

# A CONTRIBUTION TO THE EMBRYOLOGY OF BOMBACACEÆ

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THE Bombacaceæ with 20 genera and about 140 species (Willis, 1948) is treated by Bentham and Hooker (1862-83) as a tribe of Malvaceæ due to the presence of common characteristics like the large showy flowers, epicalyx, corolla with contorted æstivation and monothealous anthers. Engler and Prantl (1895), on the other hand, raised it to the rank of a family on account of the predominantly arborescent habit of its members and the presence of smooth-walled pollen grains. The present study was undertaken with a view to elucidate how far the embryological characters justify such a separation.

The previous embryological work in the family is meagre. Thirumalachar and Khan (1941) and Banerji (1942) studied the development of the female gametophyte and floss in *Eriodendron anfractuosum* DC. and *Bombax malabaricum* DC. respectively. Their observations can be summarised thus: The ovules in both species are crassinucellate, anatropous and bitegmic and show a zigzag micropyle. Usually a single hypodermal archesporial cell functions. Megaspore tetrads are linear in *Bombax* and T-shaped in *Eriodendron*. The chalazal megaspore functions and forms the 8-nucleate embryo-sac. The antipodals are ephemeral and in *Eriodendron*, they are said to degenerate even before the egg apparatus is organised. The polar nuclei fuse before fertilization. The case of an embryo-sac with reversed polarity was recorded in *Eriodendron anfractuosum*. In both species studied, the epidermal cells of the inside wall of the loculus develop into floss. In *Eriodendron*, the nucleus of the epidermal cell divides once mitotically before the cell begins to elongate.

There is no previous account of microsporogenesis, pollen grains, fertilization, embryo and seed development in the family.

This paper deals with the development and structure of the anther and pollen, ovule and embryo-sac in the following members of the family: *Eriodendron anfractuosum* DC., *Bombax malabaricum* DC., *Pachira aquatica* Aubl., *P. rosea*, *Adansonia digitata* L., *Ochroma lagopus* Sw. and fertilization,