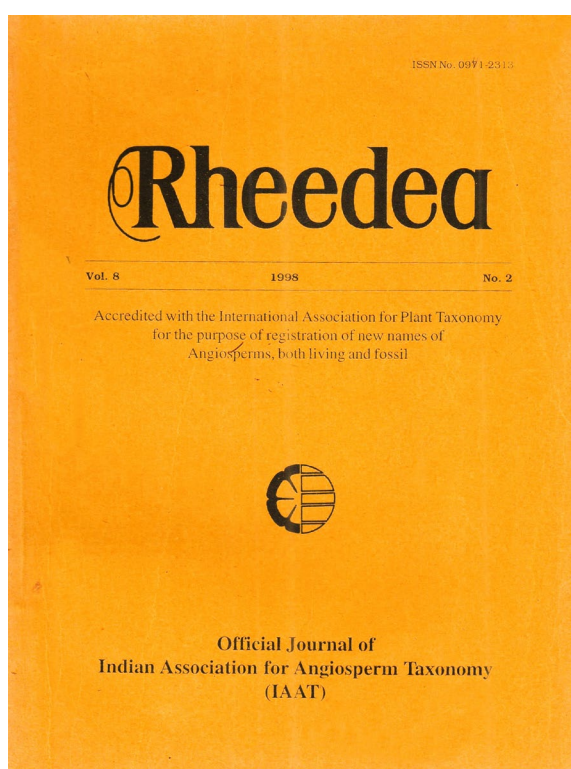




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Krishnamurthy K.V.



How to cite:

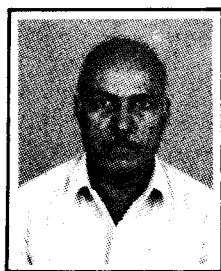
**Krishnamurthy K.V. 1998.** Taxonomic Significance of Vestured Pits and Gelatinous fibres. *Rheedeia* 8(2): 257.

<https://dx.doi.org/10.22244/rheedeia.1998.08.02.12>

*Published in print:* 31.12.1998

*Published Online:* 01.01.2022

## Taxonomic Significance of Vestured Pits and Gelatinous Fibres\*



**K.V. Krishnamurthy**

Department of Plant Science, Bharathidasan University  
Tiruchirappalli - 620 024, Tamil Nadu.

Traditionally, plant taxonomy has been obtaining all its characters from external morphology. Even today, when there is a greater emphasis for a synthesis of characters obtained from various other sources, morphology continues to have an edge over the other sources and there is no doubt that it would continue to reign taxonomically supreme for many more years to come. However, characters from other disciplines have often helped in solving taxonomic problems and disputes where morphological ones failed. One such field is Anatomy. The use of wood anatomical characters in the taxonomy of Angiosperms, however, is by no means new or recent. Infact, there has been a taxonomic procedure for the wood anatomical method in the systematic treatments of some families of Angiosperms such as Monimiaceae, Melastomaceae, Icacinaceae, etc. Notable contributions have been made in this regard by Bureau, Solereder, Bailey, Metcalfe and Chalk, Swamy and Carlquist among others.

Several wood anatomical features have been proved to be of taxonomic importance. These include the growth rings, porosity of the wood, features relating to vessel element, type of imperforate tracheary elements and nature of rays, axial parenchyma and other issues of the wood. This paper will bring to light the taxonomic significance of vestured pits and gelatinous fibres.

Vestured pits are bordered pits with the pit cavity wholly or partially lined with projections from the secondary/tertiary wall. Although vestured pits have been known for some seventy five years, their structure, and taxonomic and phylogenetic significance were never fully understood till recently. The morphological nature of the vestures differed; they may be filamentous, bead-like, coralloid, or foliate. The presence or absence, their possession by specific cell types of xylem, the chemical nature of vestures as well as their morphology have great taxonomic value. Gelatinous fibres are fibres where the inner layers of the secondary wall are non-lignified and consist of cellulose and carboxylated polysaccharides. They are characteristic of tension wood, a type of reaction wood present in some taxa of dicotyledons. Although initially considered to have no taxonomic significance, work in our laboratory has shown that these fibres have importance in taxonomy.

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\* Abstract of the Dr. V.V. Sivarajan Medal Lecture delivered on 27th November 1998 during the VIIIth Annual Conference of the Indian Association for Angiosperm Taxonomy held at Calicut, Kerala, India.