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Invasive Orchids: weeds we hate to love?

Rare species that show habitat specificity and an aversion to habitat disturbance are not uncommon in the Orchidaceae. Nonetheless, most orchids may not be in such a critical state. Many species occur in ephemeral, disturbed habitats and are, quite frankly, weedy. We may learn much about rare species by asking what makes other orchids resilient or even dependent on change. Most orchids do occur in ephemeral or frequently disturbed habitats whether they are pastures, roadsides, citrus groves, coffee and tea farms, or simply as epiphytes whose substrates, by definition, are temporary and run the gamut from durable tree trunks to short-lived twigs. Effective dispersal capabilities are essential for occupying such habitats. In the West Indies, nearly 60% of the orchid species occur on more than one island and a floristic affinity analysis indicated that geographical distance for these species is generally not a barrier to dispersal. Deforestation is a common problem throughout the tropics. By 1940, 95% of Puerto Rico had been cut yet the number of species lost from the flora has been less than 5%. Since then, forest recovery has been substantial and some orchid species have responded positively to the re-growth, a few becoming quite abundant in secondary habitats. Orchids with rapidly expanding populations include a handful of natives, but non-natives are making their appearance. In Puerto Rico, a number of these have persisted for a long time, but only recently have they become truly invasive. Should these be eradicated? What makes them so successful? Some are understory plants; some prefer grassy roadsides while others are epiphytes. Some are autogamous but others attract local pollinators with nectar rewards or by deceit. Answers may rest not only with the distribution of appropriate habitat, but also with the players in the orchids' symbiotic relationships: pollinators and mycorrhizal fungi. Widespread species either specialize on widespread "partners" or are catholic with whom they play. What do rare species do? Again, we do not know this entirely but we can predict that strains on specificity may have a role, whether it is the habitat, the pollinators, their mycorrhizal associations, or some combination of the three remains to be seen.