Phylogenetic relationships among Asian species of the genus Schefflera s.l. (Araliaceae) in the light of molecular and morphological data

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Résumé

Asian species of the genus Schefflera represent a monophyletic group well supported by molecular, morphological and geographical data. This group, also known as Asian Schefflera Clade, comprises more than 300 species, i.e. about one fourth of the family Araliaceae. The formal infrageneric system of the Asian Schefflera Clade is so far lacking and classifications developed for the regional accounts of the genus Schefflera are out of date.
We have performed mapping of nine morphological characters onto our extended molecular phylogenetic tree which comprises 71 species of Asian Schefflera Clade in order to evaluate phylogenetic relationships among the species and to find morphological features which can be used for characterization of infrageneric subgroups of the Clade.

The following features were examined: structure of stem pith, type of compound leaf, inflorescence position, inflorescence architecture, type of partial inflorescence, flower merism (including gynoecium), presence of stylodia, presence of protective function of calyx, and presence of calyptrate corolla. A single feature, i.e. structure of stem pith, is fully consistent with subdivision of Asian Schefflera Clade into two subclades. The other features show more complicated distribution within the tree; however, each of them is invariable in either of the two subclades and thus all of the nine features are assumed to be useful for morphological characterization of molecular-based clades. At the same time, almost none of the pairs of features shows equal pattern of distribution among the species under study. Hence, we find it reasonable to develop a formal system of Asian Schefflera Clade based on molecular data and compile morphological descriptions of the infrageneric taxa as combinations of features listed here. We propose a preliminary classification of the Asian Schefflera Clade which is in congruence with both morphological and molecular data.
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Mots-Clés: Vietnam, Schefflera, Araliaceae, molecular phylohenetics, taxonomy

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