



## NATIONAL WORKSHOP ON HANDS ON TRAINING IN CYTOLOGY

Organised by  
**ST. XAVIER'S COLLEGE (AUTONOMOUS), PALAYAMKOTTAI,**  
TAMILNADU—627 002

17th — 21st SEPTEMBER, 2018

**About the Workshop:** *Cytology* is the branch of life science that deals with the study of cells in terms of structure, function and chemistry. The field of cytogenetics, the study of chromosomes and their role in heredity, emerged in the early twentieth century, when scientists realized the “*Chromosome theory of heredity*” which explains that chromosomes are the physical carriers of genes. The common method of speciation in plants is by the changes in number and/or morphology of chromosomes. On the other hand combination of different sets of chromosomes from different species i.e hybridization is also another common method of evolution of new species in plants. Cytotaxonomy is the branch of biology dealing with the relationships and classification of organisms using comparative studies of chromosomes. The chromosome number of the extant plants plays a significant role in determining the phylogenetic interrelation of different groups of organisms and remain valuable today in systematics. Knowing which plants are polyploids and which are diploids allows for a better selection of individuals to be included in phylogenetic and DNA sequence - studies. Cytogeographic studies will help to understand the distribution patterns of particular species complex with different cytotypes. Although exhaustive online database on chromosomal counts have already been developed from various sources, still there are many species and genera of plants for which no chromosome count is known. There are countries from which very few counts have been reported. Therefore, there is still a great deal of traditional cytotoxic works to be done (Verma *et al.*,2017, <http://www.nelumbo-bsi.org>).

At present, when compared to the number of scientists in other fields of Plant Science in India, there are only few plant taxonomists and they are not at all familiar with cytological techniques to solve emerging problems in taxonomy like describing a new taxa or hybrid. A well trained cytotoxicologist may contribute a lot to understand biodiversity when he collaborates with an eminent molecular taxonomist.

Therefore a proper grounding in cytology and cytological techniques will be an invaluable tool for researchers and teachers. In this context, the Department of Botany, St. Xavier's College (Autonomous), Palayamkottai has planned to organize the National Workshop on Hands on training in Cytology. The Workshop will provide training to the participants in different aspects of cytology.

The workshop will give hands on training in the following areas:

- \* Preparation / fixation of materials (vascular plants) in the field
- \* Squash technique to observe mitotic and meiotic chromosomes in plants.
- \* Observation of different stages of mitosis & meiosis, counting the number of chromosomes, and preparation of permanent slides,
- \* Karyotyping.
- \* Indirect methods of determining ploidy level.
- \* Basic knowledge and applications of flow cytometry.

Number of participants- 25. Course is open to a limited number of participants and will be filled on a First-come, First-served basis. Priority will be given to candidates who are actively engaged in Plant Taxonomic Research.

Who can apply: M.Sc. and Ph.D. students, Post Doc researchers, early career college and university teachers.

Workshop fee: Rs. 5000 (Workshop fee includes only tuition fee, course material, lunch, High Tea).

The organisers can help the participants in arranging for accommodation on payment basis if needed.

Important deadlines:

- Receipt of duly filled-in application form: 3<sup>rd</sup> September, 2018
- Intimation to selected candidates: 5<sup>th</sup> September, 2018
- Receipt of fee from selected candidates: 12<sup>th</sup> September, 2018

Selected candidates will be informed by e-mail

Convenor : Dr. D. Patric Raja, Head, Department of Botany,  
St. Xavier's College, Palayamkottai.

Co-coordinator: Dr. V. Irudayaraj

Organising Secretary : Dr. G. Sahaya Anthony Xavier

Applications to be sent to: [cytologyworkshopsxc@gmail.com](mailto:cytologyworkshopsxc@gmail.com)

Phone: 9585501914, 9442063390.



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