

INDIAN OCEAN MAPOURIA SPECIES TRANSFERRED TO PSYCHOTRIA (RUBIACEAE–PSYCHOTRIEAE)

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SUMMARY

Mapouria Aubl. is a synonym of *Psychotria* L. In Madagascar and the Comoros there are 67 species of *Mapouria* that fall within the circumscription of *Psychotria* and correspondingly 64 species (67 taxa) require transfer to *Psychotria*. Thirty-seven new combinations and 30 new names are proposed; five lectotypes are designated.

Key words: Psychotrieae, *Mapouria*, *Psychotria*, Comoros, Madagascar.

INTRODUCTION

Mapouria Aubl. was described by Aublet (1775a), based on *M. guianensis* Aubl. collected from French Guiana. Of the features listed by Aublet, deciduous stipules, terminal paniculate inflorescences, heterostylous flowers, and a 5-lobed calyx are amongst those diagnostic for the genus. The plate is figured in vol. 3 of Aublet's 'Histoire des Plantes de la Guiane Française' (1775b: pl. 67).

In his summary on the identity of the genera *Mapouria* and *Grumilea* Gaertn., Bremekamp (1961: 319) stated that *Mapouria* should be applied to members of the tribe Psychotrieae that possess deciduous stipules, heterostylous flowers, pyrenes lacking a longitudinal intrusion on the commissural (ventral/adaxial) surface, and endosperm that is either ruminant on the adaxial surface only or extends over the whole surface. Bremekamp asserted that *Mapouria*, which was formerly used only for New World Psychotrieae, should be used for species that were previously included in *Grumilea*, and that *Mapouria* need not be given up in favour of *Psychotria*. On this basis, Bremekamp (1963) enumerated 67 species of *Mapouria* from Madagascar and the Comoros, mostly described as new species but some were transferred from *Psychotria*.

Following Bremekamp (1963), Petit (1964) wrote his revision of continental African *Psychotria*. In this work Petit clearly and succinctly stated that there are few, if any, differences between *Mapouria* and *Psychotria*, and specifically that the characterization for *Mapouria* as given by Bremekamp (1963), and as outlined above, included many of the African species. Petit (1964: 24) averred that *Mapouria* should not be upheld. This view was supported by Steyermark (1972: 444–446). Some years later, Hamilton (1989) formally placed *Mapouria* into the synonymy of *Psychotria*, a decision that has been widely accepted (Taylor, 1996; Andersson, 2002). Andersson (2002) sampled

two species of Madagascan *Mapouria* (*M. ankafinensis* K. Schum. and *M. macrochlamys* Bremek.) in his assessment of the *Psychotria* complex (Psychotrieae), using data from the *rps16* intron. *Mapouria macrochlamys* (*Mapouria* series VI) was placed in *Psychotria* s.s. clade III, with the neotropical type of *Mapouria*, and *M. ankafinensis* (*Mapouria* series III) was unresolved in *Psychotria* s.s. Despite the paucity of molecular information for Indian Ocean *Mapouria*, the data provided by Andersson (2002) is consistent with the placement of *Mapouria* as a synonym of *Psychotria*.

Nearly all species of Old World *Mapouria* have now been placed in *Psychotria* or other genera of Psychotrieae (see www.rbgekew.org.uk/wcsp/rubiaceae). Conspicuously, there remain 67 Indian Ocean species of *Mapouria*. After 1) careful review of the generic and species descriptions (Bremekamp, 1963); 2) examination of type specimens and/or other authentic material held at K and P (abbreviations after Holmgren et al., 1990); and 3) field study (by A. Davis), it is clear that these *Mapouria* species conform to characterization of *Psychotria* (Petit, 1964; Davis et al., 2001; Andersson, 2002). We therefore take the opportunity to transfer 67 species of Indian Ocean *Mapouria* to *Psychotria*. We have maintained the species delimitations made by Bremekamp (1963) for the 67 *Mapouria* species and believe that at the present time there is no need for species-level synonymy. Despite identifying numerous new collections of Madagascan *Mapouria* in the last ten years we have so far identified no potential synonyms. Indeed, it is likely that there are several new species that require formal description. Indian Ocean *Mapouria* mostly have terminal inflorescences and yellow corollas, a combination of characters that is also present in some species of Africa *Psychotria*, such as *P. capensis* (Eckl.) Vatke. However, there is also a group of species with axillary or near-axillary inflorescences, that have white, red or reddish corollas (*Mapouria* series I of Bremekamp, 1963). Axillary inflorescences are rare in *Psychotria* and the Psychotrieae (A. Davis, unpubl. data) but otherwise these species conform to African *Psychotria* (Petit, 1964).

In addition to the taxonomic treatment of *Mapouria* and *Psychotria* by Bremekamp (1963), he also revised four other Psychotrieae genera occurring in Madagascar and the Comoros, viz. *Apomuria* Bremek., *Trigonopyren* Bremek., *Carinta* W. Wight and *Psathura* Comm. ex A. Juss. *Carinta* is a synonym of *Geophila* D. Don, but the others are accepted names. *Apomuria* and *Trigonopyren* seem to fall within the delimitation of *Psychotria*, resembling some of the species from continental Africa in general morphology and pyrene structure. *Psathura* has a multilocular ovary, with 3–6 locules, but otherwise has the potential to be incorporated within *Psychotria*. Further work is required to ascertain the taxonomic placement of these three genera.

METHODS

Herbarium material was consulted at the Muséum National d'Histoire Naturelle, Paris (P), and the Royal Botanic Gardens, Kew (K). All specimens cited here have been seen by us, unless indicated otherwise (non vidi: n.v.). Some species were examined in the field in Madagascar, during eight field trips over a nine year period (1996–2004) by A. Davis (unpubl. data). Pyrenes were prepared by immersing fruits in boiling water for three to five minutes, depending on the size and thickness of the fruit. The mesocarp

(and any other soft tissue) was removed using a blunt scalpel blade and blunt needle. The presence vs absence of preformed germination slits (PGSs) was assessed upon removal of the mesocarp. The endosperm was examined by cutting the pyrene in transverse section with a sharp scalpel. To test for an ethanol soluble pigment, a single seed, or one half of a seed, was placed into a test-tube and covered with 70% ethanol for c. 5 minutes, at room temperature. The resulting solution was held against a white piece of paper and the colour assessed. On completion of the test, the seeds were dried and returned to their respective herbarium sheets. Pyrene observations were made using a Leica MZ95 stereomicroscope.

RESULTS

PYRENE MORPHOLOGY

All species formerly included in *Mapouria* from Madagascar and the Comoros have the same basic pyrene structure, which is the same as most Africa *Psychotria*: the pyrenes lack preformed germination slits (PGSs; see Petit, 1964; Robbrecht, 1988, 1989; Davis et al., 2001; Piesschaert, 2001), the endosperm is ruminant and the testa has an ethanol (70%) soluble pigment (see Petit, 1964), which turns ethanol red (see Methods). According to Bremekamp (1963: 6, 8) the lack of a longitudinal intrusion on the inner (adaxial) face of each pyrene (as present in some *Psychotria* spp.) is a key feature of *Mapouria*. Indeed, the pyrenes of most species of Madagascan *Mapouria* examined by us are like this, but there are also many species of continental African *Psychotria* (Petit, 1964) and Asian *Psychotria* (A. Davis, pers. observ.) that lack a longitudinal intrusion on the inner face of each pyrene.

TRANSFER OF INDIAN OCEAN MAPOURIA TO PSYCHOTRIA

For the transfer of Indian Ocean *Mapouria* species given below we have retained the species in the same number order as Bremekamp (1963), and have kept the species within their respective informal series groups (Series I–VII). This will make it easier to use the identification keys provided by Bremekamp (1963), which still have considerable utility.

SERIES I

1. *Psychotria bremekampiana* A.P. Davis & Govaerts, *nom. nov.*

Mapouria discolor Bremek. (1963) 23, non *Psychotria discolor* (Griseb.) Rolfe (1893) 258. — Type: *Humbert, Capuron & Cours 24786* (holo P), Madagascar (Nord-est), massif de l'Anjanaharibe, à l'ouest d'Andapa (haute Andramonta, bassin de la Lokoho), 1800 m.

Distribution — NE Madagascar.

Note — Named after the Dutch taxonomist and Rubiaceae specialist C.E.B. Bremekamp.

2. *Psychotria andapae* A.P. Davis & Govaerts, *nom. nov.*

Mapouria lokohensis Bremek. (1963) 24, non *Psychotria lokohensis* Bremek. (1960) 50. — Type: *Humbert & Capuron 22039* (holo P), Madagascar, limite des Domaines de l'Est et du Centre, environs d'Andapa, bassin de la Lokoho, collines de l'Ankobahina, affluent de l'Ankasahana.

Distribution — NE Madagascar.

3. *Psychotria antsiranensis* A.P. Davis & Govaerts, *nom. nov.*

Mapouria montana Bremek. (1963) 25, non *Psychotria montana* Blume (1823) 54. — Type: *Perrier de la Bâthie 16429* (holo P), Madagascar, Domaine du Centre, massif du Tsaratanana, vers 2000 m.

Distribution — N Madagascar.

4. *Psychotria rosella* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria rosella* Bremek. (1963) 25. — Type: *Humbert, Capuron & Cours 24498* (holo P), Madagascar (Nord-est), massif de l'Anjanaharibe, à l'ouest d'Andapa (bassin de la Lokoho), 700 m.

Distribution — NE Madagascar.

5. *Psychotria capuronii* A.P. Davis & Govaerts, *nom. nov.*

Mapouria suffruticosa Bremek. (1963) 26, non *Psychotria suffruticosa* Müll. Arg. (1881) 249. — Type: *Humbert & Capuron 22120* (holo P), Madagascar (Nord-est), pentes occidentales du massif de Marojejy, bassin de la Lokoho, à l'est d'Ambalamanasy II, district d'Andapa, 450–800 m.

Distribution — NE Madagascar.

Note — Named after French botanist R. Capuron in recognition of his considerable contribution to the botany of Madagascar.

6. *Psychotria brachyblastus* A.P. Davis & Govaerts, *nom. nov.*

Mapouria perrieri Bremek. (1963) 27, non *Psychotria perrieri* Bremek. (1963) 150. — Type: *Perrier de la Bâthie 15381* (holo P; iso K, P), Madagascar, Domaine du Centre, massif du Tsaratanana, 2000 m.

Distribution — N Madagascar.

7. *Psychotria oreotrepes* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria oreotrepes* Bremek. (1963) 28. — Type: *Perrier de la Bâthie 3748* (holo P), Madagascar, Domaine du Centre, massif du Tsaratanana, 2000 m.

Distribution — N Madagascar.

8. *Psychotria glaucifolia* A.P. Davis & Govaerts, *nom. nov.*

Mapouria glaucescens Bremek. (1963) 29, non *Psychotria glaucescens* Kunth (1819) 358. — Type: *Perrier de la Bâthie 3731* (holo P), Madagascar, Domaine du Centre, massif du Tsaratanana, 2500 m.

Distribution — N Madagascar.

9. *Psychotria maningoryensis* A.P. Davis & Govaerts, *nom. nov.*

Mapouria himanthophylla Bremek. (1963) 30, as '*himantophylla*', non *Psychotria himanthophylla* Bremek. (1960) 53. — Type: *Homolle 521* (holo P; iso P), Madagascar, limite des Domaines de l'Est et du Centre, Lac Alaotra, entre Menasaka et Ambodiriana, aux bords du Maningory.

Distribution — Central Madagascar.

10. *Psychotria paradoxalis* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria paradoxalis* Bremek. (1963) 31. — Type: *Humbert 23081* (holo P), Madagascar, limite des Domaines de l'Est et du Centre, contreforts occidentaux du massif de Marojejy, près du col de Doanyanala (limite des bassins de la Lokoho et de l'Andraronga).

Distribution — NE Madagascar.

11. *Psychotria maroensis* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria maroensis* Bremek. (1963) 32. — Type: *Mocquerys 342* (holo G n.v.; iso P n.v.), Madagascar, Domaine de l'Est, Baie d'Antongil, Maroa.

Distribution — NE Madagascar.

SERIES II

12. *Psychotria pyrrotricha* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria pyrrotricha* Bremek. (1963) 32. — Type: *Perrier de la Bâthie 12960* (holo P), Madagascar, Domaine du Centre, Est-Imerina, prov. Tananarive, près de Manjakandriana, Mont Lohavohitra, 1500 m.

Distribution — Central Madagascar.

13. *Psychotria rakotonasoloi* A.P. Davis & Govaerts, *nom. nov.*

Mapouria longipedunculata Bremek. (1963) 34, non *Psychotria longipedunculata* (Gardner) Müll. Arg. (1881) 237. — Type: *Cours 2367* (holo P), Madagascar, Limites des Domaines du Centre et de l'Est, entre Manakambahiny et Nonokambo, 1200 m.

Distribution — Central and E Madagascar.

Note — Named after Malagasy botanist and Rubiaceae specialist F. Rakotonasolo.

14. *Psychotria andriantiana* A.P. Davis & Govaerts, *nom. nov.*

Mapouria marojejensis Bremek. (1963) 35, non *Psychotria marojejensis* Bremek. (1963) 144. — Type: *Humbert 23726* (holo P), Madagascar (Nord-est), pente orientale du massif de Marojejy, à l'ouest de la rivière Manantenina, affluent de la Lokoho, 1850–2150 m.

Distribution — NE and Central Madagascar.

Note — Named after Malagasy botanist J. Andriantiana.

15. *Psychotria ankafinensis* (K. Schum.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Uragoga ankafinensis* K. Schum. (1899) 106. — *Mapouria ankafinensis* (K. Schum.) Bremek. (1963) 36. — Type: *Hildebrandt 3939* (holo P; iso K, P), Madagascar, Domaine du Centre, Sud Betsileo, forêt d'Ankafina.

Distribution — Central Madagascar.

16. *Psychotria baronii* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria baronii* Bremek. (1963) 37, as '*baroni*'. — Type: *Baron 157* (holo K), Madagascar, Domaine du Centre, Betsileo.

Distribution — Central Madagascar.

17. *Psychotria ambongensis* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria ambongensis* Bremek. (1963) 38. — Type: *Boivin s.n.* (holo P), Madagascar, Domaine de l'Ouest, Ambongo.

Distribution — NW Madagascar.

SERIES III

18. *Psychotria cephaloides* A.P. Davis & Govaerts, *nom. nov.*

Mapouria capitata Bremek. (1963) 39, non *Psychotria capitata* Ruiz & Pav. (1799) 59. — Type: *Humblot 556* (holo P; iso K, P), Madagascar, without further indication of locality.

Distribution — Madagascar.

19. *Psychotria humblotii* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria humblotii* Bremek. (1963) 40. — Type: *Humblot 85* (holo P), Madagascar, without further indication of locality.

Distribution — Madagascar.

20. *Psychotria nossibensis* A.P. Davis & Govaerts, *nom. nov.*

Mapouria richardiana Bremek. (1963) 41, non *Psychotria richardiana* Urb. (1913) 472. — Type: *Boivin 2053* (holo P; iso P), Madagascar, Domaine du Sambirano, Nossi-Bé, forêt de Loucoube [Lokobe].

Distribution — N Madagascar.

20a. var. *nossibensis*

Distribution — N Madagascar.

20b. var. *arrhyncha* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria richardiana* Bremek. var. *arrhyncha* Bremek. (1963) 41. — Type: *Boivin 2054* (holo P; iso P), Madagascar, Domaine du Sambirano, Nossi Bé, forêt de Lokoube [Lokobe].

Distribution — N Madagascar.

21. *Psychotria megalocarpa* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria megalocarpa* Bremek. (1963) 41. — Type: *Viguiér & Humbert 517* (holo P), Madagascar, Domaine de l'Est, prov. d'Andovoranto, distr. d'Anivorano, pic de Vohilonjo, près de Féhombly, 400 m.

Distribution — E Madagascar.

SERIES IV

22. *Psychotria mangorensis* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria mangorensis* Bremek. (1963) 43. — Type: *Perrier de la Bâthie 18059* (holo P), Madagascar, Domaine de l'Est, bassin inférieur du Mangoro.

Distribution — E Madagascar.

23. *Psychotria betamponensis* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria betamponensis* Bremek. (1963) 43. — Type: *Decary 16925* (holo P), Madagascar, Domaine de l'Est, Betampona, Rés. Nat. I.

Distribution — E Madagascar.

24. *Psychotria onivensis* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria onivensis* Bremek. (1963) 44. — Type: *Perrier de la Bâthie 17054* (holo P), Madagascar, limite des Domaines de l'Est et du Centre, forêt d'Andasibe sur l'Onive, vers 800 m.

Distribution — E and Central Madagascar.

25. *Psychotria menalohensis* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria menalohensis* Bremek. (1963) 45. — Type: *Cours 1980* (holo P; iso P), Madagascar, Domaine de l'Est, petite forêt de la Menaloha, au bord de la route de Nickelville, 850 m.

Distribution — E Madagascar.

SERIES V

26. *Psychotria anderssoniana* A.P. Davis & Govaerts, *nom. nov.*

Mapouria dolichocarpa Bremek. (1963) 46, non *Psychotria dolichocarpa* K. Schum. (1898) 686. — Type: *Boivin s.n.* (holo P), Madagascar, Domaine du Sambirano, Nossi-bé, forêt de Loucoube [Lokobe].

Distribution — N Madagascar.

Note — This species is named in memory of the Swedish botanist and Rubiaceae specialist Professor Lennart Andersson (1948–2005).

27. *Psychotria anjouanensis* A.P. Davis & Govaerts, *nom. nov.*

Mapouria lavanchiei Bremek. (1963) 47, non *Psychotria lavanchiei* Bremek. (1963) 143. — Type: *Lavanchie 17* (holo P), Comores, Anjouan.

Distribution — Comoros (Anjouan).

28. *Psychotria rubropedicellata* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria rubropedicellata* Bremek. (1963) 47. — Type: *Perrier de la Bâthie* 3788 (holo P), Madagascar, Domaine de l'Ouest, Ambongo, Namoroka, près d'Andranomavo.

Distribution — W Madagascar.

29. *Psychotria sonocorova* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria sonocorova* Bremek. (1963) 48. — Type: *Humbert & Capuron* 28950 (holo P), Madagascar, Domaine de l'Est (Sud), Fort Dauphin, Bevilany à l'ouest de Fort Dauphin, 100–200 m.

Distribution — SE Madagascar.

30. *Psychotria aegialodes* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria aegialodes* Bremek. (1963) 49. — Type: *Decary* 10318 (holo P; iso P), Madagascar, Domaine de l'Est (Sud), Fort Dauphin, Vinanibe, forêt littorale.

Distribution — SE Madagascar.

SERIES VI

31. *Psychotria rufovillosa* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria rufovillosa* Bremek. (1963) 50. — Type: *Humboldt* 480 (holo P; iso K, P), Madagascar, Domaine de l'Est, Antsianaka.

Distribution — E Madagascar.

32. *Psychotria macrochlamys* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria macrochlamys* Bremek. (1963) 51. — Type: *Decary* 7116 (holo P), Madagascar (Est), sud de Moramanga.

Distribution — E Madagascar.

33. *Psychotria tolongoinensis* A.P. Davis & Govaerts, *nom. nov.*

Mapouria erythrotricha Bremek. (1963) 52, non *Psychotria erythrotricha* Elmer (1913) 1891. — Type: *SF* 7131 (holo P), Madagascar, Domaine de l'Est, Fort Carnot – Tolongoïna – Amelatsily.

Distribution — E Madagascar.

34. *Psychotria integristipulata* A.P. Davis & Govaerts, *nom. nov.*

Mapouria subrufa Bremek. (1963) 53, non *Psychotria subrufa* Miq. (1857) 292. — Type: *Perrier de la Bâthie* 15238 (holo P; iso P), Madagascar, Domaine du Centre, Mt Tsaratanana, 1200 m.

Distribution — N Madagascar.

35. *Psychotria manongarivensis* A.P. Davis & Govaerts, *nom. nov.*

Mapouria puberula Bremek. (1963) 53, non *Psychotria puberula* C. Wright ex Griseb. (1866) 135.
— Type: *Perrier de la Bâthie* 3757 (holo P; iso P), Madagascar, Domaine de l'Ouest, base ouest du massif de Manongarivo, près de Betofo.

Distribution — NW Madagascar.

36. *Psychotria decumbens* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria decumbens* Bremek. (1963) 54. — Type: *Perrier de la Bâthie* 16767 (holo P), Madagascar, Domaine du Centre, Tampoketsa entre Ikopa et Betsiboka, Manerinerina, 1500 m.

Distribution — Central Madagascar.

37. *Psychotria simianensis* A.P. Davis & Govaerts, *nom. nov.*

Mapouria humilis Bremek. (1963) 55, non *Psychotria humilis* Hiern (1877) 198. — Type: *Perrier de la Bâthie* 3965 (holo P; iso P), Madagascar, Domaine de l'Est, sur la rivière Simiana, 100 m.

Distribution — E Madagascar.

SERIES VII

38. *Psychotria leilae* A.P. Davis & Govaerts, *nom. nov.*

Mapouria microcephala Bremek. (1963) 56, non *Psychotria microcephala* Miq. (1857) 293. — Type: *Perrier de la Bâthie* 3814 (holo P), Madagascar, Domaine de l'Ouest, massif de Manongarivo, 1600 m.

Distribution — NW Madagascar.

Note — *Psychotria leilae* is named after the daughter of A. Davis.

39. *Psychotria boenyana* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria boenyana* Bremek. (1963) 57. — Type: *Perrier de la Bâthie* 3685 (holo P), Madagascar, Domaine de l'Ouest, Boeny, Ankarafantsika.

Distribution — W Madagascar.

40. *Psychotria tsaratananensis* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria tsaratananensis* Bremek. (1963) 58. — Type: *Perrier de la Bâthie* 3589 (holo P), Madagascar, Domaine du Centre (Sous-domaine Nord), Mt Tsaratanana, 1800 m.

Distribution — N Madagascar.

40a. var. *tsaratananensis*

Distribution — N Madagascar.

40b. var. pubescens (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria tsaratananensis* Bremek. var. *pubescens* Bremek. (1963) 58. — Type: *Humbert & Capuron 25382* (holo P), Madagascar, Domaine du Centre (Sous-domaine Nord), montagnes au nord de Mangindrano (haute Maevarano) jusqu'au sommet d'Ambohimirahavy, vallée d'Ambatohalo, 1200–1400 m.

Distribution — N Madagascar.

41. Psychotria manambolensis A.P. Davis & Govaerts, *nom. nov.*

Mapouria humbertii Bremek. (1963) 59, non *Psychotria humbertii* Bremek. (1963) 157. — Type: *Humbert 12105* (holo P; iso P), Madagascar, Domaine du Centre (Sud), entre le col du Kalambatitra et la vallée de la Manambolo, 1200–1400 m.

Distribution — Central and S Madagascar.

42. Psychotria ruhsamiana A.P. Davis & Govaerts, *nom. nov.*

Mapouria tenuifolia Bremek. (1963) 60, non *Psychotria tenuifolia* Sw. (1788) 43. — Type: *Perrier de la Bâthie 15480* (holo P), Madagascar (centre-nord), massif de Tsaratanana, 1500 m.

Distribution — N Madagascar.

Note — This species is named after Markus Ruhsam, Verification Coordinator of the World Rubiaceae Checklist (www.kew.org/wcsp/rubiaceae).

43. Psychotria bathieana A.P. Davis & Govaerts, *nom. nov.*

Mapouria tetramera Bremek. (1963) 61, non *Psychotria tetramera* Steyerl. (1972) 654. — Type: *Perrier de la Bâthie 16282* (lectotype P, designated here), Madagascar, Domaine du Centre (Sous-domaine Nord), Mt Tsaratanana, 2000 m.

Distribution — N Madagascar.

Note — This species is named after the French botanist J.H.M.A. Perrier de la Bâthie. Bremekamp (1963: 61) cites two specimens for the type of *M. tetramera*, *Perrier de la Bâthie 16282* and *15374*, the latter followed by the statement 'co-type fructifère'. We here designate *Perrier de la Bâthie 16282* as the lectotype.

44. Psychotria imerinensis (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria imerinensis* Bremek. (1963) 61. — Type: *Perrier de la Bâthie 3561* (holo P), Madagascar, Domaine du Centre, Imerina Nord, Manankazo au nord-est d'Ankazobe, 1500 m.

Distribution — Central Madagascar.

45. Psychotria mandrarensis (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria mandrarensis* Bremek. (1963) 62. — Type: *Humbert 6593* (holo P; iso P), Madagascar, Domaine du Centre, bassin supérieur du Mandrare, col et sommet de Marosoui, 1000–1400 m.

Distribution — Central Madagascar.

46. *Psychotria distichodoma* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria distichodoma* Bremek. (1963) 63. — Type: *Perrier de la Bâthie 18366* (lectotype P, designated here), Madagascar, Domaine de l'Est, Ambatovola.

Distribution — E Madagascar.

Note — Bremekamp (1963: 64) cites two specimens for the type of *M. distichodoma*, *Perrier de la Bâthie 18366* and *18367*, the latter followed by the word 'co-type'. We here designate *Perrier de la Bâthie 18366* as the lectotype.

47. *Psychotria berizokae* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria berizokae* Bremek. (1963) 64. — Type: *Perrier de la Bâthie 421* (holo P), Madagascar, Domaine de l'Ouest, Berizoka.

Distribution — W Madagascar.

48. *Psychotria ancaranensis* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria ancaranensis* Bremek. (1963) 65. — Type: *Humbert 19017* (holo P), Madagascar (Nord), prov. de Diégo-Suarez, collines et plateaux calcaires de l'Ankarana, forêt trophile près d'Ambodimagodro.

Distribution — N Madagascar.

49. *Psychotria retiphlebia* Baker

Psychotria retiphlebia Baker (1887) 485. — *Uragoga retiphlebia* (Baker) Drake (1897) t. 428. — *Mapouria retiphlebia* (Baker) Bremek. (1963) 66. — Type: *Baron 4908* (lectotype K, designated here; islectotype P), Madagascar.

Distribution — Central Madagascar.

Note — Baker (1887: 485) cites two syntypes for *P. retiphlebia*, *Baron 4285* and *4908*. Bremekamp (1963: 67) also cites these two specimens, adding duplicates for Paris (P) and 'co-type' after the citation. We here designate *Baron 4908* as the lectotype.

50. *Psychotria reducta* Baker

Psychotria reducta Baker (1887) 484. — *Mapouria reducta* (Baker) Bremek. (1963) 68. — Type: *Baron 1029* (lectotype K, designated here; islectotypes K, P), Central Madagascar.

Distribution — Central Madagascar.

Note — Baker (1887: 484–485) cites eight syntypes for *P. reducta*, *Baron 1029*, *1778*, *1784*, *3760*, *3997*, *4016*, *4018*, *4399*. Bremekamp (1963: 68) cites only one specimen, *Baron 1029*, indicating a duplicate in the Paris herbarium ('*Baron 1029* P, K [sic]). We here designate *Baron 1029* (K) as the lectotype.

50a. var. *reducta*

Distribution — Central Madagascar.

50b. var. pilosula (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria reducta* (Baker) Bremek. var. *pilosula* Bremek. (1963) 69. — Type: *Decary 13773* (holo P), Madagascar, Domaine du Centre, Ambositra.

Distribution — Central Madagascar.

51. Psychotria isalensis (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria isalensis* Bremek. (1963) 69. — Type: *Humbert 19571* (holo P; iso P), Madagascar, Domaine du Centre (Sud), plateaux et vallées de l'Isalo, à l'ouest de Ranohira, 800–1250 m.

Distribution — Central Madagascar.

52. Psychotria andetrensis (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria andetrensis* Bremek. (1963) 71. — Type: *Humbert 6850* (holo P), Madagascar, Domaine du Centre, haute vallée du Mandrare, près d'Andetra, 800 m.

Distribution — Central Madagascar.

53. Psychotria parkeri Baker

Psychotria parkeri Baker (1887) 485. — *Mapouria parkeri* (Baker) Bremek. (1963) 71. — Type: *Parker s.n.* (lectotype K, designated by Bremekamp (1963: 72), Madagascar, Domaine du Centre, Andrangaloaka.

Distribution — Central Madagascar.

Note — Baker (1887: 485) cites three syntypes for *P. parkeri*, *Baron 1585*, *3527*, and *Parker s.n.* ('Also gathered in the forest of Andrangaloaka by Dr. Parker'; Baker (1887: 485)). Bremekamp (1963: 72) cites only one type for *Mapouria parkeri*: '*Parker s.n. K*'.

54. Psychotria distinctinervia A.P. Davis & Govaerts, *nom. nov.*

Mapouria reticulata Bremek. (1963) 73, non *Psychotria reticulata* Ruiz & Pav. (1799) 56. — Type: *Perrier de la Bâthie 3588* (holo P), Madagascar, Domaine du Centre, Mt Tsaratanana, 2700 m.

Distribution — N Madagascar.

55. Psychotria morley-smithiae A.P. Davis & Govaerts, *nom. nov.*

Mapouria grandiflora Bremek. (1963) 74, non *Psychotria grandiflora* H. Mann (1867) 170. — Type: *Humbert 18395* (holo P), Madagascar, Domaine du Centre, massif du Tsaratanana, Rés. Nat. IV, flanc sud de l'Antsianongatalata, 2600 m.

Distribution — N Madagascar.

Note — This species is named after Anne Morley-Smith, who indefatigably provides logistic support for staff and visitors at the Royal Botanic Gardens, Kew.

56. *Psychotria ratovoarisonii* A.P. Davis & Govaerts, *nom. nov.*

Mapouria angustifolia Bremek. (1963) 75, non *Psychotria angustifolia* Poir. (1804) 703. — Type: *Ratovoarison RN 1309* (holo P), Madagascar, limite des Domaines de l'Est et du Centre, prov. d'Andovoranto, distr. Moramanga, Périnet.

Distribution — E Madagascar.

Note — This species is named after Malagasy botanist F. Ratovoarison.

57. *Psychotria anjanaharibensis* A.P. Davis & Govaerts, *nom. nov.*

Mapouria apoda Bremek. (1963) 76, non *Psychotria apoda* Steyerl. (1972) 668. — Type: *Humbert, Capuron & Cours 24607* (holo P), Madagascar, Domaine du Centre, massif de l'Anjanaharibe à l'ouest d'Andapa (haute Andramonta, bassin de la Lokoho), 1200–1400 m.

Distribution — NE Madagascar.

58. *Psychotria manampanihensis* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria manampanihensis* Bremek. (1963) 77. — Type: *Humbert 6023* (holo P), Madagascar, Domaine du Centre, bassin de la Manampanihy, col de Fitana, 300–700 m.

Distribution — Central Madagascar.

59. *Psychotria bemarivensis* A.P. Davis & Govaerts, *nom. nov.*

Mapouria calophylla Bremek. (1963) 78, non *Psychotria calophylla* Standl. (1916) 129. — Type: *Perrier de la Bâthie 3596* (holo P), Madagascar, Domaine du Centre, Bemarivo, haute Androranga, 800 m.

Distribution — Central Madagascar.

60. *Psychotria viguieri* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria viguieri* Bremek. (1963) 78. — Type: *Perrier de la Bâthie 16283* (holo P), Madagascar, Domaine du Centre, massif du Tsaratanana, 2000 m.

Distribution — N Madagascar.

61. *Psychotria bridsoniae* A.P. Davis & Govaerts, *nom. nov.*

Mapouria magnifolia Bremek. (1963) 79, non *Psychotria magnifolia* Merr. (1921) 453. — Type: *Perrier de la Bâthie 15282* (holo P), Madagascar, Domaine du Centre, massif du Tsaratanana, 1800 m.

Distribution — N Madagascar.

Note — Named after English botanist and Rubiaceae specialist Diane M. Bridson, recently retired from the Royal Botanic Gardens, Kew.

62. *Psychotria miae* A.P. Davis & Govaerts, *nom. nov.*

Mapouria assimilis Bremek. (1963) 80, non *Psychotria assimilis* Bremek. (1963) 154. — Type: *Perrier de la Bâthie 3761* (holo P), Madagascar, Domaine du Centre, Andringitra, 1600 m.

Distribution — Central Madagascar.

Note — This species is named after Mia Nachtergaele, the second author's inspiration.

63. *Psychotria retusa* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria retusa* Bremek. (1963) 81. — Type: *Perrier de la Bâthie 3733* (holo P; iso P), Madagascar, Domaine du Sambirano, haut Sambirano, 800 m.

Distribution — NW Madagascar.

64. *Psychotria rakotoniaina* A.P. Davis & Govaerts, *nom. nov.*

Mapouria laxiflora Bremek. (1963) 82, non *Psychotria laxiflora* Blume (1826) 964. — Type: *Rakotoniaina RN 5355* (holo P), Madagascar, Domaine de l'Est, distr. Tamatave, Ambodiriana, Rés. Nat. I.

Distribution — E Madagascar.

Note — This species is named after Malagasy botanist and plant collector F. Rakotoniaina.

65. *Psychotria suarezensis* A.P. Davis & Govaerts, *nom. nov.*

Mapouria acuminata Bremek. (1963) 82, non *Psychotria acuminata* Benth. (1845) 107. — Type: *Humbert 19076* (holo P; iso P), Madagascar (Nord), prov. de Diégo-Suarez, collines et plateaux calcaires de l'Ankarana, Analamahitso, 350 m.

Distribution — N Madagascar.

66. *Psychotria calothyris* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria calothyris* Bremek. (1963) 83. — Type: *Humboldt 1462* (holo P), Comores, Anjouan.

Distribution — Comoros (Anjouan).

67. *Psychotria antsalovensisi* (Bremek.) A.P. Davis & Govaerts, *comb. nov.*

Basionym: *Mapouria antsalovensisi* Bremek. (1963) 84. — Type: *Léandri, Capuron & Razafindrakoto 2123* (holo P; iso P), Madagascar, Domaine de l'Ouest, calcaires de l'Antsingy, vers Ambodiriana (est d'Antsalova), 100–150 m.

Distribution — W Madagascar.

Note — Bremekamp (1963: 15, 84) expressed some doubts as to whether this species should be placed in *Mapouria*, and it was cited by him as '*Mapouria? antsalovensisi*'. His circumspection was mainly due to the lack of fruit and seed; the only collections known to him were of flowering material (*Léandri, Capuron & Razafindrakoto 2123* (P) and *Razafindrakoto RN 11684* (P)). *Mapouria antsalovensisi* has been recollected recently (e.g. *Jongkind et al. 3265* (K, WAG), *Labat & Deroin 2285* (K, P)) but it is still only known from flowering material. Based on the material at hand, and having a good knowledge of other Madagascan Rubiaceae genera, we believe that *M. antsalovensisi* belongs to *Psychotria* and the necessary new combination is made.

NOTES

68. *Psychotria mesentericarpa* Baker

Psychotria mesentericarpa Baker (1885) 412. — Type: *Baron 2969* (lectotype K, designated here), Central Madagascar.

Distribution — Central Madagascar.

Note — Baker (1885: 412) cites five syntypes for *P. mesentericarpa*, including *Baron 851, 1240, 2969, 2995, 3015*. According to Bremekamp (1963) *P. mesentericarpa* is a ‘nomen confusum’; he considered *Baron 1240* to be *M. reducta* and *Baron 851* and *2995* to be *M. parkeri* (Bremekamp, 1963: 68, 71–73; and as labelled on specimens). Bremekamp (1963: 68) did not place *Baron 2969* and *3015* with either of the aforementioned species: on herbarium specimens he determined them as *M. boenyana* cf. [sic]. These specimens differ from *P. reducta* and *P. parkeri* in the presence of short hairs on the undersurface of the leaf (vs glabrous) and a more or less repand calyx rim (vs lobed), although there may be other differences. Further work may show that *P. mesentericarpa* is conspecific with *P. parkeri*, but for the time being we recognize them as distinct. We take the opportunity here of lectotypifying *P. mesentericarpa* with the specimen *Baron 2969*.

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The numbers behind the names refer to the species number in this article. Accepted names are in roman type; new combinations and new names in **bold**; synonyms and basionyms in *italics*. The authors' names A.P. Davis & Govaerts are abbreviated here as D & G.

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