A PRELIMINARY ANATOMICAL AND MORPHOLOGICAL STUDY OF THE GENUS *MESUA* IN SRI LANKA: A TAXONOMIC APPROACH

E.G.D. PRIYANGANI, D.M.D. YAKANDAWALA AND I.A.U.N. GUNATILLEKE

Department of Botany, Faculty of Science, University of Peradeniya

*Mesua* L. is an important plant genus in Sri Lanka belonging to the family Clusiaceae. The different taxonomic treatments of the genus have made the identity and the nomenclature of the species belonging to this taxa very complicated. Early taxonomic treatments of the genus *Mesua* recognized *Kayea* species under the genus *Kayea*, while later work recognized it under the genus *Mesua*. In the past, taxa were delineated mostly based on morphological treatments. Recent work has come up with a different circumscription for *Mesua*. Due to these ambiguities, the present study concentrated on the morphological and anatomical characters to evaluate the species limits of the genus *Mesua* in Sri Lanka.

Specimens for study were collected mainly from the natural forests and a few from cultivated sites. Detailed morphological studies were carried out in the laboratory using fresh specimens of leaves, flowers and fruits. Leaf venation was examined after clearing leaf samples. Anatomical studies of leaf and wood were carried out by obtaining thin microtome sections.

Several morphological and anatomical differences were observed among the different species of *Mesua* during this study; specially between *Mesua stylosa* and other *Mesua* species. *Mesua stylosa* has ovate-lanceolate shape leaves with the shortest leaf length and width compared to the others. The inflorescence of *M. stylosa* is a raceme with numerous small, stalked florets. In contrast, considerably large individual flowers are present in *M. ferrea* and 2-6 large, sessile flower inflorescences in *M. thwaitesii*. The stigma of *M. stylosa* is punctate while that in *M. ferrea* is expanded. In addition, the small and woody fruit of *M. stylosa* was covered by enlarged sepals and has a prominent persistent style. This type of fruit was not observed in the other members of the genus *Mesua*. The venation of *M. stylosa* has pentagonal shaped, randomly distributed areoles while other members exhibited quadrangular shaped areoles with an oriented distribution.

Several distinct wood anatomical characters were also observed among the species. *M. stylosa* has solitary, diffuse, porous, thick concentric band of axial parenchyma, while the others have oblique multiple vessels with a concentric thin band of axial parenchyma. The ray type in *M. stylosa* is heterogeneous, with multiseriate rays, a uniseriate tail and a procumbent dominant ray cell. Other *Mesua* spp. consisted of homogenous, uniseriate ray cells with upright and procumbent dominant ray cell type.

Variations observed in morphological and anatomical features in *M. stylosa* support the views of Trimen and P.F. Stevens who excluded it from the genus *Mesua* and recognized it under the genus *Kayea* as *K. stylosa* (Thw.).