



## A revision of *Welfia* (Arecaceae)

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### Abstract

A taxonomic revision of the neotropical palm genus *Welfia* based on morphological data and morphometric methods was carried out. One hundred and five herbarium specimens were scored for one qualitative variable and 19 quantitative variables. Based on the qualitative variable, fruit shape, two species are recognized. One (*W. regia*) is widely distributed in Central America and northwestern South America from Nicaragua to Colombia and Ecuador; the second, described here (*W. alfredii*) is restricted to a small area of central Peru. Nomenclature, descriptions, and distribution maps are provided for each species, and images of the type specimen of the new species are also provided.

**Key words:** Neotropics, geonomoid palms, Palmae

### Introduction

In establishing the genus *Welfia*, Wendland (1869: 242) wrote that he knew of two species, *W. georgii* from Costa Rica and *W. regia* from Colombia. Neither species was described nor specimens cited. André (1871) gave a description and illustration of *W. regia* and also described *W. georgii* (in the form of a quotation from a letter from Wendland). Hence two species are validly published and usually recognized: *W. regia* Wendland ex André (1871: 93) and *W. georgii* Wendland in André (1871: 94). A third species, *W. microcarpa* Burret (1930: 129) was added later, but this is poorly known and was placed as a synonym of *W. georgii* by Wessels Boer (1968).

*Welfia* is a member of the geonomoid group of palms, formally named the Geonomateae Luerssen (1882: 342) (Dransfield *et al.* 2008). The geonomoids are characterized by their flowers sunken in pits along the rachillae, with each pit covered before anthesis by a proximal lip. Although there have been disagreements over generic boundaries within the group (e.g., Moore 1966; Wessels Boer 1968), these are now mostly resolved (Dransfield *et al.* 2008). The group comprises six genera and 103 species: *Asterogyne* Wendland ex Hooker (1883: 914; 5 species, Stauffer *et al.* 2003), *Calyptrogyne* Wendland (1859: 72; 18 species, Henderson 2005), *Calyptronoma* Grisebach (1864: 518; 3 species, Zona 1995), *Geonoma* Willdenow (1805: 174; 68 species, Henderson 2011), *Pholidostachys* Wendland ex Hooker (1883: 915; 7 species, Henderson 2012), and *Welfia* (2 species, this revision). Roncal *et al.* (2010) placed *Welfia* and *Pholidostachys* as sister genera, and these two as sister to the remaining four genera (*Asterogyne*, *Calyptronoma*, *Calyptrogyne*, and *Geonoma*).

*Welfia* has always been considered as a small and uncomplicated genus, comprising two (e.g., Wessels Boer 1968) or one (e.g., Henderson *et al.* 1995) species. However, the most recent monographer (Wessels Boer 1968) used only eight specimens on which to base his revision, all from either Costa Rica or Colombia and none from Nicaragua, Panama, Ecuador, or Peru, where the genus also occurs. In the present revision, 105 specimens were examined from throughout the range of the genus. *Welfia*, as revised here, comprises two species.