

# IT IS SEX STUPID : LOSS OF SEX IN ENDANGERED HIMALAYAN SPECIES



## About the speaker

*Professor M.K. Pandit is the Director of the Centre for Inter-disciplinary Studies of Mountain & Hill Environment, University of Delhi. He teaches plant systematics and evolution, genetics and ecology to undergraduate and graduate students and guides research at the University of Delhi. Prof. Pandit is a botanist by training and specializes in conservation biology of endangered Himalayan plant taxa. He has contributed to the understanding of mechanisms behind species rarity through multi-disciplinary studies. His work on the loss of sex in endangered plants, which acts as the key restrictive control on their population growth and subsequently their extinction, is one of the only two studies that have demonstrated this mechanism in endangered species. The importance of this work lies in its application to the conservation and management of endangered plant species through manipulations of their breeding systems and restoration of fertility.*

## M.K. Pandit

Professor, Centre for Inter-disciplinary Studies of Mountain & Hill Environment, University of Delhi

Species extinctions due to anthropogenic activities is an on-going process, but we encountered situations where this loss was not merely human-induced. We investigated the reasons behind the endangered status of an endemic perennial herb, *Coptis teeta* Wall. (Ranunculaceae), of the Eastern Himalaya. The results on mating systems, pre- and post-fertilization bottlenecks and the underlying processes, which act as restrictive controls in the population growth of the species will be highlighted and the effects of loss of sex leading to species rarity will be discussed. The species suffers from low fecundity and sexual reproduction does not contribute to its population growth. This loss of trait makes the species vulnerable to extinction which is aggravated by low genetic variability as shown by allozyme studies and the lack of recombination. The paucity of viable pollen, absence of pollinator attracting features and pollen rewards, and its niche within the habitat makes the species a compulsive selfer, which further limits generation of variability. In addition to the evolutionary constraints there are external threats, which greatly reduce the chances of the species' survival. We conclude that sexual reproduction plays an extremely crucial role through generating variability, increasing population growth and preparing a species for surviving through various stochastic events.

**Thursday, 8th July 2004 : 4.00 - 5.00pm**

DBS Conference Room

Blk S3, Level 5, Department of Biological Sciences  
The National University of Singapore, Science Drive 4

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Host: A/P Hugh Tan

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