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Title: The Miliuseae revisited : phylogenetic, taxonomic, and palynological studies in a major clade of Annonaceae

Issue Date: 2014-03-27

Chapter 5

(2029) Proposal to conserve the name *Meiogyne* against *Fitzalania* (Annonaceae)

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Published in *Taxon* 60: 1522–1523. 2011.

(2029) *Meiogyne* Miq. in Ann. Mus. Bot. Lugduno-Batavi 2: 12. 23 Mar. 1865 [Annon.],
nom. cons. prop.

Typus:–*M. virgata* (Blume) Miq. (*Unona virgata* Blume)

(=) *Fitzalania* F.Muell., Fragm. 4: 33. Oct. 1863, *nom. rej. prop.*

Typus:–*F. heteropetala* (F.Muell.) F.Muell. (*Uvaria heteropetala* F.Muell.)

Meiogyne Miq. is a well-known genus of Asian Annonaceae with 17 species presently recognized (Van Heusden 1994, 1996, Jessup 2007, Turner 2009). The number of species of *Meiogyne*, however, will surely increase as there are several new species to be described (pers. comm. D.M. Johnson). The genus is found from India through Southeast Asia to northern Australia, New Caledonia, and Fiji (Van Heusden 1994, 1996). Several genera (*Ancana* F.Muell., *Chieniodendron* Tsiang & P.T.Li, *Guamia* Merr., *Oncodostigma* Diels, *Polyaulax* Backer) have been synonymized¹ with *Meiogyne* on the basis of gross morphology (Van Heusden 1994). *Meiogyne*, including the synonymized genera, exhibits a corrugated or grooved area at the base of the inner side of the inner petals (Van Heusden 1994, Jessup 2007). Moreover, the apex of those stamens located in the inner whorls (near the carpels) is usually more elongated than those located in the outer whorls (Van Heusden 1992, Jessup 2007). These two important features also occur in *Fitzalania* F.Muell., an Australian endemic genus with two species (Van Heusden 1992, Jessup 2007). However, the color and appearance of the (inner) petals of *Fitzalania* (very dark purple and more or less boat-shaped) are somewhat different from those of *Meiogyne* and hence are the main reasons to still recognize this genus morphologically (Jessup 2007). In addition, one of the two species of *Fitzalania*, *F. bidwillii* (Benth.) Jessup, Kessler & Mols, possesses sepal-like outer petals, resembling those of *Heteropetalum* Benth. (now included in *Guatteria* Ruiz & Pav.), *Marsypopetalum* Scheff. *pro parte*, *Miliusa* Lesch. ex A.DC., *Phaeanthus* Hook.f. & Thomson, *Piptostigma* Oliv., and *Polyalthia* Blume *sensu stricto p.p.*

Recent molecular phylogenetic analyses have shown that *Fitzalania* is nested within *Meiogyne*, a relationship that is strongly supported (Mols *et al.* 2004a). This finding

¹ The identity of the type of *Oncodostigma leptoneurum* Diels (type species of *Oncodostigma*) is problematic (but the flower shown in the protologue is likely to represent a *Meiogyne* species), and therefore this genus actually has not been formally put into synonymy with *Meiogyne* yet; most species assigned to *Oncodostigma* have been transferred to *Meiogyne* (see also Chatrou *et al.* 2012, Thomas *et al.* 2012).

is also confirmed by the authors (in prep.²) as part of the first author's Ph.D. study to understand the phylogenetic relationships of genera in one of the major clades of Annonaceae. The genera *Ancana*, *Guamia*, and *Polyaulax*, which have been included in *Meiogyne* by Van Heusden (1994), are also found to be embedded in *Meiogyne* with strong support. Unfortunately, no suitable material of *Cheni dendron* and *Oncodostigma* is available for DNA extraction. The two species of *Fitzalania* appeared to be sister to each other with maximum support. Therefore, the different color and appearance of the (inner) petals are a synapomorphy of *Fitzalania*. The sepal-like outer petals of *F. bidwillii* is apparently an autapomorphy.

The principle of monophyly is pivotal in the classification of Annonaceae, and several genera have been re-circumscribed or newly described in the recent past. Applying this principle to the situation of *Meiogyne* and *Fitzalania* would result in the transfer of species of *Meiogyne* to *Fitzalania*, according to Art. 11.3 of the International Code of Botanical Nomenclature (McNeill *et al.* 2006), as *Fitzalania* antedates *Meiogyne*.

However, there are good reasons to conserve the name *Meiogyne* against *Fitzalania*. Firstly, the former genus contains many more species. Secondly, *Meiogyne* is better known as it has a considerably larger distribution area covering many more countries. Finally, *Meiogyne* has lent its name to a dimeric sesquiterpenoid, meiogynin A, isolated from the bark of *Meiogyne cylindrocarpa* (Burck) Heusden, which has significant potential as an anti-cancer agent (Litaudon *et al.* 2009, Fotsop *et al.* 2010). Consequently, to maximize the stability of the names, it is appropriate to conserve *Meiogyne* against *Fitzalania*. Whereas at least 17 new combinations would be required if this proposal is not accepted, only two new combinations will be necessary (from *Fitzalania* to *Meiogyne*) if it is accepted.

² = Chapter 2.