

Pollen Identification Software for Capacity Building in Palynology and Palynotaxonomy

South Indian Tree Pollen

Objectives

Morphological diversity of pollen and spores indicative of their taxonomic identity provides a most important source of information on the past and present Biodiversity. Pollen and spores preserved as sub-fossils in the natural and non-oxidative depositional environments serve as markers in the reconstruction of climate-related vegetational histories. A user friendly pollen taxa identification method is being developed to make easier the study of Pollen grains. In other words New Tools for "Learning Palynology by click of the mouse" by Taxonomists, promising young Palynologists and others trained in light microscopic palynological techniques.

Materials and Methods

Chemically fossilised/acetolysed tree pollen taxa of 150 species belonging to 147 genera (Mangroves: 9, Western Ghats: 131 and others: 7) and 63 families (2 monocots and 61 dicots) have been included. The pollen slides are from the richest pollen-spores slide collection (22,000 specimens) of the Palynological Laboratory of the French Institute of Pondicherry.

A new tool for identification and self-training in plant taxonomy (IDAO by CIRAD) has been adapted to enable Pollen identification by non-sequential choice of characters and without terminology. Vectorised drawings of a composite picture and of about 150 character states of selected tree pollen taxa have been prepared. Information on the pollen is organised in a database accessed by the identification system.

Pollen Microphotograph

Hibiscus tiliaceus
[MALVACEAE]



Pollen type of cotton family

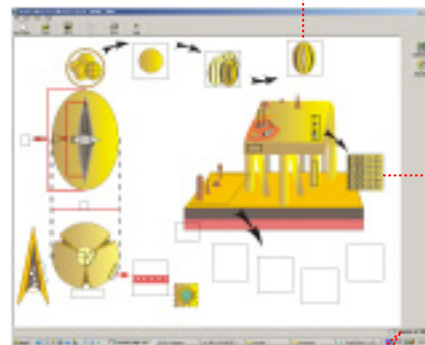
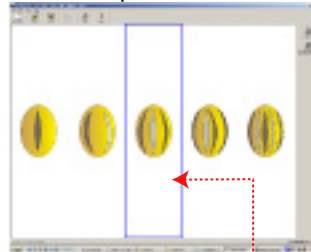
A flower enlarged



A flowering branch of cotton family

Screen shots of Pollen Identification Software

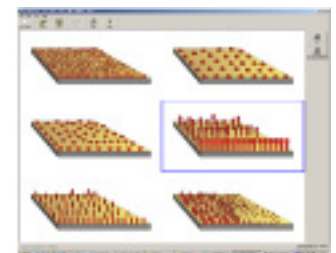
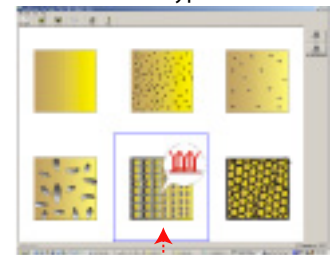
Number and Character of Pollen Apertures



Dipterocarpus indicus
[DIPTEROCARPACEAE]



Pollen Surface Types



Sculptural Elements on Pollen Surface

Results

A computer-aided Pollen Identification Software is being developed (CD-ROM and web based version).



Funding

· French Institute of Pondicherry

Contact Persons:

Dr. Vasanthy GEORGE, IFP
vasanthi.g@ifpindia.org

Dr. Pierre GRARD, IFP

E-mail: pierre.grard@ifpindia.org