SUMMARY AND CONCLUSIONS
The structure of leaf epidermis; structure and distribution of foliar stomata; structure and classification of foliar trichomes; leaf architecture, nodal, internodal and petiolar, peduncle and mid rib, vessel elements and xylem fibres are summarised for 32 genera and 52 species belonging to eleven angiosperm families.

**EPIDERMIS**

The epidermal cells are polygonal, isodiametric, rectangular, trapezoidal or elongated in various directions. The anticlinal epidermal walls are either straight, arched or sinuous, thin or thick. The epidermal cells over the veins are elongated in all the species investigated. The
anticlinal walls are greatly thickened in the members of Combretaceae, Myrtaceae, Lecythidaceae, Lythraceae and Sapotaceae.

**STOMATA**

Stomata are distributed mostly on the lower surface of the leaves in most of the families investigated, except in Lythraceae, Papaveraceae and Sapotaceae in which the leaves are amphistomatic.

The stomatal types exhibited by these families are: anomocytic, anisocytic, paracytic, diacytic, hemiparacytic rarely cyclocytic, staurocytic and polocytic. More than one type occur in all the families investigated. But in all cases the most frequent types are anomocytic and paracytic.

The unusual stomata noticed are: variously oriented contiguous stomata, cytoplasmic connection between the two adjacent stomata (guard cells), arrested development, persistent stomatal cell, single guard cell, degeneration of guard cell/s, unequal guard cells and pore without guard cells.

**TRICHOMES**

Trichomes originate mostly from single trichome initials.
The trichomes are divided into two major categories viz, eglandular and glandular. Glandular trichomes have not been noticed in any of the species investigated. The eglandular trichomes may be unicellular, bicellular and rarely multicellular and shaggy. The form of the unicellular trichomes, may be simple or conical, multicellular trichomes either uni or biseriate rarely branched. Stellate trichomes are rarely observed in Madhuca indica.

LEAF ARCHITECTURE

Leaves are simple, symmetrical or asymmetrical; ovate, oblong, obovate, elliptic. Apex may be acuminate, acute, emarginate and attenuate. The base may be lobate, obtuse, acute or obtusely cuneate. The margin is entirely or slightly wavy. The texture is coriaceous or chartaceous or membranaceous.

Leaf area shows great diversity. Major venation is pinnate, craspedodromous, camptodromous actinodromous and eucamptodromous with brochidodromous 2° veins. Primary vein is mostly thick and straight. The 2° veins on each side of the primary vein are 2-8, their arrangement is alternate, opposite or sometimes both occur in the same species. Intersecondary veins observed in all the taxa examined.
Marginal ultimate venation is looped or fimbriate; well developed and complete or incomplete. Minor venation is observed up to 5°, or rarely only up to 4° veins. Areolation is mostly complete except in *Ammannia baccifera* and *Rotala indica*. Their size and shapes are variable in different taxa studied.

Loop formation is observed in all species. They are formed by the veinlets and tracheids or both. The vein endings are simple or branched once or twice, or many times and uni or biseriate. Terminal tracheids may be solitary or more than two. Isolated tracheids and vein endings are also common in all the taxa investigated.

**VESSEL ELEMENTS AND XYLEM FIBRES**

They are studied in internode, node, petiole, mid rib and peduncle. The vessel elements show a great diversity in their structure, shape, size, distribution and number of perforation plates in the same species or in different species, or in different organs of the same species. The size of the vessel elements vary from short to moderately long. The shapes of the element may be cylindrical, tubular, conical, spindle like, drum like, fusiform and linear.

The disposition of the perforation plates may be median and transverse or oblique or lateral. The type of the
perforation may be scalariform or simple. The scalariform perforation plates may have one or many bars. The size and shape of the perforation plates also vary. The adjacent wall thickening may be mostly simple pitted or very rarely bordered pitted, scalariform, reticulate or spiral. Short or long tail is present either at one or both the ends of the vessel element.

The fibres are very short to moderately long. They are generally non-septate, but the septate fibres are also found in some taxa. Their shapes and size also vary. Thin or thick walled. They may be forked once or twice at one or both the ends.

The qualitative and statistical data for epidermis, stomata, trichomes, leaf architecture, vessel elements and xylem fibres are charted in tables. The information of stomata, trichomes, leaf architecture, vessel elements and fibres may be profitably used for taxonomic considerations.