

## CHAPTER 1

### INTRODUCTION



With present socioeconomic circumstances, Thai people are more susceptible to get depressed or stressed. Thus, the prescription of the tranquilizer for patients who are suffered from these symptoms is quite common eventhough the drug is expensive and imported product. Thus, the development of the local medicinal plants to replacé this drug will impose a great benefit to the people and the country.

*Cassia siamea*, Lamk. plant is a shrub grown only in tropical areas. It is classified in the Genus *Cassia*, Family Leguminosae. This plants is approximately 8-9 metres in height. Its leaves have a pinnate type with 7-10 pairs of leaflets and 3-4 cm. in length. The flowers are yellow and have long spike. Its pod has a flat shape and 20-30 cm. in length (Figure 1; Larsen, 1977 and Pongboonrod, 1981). In Thailand, it is commonly found in all parts of the country, but has different local names depending on the growing areas. In the central part, it is called "Khi-lek-loung" or "Khi-lek", in the north it is called "Khi-lek-ban" and in the south it is called "Ya-ha".

Flowers and young leaves of *Cassia siamea*, Lamk. have been used as a vegetable in many countries e.g. Thailand, Burma, India, Malaysia (Chaichantipyuth , 1979) and different parts of the plant have been used for various medicinal purposes. For example, the root is used as an antipyretic for fever, the bark is used to treat skin diseases and haemorrhoids, while the leaves are used in the treatment of constipation, diabetes, hypertension and insomnia, and the flowers for the treatment of insomnia and asthma (Satyavati et al., 1979; Mokasmit, 1981; Kinghorn and Balandrin, 1992). The preparation recommended in primary health care to treat insomnia is an aqueous extract of fresh or dried leaves. The crude extract obtained from the leaves and flowers of Khi-lek was found to produce the same effect in experimental animals and volunteer patients. In the animals, it reduced activity, and sedated them but didn't induce sleep, and in the volunteer patients, it helped them sleep for a longer time (Arunlukshana, 1949). The pharmacological property of Khi-lek has been shown to be the same as that

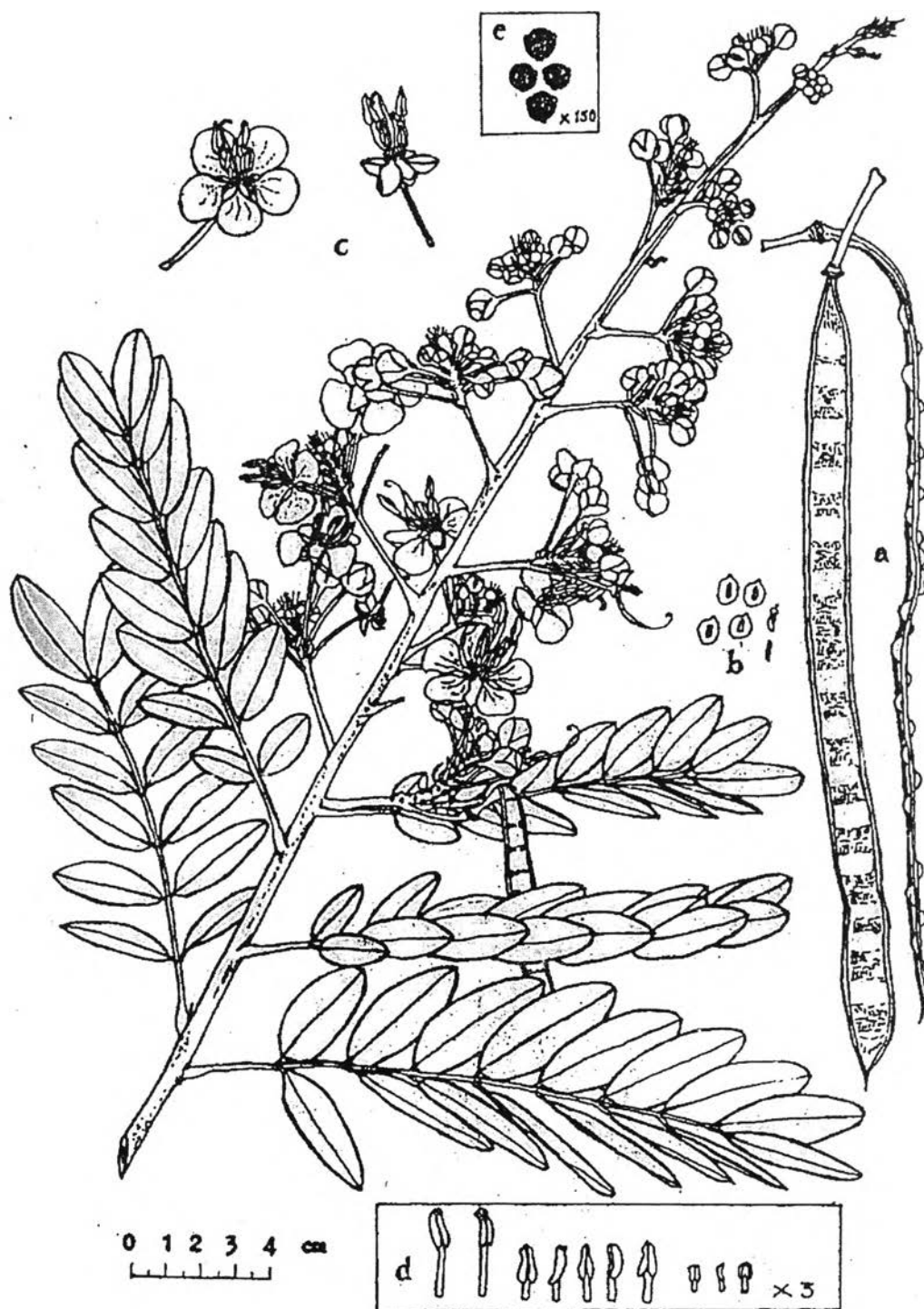


Figure 1 Detailed drawing of several parts of *Cassia siamea*, Lamk.

- a. pods      b. seeds      c. flower      d. stamens  
e. pollens under microscope

of tranquilizer drugs and can be developed for use clinically. And now there are many companies producing dried young leaves of Khi-lek in tablet form for sale in market for treating insomnia and for use as an antidepressant. In this form its quality and effectiveness cannot be controlled.

At the present time, the mechanism of action of the active ingredient from Khi-lek is not known, but earlier reports show that it can act on dopamine or serotonin in the brain. So, if we can prove that, the active ingredient from Khi-lek acts to change dopamine or serotonin contents in the central nervous system the basic mechanism of active ingredient from Khi-lek will be known, and thus open the door to further study on the development of this herbal medicine as a clinically useful drug.