



CHAPTER I

INTRODUCTION

Cassia is the largest genus of subfamily Caesalpiinoideae which are distributed in tropical and warm temperature region in form of trees, shrubs and herbs (1). Most species of Cassia have been used for laxative and cathartic properties which are due to the presence of anthraquinone compounds (2,3). Other medicinal uses of this genus have been reported such as treatments of ringworms, scabies, *Tinia versicolor*, herpes, measles, malaria, Black water fever, conjunctivitis gonorrhoea "Fugan", stomachache and diarrhea. Treatments of insect bites and itching have been reported either (4).

Chemical investigations of Cassia have been reported isolation of many types of chemical compounds e.g. anthraquinones (5), alkaloids (6), chromone (7), flavonoids (8-9), sterols (10), etc. Mostly anthraquinones and flavonoids are found in this genus.

Cassia spectabilis DC. [*C. humboldtiana* DC. ; *C. speciosa* H.B.K. ; *C. trinitatis* Reichb. ex. DC. (11) ; *Pseudocassia spectabilis* Britt. et Rose (12)].

C. spectabilis DC. has Thai names as "Khi-lek-american" or "Suwannaphruk" (13).

Cassia spectabilis DC. is a small tree up to 7m high with long, spreading leafy branches; young parts softly pubescent. Leaves with 10-15 pairs of leaflets. Petioles 3-4 cm, rhachis 20-30 cm. Stipules linear, falcate, early caducous, 1 cm long. Leaflets with short petiolule, narrow elliptic 3-7 by 1-2 cm, base rounded, apex acute, mucronate; upper surface glabrous, lower finely appressed pubescent. Inflorescences large, terminal, leafy panicles, 20-30 cm. Bracts ovate, 4-5 mm long, caducous. Pedicels 2-3 cm, velutinous. Sepals unequal, 2 outer pubescent, 3 inner glabrous, larger, 5-7 mm long. Petals yellow, spatulate, short-clawed, the lower one larger, broad falcate, 2-2.5 mm long. Stamens 10; 7 large with filaments 2-3 cm long, anthers opening by apical pores and a slit; reduced stamens 3, with reniform anthers much smaller. Ovary glabrous, recurved; style and stigma inconspicuous. Pods + terete glabrous, glossy, black, annulate septate, 18-25 by 1 cm. Seeds 50-70, suborbicular, pointed at one end, 5 mm diam; septa papery (13) (Figure 1, page 3).

C. spectabilis DC. was introduced into Thailand as an ornamental plant, according to its showy yellow flowers. Insecticidal properties of this plant had been reported (14). Chemical investigations of this plant was reported the presences of alkaloids in leaves, stems (15, 16, 17) and in seeds (18); anthraquinones and sterols in leaves and stem (15); fatty acid in seeds (19) and of flavone glycoside in seeds (20). In the flowers of *C. spectabilis* DC. were reported the presence of alkaloids which are unknown alkaloids (21). Alkaloids, from which were found in *C. spectabilis* DC., can be classified as "3-piperidinol alkaloids".



Figure 1. *Cassia spectabilis*

a. pods, b. seeds, c. stemens, d. pollens under microscope

Hence the objective of this investigation is to carry out with extraction, isolation and elucidation of chemical constituents; especially alkaloids; in the flowers of *Cassia spectabilis* DC., in order to contribute the knowledge of constituent containing in this plant and to search for compounds that might exert biological activity. Moreover it might provide some informations which enable explane concerning the alkaloid distribution and the chemotaxonomic relation among the alkaloids.