

## 23. CALLMANDER Martin W. & Peter B. PHILLIPSON: Notes on the genus *Ochna* L. (Ochnaceae) in Madagascar

### Introduction

The pantropical genus *Ochna* L. (Ochnaceae) comprises c. 80 species of trees and shrubs from Africa and Asia (VERDCOURT, 2005). In the early 20<sup>th</sup> Century, VAN TIEGHEM (1902a, 1902b, 1902c, 1903, 1907) worked on a global taxonomic revision of the family Ochnaceae in which he split the family into a total of 57 genera, describing 46 as new. VAN TIEGHEM (1902b) split the genus *Ochna* into 15 segregate genera based on the dehiscence of the stamens (longitudinal or poricidal), the morphology of the embryo (iso- or heterocotyledonous), and number of carpels. Five of Van Tieghem's *Ochna* segregates are present in Madagascar: *Diporidium* Tiegh., *Discladium* Tiegh., *Ochnella* Tiegh., *Pleuroridgea* Tiegh. and *Polythecium* Tiegh., while he considered *Ochna sensu stricto* to be absent. Van Tieghem also employed very narrow species concepts and described many new species in the family.

When PERRIER DE LA BATHIE (1941) revised the Ochnaceae for Madagascar, and later published the treatment for the *Flore de Madagascar et des Comores* (PERRIER DE LA BATHIE, 1951), he generally followed Van Tieghem's generic concepts, although he did not recognise *Polythecium*. He included 17 of Van Tieghem's 18 Malagasy species of *Polythecium* in *Diporidium*, while *Polythecium madagascariense* (DC.) Tiegh. was transferred to *Ochnella*. *Polythecium* was regarded by VAN TIEGHEM himself (1902b) as very close to *Diporidium*, differing only in having 6-10 (v. 5) carpels. However, authors of recent regional revisions and floras for other geographic regions have generally not followed Van Tieghem's narrow generic concepts, i.e. for South Tropical Africa (ROBSON, 1962), Southern Africa (DU TOIT & OBERMEYER, 1976), East Africa (VERDCOURT, 2005) and for the Indo-Pacific region (KANIS, 1968). In these treatments, the *Ochna* segregates have mostly been reunited and some of Van Tieghem's new species have been reduced to synonymy. An exception is the genus *Pleuroridgea* Tiegh., which has been reduced to synonymy under *Brackenridgea* A. Gray.

We have completed a review of the genus *Ochna* and its segregates in the context of the Catalogue of Vascular Plants of Madagascar Project (MADAGASCAR CATALOGUE, 2012), and concur with accepted opinion on its delimitation. We have adopted a broad concept of *Ochna*, with *Diporidium*, *Discladium*, *Ochnella* and *Polythecium* treated as synonyms of *Ochna*, a point of view already established for Madagascar by SCHATZ (2001), and we have published new combinations for the Malagasy species of *Pleuroridgea* in *Blackenridgea*, in an earlier note in this series (CALLMANDER & al., 2010). The purpose of the present note is to formally transfer four Malagasy species to *Ochna* that do not already have valid names in this genus. All are endemic to Madagascar and were originally described in either *Diporidium*, *Discladium* or *Polythecium*. Three simply require new combinations, and one requires a new name. Further revisionary work on the *Ochna* of Madagascar is underway, and will lead to the publication of a complete revision. It will include the description of many new species and threat analyses for all Malagasy species including those presented here. Preliminary lists of specimens and distribution maps for all published species, including those treated in this article are available in the «Catalogue of Vascular Plants of Madagascar» (MADAGASCAR CATALOGUE, 2012).

### Nomenclature

*Ochna baronii* (Tiegh.) Callm. & Phillipson, **comb. nova**  
= *Diporidium baronii* Tiegh. in Ann. Sci. Nat. Bot. ser. 8, 16: 359. 1902.

**Typus: MADAGASCAR:** Chiefly North-West, received IX.1887, fl., *Baron 5457* (holo-: P [P00730643]!; iso-: K!).

**Observations.** – This species is known from rocky habitats and forest patches in the Isalo and Makay Massifs in the south-west, through the dry forests of the, west and north-west on sand and limestones as far north as the Boina region. The label

Addresses of the authors: MWC: Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri, 63166-0299, U.S.A. and Conservatoire et Jardin botaniques de la Ville de Genève, ch. de l'Impératrice 1, case postale 60, 1292 Chambésy, Genève, Switzerland. E-mail: [martin.callmander@mobot.org](mailto:martin.callmander@mobot.org)

PBP: Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri, 63166-0299, U.S.A. and Muséum national d'Histoire naturelle, Département Systématique et Evolution, UMR 7205 OSEB, case postale 39, rue Cuvier 57, 75231 Paris, cedex 05, France.

of the type specimen (*Baron 5457*), lacks a precise collecting locality, but, based on information from Baron's notes is believed to have been collected in the vicinity of the «Androna Province» which is taken to be the Androna Plateau (Bas Plateau d'Androna) some 50 km south of the town of Antsosihiy, in Sofia Region of Mahajanga Province (WAHLERT, *pers. comm.*). *Ochna baronii* differs from *O. pervilleana* Baill. by its shorter leaves (ca. 3 cm long instead of ca. 5-8 in *O. pervilleana*) and its solitary flowers (inflorescences always with 2 or more flowers in *O. pervilleana*).

***Ochna louvelii*** (H. Perrier) Callm. & Phillipson, **comb. nova**

= *Diporidium louvelii* H. Perrier in Not. Syst. (Paris) 10: 35. 1941.

**Typus:** MADAGASCAR. Prov. Toamasina: Centre Est, Analamazaotra, s.d., *Louvel 25* (holo-: P [P00048443]!).

*Observations.* – *Ochna louvelii* seems to be a narrow endemic known only from a couple of collections from the humid montane forests around Moramanga on the eastern

escarpment. This species differs from *O. polycarpa* Baker, which occurs in the same region but extends southwards on the highlands to near Fianarantsoa, by its lax inflorescence (vs. contracted in *O. polycarpa*) with c. 10-20 minute flowers with sepals > 5 mm (vs. 1-5 larger flowers with sepals 8-10 mm), and from *O. thouvenotii* by its smaller leaves (1-2 × 0.8-1.5 cm vs. 3-4.5 cm × 1-2.5 cm) and its many-flowered inflorescences (10-20 vs. 1-5 flowers).

***Ochna sambiranensis*** Callm. & Phillipson, **nom. nov.**

= *Polythecium macranthum* Tiegh. in Ann. Sci. Nat. Bot. ser 8, 16: 370. 1902.

**Typus:** MADAGASCAR. Prov. Antsiranana: Nosy Be, meeresstrand, VII.1879, fl., *Hildebrandt 3192* (holo-: P [P00568727]!; iso-: G [G00353496]!, P [P00568728, P00568729]!).

*Observations.* – This species was first described as *Polythecium macranthum* Tiegh., based on a single collection (*Hildebrandt 3192*) from Nosy Be. The species was placed in



**Fig. 1.** – Living plant of *Ochna sambiranensis* Callm. & Phillipson at Kalabenono corresponding to Callmander & al. 703.

[Photo: M. W. Callmander]

synonymy by PERRIER DE LA BATHIE (1941), along with seven other species of *Polythecium* described by Van Tieghem, under a very broadly-circumscribed *Diporidium ciliatum* (Lam.) Kuntze (= *Ochna ciliata* Lam.). We have found a number of additional collections also from lowland forests in the Sambirano region of NW Madagascar that are an excellent match for the type collection, mostly modern collections that were not available to Perrier de la Bathie. The specimens all possess a distinct suite of characters, and we believe they represent a well-marked species that should now be recognised in the genus *Ochna*. A new combination in *Ochna* based on the existing epithet is not possible, because this name already exists for a different species (*O. macrantha* Baker, also from Madagascar). We therefore propose the new name *O. sambiranensis* for this species. VAN TIEGHEM (1902b: 370) noted the following diagnostic characters for the species: its relatively large leaves with their conspicuously ciliate margins and mucronate apices and its large flowers in a few-flowered raceme with a highly-contracted axis, resembling an umbel (Fig. 1). In addition we add that *O. sambiranensis* can be distinguished from *O. ciliata* to which it is probably most closely related, by its coriaceous, narrowly elliptic to lanceolate leaves, with a rather obscure tertiary venation (vs. membranous, obovate to oblanceolate leaves, with conspicuous tertiary venation); with its flowers borne on much longer pedicels (usually > 20 mm long), often developing before the leaves (vs. shorter pedicels and with flowers concurrent with the leaves).

*Etymology.* – The species epithet refers to the Sambirano biogeographic region to which *Ochna sambiranensis* appears to be restricted.

***Ochna thouvenotii* (H. Perrier) Callm. & Phillipson, comb. nova**

= *Discladium thouvenotii* H. Perrier in Not. Syst. (Paris) 10: 26. 1941.

**Typus:** MADAGASCAR: Analamazaotra, s.d., *Thouvenot 66* (holo-: P [P00391402]!; iso-: K!, P [P00391403]!).

*Observations.* – *Ochna thouvenotii* appears to be confined to the eastern escarpment around Moramanga and to near Foulpointe on the East Coast. Differences between this species and *O. louvelii* which also occurs around Moramanga are described above under the latter species. *Ochna thouvenotii* differs from *O. polycarpa*, which is also found on the eastern escarpment, by its larger leaves (3–4.5 cm × 1–2.5 cm vs. 1.5–3 cm × 0.7–1.5 cm) and flowers with sepals at anthesis > 1.5 cm in length (vs. ca. 1 cm in *O. polycarpa*).

## Acknowledgements

We are grateful to Greg Wahlert for sharing his knowledge on the Richard Baron's collecting itinerary. Financial support was provided by grants from the U.S. National Science Foundation (0743355) and the Andrew W. Mellon Foundation.

## References

- CALLMANDER, M. W., S. BUERKI & P. B. PHILLIPSON (2010). The genus *Brackenridgea* A. Gray (Ochnaceae) in Madagascar. *Candollea* 65: 374–375.
- DU TOIT, P. C. V. & A. A. OBERMEYER (1976). Ochnaceae. In: ROSS, J. H. (ed.), *Fl. Southern Africa* 22. Government Printer, Pretoria.
- KANIS, A. (1968). A revision of the Ochnaceae of Indo-Pacific area. *Blumea* 16: 1–82.
- MADAGASCAR CATALOGUE (2012). Catalogue of the vascular plants of Madagascar [<http://www.efloras.org/madagascar>].
- PERRIER DE LA BATHIE, H. (1941). Révision des Ochnacées de la région malgache. *Notul. Syst. (Paris)* 10: 333–369.
- PERRIER DE LA BATHIE, H. (1951). Ochnacées. In: HUMBERT, H. (ed.), *Fl. Madagascar Comores* 133. Muséum national d'Histoire naturelle, Paris.
- ROBSON, N. (1962). New and little known species from the Flora Zambesiaca area. *Bol. Soc. Brot. ser. 2*, 36: 1–39.
- SCHATZ, G. E. (2001). *Generic Tree Flora of Madagascar*. Royal Botanic Gardens, Kew & Missouri Botanical Garden, St. Louis.
- VAN TIEGHEM, PH. (1902a). Subdivision du genre *Ochne* et constitution actuelle de la tribu des Ochnées. *J. Bot. (Morot)* 4: 113–128.
- VAN TIEGHEM, PH. (1902b). Sur les Ochnacées. *Ann. Sci. Nat. Bot. ser. 8*, 16: 161–416.
- VAN TIEGHEM, PH. (1902c). L'embryon des Ochnacées et son emploi dans la définition des genres. *Bull. Mus. Hist. Nat.* 8: 208–218.
- VAN TIEGHEM, PH. (1903). Nouvelles observations sur les Ochnacées. *Ann. Sci. Nat. Bot. ser. 8*, 18: 37–60.
- VAN TIEGHEM, PH. (1907). Supplément aux Ochnacées. *Ann. Sci. Nat. Bot. ser. 9*, 20: 171–192.
- VERDCOURT, B. (2005). Ochnaceae. In: BEENTJE, H. J. & S. A. GHAZANFAR (ed.), *Fl. Trop. E. Afr.* Royal Botanic Gardens, Kew.