406D

Multiple-entry key for the *Cryptocoryne* species of Sri Lanka using DELTA format and other software

N S Abeysekara[1] and G I Seneviratne[1*]

[1]*Department of Plant Sciences, Faculty of Science, University of Colombo, Colombo 03*

Cryptocoryne Fischer ex Widler of Araceae, has ten endemic species in Sri Lanka. All the ten species are presently threatened with extinction due to over exploitation. The current identification of species is based on the inflorescence and an alternative method is in need to give accurate details of the exploitation levels and the threatened status species wise. The main objective of this study was to develop a multiple-entry key to distinguish the Sri Lankan *Cryptocoryne* species based on their vegetative morphological characters. Other objective was to find ways to further improve this system using other taxonomic characters.

Initially, thirteen vegetative morphological characters and their respective character states, from " A Revised Handbook to the Flora of Ceylon" were used to construct the Pollycalve database using DEscription Language for Taxonomy (DELTA). These DELTA formatted data were translated into IntKey, which is an interactive computer programme that allows the identification of a specimen from a pool of possibilities, allowing the entry into the key at any point. For the trials to check the reliability, data were collected from herbaria, live and cultivated specimens, especially on the widely used species *C. undulata*, *C. walkeri*, *C. wendtii* and *C. beckettii*. It was observed that the minimum values obtained in the field for leaf length and width of the leaf blade were sometimes lower than the recorded values in the Revised Flora. Therefore the range of the relevant ratios had to be broadened accordingly. The system has the facility to incorporate floral characters with their respective character states, pictures of the habits and that of the inflorescences. Attempts have also been made to construct a conventional key using the same data set, which has been partially successful so far.

According to the trials made so far it is possible to separate *C. beckettii* from *C. wendtii* and *C. walkeri* while at times it was not possible to separate it from *C.undulata*. The system seems promising as an alternative method that could be developed to identify the Sri Lankan *Cryptocoryne* species, using only the vegetative features. Further studies are being carried out to incorporate chemotaxonomic data, based on the analysis of flavonoid aglycones of the vegetative parts as well.

*indrani@pts.cmb.ac.lk

Tel: 011 2585038