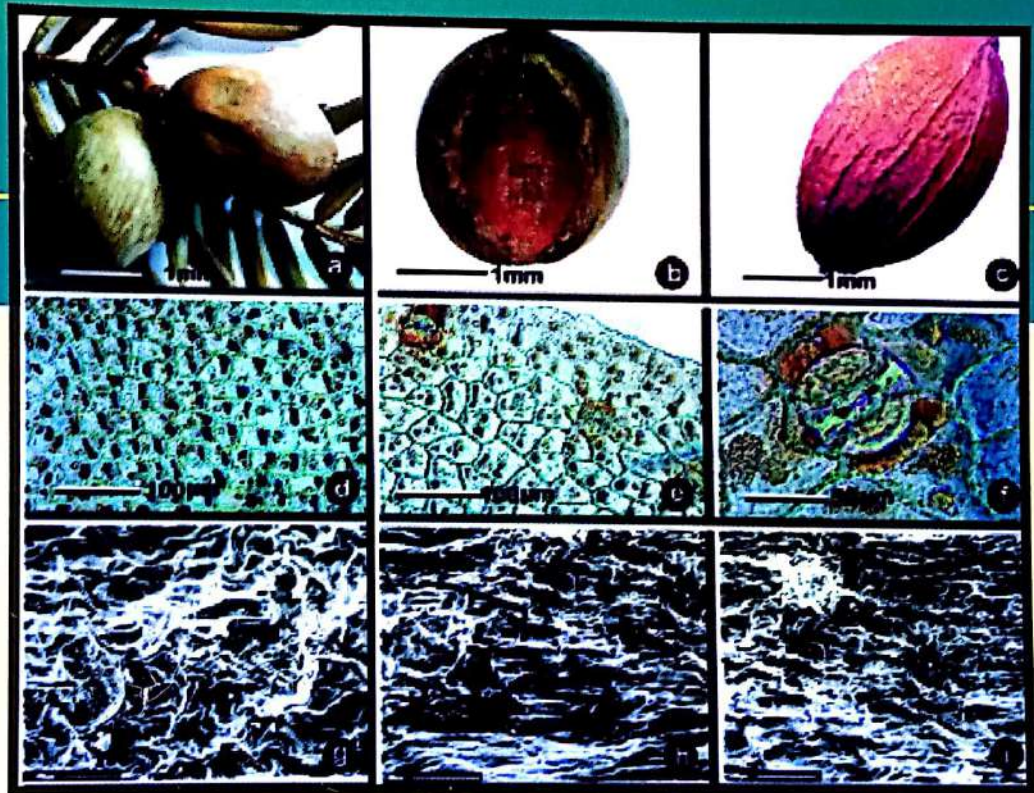


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## Application of seedling morphology as a potential taxonomic tool in the study of four members of the Indian Annonaceae

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Taxonomic study of seedling morphology has been emphasized from an elaborate investigation of four members of the family Annonaceae viz. *Annona muricata* L., *Annona reticulata* L., *Artabotrys hexapetalus* (L.f.) Bhandari, *Polyalthia longifolia* (Sonn.) Thwaites. Of the four investigated taxa, each one represent a specific *seedling type*, and thus four distinct seedling types have been recognized on the basis of germination pattern, which include crypto-epigeal, phanero-epigeal, crypto-hypogeal, and crypto-geal type. The investigated seedlings were characterized using standard terminology. Some diagnostic morphological features of seedlings have been screened out and used in the development of an artificial key for identification of the concerned taxa some of which include the seedling type; nature of cotyledons; presence or absence of cataphylls; phyllotaxy, shape, venation pattern of both paracotyledons, first two leaves and subsequent leaves. These seedling morphological data of the investigated taxa can be correlated with some other botanical disciplines in deducing taxonomic affinity.

**Key words:** Annonaceae, seedling morphology, germination pattern, seedling types, identification.

### INTRODUCTION

Annonaceae are large pantropical family of aromatic shrubs, trees, and lianas, consisting of *ca.* 130 genera and 2300 species, being the largest family of the Magnoliales, with about three-fourths taxa of the order (Cronquist, 1981). It is generally considered to be a natural family and basally positioned in the

mesangiosperms. The family gain prior attention of the botanist due to its high morphological variability and phylogenetic position and as such represent a significant part in plant diversity, both in terms of number of species and individuals (Xu and De Craene, 2010). Different workers have worked on this family based on molecular data (e.g. Doyle *et al.*, 2004; Pirie *et al.*, 2007), floral morphology (e.g. Scharaschkin and Doyle,