand, Malaysia, and Singapore. Thirdly, *Hoya parasitica* (Roxb.) Wall. ex Wight var. *hendersonii* Kiew is an endemic variety to Malaysia (Rintz, 1978; Kiew, 1995).

According to Kiew (1995), these three varieties can be distinguished from each other by leaf characters and habitats. *Hoya parasitica* (Roxb.) Wall. ex Wight var. *parasitica* has elliptic leaf, cuneate base, obscure veins and lowest basal vein-pair extending about halfway to apex. While the other two varieties have ovate leaf with slightly cordate base, conspicuous veins and the lowest basal vein-pair extending to apex. With regard to habitat, the var. *hendersonii* grows in lower montane forest, about 1,200 m above sea level while the other two are lowland varieties. The variety *parasitica* is common in strand forest, especially on the islands and the var. *citrina* is common on limestone and sometimes occurs in riverine fringe (Kiew, 1995). It was

noted that some closely related species such as *H. rigida* Kerr and *H. ridleyi* King & Gamble may be belonged to *H. parastica* species as well (Veldkamp et. al, 1995).

The first recorded taxonomic account of the genus *Hoya* in Thailand was in Flora Siamensis Enumeratio (Kerr, 1951). Most of the studied specimens were collected during the 1920s. Kerr (1951) suggested that *H. parasitica* (Roxb.) Wall. ex Wight is a very variable species. The variations included texture, shape, size and venation of leaves, the size of the flower and shape of the corolla lobe. Since then, there has been no further intensive investigation on this plant group. This probably due to lack of special interest and difficulty in identification. So this genus has never been studied for a long time. Presently, the genus *Hoya* is being studied for the Flora of Thailand Project, there are probably more than 36 species of *Hoya* in Thailand (Thaithong, 1995). Of these, *Hoya parasitica* s.l. is the most common species and widely distributed. It is found throughout the country from lowland to mid-altitude forests, such as mangrove, deciduous and evergreen forests. This species is extremely variable in leaf and flower forms. It seems likely that this group of taxa should be a complex species (Thaithong, 1995). Moreover, previously distinct species, *H. ridleyi* and *H. rigida* have been taxonomically confused with *H. parasitica* sensu lato. *H. ridleyi* King & Gamble is found in peninsular Thailand (Ridley, 1923), and was recognized as *H. parasitica* (Roxb.) Wall. ex Wight var. *parasitica* by Rintz (1978). Then, Veldkamp et.al. (1995) suggested that *H. rigida* Kerr, an endemic species to Thailand, may be included in *H. parasitica* s.l.

From the above mentioned informations indicate that this species was not clearly distinguished among interspecific and infraspecific taxa. Moreover, the naturally growing species in Thailand presents highly variations of both vegetative and reproductive morphology as well as their habitats. These variations do not match properly with the infraspecific taxa that were recognized earlier. The taxonomic status of "*H. parasitica* complex" in Thailand is still doubtful and need to be investigated.

Aim of the thesis

This thesis aims to investigate morphological, anatomical, palynological and molecular variations of the "*H. parasitica* complex" in Thailand as criteria for determining taxonomic status of this taxon in Thailand.