



Article

***Lindsaea linduensis* (Lindsaeaceae, Polypodiales), a new fern species from Sulawesi, Indonesia**

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Abstract

Lindsaea linduensis (Lindsaeaceae), from Central Sulawesi, Indonesia, is described as new to science. It differs from *L. repens* var. *sessilis* by having 2-pinnate fronds (versus 1-pinnate), longer petioles (10–17 cm versus 1–5 cm), and more widely spaced ultimate segments (>5 mm apart versus <4 mm). We provide an updated key to the species group to which this species belongs.

Introduction

The Malay Archipelago is characterized by a vast area and thousands of islands of different sizes supporting an extraordinary variety of environments and a particularly high number of species (Roos *et al.* 2004). The botanical knowledge on the archipelago is constantly increasing, but to date the only island with a complete flora is Java (Backer & Posthumus 1939). With a surface of 174,600 km², Sulawesi is a mid-sized island in the archipelago (Roos *et al.* 2004). The botanical knowledge of this island is still poor, and with 20 samples per square kilometers it has the fewest herbarium collections of any major Malay island (Cannon *et al.* 2007). Botanical explorations of this island constantly result in discoveries of unknown species, including tree species (Culmsee 2008) and herbaceous plants (Thomas *et al.* 2011), highlighting the elevated number of endemic species and the peculiarity of the island. With its position between Borneo and New Guinea, Sulawesi has floristic components from both of these areas (Cicuzza *et al.* 2010). The fern flora of Sulawesi was last summarized by Christ (1898) who listed 43 families and 308 species. For the genus *Lindsaea* Dryand. ex Smith (1793: 413), Christ (1898) listed merely ten species with only one endemic to Sulawesi. Since then, the known fern flora of Sulawesi has grown to over 900 species (P. Hovenkamp pers. comm.) and 18 species of *Lindsaea* were included in the treatment for the Flora Malesiana (Kramer 1971).

Lindsaeoid ferns have been considered part of Davalliaceae (Schomburgk 1848) and later of Dennstaedtiaceae (Kramer & Green 1990). The separation as a distinct family, Lindsaeaceae, was proposed by Pichi Sermolli (1970). Based on molecular studies, Lindsaeaceae is supported as a separate family and as sister to Dennstaedtiaceae and Pteridaceae (Hasebe *et al.* 1994). A recent phylogenetic study of Lindsaeaceae (Lehtonen *et al.* 2010) recognized six well-supported clades that can be recognized as the genera *Sphenomeris* Maxon (1913: 144), *Odontosoria* Fée (1852: 325), *Osmolindsaea* (Kramer 1967a: 560) Lehtonen & Christenh. (in Lehtonen *et al.* 2010: 335), *Nesolindsaea* Lehtonen & Christenh. (in Lehtonen *et al.* 2010: 336), *Tapeinidium* (Presl 1849: 961) Christensen (1906: 631) and *Lindsaea*. The genus *Lindsaea* is pantropical, with approximately 200 species; a few species also grow in subtropical habitats in southern Japan and Australia. Ecologically, the genus is primarily found in moist tropical forests at elevations below 3000 m (Kramer 1971). The most recent taxonomic treatments of the genus have been prepared by Kramer for the Malesian region (Kramer 1971) and for the Neotropics (Kramer 1957). Since then, numerous species have been described