

New combinations in *Debia*, *Dimetia* and *Scleromitron* (Rubiaceae) relating to the Flora of Thailand

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ABSTRACT

New combinations for five taxa in the *Hedyotis-Oldenlandia* complex (Rubiaceae) in Thailand are proposed, namely *Debia rosettifolia*, *Dimetia capitellata* var. *pubescens*, *D. prainiana*, *D. ridleyana* and *Scleromitron kerrii*. Six relevant taxa are lectotypified.

KEYWORDS: *Hedyotis-Oldenlandia* complex, typification.

Accepted for publication: 27 April 2021. Published online: 31 May 2021

INTRODUCTION

Scleromitron (Wight & Arn.) Meisn. was first treated as separate genus by Meisner in 1838, based on *Hedyotis* sect. *Scleromitron* Wight & Arn. The recent phylogenetic analyses by Guo *et al.* (2013) and Neupane *et al.* (2015) supported *Scleromitron* as a distinct genus. *Oldenlandia tenelliflora* (Blume) Kuntze var. *kerrii* was named by Craib in 1911 and then elevated to species as *Hedyotis kerrii* (Craib) Craib in 1932. In contrast, Fukuoka (1970) considered the latter as a mere variety as *H. tenelliflora* var. *kerrii* (Craib) Fukuoka. It differs from *S. tenelliflorum* Korth. by having the corolla glabrous inside at the throat (vs. a pilose corolla throat inside). Consequently, it should be reinstated following Craib (1932), and transferred to *Scleromitron* because of its homostylous flowers with exerted stamens and style.

The genus *Dimetia* (Wight & Arn.) Meisn. was elevated from *Hedyotis* sect. *Dimetia* Wight & Arn. by Meisner (1838). It was supported as a separate genus by Guo *et al.* (2013), Neupane *et al.* (2015) and Wang (2019). *Dimetia scandens* (Roxb.) R.J.Wang, selected as the type of the genus (Guo *et al.*, 2013), is a climbing species with a terminal inflorescence. The distinct climbing taxa that have terminal inflorescence, densely hair inside the corolla

throat, loculicidally and septicidally dehiscent fruit, dorsiventrally compressed and often with winged seeds of the *Hedyotis-Oldenlandia* complex in Thailand should also be transferred to the genus *Dimetia*.

The genus *Debia* Neupane & N.Wikstr. was established by Neupane & Wikström (2015). It was separated from the other genera of the *Hedyotis-Oldenlandia* complex by phylogenetic analyses. The genus is distinct by having ovate to oblong and membranous leaves, hair-ring/band inside the corolla throat, loculicidally dehiscent fruit at the disc area, and angular with often wavy cell-wall seeds. Four species, *Debia andamanica* (Kurz) Neupane & N.Wikstr., *D. krewanhensis* (Pierre ex Pit.) Neupane & N.Wikstr., *D. oligocephala* (Pierre & Pit.) Neupane & N.Wikstr. and *D. ovatifolia* (Cav.) Neupane & N.Wikstr., were initially membered. In Thailand, *Oldenlandia rosettifolia* E.T. Geddes was named by Geddes in Craib (1928) and was subsequently synonymized by Fukuoka (1970) within the name *Hedyotis ovatifolia* Cav. However, it is distinguished from the latter by the leaves glabrous on both surfaces, pendulous flowers and connivent anthers. Therefore, *Oldenlandia rosettifolia* should be reinstated and combined under the genus *Debia*.

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Several new combinations, lectotypes and synonymizations in *Debia*, *Dimetia* and *Scleromitron* are needed for the forthcoming account of Rubiaceae for the Flora of Thailand.

TAXONOMY

1. *Debia rosettifolia* (E.T.Geddes) Wangwasit & Chantar., **comb. nov.**— *Oldenlandia rosettifolia* E.T.Geddes, Bull. Misc. Inform. Kew 1928: 242. 1928; Craib, Fl. Siam. 2(1): 58. 1932. Type: Thailand, Saraburi, Muak Lek, Kao Pong Swang, 16 July 1925, *Nai Noe 118* (lectotype **ABD** [ABDUH:2/434!], designated here; isolectotypes **BK** [BK257360!], **BM** [BM000945128!], **K** [K000760516!]).

— *Oldenlandia marcanii* Craib, Bull. Misc. Inform. Kew 1931: 443. 1931, syn. nov.; Fl. Siam. 2(1): 57. 1932. Type: Thailand, Kanchanaburi, Sai Yok NP, c. 250 m, limestone hill, 1 Aug. 1928, *A. Marcan 2376* (lectotype **ABD** [ABDUH:2/432!], designated here; isolectotype **BM** [BM000957901!], **K** [K000760520!]).

Note.— *Debia rosettifolia* is very similar to *D. ovatifolia* (Cav.) Neupane & N. Wikstr. but differs in having glabrous leaves and oblong, connivent and violet-blue anthers of 1–1.8 by 0.2–0.3 mm size. *Nai Noe 118*, the type collection, was examined with five sheets at **ABD**, **BK**, **BM**, **K**, and **TCD**. The duplicate ABDUH:2/434 at **ABD** is chosen as the lectotype because it is the original material that the author, Elisabeth T. Geddes who studied Botany at Aberdeen University (The Scotsman, 1924, p. 5), described. *Oldenlandia marcanii* (Craib 1931b) was reduced to a synonym of *Hedyotis ovatifolia* Cav. (now, *Debia ovatifolia*) by Fukuoka (1970). However, it is more similar to *Debia rosettifolia* by having glabrous leaves and oblong anthers and must be treated as a synonym of the latter. We select *Marcan 2376* at **ABD** to be the lectotype because it was deposited at the place where professor W.G. Craib worked.

2. *Dimetia capitellata* (Wall. ex G.Don) Neupane & N. Wikstr., Taxon 64: 315. 2015.

var. **pubescens** (Kurz) Wangwasit & Chantar., **comb. nov.**— *Hedyotis capitellata* var. *pubescens* Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 46(2): 135. 1877; Fukuoka in S.E. Asian Stud. 8(3): 327. 1970. Type: Myanmar, Pegu, Roselay Valley, s. dat., *W.S. Kurz 1431* (lectotype **CAL** [CAL200057 image!],

designated here; possible isolectotype **CAL** [CAL200047 image!, ‘Tywoon dist., Tonkyaghat’]).

— *Hedyotis dimorpha* Craib, Bull. Misc. Inform. Kew 1914: 124. 1914; Fl. Siam. 2(1): 40. 1932. Type: Thailand, Lampang, Pak Kawng, near Lakon, 360 m, 3 Feb. 1912, *A.F.G. Kerr 2310* (lectotype **ABD** [ABDUH: 2/667!], designated here; isolectotypes **BM** [BM000945151!], **E** [E00327663 image!], **K** [K000760331!, K000760332!], **TCD** [TCD0017451 image!]).

Note.— *Dimetia capitellata* var. *pubescens* is distinct from *D. capitellata* var. *capitellata* by having calyx lobes distinctly longer than the calyx tube. Kurz (1877) cited the locality of *Hedyotis capitellata* var. *pubescens* from the hill-toungyas, and along choungs in the tropical forest of the Martaban and Tenasserim hills, up to 900 m elevation without collection details. Two sheets of *Kurz 1431* at **CAL** from Pegu are labelled as *Hedyotis capitellata* var. *pubescens*. Of these, CAL200057 at **CAL** is in the best condition and, therefore, designated as the lectotype. Craib (1914) described *H. dimorpha* and cited *Kerr 2310*, *Kerr 2379* and *Collett 430* in the protologue. *Kerr 2310* (ABDUH: 2/667) is designated as lectotype because it is an orthodox specimen, Craib described, and well preserved.

3. *Dimetia prainiana* (King) Wangwasit & Chantar., **comb. nov.**— *Hedyotis prainiana* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 72(2): 158. 1904. Type: Malaysia, Penang, June 1886, *C. Curtis 977* (**K** [K000760372!]).

Note.— *Dimetia prainiana* has distinctive bracts which are more or less as long as the radial of the capitular flower head, and an indistinct corolla which is usually exerted above the calyx by up to 1.5 mm.

4. *Dimetia ridleyana* (Craib) Wangwasit & Chantar., **comb. nov.**— *Hedyotis ridleyana* Craib, Bull. Misc. Inform. Kew 1931: 278. 1931. Type: Thailand, Ranong, La-un, 50 m, *A.F.G. Kerr 16458* (lectotype **ABD** [ABDUH:2/677!], designated here; isolectotypes **BK** [BK257363!], **BM** [BM000945145!], **K** [K000760336!]).

Note.— *Dimetia ridleyana* is distinct in having sessile flowers with a recurved calyx and a glabrous disc of capsules. Craib (1931a) described *Hedyotis*

ridleyana and cited *Kerr 16458* in the protologue. Four duplicates from **ABD**, **BK**, **BM**, and **K** were examined; the one at **ABD** is designated as lectotype because it is the original material that the author described.

5. Scleromitron kerrii (Craib) Wangwasit & Chantar., **comb. nov.**— *Oldenlandia tenelliflora* var. *kerrii* Craib, Bull. Misc. Inform. Kew 1911: 388. 1911; Bull. Misc. Inform. Kew 1912: 101. 1912.— *Hedyotis kerrii* (Craib) Craib, Fl. Siam. 2(1): 42. 1932.— *H. tenelliflora* var. *kerrii* (Craib) Fukuoka in S.E. Asian Stud. 8(3): 322. 1970. Type: Thailand, Chiang Mai, Doi Sutep NP, 300–750 m, 10 Oct. 1909, *A.F.G. Kerr 821* (lectotype **K** [K000760519!], designated here; isolectotypes **K** [K000760517!, K000760518!], **TCD** [TCD0017318 image!]).

Note.— *Scleromitron kerrii* differs from *Scleromitron tenelliflorum* (Blume) Korth. by the corolla being glabrous inside. It also differs from *Scleromitron angustifolium* (Cham. & Schltld.) Benth. by erect or ascending stems, leaves scabrous throughout on the upper surface and of 4–8.5 by 0.3–2.5 cm size, clustered flowers in the leaf axils and with or without peduncle. *Kerr 821* was cited by Craib (1911) in the protologue of *Oldenlandia tenelliflora* var. *kerrii*. Four duplicates are housed at **K** (3 sheets) and **TCD**. The material in **K** (K000760519) is a more complete specimen and proposed here as lectotype.

ACKNOWLEDGEMENTS

The authors wish to thank the directors, curators and staff of **ABD**, **BK**, **BKF**, **BM**, **BO**, **CAL**, **CMUB**, **E**, **K**, **KKU**, **L**, **P**, **PSU**, **QBG**, **SING** and **TCD** for providing access to specimens. We also thank Dr Kongkanda Chayamarit for her encouragement and Dr H.-J. Esser for his critical reading and valuable comments to improve this manuscript. This research project was financially supported by Mahasarakham University.

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