

New combinations in Hoya for the species of *Clemensiella* (Marsdenieae, Apocynaceae)

Authors: Wanntorp, Livia, and Meve, Ulrich

Source: *Willdenowia*, 41(1) : 97-99

Published By: Botanic Garden and Botanical Museum Berlin (BGBM)

URL: <https://doi.org/10.3372/wi.41.41110>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

LIVIA WANNTORP^{1*} & ULRICH MEVE²**New combinations in *Hoya* for the species of *Clemensiella* (*Marsdenieae*, *Apocynaceae*)****Abstract**

Wanntorp L. & Meve U.: New combinations in *Hoya* for the species of *Clemensiella* (*Marsdenieae*, *Apocynaceae*). – Willdenowia 41: 97–99. – Online ISSN 1868-6397; © 2011 BGBM Berlin-Dahlem.
doi:10.3372/wi.41.41110 (available via <http://dx.doi.org/>)

Clemensiella, with two species in the Philippines, Sumatra and Sarawak, respectively, has traditionally been considered as one of the distinct genera of the tribe *Marsdenieae*, based on morphological evidence. However, new molecular phylogenetic evidence has demonstrated that *Clemensiella* is nested within *Hoya* as sister group to species of *H.* sect. *Eriostemma*. Therefore we propose to merge *Clemensiella* with *Hoya* and provide the new combinations *H. mariae* and *H. omlori* for its two species.

Additional key words: *Hoya* sect. *Eriostemma*, phylogenetic relationships, systematics, taxonomy

Schlechter (1915) described the new genus *Clemensiella* consisting of the single species *C. mariae* (Schltr.) Schltr. (Fig. 1A–B), endemic to the Philippines. Today, we know that *Clemensiella* is not only restricted to the Philippines but also occurs in Sumatra and Sarawak (Omlor 1998; Meve & al. 2009). However, collections of specimens from the latter regions were shown to belong to a second species of *Clemensiella*, *C. omlori* Livsh. & Meve (Fig. 1C) named after R. Omlor (Meve & al. 2009), who first recognised this taxon as distinct from *C. mariae*. This species is morphologically very similar to *C. mariae* but the shape of the corolla, which is typically campanulate in *C. mariae* and salvershaped in *C. omlori*, as well as characters of the gynostegium clearly separate the two species from each other (Meve & al. 2009). Recently, *C. omlori* has also been collected in Perak, W Malaysia (S. Somadee & T. Nyhuus, pers. comm.).

Schlechter (1915) placed *Clemensiella* in the tribe *Marsdenieae* next to *Telosma* without giving any explanation for his assessment. Omlor (1998) in his monograph of the tribe, rejected Schlechter's view and instead

pointed out a more isolated position for *Clemensiella* in the *Marsdenieae*, while at the same time discussing the morphological similarity between the pollinia of *Clemensiella* and *Marsdenia* and pointing out the similarity in the epiphytic habit of both *Clemensiella* and *Hoya*. Meve & al. (2009) hypothesised that characters such as adventitious roots, persistent inflorescences and valvate corolla lobes as well as preliminary molecular synapomorphies could support a close relationship between *Clemensiella* and a group including *Hoya* R. Br. and *Dischidia* R. Br. In fact, because of this close morphological evidence, specimens of *C. mariae* have occasionally been described as belonging to the genus *Hoya* (Kloppenburger & Siar 2006).

More recently, a molecular phylogenetic study based on 77 species of *Hoya*, four of *Dischidia* and including one accession of *Clemensiella mariae*, showed that *Clemensiella* is nested inside *Hoya*, clearly separate from *Dischidia*, as the sister group of the species of *Hoya* that are generally attributed to *H.* sect. *Eriostemma* Schltr. (Wanntorp & al. 2011). While discussing characters in common to *Clemensiella* and *Hoya/Dischidia*, Meve &

1 Swedish Museum of Natural History, Department of Phanerogamic Botany, Box 50007, SE-104 05, Stockholm, Sweden;
*e-mail: livia.wanntorp@nrm.se (author for correspondence).

2 Department of Plant Systematics, University of Bayreuth, 95440 Bayreuth, Germany.



Fig. 1. A–B: *Hoya mariae* (≡ *Clemensiella mariae*); C: *H. omlori* (≡ *C. omlori*); D: *H. ciliata* of *H. sect. Eriostemma*. – Photographs all taken from plants in cultivation: A+B by U. Meve (Philippines, s. loc., *P. Gozon s.n.*, UBT), C by S. Somadee (Malaysia, Perak, *Somadee s.n.*), D by A. Boström (ex hort., *Boström s.n.*).

al. (2009) also pointed out characters of *Clemensiella* that are not typical for *Hoya/Dischidia* but rather place *Clemensiella* closer to the other genera of *Marsdenieae*. Among these characters are flowers having fleshy corollas with valvate lobes and clavate pollinia without pellucid margins attached to small and narrowly oblong corpuscles by long, ribbon-shaped caudicles. Interestingly, these characters are also found in species belonging to the peculiar *H. sect. Eriostemma* (Fig. 1D), which has been even proposed as a genus on its own (Kloppenburger & Gilding 2001), or as possible sister group to *Hoya* or the remainder of it (Wanntorp & al. 2006 a, b). Presently, there is no clear evidence supporting this sister relationship and *H. sect. Eriostemma* is therefore considered as part of *Hoya*. Recently, Wanntorp & al. (2006b) and Wanntorp (2007) provided clear molecular and morphological evidence supporting a nested position of the genera *Micholitzia* N. E. Br., *Absolmsia* Kuntze

and *Madangia* P. I. Forst. & al. in the *Marsdenieae* and *Clemensiella* is therefore yet another example of genera that were originally described as monotypic and that cannot be kept separate from *Hoya*, if this genus has to be monophyletic.

Hoya R. Br., Prodr.: 459. 1810. – Type: *Hoya carnosa* (L. f.) R. Br.
= *Clemensiella* Schltr. in Repert. Spec. Nov. Regni Veg. 13: 566. Sep 1915 ≡ *Clemensia* Schltr. in Repert. Spec. Nov. Regni Veg. 13: 542. Jun 1915, non Merrill 1908. – Type: *Clemensiella mariae* (Schltr.) Schltr.

Hoya mariae (Schltr.) L. Wanntorp & Meve, **comb. nov.** ≡ *Clemensiella mariae* (Schltr.) Schltr. in Repert. Spec. Nov. Regni Veg. 13: 566. Sep 1915 ≡ *Clemensia mariae* Schltr. in Repert. Spec. Nov. Regni Veg. 13: 543. Jun 1915. – Lectotype (designated by Meve & al. 2009: 450):

Philippines, Laguna, Luzon, San Antonio, 9.–10.1912, *Ramos 15962* (P; isoelectotypes: BM, K).

= *Hoya viracensis* Kloppenb. & Siar in *Fraterna* 19(4): 5. 2006. – Holotype: Philippines, Catanduanes, Virac, Brgy. Kalatagan, secondary forest, soil clay loam, 2.12.1991, *Barbon, Garcia & Alvarez PPI 5658* (PNH; isotypes: BISH, BRIT!, CAHUP).

[– *Clemensiella dischidioides* Elmer in Merrill, Enum. Philipp. Fl. Pl. 3: 356. 1923 & in Leaflet. Philipp. Bot. 10: 3549. 1938, nom. nud.]

Hoya omlori (Livsh. & Meve) L. Wanntorp & Meve, **comb. nov.**

≡ *Clemensiella omlori* Livsh. & Meve in *Edinburgh J. Bot.* 66: 454. 2009. – Holotype: Indonesia, Aceh, Gunung Leuser Reserve, Camp Simpang and vicinity, 3–5 km upstream Lau [stream] Ketambe, ca. 35 km NW of Kutatjane, 400–600 m, 19.8.1972, *deWilde & deWilde-Duyffes 14377* (L; isotype: K).

Acknowledgements

We thank T. Nyhuus for kindly providing the original material of *C. mariae*; S. Somadee and A. Boström for photographic material; and the staff of the Molecular Systematics Laboratory (MSL) of the Swedish Museum of Natural History, Stockholm, for laboratorial support. Financial support was received from the Swedish Research Council as a grant (to L.W.) for the project “Diversification in the Indomalaysian Rain Forest – ancient stability or recent dynamics?” (VR-621-2009-5370).

References

- Kloppenburger R. D. & Gilding E. 2001: *Eriostemma* (Schlechter) Kloppenburger & Gilding. – *Fraterna* **14(2)**: 1.
- Kloppenburger R. D. & Siar S. V. 2006: *Hoya viracensis* Kloppenburger & Siar sp. nova. – *Fraterna* **19(4)**: 5–7.
- Meve U., Laurente O., Alejandro G. J. & Livshultz T. 2009: Systematics of *Clemensiella* (Apocynaceae, Asclepiadoideae). – *Edinburgh J. Bot.* **66**: 447–457.
- Omlor R. 1998: Generische Revision der *Marsdenieae* (Asclepiadaceae). – Aachen: Shaker.
- Schlechter R. 1915: *Asclepiadaceae philippinenses* I–II. – *Repert. Spec. Nov. Regni Veg.* **13**: 537–544, 554–566.
- Wanntorp L. 2007: Pollinaria of *Hoya* (Marsdenieae, Apocynaceae), shedding light on molecular phylogenetics. – *Taxon* **56**: 465–478.
- Wanntorp L., Gotthardt K. & Muellner A. N. 2011: Revisiting the wax plants (*Hoya*, *Marsdenieae*, *Apocynaceae*): Phylogenetic tree using the chloroplast markers *matK* gene and *psbA-trnH* intergenic spacer. – *Taxon* **60**: 4–14.
- Wanntorp L., Kocyan A. & Renner S. S. 2006a: Wax plants disentangled: A phylogeny of *Hoya* (Marsdenieae, Apocynaceae) inferred from nuclear and chloroplast DNA sequences. – *Molec. Phylogen. Evol.* **39**: 722–733.
- Wanntorp L., Kocyan A., Donkelaar R. van & Renner S. S. 2006b: Towards a monophyletic *Hoya* (Marsdenieae, Apocynaceae): Inferences from the chloroplast *trnL* region and the *rbcL-atpB* spacer. – *Syst. Bot.* **31**: 586–596.