Phylogenetic and taxonomic studies in Macaranga, Mallotus and other acalyphoid genera (Euphorbiaceae s.s.)

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CHAPTER 4

PROPOSAL TO CONSERVE THE NAME *MALLOTUS* AGAINST *TREWIA* (EUPHORBIACEAE S.S.)

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Submitted to Taxon

Mallotus Lour., Fl. Cochinch. 635, 1790. *nom. cons. prop.*
Typus: *M. cochinchinensis* Lour. [=*M. paniculatus* (Lam.) Müll.Arg. var. *paniculatus*]

(=) *Trewia* L. ['*Trevia*', see the last paragraph of the proposal], Sp. Pl. 1193, 1753. *nom. rej. prop.*
Typus: *T. nudiflora* L.

Mallotus Lour. is a large palaeo(sub)tropical genus of shrubs and trees (and rarely climbers; Govaerts et al., 2000). A recent molecular phylogenetic study on *Mallotus* and related genera (Kulju et al., in press) clearly demonstrated the paraphyly of this genus (a result already anticipated by earlier studies with limited taxon sampling; Slik & Van Welzen, 2001; Wurdack et al., 2005). The paraphyly of *Mallotus* is partly caused by the genus *Trewia* L., which was found to be part of the strongly supported main *Mallotus* clade (termed '*Mallotus* s.s. clade'). This result is also supported by morphological evidence, because *Trewia* differs from *Mallotus* only in the fruit type (in *T. nudiflora* L., the type species, the fruits are indehiscent and drupaceous instead of dehiscent and capsular as typically seen in Euphorbiaceae; Kulju et al., 2007). We deemed it necessary to reflect these phylogenetic results into a classification: *Trewia* was consequently merged with *Mallotus*, together with two other genera (*Neotrewia* Pax & K. Hoffm. and *Octospermum* Airy Shaw; Kulju et al., 2007; see also the review of the morphology of the newly circumscribed *Mallotus* s.s., Sierra et al., 2007). The transferred *Trewia* species are also present in the key of *Mallotus* sect. *Rottleropsis* (Sierra et al., 2007). Unfortunately, the name *Trewia* (1753) has priority over the name *Mallotus* (1790). *Trewia*, a genus with only 2 species, has never before been considered congeneric with the species rich and much more widespread genus *Mallotus*. To prevent name changes for all the species in the genus *Mallotus*, we propose to conserve the name *Mallotus* against *Trewia*.

In the phylogenetic analyses of *Mallotus* and related genera (see Fig. 5 in Kulju et al., in press), *Trewia nudiflora* is clearly part of the *Mallotus* s.s. clade and forms a highly supported clade with *Mallotus khasianus* Hook.f. These two species also share morphological similarities (Kulju et al., 2007). The unpublished further studies with different sequence markers and expanded taxon sampling as well demonstrate that *Trewia* is part of the strongly supported *Mallotus* s.s. clade, but its position inside this clade remains ambiguous.

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After transferring 16 species from *Mallotus* to a related genus *Cordemoya* (Sierra et al., 2006), the genus *Mallotus* is still estimated to comprise 110 species (Sierra et al., 2007). Therefore, adopting the name *Trewia* for this genus would result in a great number of new combinations, instead of two new combinations when the name *Mallotus* is conserved. Moreover, *Mallotus* is widely distributed from Africa and Madagascar to the West Pacific, whereas the two *Trewia* species have a much narrower Asiatic distribution (*T. polycarpa* Benth. is an extremely rare Indian endemic, and *T. nudiflora*, although present from India to the Philippines, is rather rare in many parts of the distribution area; Airy Shaw, 1966, 1969; Kulju et al., 2007). Adopting the name *Trewia* would therefore affect a large number of regional floras and treatments, many of which are unfamiliar with the name *Trewia* as it does not occur in those regions (e.g., Airy Shaw, 1972; Whitmore, 1973; Airy Shaw, 1975; Long in Grierson & Long, 1987; Kiu et al., 1996); Radcliffe-Smith, 1996**;** Forster, 1999). The name *Mallotus* is also used in the recent revisional work of the genus in Africa, Malesia and Thailand (Bollendorff & al. 2000; Slik & Van Welzen, 2001b; Sierra et al., 2005; Sierra & Van Welzen, 2005; Sierra & Van Welzen, 2006; Van Welzen & Sierra, 2006; Sierra et al., 2007).

The genus *Mallotus* is also ecologically important. It is present in a wide variety of habitats in Southeast Asian forests and many species are common in the more disturbed forest types (Keßler, 2000; Slik et al., 2003a). *Mallotus* species (together with species of the related genus *Macaranga* Thou.) feature in many ecological studies, e.g.: Primack & Lee, 1991; Eichhorn, 2006. They are used as indicators for various kinds of forest disturbance (Slik et al. 2003a; Slik, 2005). Therefore, adopting the name *Trewia* would surely cause irritation and confusion not just among taxonomists, but also in the fields of tropical ecology and biodiversity.

It may be noted that the name *Trewia* itself is not free from nomenclatural problems. Originally Linnaeus (1753) spelled the name "*Trevia*", but later he used both "*Trevia*" and "*Trewia*" (see Nicolson et al., 1988). In the subsequent literature, the spelling "*Trewia*" is almost universally used (see references in Kulju et al., 2007). However, the present code (McNeill et al., 2006: art. 13.4) gives priority to the original spelling in Sp. Pl. (1753) and therefore "*Trevia*" should be adopted. When the name *Mallotus* is conserved and *Trewia*/*Trevia* placed in the synynomy, this problem becomes insignificant. This is an extra benefit of conserving *Mallotus* over *Trewia*, in addition to maintaining the nomenclatural stability, as explained above.