

## CHAPTER I

### INTRODUCTION



#### BOTANICAL DESCRIPTION

*Aglaiia chittagonga* Miq. is a medium size tree belonging to the genus *Aglaiia* of the family Meliaceae. The plant can grow up to 7-10 m. Its twigs are gray and longitudinally wrinkled, with numerous to densely covered with large ( up to 0.3 mm in diameter), very pale orange brown peltate scales. The leaves are imparipinnate, up to 30 cm long and 35 cm wide, obovate in outline. The member of leaflets are 5-7 with the lateral leaflets subopposite. Its leaves, petiole, rachis and petiolules are covered with numerous to dense scales like those on the twigs.

The inflorescence are 7-9.5 cm long, 8cm. wide, while the peduncles are 2-10 mm long. The flowers are 2-3 mm long, 1.5-3 mm wide with 0.5-2mm pedicel. The pedicel and calyx are also covered with numerous or dense scales like those on the twigs.

The fruits of this plant are 2.5 cm long and 1.5 cm wide ellipsoid, indehiscent and densely covered on the outside with very pale orange-brown scales, which many have a fimbriate margin. Each fruit has 2 locules, each locule containing 0 or 1 seed which is surrounded by an edible aril (Pannell, 1992) (Figure 1).

The plants can be found in Bangladesh (Chittagong) and Thailand (Pannell, 1992).

## ETHNOMEDICAL USES OF AGLAIA SPECIES

Several species in the genus *Aglaiia* have been used ethnomedically in many countries, for example:

The leaves and twigs of *Aglaiia odorata* Lour., known as Shu-Lan in Chinese folklore, are used as a herbal remedy for treatment of human cough, inflammation and traumatic injury (Hayashi *et al.*, 1982). In Thailand, the same plant is traditionally prescribed as a heart stimulant febrifuge and as an expectorant (Janprasert *et al.*, 1993).

The roots and leaves of a Thai plant "Kang-Kao" (*Aglaiia piriifera* Hance.) widely distributed in the central and northeast regions, are used to induce vomiting and are useful antidotes for poisoning (Saifah, Jongbunprasert and Kelly, 1988).

*Aglaiia roxburghiana* Miq. used as a drug in the traditional systems of medicine in India, has been reported to possess a number of pharmacological properties such as diuretic, abortifacient, antileprosy, antitumour, antidysentery and is also efficacious in a variety of other ailments ( Vishnoi, Shoeb and Kapil, 1988 ). There is no report on ethnomedical use of *Aglaiia chittagonga* Miq.

Phytochemical studies of plants in genus *Agala* have been reported to possess interesting chemical constituents. Several terpenoids and alkaloids were found, some of which have shown antileukemic (Hayashi *et al.*, 1982); (Duh *et al.*, 1993) ; (Saifah *et al.*, 1993) and antiviral activity (Joshi *et al.*, 1987).

The alkaloids found in several species of the genus *Aglaiia* are bisamides in nature. These very characteristic bisamides of *Aglaiia* species, together with their more widely distributed triterpenes and lignans, significantly contribute to the chemotaxonomic classification of these plants.

It is the purpose of this investigation to study the nature of the compounds in the leaves of *Aglaiia chittagonga* Miq., which might serve as an additional information on the chemical nature of this family, providing a valuable chemotaxonomic lead.