

CHAPTER 1

INTRODUCTION

The genus *Argostemma* Wall. is a rather large genus in family Rubiaceae, subfamily Rubioideae, tribe *Argostemmatae* (Robbrecht, 1988). They are all perennial herbs. The genus comprises about 100 species (Mabberley, 1987), confined to the South-East Asia but two species occur in tropical West Africa (Sridith & Puff, 2001).

The taxonomic status of the genus *Argostemma* has been questioned, whether it should be divided into the infrageneric taxa or not, due to the morphological differences in growth habits; corolla shape; fusion of the stamens etc. Ridley (1927); Bakhuizen van den Brink, Jr. (1953) and Schumann (1981) have further subdivided the genus based on vegetative characters and floral features in the past. However, none of these infrageneric classifications seem satisfactory, and all of them appear to be highly artificial later (Sridith, 1999^b). According to the floral morphology, two major types of corolla shapes are recognized due to the different proportions between corolla tube and corolla lobe length, e.g. bell-shaped and star-shaped corolla (Sridith & Puff, 2001).

Besides morphological evidences, the chromosome characters are also useful sources of comparative data in taxonomy, due to the fact that these structures contain the genetic material which is responsible for maintaining reproductive barriers and the integrity of species and other taxa (Stuessy, 1989). The cytotaxonomy can be usefully considered under three headings: chromosome numbers, chromosome

structure and chromosome behaviour. The number of chromosomes is as important as the number of carpels (Stace, 1989). The structure or shape of chromosomes is to be considered in the same way as the shape of leaves or petals. The pairing behaviour of chromosomes at meiosis is determined in which governs the level of fertility of hybrids and hence the breeding behaviour and pattern of variation of populations (Stace, 1989).

There are few cytological works on the genus *Argostemma*. The only six species showed different numbers of chromosomes in the genus (Mangenot & Mangenot, 1962; Khoshoo & Bhatia, 1963; Hellmayr *et al.*, 1994; Kiehn, 1996; Puangsomlee & Puff, 2001). Nevertheless, more karyological works are still needed in order to get the information on numbers and shapes of chromosomes of all representatives of each morphological group. Since the karyological information together with other morphological data may lead to the understanding of how “good genus” *Argostemma* Wall. is.

Objective

To study chromosome numbers from somatic and germ-line cells of selected *Argostemma* spp. in Thailand.