



A taxonomic revision of *Anisophyllea* (Anisophylleaceae) from Madagascar

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Abstract

A taxonomic revision of *Anisophyllea* (Anisophylleaceae) from Madagascar was carried out. Five species of the genus are recognized, of which four are described as new. The five species include *Anisophyllea fallax*, *A. madagascarensis* sp. nov., *A. masoalensis* sp. nov., *A. parafallax* sp. nov., and *A. schatzii* sp. nov. A key to the Malagasy species of *Anisophyllea* is provided. All species are described and illustrated. Information on their distribution and habitat is given. Taxonomic issues are discussed. The IUCN Red List categories are assessed.

Key words: *Anisophyllea*, *A. fallax*, *A. madagascarensis*, *A. masoalensis*, *A. parafallax*, *A. schatzii*, IUCN Red List, Madagascar

Introduction

Anisophyllea R.Br. ex Sabine (1824: 446) is the most speciose genus in Anisophylleaceae, a member of the order Cucurbitales (Zhang *et al.* 2006: 305, 2007: 1057, Schaefer & Renner 2011: 122), and species of the genus are widespread in tropical Africa, the Malay peninsula, and tropical South America (Ding Hou 1958: 474, Juncosa & Tomlinson 1988: 1279; Zhang *et al.* 2007: 1057, Schwarzbach & Tomlinson 2008: 54). *Anisophyllea* has been estimated to contain 10–30 species (King 1897: 322, Engler & von Brehmer 1917: 369, Juncosa & Tomlinson 1988: 1279, Schwarzbach & Tomlinson 2008: 54). However, no modern taxonomic revision of the genus has ever been conducted. In Madagascar, currently only one species, *A. fallax* Scott-Elliot (1891: 16), is recognized (Grandidier 1896: 327). Our examination of material of *Anisophyllea* in Madagascar in major herbaria and literature study showed, however, that there are five species of *Anisophyllea* in Madagascar, four of which are as yet undescribed.

Materials and methods

Morphological characters were observed in herbarium specimens of *Anisophyllea* from herbaria K (all acronyms from Index Herbariorum available online at sweetgum.nybg.org/ih/), MO, and P which have rich holdings from Madagascar. Specimens or images of specimens of related species of mainland African, Asian, and South American species of *Anisophyllea* at A, B, BM, BO, BR, CAL, COI, E, F, G, HBG, KEP, L, LISC, MEL, NY, SAN, SAR, SING, TAN, TEF, and US were also examined. Nomenclatural information was taken from protologues and literature. A morphological species concept requiring morphological discontinuity between species was adopted. Some geographical coordinates were estimated post-facto using various

Additional specimens examined:—MADAGASCAR. Alaotra Mangoro (Toamasina): 19°29'00"S, 48°04'00"E, December 1927, H. Perrier de la Bâthie 14142 (P). Analanjirofo: Baie d'Antongil, plage d'Ambanizana, 15°30'S, 49°58'E, below 50 m, 12 May 1988, Floret 2008 (MO, P); Masoala Peninsula, south of the village of Ambanizana in the Andranobe River Watershed, 15°40'24"S, 49°57'51"E, 110–260 m, 20 December 1994, N. Vasey & R. Behasy 249 (MO); Nosy Mangabe, 5 km S of Maroantsetra in the Bay of Antongil, 15°29'S, 49°45'E, below 330 m, 29 May 1990, Betsy Carlson 272 (MO); Nosy Mangabe, Baie d'Antongil, 15°30'S, 49°46'E, 50–150 m, 5 May 1988, J. J. Floret 1989 (MO, P); Nosy Mangabe, a 520 hectare island 5 km from Maroantsetra in the Bay of Antongil, 15°30'S, 49°46'E, below 330 m, 13–19 December 1989, George E. Schatz 2849 (MO, P); 15°30'S, 49°46'E, below 330 m, 13–23 April 1988, George E. Schatz & Alwyn H. Gentry 2284 (MO); Tamatave, 15°28'49"S, 49°46'00"E, 20 January 2006, D. C. Daly, J. Raharimampionona, J. Razanatzoa, et al. 12995 (MO, P); Tampolo Forest Station, ca. 10 km N of Fenerive, 17°17'00"S, 49°23'30"E, 10 m, 23 January 1986, Laurence J. Dorr 4635, 4644 (MO, P). Atsinanana (Toamasina): [17°55'00"S, 49°13'00"E], 27 May 1950, Reserve Naturelle 2619 (P); Soanierana Ivongo, [16°54'30"S, 49°35'00"E], April 1950, Service Forestier 21-R-72 (P, TEF); Tamatave(?), July 1850, M. Boivin 2253 (P); January 1954, Service Forestier (Capuron) 8902 (P). Sava: Marojejy Nature Reserve, 14°28'S, 49°48'E, 80–100 m, 07 February 1988, James S. Miller & Porter P. Lowry II 3847 (MO). Vatovavy-Fitovinany: Ambatolampy, Canton et district de Fort-Carnot Forêt, bord de ruisseau, sol latéritique, clairière, [21°54'00"S, 47°26'00"E], 22 June 1951, Service Forestier 61-R-144 (P); Amboanato, canton et district Mananjary, [21°08'30"S, 48°23'00"E], 17 October 1954, Service Forestier 13671 (P, TEF); Ambodiamba, Canton d'Ampasimparihy, District de Mananjary, [21°31'S, 48°02'E], 24 January 1955, Service Forestier 15467 (P, TEF).

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