

The identity and typification of *Pimia* Seem. (Sterculiaceae)

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Summary. The unispecific Fijian genus *Pimia* Seem. (Sterculiaceae) has long been considered to be related to genera that are now included in the Byttneriaceae (also known as Malvaceae-Byttnerioideae). Morphological characters, however, indicate that *Pimia* is a mixture of *Commersonia* J. R. Forst. & G. Forst. (Byttneriaceae) and *Diospyros* L. (Ebenaceae). The name of the sole species, *P. rhamnoides* Seem., is lectotypified with an element that is determined to be *C. bartramia* (L.) Merr. and thus *Pimia* becomes a synonym of *Commersonia*. An epitype for *P. rhamnoides* is also selected because the lectotype now lacks flowers, which were an important element of the protologue.

Key Words. Byttneriaceae, *Commersonia*, *Diospyros*, Ebenaceae, Fiji, nomenclature.

Introduction

The unispecific genus *Pimia* Seem., endemic to Fiji, has been an enigma since it was first described. When Seemann (1862b) erected the genus on a single collection (Seemann 83) from Vanu Levu, he placed it in the Lasiopetaleae (i.e., Sterculiaceae, now Byttneriaceae) and compared it to *Lasiopetalum* Sm. and *Commersonia* J. R. Forst. & G. Forst. (Throughout this note family nomenclature follows Cheek in Heywood *et al.* 2007, and not APG III, 2009). Seemann (1862b, 1865) stated that *Pimia* differed from the former genus in its echinate fruit and the latter by its lack of staminodia and differently-shaped petals. It is noteworthy that when Seemann (1865: pl. 5) illustrated *P. rhamnoides* Seem. for his *Flora vitiensis* he wrote that before he had found the few flowers on the specimen at BM that were used for the plate he had considered his collection to represent a species of Rhamnaceae and he compared the habit of *Pimia* to that of *Pomaderris* Labill. (Rhamnaceae), a genus native to south-eastern Asia, Australia, and New Zealand but not Fiji. Indeed, Seemann (1861: 255) had first reported this collection as “83. Rhamnea.” Evidently it was only after he discovered these few flowers (and fruit) that Seemann (1862a: 433) believed that he had a new genus allied to *Commersonia* (viz., “Byttneriacearum gen. nov. aff. Commersoniæ (83)”).

The genus *Pimia* has not been recollected in the intervening century and a half. Our interpretation of it rests on the protologue, its description and illustration in the *Flora vitiensis*, and the one collection cited by Seemann (Seemann 83).

Identity of *Pimia*

It is difficult to reconcile the habit of *Pimia rhamnoides* in Seemann’s (1865: pl. 5) plate with anything remotely resembling Sterculiaceae s.l. (Byttneriaceae and Sterculiaceae s.s. occur naturally in Fiji, and species of Dombeyaceae and Helicteraceae are cultivated). There are no stipules or stipular scars nor are the leaves palmately veined, morphological characters that are universal among the Malvales. In contrast, all but one of the eight floral and fruit details (pl. 5, figs. 1 – 8) can be reconciled with *Commersonia*. The fruit are somewhat malformed and the petal is atypical (broader than usual) but the anther and petal are a close match for those of *Commersonia* as are the stellate-tomentose spines on the fruit. Seemann’s statements (1862b, 1865) that staminodes are not present is not persuasive in eliminating *Commersonia* from consideration since the floral material is so fragmentary and the staminodes of *Commersonia* are so small that it is reasonable to expect that they were overlooked. The one trichome illustrated (Seemann 1865: fig. 8) is unlike anything known in the Malvales. The figure caption states that fig. 8 is “the articulated hair covering the branches” but an annotated sketch affixed to Seemann 83 at Kew (Herbarium Hookerianum), which seems to have served as the basis for the details on the plate illustrated and lithographed by Walter Hood Fitch, states that these multicellular hairs are “from [the] leaf.” The plate also is misleading in how it portrays the habit of the plant; the leaf margin is plane, but the leaf margin on four of the five branchlets found on the syntypes examined (BM, K,

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and L) is strongly revolute. These trichome and leaf margin characters suggest that the vegetative element of *Pimia* is *Diospyros* L. (Ebenaceae), an idea first proposed in the 1980s by G. P. Guymer (pers. comm.) but not formally resolved by him.

Seven species (14 taxa) of *Diospyros* occur naturally in Fiji. Of these, four species (six taxa) have been collected on Vanu Levu. The available keys (Smith 1971, 1981b) are constructed on the basis of fertile material. Nonetheless, the accompanying descriptions provide enough detail to discriminate between the species and varieties, and the leaves of *Seemann* 83 clearly represent an immature stage of *D. foliosa* (A. Gray) Bakh. var. *foliosa*. This variety, which Smith (1971, 1981b) cited as *D. elliptica* (J. R. Forst. & G. Forst.) P. S. Green var. *foliosa* (A. Gray) A. C. Sm., is the only taxon of the genus in Fiji that has a dense indumentum of ferruginous hairs, which also agrees with the descriptions of the foliage of *Pimia rhamnoides* published by Seemann (1862b, 1865). In addition, the multicellular hairs illustrated by Seemann (1865: pl. 5, fig. 8) are identical to those found on the abaxial surface of the young leaves of *D. foliosa* var. *foliosa*.

Typification of *Pimia rhamnoides*

As noted above, the only material cited by Seemann (1862b) in describing *Pimia rhamnoides* is *Seemann* 83 and since he did not indicate a holotype, the existing duplicates are syntypes. Smith (1981a) selected the syntype deposited in BM as the lectotype, but as he was unaware that this collection is based on more than one taxon his choice may be superseded (McNeill *et al.* 2006, Arts. 9.17(c), 9.12). The Vienna Code (McNeill *et al.* 2006, Art. 9.12) stipulates that in the case of mixtures, the type of the name “must remain attached to that part which corresponds most nearly with the original description or diagnosis.” We would argue that for *P. rhamnoides* this part is the *Commersonia* element since Seemann (1862b, 1865) in his protologue and subsequent floristic treatment clearly considered his new genus and species to be allied with *Lasiopetalum* and *Commersonia*. Indeed, for almost 150 years *Pimia* has been identified almost exclusively with Sterculiaceae s.l. (see nomenclatural summary below). The sole exception is the GRIN database that places *Pimia* in synonymy under *Diospyros* (USDA, ARS, National Genetic Resources Program 2010), which was done presumably on the advice of Guymer. Additionally, the Vienna Code (McNeill *et al.* 2006, Recommendation 9A.5) favours selecting the *Commersonia* element as it recommends that in the case of mixtures the lectotype should be chosen to preserve current usage.

We are acutely aware that while the *Commersonia* element is the one that most closely resembles the original description, it never comprised the physical bulk of the type number (*Seemann* 83) and in the

1860s evidently only was present as floral and fruit fragments associated with the BM sheet. Some of this material appears to have been sacrificed in making the plate for *Flora vitiensis* (Seemann 1865: pl. 5), or possibly lost, and now the material is reduced to a few fragments of the stellate-pubescent spines of *C. bartramia* (L.) Merr. contained in a packet on the sheet. These fragments are what we designate below as the lectotype of this name and explicitly exclude all elements that can be assigned to *Diospyros*. Furthermore, we also designate below an epitype since the lectotype now lacks flowers, which were an important part of the original description (Seemann 1862b).

Nomenclatural Summary

Commersonia J. R. Forst. & G. Forst. (Forster & Forster 1775: 22). Type: *Commersonia echinata* J. R. Forst. & G. Forst., **nom. illegit.** (= *Commersonia bartramia* (L.) Merr.).
Pimia Seem. (Seemann 1862b: 366, 1865: 25, pl. 5); Seemann in Lindley & T. Moore (eds) (1866: 889); Pritzel (1866: 215); Bentham & Hooker (1867: 984); K. Schumann (1890: 89 (clave), 90 – 91); T. v. Post & Kuntze (1903: 667); Guppy (1906: 265); Edlin (1935: 125, 142); Smith (1955: 283); Hutchinson (1967: 509); Airy Shaw (1973: 901); E. R. Farr *et al.* (1979: 1343); Smith (1981a: 395); Brummitt (1992: 335, 673); Greuter *et al.* (1993: 875); Wielgorskaya (1995: 78); Mabberley (2008: 687), **synon. nov.** Type: *Pimia rhamnoides* Seem. (= *Commersonia bartramia* (L.) Merr.).

Commersonia bartramia (L.) Merr. (Merrill 1917: 362). Type: The published plate of “*Restiaria alba*” (Rumphius 1743: 187, pl. 119).

Muntingia bartramia L. (Linnaeus 1759: 124).

Commersonia echinata J. R. Forst. & G. Forst. (Forster & Forster 1775: 22, pl. 22), **nom. illegit.**

Pimia rhamnoides Seem. (Seemann 1862b: 366, 1865: 25, pl. 5); Seemann in Lindley & T. Moore 1866: 889); Horne (1881: 266); Drake (1890: 124); Smith (1955: 283); J. W. Parham (1972: 169); Smith (1981a: 395), **synon. nov.** Type: Fiji, Vanu Levu, Mathuata, Oct. 1860, *B. C. Seemann* 83 (lectotype BM, fragments of fruit with stellate-tomentose spines only, selected here). Epitype: Fiji, Vanu Levu, Mathuata, Mt Uluimbau [“The Three Sisters”], S of Lambasa, 13 Nov. 1947, A. C. Smith 6594 (epitype K!, selected here; isoeptypes A!, US!).

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