

Integrative taxonomy of the section *Pseudophrys* (*Ophrys*, Orchidaceae): making use of both genetic and phenotypic data

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Accurate species delimitation is a prerequisite for most researches about biodiversity and its management. Integrative taxonomy has been advocated for a long time, yet tools allowing true integration of genetic and phenotypic data have been developed quite recently and applied to very few models. In particular, these tools have never been applied to orchids, despite many discussions about species delimitations in this family. In this study, we investigated species boundaries within a group of twelve *Pseudophrys* taxa by analyzing genetic, morphometric and chemical data in a Bayesian framework. We found that these twelve taxa were merged into four species when only genetic data were used, while most formally described species were recognized as such when only phenotypic data were used. The result of the IBPP analysis performed on both genetic, morphometric and chemical data supports the proposal to merge *Ophrys bilunulata* and *O. marmorata* on the one hand, and *O. funerea* and *O. zonata* on the other hand. We are convinced that this integrative taxonomic approach holds great promise to conduct taxonomic revisions in other orchid groups.