

The genus *Polylepis* is one of the most important Andean tree genera. *Polylepis* forests are found from Venezuela to Chile and Argentina at elevations of up to 4800 m where they support a unique biodiversity in an otherwise treeless landscape. They also provide important ecosystem services such as clean water, protection against erosion, firewood, fodder, and medicinal plants. However, these forests are highly fragmented and among the most endangered ecosystems in the Andes.

Taxonomically, *Polylepis* show a wide morphological variability among and within species, so that species classification has varied strongly over time. In the present monograph, the authors present a novel classification based on a species concept considering morphological, climatic, and biogeographic distinctness as an indicator of evolutionary independence. In total, they recognize 45 species of *Polylepis*, grouped in five sections, and seven species are described as new: *P. frontinensis* from Colombia, *P. simpsoniae* from Ecuador, and *P. acomayensis*, *P. fjeldsaoi*, *P. occidentalis*, *P. pilosissima*, and *P. sacra* from Peru. Three species from Peru are re-instated as valid species (*P. albicans*, *P. pallidistigma* and *P. serrata*). Two taxa from Bolivia are elevated from subspecies to species rank (*P. incanooides* and *P. nana*). For all species, the morphology, habitat, distribution, ecology, and conservation status are documented. The monograph further includes an identification key to the species of the genus and general introductions on taxonomic history, morphology, evolution, ecology, and conservation.

These research findings illustrate the power of an approach that integrates multiple data types, morphological, climatic niches, ploidy levels, and ecological to address fundamental questions regarding species taxonomy. It sets the stage for understanding the evolution of the genus *Polylepis* and provides a sound basis for its conservation.



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## A MONOGRAPH OF THE GENUS *POLYLEPIS* (ROSACEAE)

BY  
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*Polylepis fjeldsaoi* T.Boza & M.Kessler, sp. nov.

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