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Phorophytes in epiphytic orchid ecology: a case of mutual exclusion?

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In the management of areas protected for epiphytic orchid conservation it is important to identify the preferred phorophyte species, so that special consideration may be taken to preserve them. There seem to be such frequent patterns of preference/avoidance in orchid-phorophyte relationships, that orchid-rich habitats should probably to a large extent be defined by their tree species composition. A survey of possible cases of narrow tree-orchid specificity revealed a great diversity among specialized orchid hosts, but also a strong representation of certain families of trees. This field clearly requires much more study. Basic curiosity, however, also requires that we go beyond the name of a phorophyte taxon. At present we know very little about what makes epiphytes establish on certain species of phorophytes while being absent on other tree species nearby. This question becomes more puzzling when the phorophyte species preferred by one orchid species is avoided by another. We explored a case of apparent mutual exclusion among two orchid species colonizing differential hosts within the same area. The usual approach towards explaining tree-epiphyte relationships is to correlate presence/absence with data on phorophyte features, such as bark pH, rugosity and water holding capacity. We attempted to compensate for the age and growth dynamics of the tree by analysing several heights to get a glimpse of age-related gradients in features.

Keywords: bark features; orchid habitat; species interaction; woody plant analysis