



## Further taxonomic transfers in Oncidiinae (Orchidaceae)

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### Abstract

To bring species nomenclature for Oncidiinae in line with a comprehensive phylogenetic study based on multiple DNA sequences and patterns of morphological variation, we present additional name transfers: (i) *Ada*, *Brachtia*, and *Mesospinidium* into *Brassia* and (ii) *Pachyphyllum* and *Raycadenco* into *Fernandezia*. These changes in circumscription are necessitated by the lack of monophyly of *Ada* and *Fernandezia/Pachyphyllum* as demonstrated in phylogenetic studies of DNA sequence data, plus these two sets of enlarged genera each share some morphological characters that are putative synapomorphies. *Raycadenco* could be maintained, but it exhibits the synapomorphies of *Fernandezia/Pachyphyllum* and differs only in its pollination syndrome, so in the interests of simplicity it seems better to include it in *Fernandezia*.

**Key words:** *Ada*, *Brassia*, *Cischweinfia*, *Fernandezia*, *Mesospinidium*, Neotropical orchids, new combinations, *Pachyphyllum*, *Raycadenco*, spider orchids

### Introduction

In *Genera Orchidacearum* V, Chase (2009) noted that there were some outstanding issues related to the circumscription of *Ada* Lindl. and its close relatives and of *Fernandezia* Ruiz & Pav. and *Pachyphyllum* Kunth, but he stated that it was premature to make changes to these genera without further study (only nuclear ribosomal DNA, nrITS, results were presented in Chase 2009). Subsequently, additional DNA studies (Whitten al., submitted) using a multi-gene approach have clearly demonstrated that changes in circumscription of these genera are required, although these changes could be made even on morphological grounds.

*Ada* was a monospecific genus throughout most of its history, with the single species *A. aurantiaca* Lindley (1853:1), an unusual bright orange-flowered species, presumably pollinated by hummingbirds. The generic concept was expanded by Williams (1972), who on the basis of similarities in pollinaria added to *A. aurantiaca* the so-called “glumaceous brassias”. Lindley (1853) divided *Brassia* into two sections: *Brassia* (originally as *Eubrassia*) and *Glumaceae*. Williams also noted that in most cases, the floral bracts of these glumaceous species were larger and that they have many more leaves subtending the pseudobulbs than in the species of *Brassia* proper. These differences are more a matter of degree, and the species of section *Brassia* are much more heterogeneous with respect to those of *Ada*. Most species of *Ada* (other than the type) are much more like those of *Brassia*, which are “spidery” (i.e. have long narrow tepals, which give rise to their common name, “spider orchids”). They share general floral traits, in particular a cavity without nectar or other obvious reward formed by a bilobed callus on the base of the lip, and these species are reportedly pollinated by wasps (van der Pijl & Dodson 1969), although this is not particularly well documented. Williams (1972) also stated that *Ada* was more closely related to *Mesospinidium* Rchb.f. and *Brachtia* Rchb.f., and indeed the molecular studies have demonstrated that most species of *Ada* are sister to *Mesospinidium*. The species of