Lacomucinae, a new monotypic genus in Thesiaceae (Santalales)

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Abstract

A new monotypic genus from southern Africa is described based on Thesium lineatum. Lacomucinae lineata has a number of vegetative and floral morphological features that differ from Thesium and other members of Thesiaceae. An apparently unique feature of the plant is the presence of succulent, fusiform, terete leaves that are caducous, eventually leaving a persistent petiolar stub. The stem surface shows striations formed by cortical fibers inside raised ridges. Anatomically, this type is widespread from tropical Africa to South Africa and is considered monospecific (Stauffer, 1961). Finally, Lacomucinaea is sister to Osyridicarpos, further supporting this relationship suggested by stem anatomy characters. Recognizing this taxon as a distinct genus results in the genus Thesium being monophyletic. A key to all genera in Thesiaceae is provided.

Key words: parasitic plant; Santalaceae; flora of South Africa; taxonomy; Thesium

Introduction

The largest genus in the sandalwood order (Santalales) is the root hemiparasite Thesium Linnaeus (1753: 207). Found in Africa, Europe, Asia, Australia, South America and North America (by introduction), Thesium is most diverse in South Africa where at least half the ca. 350 species are found. Although traditionally classified in Santalaceae, a molecular phylogenetic study (Der & Nickrent, 2008) identified six clades that were later classified at the family rank (Nickrent et al. 2010). Thus, Thesium was included in Thesiaceae along with five other genera: Buckleya Torrey (1843:170) is a genus of shrubs with five species disjunct in the eastern USA and eastern Asia. Kunkeliella Stearn (1972: 17), is composed of at least four species endemic to the Canary Islands. Osyridicarpos Candolle (1857a: 635) is widespread from tropical Africa to South Africa and is considered monospecific (Stauffer, 1961). Finally, Thesidium Sonder (1857: 364) is a small group of ca. nine species of South Africa, segregated from Thesium based mainly on the monoecious sexual state. Apart from Kunkeliella, these generic concepts follow those presented in Pilger (1935). That classification placed Buckleya in tribe Osyrideae and Osyridicarpos, Thesidium and Thesium in Thesiaceae along with Arjona Commerson ex Cavanilles (1797: 57) and Quinckamalium Molina (1782: 151), the latter two shown by Der & Nickrent (2008) to be in Schoepfiaceae.

A general review of the taxonomic history of Thesium was presented in Moore et al. (2010). Briefly, the first infrageneric classification was by Reichenbach (1828) who recognized three sections: Thesium (of Europe), Thesiumys (of South Africa), and Frisea (of South Africa). Alphonse de Candolle (Candolle, 1857a, b) recognized 112 species of Thesium worldwide. This classification contained six sections: Euthesium, Aetheothesium, Discothesium, Frisea, Chrysothesium and Psilothesium (the South American species), losing his former section Hagnothesium by recognizing Thesidium as distinct (following Sonder 1857). The most comprehensive treatment of Thesium worldwide was that proposed by Hendrych (1972). Hendrych segregated two genera from Thesium, Chrysothesium (Jaubert & Spach) Hendrych (1994: 319; formerly section Chrysothesium) to accommodate three species from Turkey and one from Central Asia (Hendrych, 1994), and Austroamericium Hendrych (1963: 126) which included three species from Venezuela and Brazil. Following the molecular work by Moore et al. (2010), and based on the concept that genera should be monophyletic (Backlund & Bremer, 1998), Forest & Manning (2013) formally included Thesidium in Thesium sect. Hagnothesium. Also, based on the topology of the molecular tree in Der & Nickrent (2008), they included Kunkeliella in Thesium sect. Kunkeliella.