



## A new definition of the genus *Petrocodon* (Gesneriaceae)

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### Abstract

Based on molecular studies, the small Chinese genus *Petrocodon* (two species and one variety) has been recently enlarged to include the monotypic genera *Calcareoboea*, *Paralagarosolen* and *Tengia*. It is shown here that the (6–7) species of *Lagarosolen*, the monotypic *Dolicholoma*, a few species of *Didymocarpus*, and a number of new species that have recently been published (but not formally described) under *Petrocodon* and *Lagarosolen* should be included in this genus. This raises the size of the genus from five to around 20 species. With respect to the floral diversity (corolla form, size, and coloration; with the exception of *Tengia*, the androecium is always diandrous) and inferred pollination syndromes (different forms of melittophily, ornithophily, psycho- and/or sphingophily), *Petrocodon* represents one of the most varied genera of Old World Gesneriaceae, comparable to some New World genera.

**Key words:** *Calcareoboea*, *Didymocarpus*, *Dolicholoma*, Lamiales, *Lagarosolen*, molecular systematics, *Paralagarosolen*, pollination syndromes, *Tengia*

### Introduction

A recent molecular phylogenetic study (Möller *et al.* 2009) revealed that the Chinese genera *Petrocodon* (three species with small, white, urceolate flowers, with buzz-pollination syndrome) and *Calcareoboea* (monotypic in its original concept, with large, long-tubular, bright red, apparently ornithophilous flowers) form a strongly supported clade. This was confirmed in the study of Wang *et al.* (2011) who also added *Paralagarosolen* (with long-tubed hypocrateriform flowers) and *Tengia* (with flowers similar to *Petrocodon*, but with five fertile stamens) to the clade and expanded the definition of *Petrocodon* to include these four genera, with five species in total. The present paper provides molecular evidence that this definition is still too narrow and that some more genera have to be included in *Petrocodon*. In addition, the new definition demonstrates strikingly, and exemplarily for the Old World Gesneriaceae, how unreliable traditional generic definitions, often based exclusively on floral characters, are. *Petrocodon* emerges as one of the florally most diverse clades of Old World Gesneriaceae.

### Material and Methods

#### Plant material

Leaf material for newly acquired sequences came from silica gel dried field collections. Most molecular data came from previous work (Möller *et al.* 2009, 2011a, Weber *et al.* 2011), sequences for three taxa were