

THREE NEW COMBINATIONS IN *EUMACHIA* (RUBIACEAE–PALICOUREEAE) FROM SOUTHEAST ASIA

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For 185 years, the genus *Eumachia* (Rubiaceae) was considered to include one species from Tonga. Since 2015, 94 more names have been added to it, expanding *Eumachia* into a pantropical genus of shrubby plants, most of whose members were originally described in *Psychotria*. Four *Psychotria* species from Southeast Asia that were identified as potentially belonging in *Margaritopsis* (now a synonym of *Eumachia*) have not yet had combinations made in *Eumachia*. They are considered here, and new combinations are made for *Psychotria extensa* Miq., *P. montana* Blume and *P. rostrata* Blume. The fourth name, *Psychotria expansa* Blume, is considered a synonym. The identities of *Chassalia sangiana* Miq. and *Psychotria rhodocarpa* Teijsm. & Binn. are also discussed. Lectotypes are designated for several names.

Keywords. Indonesia, lectotype, *Margaritopsis*, *Psychotria*.

INTRODUCTION

Based on morphological and molecular data, Andersson (2001) expanded the small and rather obscure Caribbean Rubiaceae genus *Margaritopsis* C.Wright to a pantropical taxon including the genera *Chazaliella* E.M.A.Petit & Verdc., *Chytropsia* Bremek. and *Readea* Gillespie. Most of the species involved had originally been described in *Psychotria* L. Barrabé *et al.* (2012) investigated further and argued that a group of 47 species from the Asia-Pacific region belonged in *Margaritopsis*, which had then been moved from the tribe Psychotrieae to the tribe Palicoureeae. Barrabé *et al.* (2012) did not make combinations in *Margaritopsis* for the members of what they referred to as clade G. Subsequently, it became apparent that *Eumachia* DC. was the earliest name available for the genus. Taylor *et al.* (2017) then published many new combinations in *Eumachia* for the species previously assigned to *Margaritopsis*.

Barrabé *et al.* (2012) included eight species of *Psychotria* from Mainland Asia and West Malesia within clade G. Taylor *et al.* (2017) provided combinations for four of these in *Eumachia*, leaving *Psychotria expansa* Blume, *P. extensa* Miq., *P. montana* Blume and *P. rostrata* Blume untransferred. They said that they were unable to resolve the application of these names. All four names are based on collections made on Java.

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Two of them have been widely used, namely *Psychotria montana*, which is known from India to Malesia (Craib, 1934; Backer & Bakhuizen van den Brink, 1965; Deb & Gangopadhyay, 1989; Wong, 1989), and *P. rostrata*, which has a more limited range, occurring from Thailand to Sumatra and Java (Craib, 1934; Backer & Bakhuizen van den Brink, 1965; Wong, 1989). Valeton (1909) considered *Psychotria montana* a montane species and *P. expansa* a lowland one, but subsequent authors have considered *P. expansa* a synonym of *P. montana* (Backer & Bakhuizen van den Brink, 1965; Sohmer, 1988). I see no reason to separate the two entities again. *Psychotria extensa* is more poorly known but was recognised by Backer & Bakhuizen van den Brink (1965). It appears to be very close to *Psychotria leptothyrsa* Miq., which Backer & Bakhuizen van den Brink (1965) cited as a synonym. I refrain from uniting them here, but the relationship between the two taxa clearly deserves more attention, as *Psychotria leptothyrsa* (now *Eumachia leptothyrsa* (Miq.) Barrabé & al.) occurs widely from the Lesser Sunda Islands to the South Pacific (Sohmer, 1988).

Combinations in *Eumachia* are therefore required for *Psychotria extensa*, *P. montana* and *P. rostrata*. These are made here.

NEW COMBINATIONS

Eumachia extensa (Miq.) I.M.Turner, **comb. nov.** – *Psychotria extensa* Miq., Fl. Ned. Ind. 2: 288 (1857). – *Uragoga extensa* (Miq.) Kuntze, Revis. Gen. Pl. 2: 960 (1891). – Type: Java, *T. Horsfield Rub.* 32 (holo K [K000777206], possible iso K [K000777205]).

Miquel was sent a set of specimens by Thomas Horsfield for his work on the flora of the Netherlands East Indies (Stafleu, 1978). This set must have been eventually returned to Horsfield, with Miquel retaining fragments of some of them that are now in U. After Horsfield's death in 1859, a set of his herbarium specimens was given by the East India Company to the Linnean Society (van Steenis-Kruseman, 1950). In turn, this set was transferred to Kew in 1913 as an appendage to the Wallich Herbarium (van Steenis-Kruseman, 1950). Apparently the Horsfield collections were then distributed among the Kew general herbarium. There was already a set of Horsfield collections at Kew that had been purchased in 1859 and incorporated into William Hooker's herbarium. These sets of Horsfield specimens, at least as far as the Rubiaceae are concerned, are numbered by taxon, so it cannot be assumed that specimens under the same number are true duplicates. The set from the Linnean Society at Kew includes annotations by Miquel and bibliographic notes made when accessioned by the Linnean Society. In cases in which there are no fragments in U, the Kew specimens annotated by Miquel should be considered as holotypes for names published by Miquel solely based on a single Horsfield collection. *Psychotria extensa* provides such an example.

Eumachia montana (Blume) I.M.Turner, **comb. nov.** – *Psychotria montana* Blume, Catalogus 54 (1823). – *Chassalia montana* (Blume) Miq., Fl. Ned. Ind. 2: 281 (1857), as '*Chasalia*'. – *Uragoga montana* (Blume) Kuntze, Revis. Gen. Pl. 2: 961

(1891). – Type: Java, ?Megamendung, *C.L. Blume s.n.* (lecto L [L0001196], designated here, specifically excluding the shoot mounted on the lower left of the sheet).

Psychotria expansa Blume, Bijdr. Fl. Ned. Ind.: 963 (1826). – *Chassalia expansa* (Blume) Miq., Fl. Ned. Ind. 2: 280 (1857), as ‘*Chasalia*’. – Type: Java, *C.L. Blume s.n.* (lecto L [L0001195], designated by Sohmer [1988: 320]).

Psychotria umbellata Korth., Ned. Kruidk. Arch. 2(2): 245 (1851), nom. illeg., non Thonning (1827), nec Vellozo (1829). – *Uragoga acutifolia* Kuntze, Revis. Gen. Pl. 2: 954 (1891). – Type: Sumatra, *P.W. Korthals s.n.* (lecto L [matrix barcode L.2952601], designated here).

Psychotria bantamensis Miq., Fl. Ned. Ind. 2: 288 (1857). – Type: Java, zuidkust van Bantam, *F.W. Junghuhn s.n.* (lecto L [L0281706], designated here).

Psychotria viridissima Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 41: 315 (1872). – Type: Myanmar, Burma, Pegu, Toukyeghat, Chymenah evergreen forest, *S. Kurz s.n.* (lecto K [K000031773], designated here; isolecto CAL).

Psychotria montana var. *tabacifolia* Hook.f., Fl. Brit. India 3: 174 (1880). – Type: Singapore, 1822, *N. Wallich s.n.* [EIC 8334] (lecto K-W [K001125265], designated here).

Psychotria montana var. *leiopyrena* Valetton, Icon. Bogor. 3: 191 (1908). – Type: Java, Mt Oengaran, *S.H. Koorders 25966* (syn (n.v.)), *S.H. Koorders 31650* (syn (n.v.)), *S.H. Koorders 34822* (syn (n.v.)), *S.H. Koorders 34823* (syn (n.v.)).

Sohmer (1988: 320) designated a lectotype for *Psychotria montana* Blume. However, he cited the place of publication as Blume’s *Bijdragen* (Blume, 1825–1826). This was not the earliest publication of the name by Blume – it appeared in his *Catalogus* (Blume, 1823), a listing of the plants growing in the Bogor Botanic Gardens. The name was validated in the *Catalogus* by a brief footnote that provided a description. There were no specimens cited. The sheet that Sohmer selected as lectotype has an original label in Blume’s hand, including the species name. This has three dates on it, 1816, 1821 and April 1825, with no obvious sign of them having been written at different times. The first date is crossed out. There are two fertile shoots mounted on the sheet, which may therefore represent separate gatherings, although there is no way to tell if this is the case, or which shoot is from which date. Additionally, as the species name was first validly published in 1823, a specimen collected in 1825 would be too late to be original material. In the interests of continuity, I here lectotypify *Psychotria montana* Blume (1823) to the upper of the two shoots mounted on the sheet, assuming that it was collected in 1821.

Eumachia rostrata (Blume) I.M.Turner, **comb. nov.** – *Psychotria rostrata* Blume, Bijdr. Fl. Ned. Ind.: 961 (1826). – *Chassalia rostrata* (Blume) Miq., Fl. Ned. Ind. 2: 281 (1857). – *Uragoga rostrata* (Blume) Kuntze, Revis. Gen. Pl. 1: 300 (1891). – Type: Java, *C.L. Blume s.n.* (lecto L [matrix barcode L.2944787], designated here).

Polyozus acuminata Blume, Bijdr. Fl. Ned. Ind.: 948 (1826). – Type: Java, *C.L. Blume s.n.* (lecto L [matrix barcode L.2944703], designated here).

Polyozus latifolia Blume, Bijdr. Fl. Ned. Ind.: 948 (1826). – *Chassalia rostrata* var. *latifolia* (Blume) Miq., Ann. Mus. Bot. Lugduno-Batavi 4: 203 (1869). – Type: Java, C.L. Blume 1646 (lecto L [matrix barcode L.2944716], designated here, restricted to the large-leaved shoot, the apex of which reaches highest on the sheet).

Psychotria tetrandra Blume, Bijdr. Fl. Ned. Ind.: 961 (1826). – Type: Java, Gunong Seribu, C.L. Blume s.n. (lecto L [matrix barcode L.2944702], designated here).

THE IDENTITIES OF *CHASSALIA SANGIANA* MIQ. AND *PSYCHOTRIA RHODOCARPA* TEIJSM. & BINN.

Miquel described a Rubiaceae species from a collection made by Teijsmann on the island of Pulau Sangiang in the Sunda Straits, between Java and Sumatra. He called the species *Chassalia sangiana*. Bremekamp (1937) effectively lectotypified Miquel's name to a specimen in U. Bremekamp noted that the type specimen actually represented *Pavetta sylvatica* Blume, making *Chassalia sangiana* a synonym of this. Merrill (1954) was clearly unaware of Bremekamp's publication, and apparently working on specimens named in L, transferred *Chassalia sangiana* to *Psychotria* and included *Psychotria rhodocarpa* Teijsm. & Binn. as a synonym. Merrill compounded his errors, as the combination *Psychotria sangiana* had already been made by Teijsmann & Binnendijk (1866). *Psychotria rhodocarpa* does not belong in *Pavetta* but is a true *Eumachia*. There are Teijsmann specimens in K, L and NY that came from Hasskarl, who was sent material by Teijsmann. They are very similar to the type material of *Psychotria horsfieldiana* Miq., which has already been transferred to *Eumachia*, and here I reduce *P. rhodocarpa* to synonymy of it.

Pavetta sylvatica Blume, Bijdr. Fl. Ned. Ind.: 953 (1826). – Type: Java, Gunong Seribu, C.L. Blume 843 (lecto L, designated by Bremekamp [1934: 86]).

Chassalia sangiana Miq., Fl. Ned. Ind., Eerste Bijv.: 546 (1861), as '*Chasalia*'. – *Psychotria sangiana* (Miq.) Teijsm. & Binn., Cat. Hort. Bot. Bogor. (Teijsmann & Binnendijk) 111 (1866). – *Chassalia curviflora* var. *grandifolia* Miq., Ann. Mus. Bot. Lugduno-Batavi 4: 203 (1869). – Type: Java, Poeloe Sangian [Pulau Sangiang], J.E. Teijsmann s.n. [H.B. 2978] (lecto U [U0006140], designated by Bremekamp [1937: 115]).

Eumachia horsfieldiana (Miq.) Barrabé & al., Candollea 72: 310 (2017). – *Psychotria horsfieldiana* Miq., Fl. Ned. Ind. 2: 285 (1857). – Type: Java, T. Horsfield Rub. 36 (holo K [K000777198]; possible iso K [K000777198]).

Psychotria rhodocarpa Teijsm. & Binn., Natuurk. Tijdschr. Ned.-Indië 27: 30 (1864). – Type: Sumatra, J.E. Teijsmann s.n. (lecto L [matrix barcode L.2944636], designated here; possible isolecto K [K000777183], NY [NY00133002]).

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