

# Chaos revisited: nomenclature and typification of the Malagasy endemic *Euphorbia* subgenus *Lacanthis* (Raf.) M.G.Gilbert

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## ABSTRACT

Malagasy relatives of the Crown-of-Thorns (*Euphorbia milii* Des Moul.) are well known worldwide for their ornamental value. Malagasy taxa account for almost 10% of the genus *Euphorbia* L., with 110 accepted names constituting subgenus *Lacanthis* (Raf.) M.G.Gilbert. The chaotic taxonomy combined with the poor state of preservation of most herbarium specimens makes the systematic study of this huge genus a quite difficult task. This paper offers a nomenclatural account of all the published names with a recapitulatory list citing all the accepted names in subgenus *Lacanthis* as a first step towards the revision of the group.

## KEY WORDS

Madagascar,  
spiny euphorbias,  
*Lacanthis* (Raf.)  
M.G.Gilbert,  
nomenclature,  
lectotypification.

## RÉSUMÉ

*Le chaos revisité: nomenclature et typification d'Euphorbia sous-genre Lacanthis (Raf.) M.G.Gilbert, endémique de Madagascar.*

Les espèces malgaches apparentées à la plante connue sous le nom de Couronne d'épines (*Euphorbia milii* Des Moul.) sont surtout connues dans le monde entier pour leur valeur ornementale. Les taxons malgaches représentent presque 10 % du nombre total d'espèces du genre *Euphorbia* L., dont 110 noms acceptés constituent le sous-genre *Lacanthis* (Raf.) M.G.Gilbert. La taxonomie chaotique alliée au mauvais état de conservation de la majorité des échantillons d'herbier rendent l'étude systématique de ce genre énorme particulièrement ardue. Cet article propose une mise au point nomenclaturale de tous les noms publiés et inclut une liste récapitulative de tous les noms acceptés du sous-genre *Lacanthis* comme première étape vers la révision du groupe.

## MOTS CLÉS

Madagascar,  
euphorbes épineuses,  
*Lacanthis* (Raf.)  
M.G.Gilbert,  
nomenclature,  
lectotypification.

## INTRODUCTION

The genus *Euphorbia* L., distributed worldwide, is one of the most diversified Angiosperm genera with over 2000 species. The Malagasy spiny succulent *Euphorbia*, constituting the subgenus *Lacanthis* (Raf.) M.G.Gilbert, are grown worldwide and are internationally renowned for their numerous species, hybrids and cultivars, especially those originating from the famous Malagasy red-flowered Crown-of-Thorns (*Euphorbia milii* Des Moul.). The taxonomy of this reputedly difficult group of plants is particularly chaotic, and more than any other group of this huge genus, requires to be revised. Although the majority of the numerous specific epithets in use are valid, most of the infraspecific names, including widely used ones, have not been validly published yet.

The study of the Malagasy *Euphorbia milii* relatives begun with the description of *E. lophogona* by Lamarck (1786: 417), and numbers of species and infraspecific taxa are still being described, forming the most diversified group of *Euphorbia* in Madagascar with the 114 taxa cited in this paper (the total number of *Euphorbia* taxa in Madagascar is estimated at c. 170).

The Malagasy flora has always inspired interest among botanists and succulent enthusiasts and has been studied by many. However, only a few monographic works dealing with *Euphorbia* (particularly the succulent spiny taxa), have resulted.

Those of Denis (1921), Ursch & Leandri (1954), Rauh (1995, 1998) and Haevermans (2003) are the most recent works dealing with these interesting Malagasy xerophytic taxa. The species treated here are all members of the subgenus *Lacanthis* (Raf.) M.G.Gilbert, for which a phylogenetic analysis, with a non-formal re-circumscription exclusively restricted to all the Malagasy endemics has been published (Haevermans *et al.* 2004).

## MATERIAL AND METHODS

Specific and infraspecific names of *Euphorbia* subgenus *Lacanthis* were inventoried by compiling appropriate literature, and examining herbarium collections. The *International Code of Botanical Nomenclature* (ICBN), Vienna version (McNeill *et al.* 2006) was strictly applied for assessing the validity and legitimacy of the names. As a result, the necessary nomenclatural acts were made for several names found to require clarification in respect to their application. As a general rule, we chose lectotypes according to the relative quality and preservation of the specimens.

For each type, herbarium acronyms are listed and an exclamation mark behind the herbarium acronym is used to indicate the specimens examined (otherwise noted as "not seen"). Label data and digital images from the type specimens housed at the Paris herbarium

(P) are available in the online herbarium database “Sonnerat” (<http://www.mnhn.fr/base/sonnerat.html>) by entering the accession numbers given.

For the species described by Ursch & Leandri (1954), mostly based on cultivated plants in the Parc de Tsimbazaza (Antananarivo, Madagascar) and present at P under Leandri’s collection numbers, it is assumed that the specimens were pressed at the time of the description and drawing of the figures, and thus are to be considered as types. This choice is justified because several illustrations clearly represent the drawings of the pressed material available at P (e.g., *E. beharensis* Leandri var. *guillemettii* (Ursch & Leandri) Rauh).

## NOMENCLATURAL TREATMENT

### VALIDLY PUBLISHED NAMES

#### 1. *Euphorbia alfredii* Rauh

*Cactus and Succulent Journal* (Los Angeles) 59 (5): 209 (1987). — Type: “terrestrial on limestone in a deciduous xerophytic forest north of Ambilobe, northwestern Madagascar, at about 200m elev., june 1985”, *B.G.H.* 67092, *A. Razafindratsira s.n.*, (holo-, HEID!, *in spiritu*).

#### 2. *Euphorbia ambarivatoensis* Rauh & Bardot-Vaucoulon

*Succulentes* 3: 4 (1999). — Type: “*in rupibus calcariis, Falaises de l’Ankarana, apud Ambarivato*, november 30, 1997”, *Bardot-Vaucoulon & Andrianantoanina 1006* (holo-, P! [P00309518]; iso-, TAN!).

#### 3. *Euphorbia ambovombensis* Rauh & Razaf.

*Cactus and Succulent Journal* (Los Angeles) 59 (6): 251 (1987). — Type: “growing in black soil, in deep shade of a xerophilous bush, 10 km north of Ambovombe (southern Madagascar), june 1987”, *Rauh 68656* (holo-, HEID!, *in spiritu*).

#### 4. *Euphorbia analavelonensis* Rauh & Mangelsdorff

*Succulentes* 1: 3 (2000). — Type: “*pendens in rupibus praeruptis lapidis harenosi faucium angustarum profunde*

*incissarum apud Analavelonam (prov. Toliary)*, march 1997”, *B.G.H.* 75090 coll. *R.D. Mangelsdorff* (holo-, HEID!, *in spiritu*).

#### 5. *Euphorbia annamariae* Rauh

*Euphorbia Journal* 7: 21 (1991). — Type: “coastal forest near St. Luce, not far from Fort Dauphin in southeast Madagascar, june 1961”, *Rauh & Buchloh 7557* (holo-, HEID!).

#### 6. *Euphorbia ankarensis* Boiteau

*Bulletin trimestriel de l’Académie malgache* 24: 86 (1942). — Type: “Jardin de Tsimbazaza n° 15”, integrated in the herbarium as *Leandri 2387* (lecto-, P! [P00220599], designated by Ursch & Leandri [1954: 136]).

### REMARK

This species collected by H. Humbert on limestone rocks in Ankarana was put in cultivation in the botanical garden of Tsimbazaza in 1938 under the number 15. The lectotype chosen by Ursch & Leandri (1954), was collected by E. Ursch in 1953 and deposited at P under the number *Leandri 2387*, bearing the mention “Jardin de Tsimbazaza n° 15”.

#### 7. *Euphorbia ankazobensis* Rauh & Hofstätter

*Succulentes* 3: 6 (2000). — Type: “*Residua silvae frondiferae, circa Ankazobe, Prov. Antananarivo*, October 5, 1989”, *B.G.H.* 70598 coll. *S. Hofstätter*, (holo-, HEID!, *in spiritu*).

#### 8. *Euphorbia banae* Rauh

*Kakteen und Andere Sukkulente* 44 (1): 2 (1993). — Type: “*in silva arida ad calcem, inter Ampaninihy [Ampanihy] et Androka, Madagascar meridionalis occidentalis*, march 1992”, *Rauh 73031* (holo-, HEID!, *in spiritu*).

#### 9. *Euphorbia beharensis* Leandri var. *beharensis*

*Notulae Systematicae* 12: 164 (1946). — Type: “vallée de la moyenne Mananara (limite orientale de l’Androy): rocailles gneissiques, 26 Novembre 1931”, *Decary 9435* (lecto-, P! [P00077906], here designated).

### REMARK

Leandri based this species on two syntypes from Behara (province de Fort-Dauphin). Other former

syntype: “sable gneissique, 10 Juillet 1926”, *Decary 4276* (P! [P00077907]).

10. *Euphorbia beharensis* Leandri  
var. *adpressifolia* Rauh

*Tropische und Subtropische Pflanzenwelt* 100: 13 (1999). — Type: “circa Beharam, in harena, in territorio var. beharensis, 1996”, *Rauh 74672* (holo-, HEID!, in spiritu).

11. *Euphorbia beharensis* Leandri  
var. *squarrosa* Rauh

*Tropische und Subtropische Pflanzenwelt* 100: 14 (1999). — Type: “silva xerophytica ad Lac Anony, Provincia Tolanaro, Madagascar meridionalis-occidentalis, 1996”, *Rauh 74989* (holo-, HEID!, in spiritu).

12. *Euphorbia beharensis* Leandri  
var. *truncata* Rauh

*Tropische und Subtropische Pflanzenwelt* 100: 11 (1999). — Type: “silva Didiereacearum apud Behara in harena (Madagascar meridionalis-occidentalis), march 1987”, *Rauh 68567* (holo-, HEID!, in spiritu).

13. *Euphorbia berevoensis* Lawant & Buddens.

*Euphorbia World* 4 (1): 6 (-11; figs 1-10) (2008). — Type: “Between Berevo and the river Tsirihibina”, *W. Rössli & Hoffmann 43/93* (holo-, P! [P00577728]).

14. *Euphorbia berorohae* Rauh & Hofstätter

*British Cactus and Succulent Journal* 13 (3): 94 (1995). — Type: “rocky slopes near the village of Beroroha at the river Mangoky, southern Madagascar”, *B.G.H. 74465 coll. S. Hofstätter s.n.* (holo-, HEID!, in spiritu).

15. *Euphorbia bevilaniensis* Croizat

*National Horticultural Magazine* 1934 (Jan.): 96 (1934). — *Euphorbia splendens* Bojer ex Hook. var. *bevilaniensis* (Croizat) Leandri, *Notulae Systematicae* 12: 159 (1946). — *Euphorbia milii* Des Moul. var. *bevilaniensis* (Croizat) Ursch & Leandri, *Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 150 (1954). — Type: “Bevilany, limite de

l'Anosy et de l'Androy, Forêt gneissique, 14-11-1932”, *Decary 10956* (holo-, P! [P00077911]).

REMARK

Croizat (1934) does not cite the collection number but mentions the tag and data actually written on it, *Decary 10956* is the only specimen housed at P which corresponds exactly to this name and this description.

Ursch & Leandri (1954) consider this name to apply to a variety of *Euphorbia milii* Des Moul., to be called *Euphorbia milii* Des Moul. var. *bevilaniensis* (Croizat) Ursch & Leandri.

16. *Euphorbia biaculeata* Denis

*Les euphorbiées des îles australes d'Afrique*: 75, fig. 18 (1921). — Type: “Plateau Mahafaly, 1910”, *Perrier de la Bâthie 9764* (holo-, P! [P00077899]).

17. *Euphorbia boissieri* Baillon

*Adansonia* 1: 142 (1860-1861). — Type: “Sainte-Marie de Madagascar, forêt de Tafondrou, décembre 1849”, *Boivin 18823* (holo-, P! [P00077912]).

REMARK

The sheet P00077912 bears the unpublished name “*Euphorbia bailloni* Boiss.” likely handwritten by Boissier.

18. *Euphorbia boiteau* Leandri

*Notulae Systematicae* 12: 163 (1946). — Type: “vallée moyenne du Mandrare, près Anadabolava: forêt sèche, altitude: 200-250 m, décembre 1933”, *Humbert 12484* (holo-, P! [P00077901]; iso-, P! [P00077902, P00077903]).

19. *Euphorbia bojeri* Hook.

*Curtis's Botanical Magazine* 63: t. 3527 (1836). — *Sterigmanthe bojeri* (Hook.) Klotzsch & Garcke, *Monatsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin*: 252 (1859). — Type: *Curtis's Botanical Magazine* 63: t. 3527 (1836) (holo-, !).

REMARK

Taxonomic synonym of *Euphorbia milii* Des Moul.

20. *Euphorbia brachyphylla* Denis

*Les euphorbiées des îles australes d'Afrique*: 80 (1921). — Type: "région du centre: grès liasique de la Manamatz, Bassin du Mangoky, 1911", *Perrier de la Bâthie* 9652 (holo-, P! [P00077919]; iso-, P! [P00220709]).

21. *Euphorbia bulbispina* Rauh & Razaf.

*Euphorbia Journal* 7: 31 (1991). — Type: "on limestone rocks on the top of the Windsor Castle; near Diégo-Suarez, northern Madagascar", *B.G.H.* 68664 coll. *A. Razafindratsira s.n.* (holo-, HEID!, *in spiritu*).

22. *Euphorbia capmanambatoensis* Rauh

*Kakteen und Andere Sukkulente* 46 (9): 219 (1995). — Type: "Madagascar boreo-orientalis, Cap Manambato, ad saxa syenitica in fissuris rupium, 20-50 m.s.m., plerumque consociata *Aloe fragilis*, 1993", *Rauh* 73995 (holo-, HEID!, *in spiritu*).

23. *Euphorbia capsaintemariensis* Rauh  
var. *capsaintemariensis*

*Cactus and Succulent Journal* (Los Angeles) 25 (4): 100 (1970) (as "*cap-saintemariensis*"). — *Euphorbia decaryi* Guillaumin var. *capsaintemariensis* (Rauh) Cremers, *Bulletin du Jardin botanique de l'État, Bulletin van den Rijksplantentuin* 54(3/4): 371, fig. 8B (1984). — Type: "Madagascar meridionalis, in terracinis calcaribus apud Cap Ste. Marie, 100 m.s.m.", *Rauh* M1194 (holo-, HEID!, *in spiritu*).

## REMARK

Cremers (1984) considers this name to apply to a variety of *Euphorbia decaryi* Guillaumin to be called *Euphorbia decaryi* Guillaumin var. *capsaintemariensis* (Rauh) Cremers.

24. *Euphorbia capsaintemariensis* Rauh  
var. *tulearensis* Rauh

*Cactus and Succulent Journal* (Los Angeles) 50 (6): 263 (1978). — Type: "Madagascar austro-occidentalis prope viam Tulear, St. Augustin in rupibus calcareis sub fructibus, august 1961", *Rauh* 7603 (holo-, HEID!, *in spiritu*).

## REMARK

Rauh (1988: 184) considers this taxon to be a distinct species called *Euphorbia tulearensis* (Rauh) Rauh.

25. *Euphorbia capuronii* Ursch & Leandri

*Mémoires de l'Institut scientifique de Madagascar, série B, Biologie végétale* 5: 170, fig. 50 (1954). — Non *Euphorbia capuronii* Leandri, *Bulletin de la Société botanique de France* 103 (9-10): 608 (1956), *nomen illegitimum*. — Type: "Jardin de Tsimbazaza sous le n° 28, plante récoltée sur le plateau Mahafaly", integrated in the herbarium as *Leandri* 4388 (holo-, P! [P00577115]).

## REMARK

The name *Euphorbia capuronii* Leandri being a later homonym is illegitimate according to McNeill *et al.* (2006: Art. 53.1).

26. *Euphorbia caput-aureum* Denis

*Les euphorbiées des îles australes d'Afrique*: 73 (1921) (as "*Caput aureum*"). — Type: "rocailles gréseuses dénudées du M<sup>e</sup> Mahabenofa vers 450 m d'altitude (vallée de la Manonkalala, vers le Nord de l'île)", XI.1909, *Perrier de la Bâthie* 10695 (lecto-, P! [P00577109], here designated).

27. *Euphorbia cremersii* Rauh & Razaf.  
var. *cremersii*

*Euphorbia Journal* 7: 23 (1991). — Type: "western highland on the road between Maevatanana and Majunga (Antanimbary, north of Antsiabotsira [Antsiabositra]), in laterite, between grasses, growing in a forest, 1987", *B.G.H.* 68506 coll. *A. Razafindratsira s.n.* (holo-, HEID!, *in spiritu*).

28. *Euphorbia cremersii* Rauh & Razaf.  
forma *viridiflora* Rauh

*Euphorbia Journal* 7: 25 (1991). — Type: "western highland on the road between Maevatanana and Majunga (Antanimbary, north of Antsiabotsira [Antsiabositra]), in laterite, between grasses, growing in a forest, 1987", *B.G.H.* 68506/a coll. *A. Razafindratsira s.n.* (holo-, HEID!, *in spiritu*).

29. *Euphorbia croizatii* Leandri

*Notulae Systematicae* 12: 160 (1946) (as "*croizati*"). — Type: "Ampilira (nord-est de l'Androy), rocailles gneissiques, 23 novembre 1939", *Decary* 9373 (lecto-, P! [P00094462], here designated).

REMARK

Other syntype: “Ampasimpolaka, à l’est d’Ambovombe, sur les cipolins, 29 juin 1931”, *Decary 9041* (P! [P00094461]).

30. *Euphorbia cylindrifolia* Marn.-Lap. & Rauh  
subsp. *cylindrifolia*

*Kakteen und Andere Sukkulente* 12 (5): 66 (1961). — Type: “in silvis arenibus *Alluaudiae* generis inter Manambaro et Fort Dauphin in regione orientis 45 km a Fort Dauphin distante (Madagascar austro-orientalis), august 1959”, *Rauh M 1239* (holo-, P! [P00077957]).

31. *Euphorbia cylindrifolia*  
subsp. *tuberifera* Rauh

*Kakteen und Andere Sukkulente* 14 (1): 5 (1963). — Type: “Habitat in silvis xerophilis generis *Alluaudiae* inter Amboasary et Fort-Dauphin apud km 433, september 1961”, *Rauh 7480* (holo-, P! [P00077956]).

32. *Euphorbia decaryi* Guillaumin var. *decaryi*

*Bulletin du Muséum d’Histoire naturelle*, Paris, série 2, 6 (1): 120 (1934). — Type: “dunes et sables de Vinanibe près de Fort Dauphin, 10 juillet 1932”, *Decary 10056* (holo-, P! [P00077958]).

33. *Euphorbia decaryi* Guillaumin  
var. *ampanihyensis* Cremers

*Bulletin du Jardin botanique de l’État, Bulletin van den Rijksplantentuin* 54 (3/4): 373, fig. 8B (1984). — Type: “bush calcaire à 30 km au S d’Ampanihy, novembre 1962”, *Bosser 16925* (holo-, P! [P00077959]).

34. *Euphorbia decaryi* Guillaumin  
var. *robinsonii* Cremers

*Bulletin du Jardin botanique de l’État, Bulletin van den Rijksplantentuin* 54 (3/4): 373, fig. 8B (1984). — Type: “Jardin botanique de Tsimbazaza (collection n° 76, originaire de Tuléar)”, *Robinson s.n.* (holo-, P! [P00077962]).

35. *Euphorbia decaryi* Guillaumin var.  
*spirosticha* Rauh & Buchloh

*Cactus and Succulent Journal* (Los Angeles) 58 (1): 9 (1986). — Type: “forming extensive stands in the under-

story of *Alluaudia procera* forests near Ampotaka (south of Ampanihy), at the Manarandra [Menarandra] River in southwestern Madagascar, november 1961”, *Rauh & Buchloh 7599* (holo-, HEID!, *in spiritu*).

36. *Euphorbia delphinensis* Ursch & Leandri

*Mémoires de l’Institut scientifique de Madagascar*, série B, Biologie végétale 5: 166, fig. 48 (1954). — Type: “Jardin de Tsimbazaza n° 3, plante récoltée par M. Duran à Fort-Dauphin”, integrated in the herbarium as *Leandri 2407* (holo-, P! [P00077966]).

37. *Euphorbia denisiana* Guillaumin

*Bulletin du Muséum d’Histoire naturelle*, série 2, 1 (6): 448 (1929). — Type: “1926”, *Denis f. 242* (holo-, P! [P00077965]).

REMARK

On the label of *Denis f. 242* is written “probablement recueillie par Humbert”.

38. *Euphorbia didiereoides* Denis ex Leandri

*Bulletin du Muséum d’Histoire naturelle*, série 2, 6 (1): 121 (1934). — Type: “gneiss (rocailles dénudées) sur la Zomandao, vers 700 m d’alt.”, *Perrier de la Bâthie 12873* (lecto-, P! [P00077967], here designated; isolecto-, P! [P00221606]).

OTHER SYNTYPES. — “Rocailles, sur la Zomandao”, *Perrier de la Bâthie 16533* (P! [P00221607, P00221608]).

39. *Euphorbia duranii* Ursch & Leandri  
var. *duranii*

*Mémoires de l’Institut scientifique de Madagascar*, série B, Biologie végétale 5: 160, fig. 44 (1954). — Type: “Jardin de Tsimbazaza n° 2, plante récoltée par Duran dans la 5<sup>e</sup> réserve naturelle”, integrated in the herbarium as *Leandri 2406* (holo-, P! [P00077969]).

REMARK

Originally published as “*durani*”, but corrected in “*duranii*” according to McNeill *et al.* (2006: Art. 60.11).

40. *Euphorbia duranii* Ursch & Leandri  
var. *ankaratrae* Ursch & Leandri

*Mémoires de l’Institut scientifique de Madagascar*, série B, Biologie végétale 5: 160, fig. 45 (1954). — Type: “Jar-

din de Tsimbazaza n° 10, plante récoltée à Ankaratra”, integrated in the herbarium as *Leandri 2383* (holo-, P! [P00077968]).

41. *Euphorbia erythroculata* Mangelsdorff

*Haseltonia* 11: 3 (-10; figs 1, 2, 3a-d, 4-7) (2005). — Type: “Prov. Toliara, SW of Manja, 21°28’39”S, 44°E, 2002-11-14, Growing on low ridges of coralline limestone covered with rather dense, succulent-rich deciduous forest”, *W.Röösli & R.Hoffmann 9/02* (holo-, MO; iso-, P! [P00573483]).

42. *Euphorbia fanarantsoae* Ursch & Leandri

*Mémoires de l’Institut scientifique de Madagascar*, série B, Biologie végétale 5: 164, fig. 47 (1954). — Type: “Jardin de Tsimbazaza n° 24, plante récoltée à Fianarantsoa”, integrated in the herbarium as *Leandri 2393* (holo-, P! [P00077982]).

43. *Euphorbia francoisii* Leandri var. *francoisii*

*Notulae Systematicae* 12: 161 (1946). — Type: “environs de Fort-Dauphin, entre le pic St Louis et la mer, sable, altitude 1-25 m, entre le 20 septembre et le 6 octobre 1928”, *Humbert 5978* (holo-, P! [P00077987]; iso-, P! [P00077988, P00077989]).

REMARK

Originally published as “*francoisi*” but corrected in “*francoisii*” according to McNeill *et al.* (2006: Art. 60.6 and 60.11; the French “ç” being a diacritic sign is to be corrected).

44. *Euphorbia francoisii* Leandri  
var. *crassicaulis* Rauh

*Euphorbia Journal* 10: 175 (1996). — Type: “under dense bushes near the coast, close to the village of Andrahomana (in southern Ranopiso, between Tolanaro and Amboasary), march 1993”, *Rauh 73936* (holo-, HEID!, *in spiritu*).

REMARK

Rauh (1998: 177) mentions the name *Euphorbia francoisii* var. *crassicaulis* forma *rubrifolia* Rauh which is an invalidly published *nomen nudum*.

45. *Euphorbia francoisii* Leandri  
var. *rakotozafyi* Cremers

*Bulletin du Jardin botanique de l’État, Bulletin van den Rijksplantentuin* 54 (3/4): 377, figs 3-8C (1984). — *Euphorbia cremersii* var. *rakotozafyi* (Cremers) Rauh, *Succulent and Xerophytic Plants of Madagascar*, vol. 1: 172 (1995). — Type: “originaire de Madagascar, sans localisation précise, en culture au Jardin de Tsimbazaza (collection n° 63), 5 décembre 1974”, *Cremers 3541* (holo-, P! [P00077990]).

REMARK

Rauh (1995) considers this name to apply to a variety of *Euphorbia cremersii* Rauh & Razaf., to be called *Euphorbia cremersii* Rauh & Razaf. var. *rakotozafyi* (Cremers) Rauh.

46. *Euphorbia fournieri* Rebut

*Lyon Horticole* 15: 22 (1893). — Type: not designated.

REMARK

*Euphorbia fournieri* is a synonym of the cultivated plant known at the time in Europe under the name of *Euphorbia lophogona sensu auct.*, non *Euphorbia lophogona* Lam. The description of Rebut matches perfectly *E. leuconeura* Boiss. Therefore *Euphorbia fournieri* is treated as a taxonomic synonym of *Euphorbia leuconeura* Boiss. as suggested by Marnier-Lapostolle & Leandri (1956).

47. *Euphorbia genoudiana* Ursch & Leandri

*Mémoires de l’Institut scientifique de Madagascar*, série B, Biologie végétale 5: 172, fig. 51 (1954). — Type: “Jardin de Tsimbazaza n° 4, plante récoltée en pays Mahafaly”, integrated in the herbarium as *Leandri 2408* (holo-, P! [P00077991]).

48. *Euphorbia geroldii* Rauh

*Succulentes* 1: 5 (1994). — Type: “*silva litoralis, ad harenam, circa Iharana (= Vohémar) in regione Ambilobe, Madagascar orientalis-septentrionalis*”, March 1993”, *Rauh 73926* (holo-, HEID!, *in spiritu*).

49. *Euphorbia gottlebei* Rauh

*Cactus and Succulent Journal* (Los Angeles) 64 (1): 14 (1992). — Type: “steep limestone slopes of the Fiherenana

Valley, northwest of Sakarah [Sakaraha], about 500 m, november 1990", *Rauh 72185* (holo-, HEID!, *in spiritu*).

### 50. *Euphorbia guillauminiana* Boiteau

*Bulletin trimestriel de l'Académie malgache* 24: 87 (1942). — Type: "basaltes à Ambarijeby, District d'Analalava (Ouest)", *Decary 16436* (holo-, not located).

### 51. *Euphorbia guillemetii* Ursch & Leandri

*Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 168, fig. 49 (1954). — *Euphorbia beharensis* Leandri var. *guillemetii* (Ursch & Leandri) Rauh, *Tropische und Subtropische Pflanzenwelt* 100: 10 (1999). — Type: "Jardin de Tsimbazaza sous le n° 36, plante récoltée à Ranomainty", integrated into the herbarium as *Leandri 2398* (holo-, P! [P00077992]).

#### REMARK

Rauh (1999) considers this name to apply to a variety of *Euphorbia beharensis* Leandri, to be called *Euphorbia beharensis* Leandri var. *guillemetii* (Ursch & Leandri) Rauh.

### 52. *Euphorbia hermanschwartzii* Rauh

*Cactus and Succulent Journal* (Los Angeles) 63 (5): 246 (1991) (as "*herman-schwartzii*") — Type: "Schrattenskalk" plateau of the western Falaise de l'Ankarana, south of Diégo Suarez, november 1990", *Rauh 72125* (holo-, HEID!, *in spiritu*; iso-, P, *in spiritu*, not found).

### 53. *Euphorbia hexadenia* Denis

*Les euphorbiées des îles australes d'Afrique*: 49 (1921). — *Euphorbia daphnoides* Baill., *Bulletin mensuel de la Société linnéenne de Paris* 1 (84): 671 (1887). — Not *E. daphnoides* Balf.f., *Journal of the Linnean Society*, Botany 16: 21 (1877). — Type: "Vavatóbé: Belinta, February 1880", *Hildebrandt 3333bis* (holo-, P! [P00077996]).

#### REMARK

*Euphorbia daphnoides* Baill. was renamed "*Euphorbia hexadenia*" by Denis (1921) because the epithet "*daphnoides*" had already been used by Balfour 10 years earlier (Balfour 1877) for an endemic of Rodrigues.

### 54. *Euphorbia hislopii* N.E.Br.

*Bulletin of Miscellaneous Information, Royal Gardens, Kew* 8: 304 (1913). — *Euphorbia splendens* Bojer ex Hook. var. *hislopii* (N.E.Br.) Leandri, *Notulae Systematicae* 12: 159 (1946). — *Euphorbia milii* Des Moul. var. *hislopii* (N.E.Br.) Ursch & Leandri, *Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 150 (1954). — Type: "Brought from Durban by Mr. A. Hislop, May 1911", *Hislop s.n.* (holo-, K! [K000185057]).

#### REMARK

We consider this name to apply to a variety of *Euphorbia milii*, to be called *Euphorbia milii* Des Moul. var. *hislopii* (N.E.Br.) Ursch & Leandri.

### 55. *Euphorbia hofstaetteri* Rauh

*Cactus and Succulent Journal* (Los Angeles) 64 (3): 112 (1992). — Type: "plateau de la Table, near Toliara and Tongobory, august 1991", *B.G.H. 73040 coll. S. Hofstätter s.n.* (holo-, HEID!, *in spiritu*).

### 56. *Euphorbia horombensis* Ursch & Leandri

*Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 154, figs 40, 42 (1954). — Type: "Jardin de Tsimbazaza n° 5, plante récoltée par Poisson sur le plateau Horombe", integrated in the herbarium as *Leandri 2409* (lecto-, P! [P00078001], here designated).

#### REMARK

Ursch & Leandri based this name on two plants cultivated in the Jardin botanique de Tsimbazaza under numbers 5 and 35, Horombe, the first one being collected by Dr Poisson, the second one brought by an unknown collector. A herbarium specimen exists at P from the plant number 5, but a specimen corresponding to the second plant, number 35, cannot be found. We thus chose to lectotypify on the sole original specimen left at P.

### 57. *Euphorbia iharanae* Rauh

*Kakteen und Andere Sukkulente* 46 (9): 221 (1995). — Type: "*In locis saxosis montium costae septentrionalis Cap Manambato (in districtu Iharanae), Madagascar septen-*

*trialis orientalis*, January 1995”, B.G.H. 74412 coll. A. Razafindratsira (*Antananarivo*) s.n. (holo-, HEID!, *in spiritu*).

### 58. *Euphorbia isalensis* Leandri

*Notulae Systematicae* 12: 163 (1946). — Type: “grès et sables siliceux, alt. 400-1000 m., fruits en octobre”, *Humbert* 2761 (lecto-, P! [P00078015], here designated).

OTHER SYNTYPES. — “Jardin botanique de Tsimbazaza, à Tananarive, rapportée probablement de l’Isalo par le Pr Humbert”, *H. Perrier* s.n. (syn-, P [P00221824]!). — “Grès et sables siliceux, alt. 400-1000 m, fleurs en octobre”, *Humbert* 2786 (syn-, P! [P00078016, P00078017]).

#### REMARK

Leandri published this name with the written indication “*sp. nov. interim.*”. But later, he rejected this name: “le nom *E. isalensis* [...] doit être rejeté comme homonyme récent (différant par une seule lettre) d’une espèce douteuse” (the name *E. isalensis* [...] must be rejected as a recent homonym (differing by a single letter) of a dubious species). The name however is validly published and all the original material survived, hence its inclusion in this part of the paper (see *Euphorbia isaloensis* Drake in the *Incertae sedis* section).

### 59. *Euphorbia itremensis* Kimnach & Lavranos

*Cactus and Succulent Journal* (Los Angeles) 73 (1): 42 (2001). — Type: “Madagascar: c. 25 km W of Col d’Itremo, October 19, 1995”, *J. Lavranos* 30000. *G. Barad, G. James, M. Kimnach & S. Linden* (holo-, P! [P00577113]; iso-, HNT, not seen).

### 60. *Euphorbia kondoi* Rauh & Razaf.

*Cactus and Succulent Journal* (Los Angeles) 61 (3): 113 (1989). — Type: “xerophytic bush on limestone, 300 m, Prov. of Toliary (Tuléar), southwest Madagascar, 1986”, B.G.H. 69087 coll. A. Razafindratsira s.n., (holo-, HEID!, *in spiritu*).

### 61. *Euphorbia labatii*

Rauh & Bardot-Vaucoulon

*Succulentae* 4: 3 (1999). — Type: “Andriafiabe [Andrafiabe], Réserve spéciale de l’Ankarana, Camp des

Américains, 28 novembre 1996”, *Labat* 2838 (holo-, P! [P00078803]; iso-, TAN!).

### 62. *Euphorbia leuconeura* Boiss.

*De Candolle Prodromus systematis naturalis regni vegetabilis* 15 (2): 78 (1862). — Type: “vallée de l’Andalany, affluent de l’Androranga (bassin de la Bemarivo du nord-est), forêt ombrophile sur gneiss, altitude: 200-800 m, 12-14 novembre 1950”, *Humbert* 24215 (neo-, P! [P00221853], here designated; isoneo-, K!, MICH!, MO!, P! [P00577110], TAN!).

#### REMARK

Boissier based this species on living specimens brought from Madagascar by Richard, but no herbarium material of this plant has been kept, and Denis (1921) and Ursch & Leandri (1954) considered the species as insufficiently known. Marnier-Lapostolle & Leandri (1956) wrote that the plant known and cultivated in European greenhouses under the name of *Euphorbia lophogona* was in fact the real *E. leuconeura*. This one was largely diffused in Europe under the name of *E. lophogona* (as specified in the diagnose by Boissier), while the real *E. lophogona* described by Lamarck doesn’t seem to have ever been established in cultivation in Europe at this time (see *Euphorbia fournieri* Rebut).

### 63. *Euphorbia lophogona* Lam. var. *lophogona*

*Encyclopédie méthodique botanique* 2: 417 (1786). — Type: “Isle de Madagascar”, *Commerçon* s.n. (holo-, P-LA[P00381923]!; iso-, P-JU!, P! [P00078024, P00078025]).

#### REMARK

In the *Encyclopédie méthodique*, Lamarck (1786) describes the species number 14 as “*Euphorbia lophogona*” followed by a latin description, and then the following mention “*Euphorbia Madagascariensis*. Commers. Herb. & Ic. *Be-tanghan* (grande main) *indigenis*”. We think this sentence should not be interpreted as the valid publication of a new name, junior synonym of *Euphorbia lophogona* Lam., authored by Commerçon ex Lamarck, but should be translated as “a Madagascan *Euphorbia*. Found in Commerçon’s herbarium and Illustrated. Known

under the indigenous name of ‘be-tanghan’ (big hand). “*Euphorbia madagascariensis* Comm. ex Lam.”, cited by various sources (<http://www.ipni.org>) as a synonym of *Euphorbia lophogona* Lam. has in fact never been published.

The holotype is the fragment of flower found in Lamarck Herbarium (P-LA) with the mention “flower of euphorbia number 14” by his own hand. Isotypes are found in both the Jussieu Herbarium (P-JU) and the general collection (P).

64. *Euphorbia lophogona* Lam.  
var. *tenuicaulis* Rauh

*Euphorbia Journal* 7: 23 (1991). — Type: “coastal forest near St. Luce, not far from Fort Dauphin in southeast Madagascar, June 1987”, *Rauh* 68607 (holo-, HEID, *in spiritu*).

65. *Euphorbia mahafalensis* Denis

*Les euphorbiées des îles australes d’Afrique*: 78, fig. 21 (1921). — Type: “plateau calcaire Mahafaly, sur les rocs, juin 1910”, *Perrier de la Bâthie* 9781 (holo-, P! [P00078026]; iso-, P! [P00221854]).

66. *Euphorbia mainiana* H. Poisson

*Recherches sur la flore méridionale de Madagascar*: 37 (1912). — Type: “Monts Mainia [La Table, prov. de Tuléar]”, *Geay* 5929 (holo-, P! [P00078027]).

67. *Euphorbia mangelsdorffii* Rauh

*Kakteen und Andere Sukkulente* 49 (2): 44 (1998). — Type: [“zwischen Sambava und Andapa, 600 m.”], III. 1997, *B.G.H.* 74947 coll. *R.D. Mangelsdorff s.n.* (holo-, HEID!, *in spiritu*).

68. *Euphorbia mangokyensis* Denis

*Les euphorbiées des îles australes d’Afrique*: 80, fig. 22 (1921). — Type: “rocailles boisées sèches des gneiss et cipolins, bassin du Mangoky, 1911”, *Perrier de la Bâthie* 9660 (lecto-, P! [P00078039], here designated; isolecto-, P! [P00078040]).

REMARK

Other syntypes: “rocailles boisées sèches des gneiss et cipolins, bassin du Mangoky, 1911”, *Perrier de la Bâthie* 9660 (P! [P00078039, P00078040]).

69. *Euphorbia melanacantha* Drake

*Bulletin du Muséum d’Histoire naturelle* 1903: 45 (1903). — Type: “Tsilamaha (octobre 1901)”, *Grandidier s.n.* (holo-, P! [P00577112]).

REMARK

Taxonomic synonym of *Euphorbia splendens* Bojer ex Hook. (Denis 1921), to be called *Euphorbia milii* Des Moul. var. *splendens* (Bojer ex Hook.) Ursch & Leandri.

70. *Euphorbia milii* Des Moul. var. *milii*

*Bulletin de l’Histoire naturelle de la Société linnéenne de Bordeaux* 1: 27, pl. 1 (1826). — Type: Des Moulins, *Bulletin de l’Histoire naturelle de la Société linnéenne de Bordeaux* 1: t. 1 (1826) (holo-, !).

REMARK

The original wild locality in Madagascar remains unknown. Newton (1994) designated improperly a lectotype (McNeill *et al.* 2006: Art. 9.1) which is in fact the holotype: “the plate in the protologue with drawings of the plant”.

We consider this name to apply to a distinct species, thus called *Euphorbia milii* Des Moul.

71. *Euphorbia milii* Des Moul. var. *bosseri* Rauh

*Cactus and Succulent Journal* (Los Angeles) 42 (6): 271 (1970). — *Euphorbia neobosseri* (Rauh) Rauh, *Cactus and Succulent Journal* (Los Angeles) 64(5): 264 (1992) (as “*neo-bosseri*”). — Type: “forest of Sakaraha, east of Toliara (Tuléar)”, *B.G.H.* 70856 (holo-, HEID!, *in spiritu*).

REMARK

Rauh (1992a) considers this name to apply to a distinct species, thus called *Euphorbia neobosseri* (Rauh) Rauh.

72. *Euphorbia milii* Des Moul.  
var. *longifolia* Rauh

*Kakteen und Andere Sukkulente* 18 (10): 182 (1967). — Type: “*In collibus gneissiacis 20 km in directione meridionali a Betroka distantibus*, 1959”, *Rauh* M1464 (holo-, HEID!, *in spiritu*).

73. *Euphorbia milii* Des Moul.  
var. *roseana* Marn.-Lap. ex J.-P. Demoly

*Journal botanique de la Société botanique de France* 18-19: 189 (2002). — Type: “Jardin botanique Les Cèdres, déc. 1997 (fl.)”, *M. Teissier s.n.* (holo-, P! [P00577111]).

## REMARK

Marnier-Lapostolle based this name on a cultivated plant brought back from Zombitsy by Montagnac. However the name is a *nomen nudum* as he did not cite a type in his paper (Marnier-Lapostolle 1962). Demoly (2002) later validated this name by designating a holotype (improperly called a neotype in the publication).

74. *Euphorbia milii* Des Moul.  
var. *tenuispina* Rauh & Razaf.

*Euphorbia Journal* 7: 34 (1991). — Type: “mountains in the region of Ihosy et Isalo, southern Madagascar”, *B.G.H. 68736 coll. A. Razafindratsira s.n.* (holo-, HEID!, *in spiritu*).

75. *Euphorbia milii* Des Moul.  
var. *tulearensis* Ursch & Leandri

*Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 152, fig. 40 (1954). — Type: “Jardin de Tsimbazaza n° 13, plante récoltée à Tuléar”, integrated in the herbarium as *Leandri 2385* (holo-, P! [P00078047]).

76. *Euphorbia millotii* Ursch & Leandri

*Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 138, fig. 33 (1954) (as “*milloti*”). — Type: “Jardin de Tsimbazaza n° 14, plante récoltée par Millot”, integrated in the herbarium as *Leandri 2386* (holo-, P! [P00078049]).

77. *Euphorbia moratii* Rauh var. *moratii*

*Kakteen und Andere Sukkulente* 21 (8): 153 (1970). — Type: “Antsingy (Reserv. Nat. Nr. 9) prope Bekopaka in vertice montium Falaise Nord in saltibus Manambalo [manambolo]”, *Morat 1484* (holo-, HEID!, *in spiritu*).

78. *Euphorbia moratii* Rauh  
var. *antsingiensis* Cremers

*Bulletin du Jardin botanique de l'État, Bulletin van den Rijksplantentuin* 54 (3/4): 382, figs 5E-H, 8D (1984). — Type: “sur calcaire de l'Antsingy vers Bevary (E. d'Antsalova), entre le 27 janvier et le 5 février 1960”, *Leandri & Saboureau 2938* (holo-, P! [P00078054]).

79. *Euphorbia moratii* Rauh  
var. *bemaraensis* Cremers

*Bulletin du Jardin botanique de l'État, Bulletin van den Rijksplantentuin* 54 (3/4): 381, figs 5I-L, 8D (1984). — Type: “Tsingy du Bemaraha, réserve n° 9”, *Morat 1355* (holo-, TAN! [TAN000554]).

80. *Euphorbia moratii* Rauh  
var. *multiflora* Rauh

*Euphorbia Journal* 7: 27 (1991). — Type: “probably north of Maevatana, on the road to Majunga, without exact locality”, *Ernst Specks ES 602* (holo-, HEID!, *in spiritu*).

81. *Euphorbia neobosseri* (Rauh) Rauh  
var. *itampolensis* Rauh

*Tropische und Subtropische Pflanzenwelt* 100: 7 (1999). — Type: “ad Itampolo in harena in silvis Didiereacearum”, *B.G.H. 73303 coll. R. Bana* (holo-, HEID!, *in spiritu*).

## REMARK

Rauh (1992a) considers the name *Euphorbia milii* Des Moul. var. *bosseri* to apply to a distinct species, called *E. neobosseri* (Rauh) Rauh, of which this name is a variety to be called *E. neobosseri* (Rauh) Rauh var. *itampolensis* Rauh.

82. *Euphorbia neohumbertii* Boiteau  
var. *neohumbertii*

*Bulletin trimestriel de l'Académie malgache* 24: 85 (1942) (as “*neohumberti*”). — Type: “collines et plateaux calcaires de l'Ankarana (province de Diégo-Suarez), forêt trophile entre Ambondrofe et Ambodimandro, rocailles, altitude: 250 m, entre décembre 1937 et janvier 1938”, *Humbert 19008* (neo-, P! [P00078119], here designated).

## REMARK

Boiteau (1942) wrote: “plante récoltée par le professeur H. Humbert sur les rocailles calcaires de

l'Ankara (Ouest), mise en culture au Jardin botanique en janvier 1938". The neotype here designated is likely to have been collected at the same time as the live plant on which Boiteau based his description. On this sheet is also written "*Euphorbia viguieri* Denis var. *ankaranensis* Leandri" which constitutes an unpublished *nomen nudum*.

83. *Euphorbia neohumbertii* Boiteau  
var. *aureoviridiflora* Rauh

*Cactus and Succulent Journal* (Los Angeles) 42 (5): 204 (1970). — *Euphorbia aureoviridiflora* (Rauh) Rauh, *Collectanea Botanica* 21: 207 (1992). — Type: "in steep and almost vertical calcareous rocks of the Montagne des Français near Diego-Suarez, 1969", Rauh 22921 (holo-, HEID!, *in spiritu*).

REMARKS

Rauh (1992b: 207, then again 1995: 297) considers this name to apply to a distinct species, to be called *Euphorbia aureoviridiflora* (Rauh) Rauh.

84. *Euphorbia pachypodioides* Boiteau

*Bulletin trimestriel de l'Académie malgache* 24: 87 (1942). — *Euphorbia antankara* Leandri, *Notulae Systematicae* 12: 161 (1946), *nom. illeg.* — Type: "collines et plateaux calcaires de l'Ankarana (province de Diégo-Suarez), forêt tropophile, alt. 10-250 m, entre décembre 1937 et janvier 1938", Humbert 18799 (lecto-, P! [P00078060], here designated).

REMARK

Boiteau has only written: "Plante récoltée par H. Humbert sur les rocailles calcaires de l'Ankarana (Ouest), mise en culture au Jardin botanique". We chose to lectotypify *Euphorbia pachypodioides* on the only specimen available at P which matches exactly the text of Boiteau. The name *Euphorbia antankara* Leandri then becomes an illegitimate superfluous name for *E. pachypodioides* because Leandri based his name on the same specimen.

85. *Euphorbia parvicynthophora* Rauh

*Cactus and Succulent Journal* (Los Angeles) 58 (4): 143 (1986). — Type: "in pockets of soil on face of cavernous limestone cliff near village of Anjamala on south bank of Fiherenana river, about 45 km east northeast of Tulear, Madagascar; alt. c. 100m.", Lavranos & Morat

9601 (=AbG 75-1116) leg. John Lavranos deposited at Herb. Inst. System. Bot. Univ. Heidelberg, under number B.G.H. 66612, (holo-, HEID!, *in spiritu*).

86. *Euphorbia paulianii* Ursch & Leandri

*Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 132, fig. 29 (1954) (as "*pauliani*"). — Type: "Jardin de Tsimbazaza n° 9, plante récoltée dans les Tsingy [Bemaraha]", integrated in the herbarium as *Leandri* 2382 (holo-, P! [P00078064]; iso-, P! [P00078065]).

87. *Euphorbia perrieri* Drake var. *perrieri*

*Bulletin du Muséum national d'Histoire naturelle* 5 (6): 308 (1899) (as "*perieri*"). — Type: "Firingalava, 1898", *Perrier de la Bâthie* 571 (holo-, P! [P00078070]).

88. *Euphorbia perrieri* var. *elongata* Denis

*Les euphorbiées des îles australes d'Afrique*: 88 (1921). — Type: "bois sur les grès liasiques du massif de Manongarivo vers 800 m d'alt., avril 1909", *Perrier de la Bâthie* 9916 (holo-, P! [P00078071]).

89. *Euphorbia primulifolia* Baker  
var. *primulifolia*

*Journal of the Linnean Society*, Botany 18: 278 (1881). — Type: Ankaratra mountains, *Kitching s.n.* (holo-, K! [K000185192]; iso-, K! [K000185194]).

REMARK

Published as "*primulaefolia*", which should be treated as an error to be corrected in "*primulifolia*", according to McNeill *et al.* (2006: Art. 60.8 and Rec. 60G).

90. *Euphorbia primulifolia* Baker  
var. *begardii* Cremers

*Bulletin du Jardin botanique de l'État*, *Bulletin van den Rijksplantentuin* 54 (3/4): 386, figs 7, 8 E (1984). — Type: "dans les sables gréseux des vallées encaissées de l'Isalo", *Cremers* 2843 (holo-, P! [P00078085]; iso-, TAN!).

91. *Euphorbia quartziticola* Leandri

*Notulae Systematicae* 12: 159 (1946). — Type: "Ambatofinandrahana, 11 octobre 1939", *Decary* 14988 (lecto-, P! [P00078088], here designated).

## REMARK

Other former syntypes: “ouest d’Ambatofinandrahana, 20 novembre 1939”, *Decary 15131* (P! [P00078089]); “ouest d’Ambatofinandrahana, 20 novembre 1939”, *Decary 15133* (P! [P00078090]).

92. *Euphorbia razafindratsirae* Lavranos

*Succulentas* 3: 7 (2002). — Type: “in silva xerophila prope urbem Tongobory, lat. 23°30’N, long. 44°20’E, alt. c. 275 m, 1999”, *Razafindratsira s.n.* (holo-, P! [P00577114]).

93. *Euphorbia razafinjohanyi* Ursch & Leandri

*Mémoires de l’Institut scientifique de Madagascar*, série B, Biologie végétale 5: 162, fig. 46 (1954) (as “*razafinjohanii*”). — Type: “Jardin de Tsimbazaza n° 26, plante récoltée à Fianarantsoa”, integrated in the herbarium as *Leandri 2395* (holo-, P! [P00078094]).

94. *Euphorbia retrospina* Rauh & Gerold

*Succulentas* 4: 3 (2000). — Type: “environ d’Antanimora, en direction du Massif d’Angavo, 1998”, *B.G.H. 70625 coll. Mananige-Gerold*, Antananarivo (holo-, HEID!).

95. *Euphorbia robivelonae* Rauh

*Succulentas* 1: 9 (1994). — Type: “ad ripam et in aqua rivorum lento fluentium inter rupes, in societate cum *Cyperis aquaticis*, in territorio de Forêt de Analava (Iharana-Sambava), march 1993”, *Rauh 73927* (holo-, HEID!, in spiritu).

96. *Euphorbia rossii* Rauh & Buchloh

*Kakteen und Andere Sukkulente* 18 (11): 202 (1967). — Type: “apud Nosy-Ambositra [Ambositra] in valle fluminis Mongoky [Mangoky] prope Befandriana-Sud in saxis arenaceis, rarius calcareis, october 1961”, *Rauh & Buchloh 7354* (holo-, HEID!, iso-, P! [P00224979]).

97. *Euphorbia sakarahaensis* Rauh

*Cactus and Succulent Journal* (Los Angeles) 64 (5): 265 (1992). — Type: “in the forest of Sakaraha (Zombitsy), Prov. Toliara, SW Madagascar, nov. 1991”, *B.G.H. 72317 coll. Hofstätter s.n.* (holo-, HEID!, in spiritu).

98. *Euphorbia splendens* Bojer ex Hook.

*Curtis’s Botanical Magazine* 56: t. 2902 (1829). — *Steirigmanthe splendens* (Bojer ex Hook.) Klotzsch & Garcke, *Monatsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin*: 252 (1859). — *Euphorbia milii* Des Moul. var. *splendens* (Bojer ex Hook.) Ursch & Leandri, *Mémoires de l’Institut scientifique de Madagascar*, série B, Biologie végétale 5: 148 (1954). — Type: *Curtis’s Botanical Magazine* 56: t. 2902 (1829) (holo-, !; epi-, P! “*Hab. ad versum agrorum in prov. Emerina [Imerina], nom. mad. Souñg-gow-Souñg-gow, Madagascar*” Bojer s.n. [P00078105], here designated).

## REMARK

We chose to designate as an epitype the specimen collected by Bojer which was used by him to make the drawing sent to Hooker and on which he based the description and drawing (Bojer 1829: pl. 2902) of the plant which is the holotype of the name.

We consider this name to apply to a variety of *Euphorbia milii*, to be called *Euphorbia milii* Des Moul. var. *splendens* (Bojer ex Hook.) Ursch & Leandri.

99. *Euphorbia subapoda* Baill.

*Bulletin mensuel de la Société linnéenne de Paris* 1 (84): 671 (1887). — Type: “Ambatomenaloha, 1876”, *Grandidier 75* (holo-, P! [P00078084]).

## REMARK

Taxonomic synonym of *Euphorbia primulifolia* Baill. var. *primulifolia* according to Denis (1921).

100. *Euphorbia suzannae-marnierae*  
Rauh & Pétignat

*Succulentas* 19 (4): 10 (1996) (as “*suzannae-marnierae*”). — Type: “Madagascar, meridionalis prope Anadobolava (Toliary), in septentrionali ad Amboasary, in silvis caducifoliis”, *Pétignat 397* (holo-, HEID!, in spiritu).

## REMARK

The name of the last author was incorrectly spelled “Pétiqnat”.

101. *Euphorbia tardieuana* Leandri

*Notulae Systematicae* 12: 162 (1946). — Type: “rocaïlles dénudées, sur l’Anosivola, affluent de droite du

Mangoro, novembre 1927”, *Perrier de la Bâthie 18166* (holo-, P! [P00078111]).

102. *Euphorbia thuarsiana* Baill.

*Adansonia* 1: 139 (1860-1861). — Type: *s. loc.*, *Dupetit-Thouars s.n.* (holo-, P! [P00078108]; iso-, P! [P00078109]).

103. *Euphorbia tsimbazazae* Leandri

*Notulae Systematicae* 12: 162 (1946). — Type: “Jardin de Tsimbazaza n° 11, nov. dec.”, *Boiteau s.n.* (holo-, P! [P00078021]).

REMARK

Leandri based this name on material sent from the botanical garden of Tsimbazaza by Boiteau in 1939 under n° 11. The specimen found at P (P00078021) comprises two labels, one from Boiteau’s hand (corresponding to the material sent by himself and thus likely dating from 1939). This label, the oldest, also bears a more recent handwritten mention incorrectly stating that the specimen was made by E. Ursch. The other label bears the collection number *Leandri 2384* and the name *Euphorbia leandriana* Boiteau, and likely dates from when Ursch & Leandri (1954) attributed to the plant cultivated under n° 11 in the Park of Tsimbazaza, the name of *E. leandriana* Boiteau, while being doubtful on the validity of *E. tsimbazazae* Leandri. Rauh (1992c) attached the name of *E. leandriana* to the type of *E. tsimbazazae* emphasizing the fact that both *E. leandriana* and *E. tsimbazazae* should be treated as dubious species due to inconsistencies between illustrations and specimens in (Ursch & Leandri 1954; Leandri 1946, 1953). We decided not to take into account for now the contradicting taxonomic hypotheses proposed by these authors and instead to follow the strict interpretation of the protologues and specimens available.

104. *Euphorbia viguieri* Denis var. *viguieri*

*Les euphorbiées des îles australes d’Afrique*: 73 (1921). — Type: “Belumbo, près Mevetanana [Maevatanana], dans les bois rocailleux granitiques”, *Perrier de la Bâthie 949* (lecto-, P! [P00226171]), designated by Ursch & Leandri [1954: 120]).

REMARK

Denis based his species on material collected by P. Boivin and Perrier de la Bâthie but he did not cite a type.

105. *Euphorbia viguieri* Denis  
var. *ankarafantsiensis* Ursch & Leandri

*Mémoires de l’Institut scientifique de Madagascar*, série B, Biologie végétale 5: 124, fig. 25 (1954). — Type: “Jardin de Tsimbazaza n° 41, plante récoltée à Ankarafantsy [Ankarafantsika]”, integrated in the herbarium as *Leandri 2400* (lecto-, P! [P00078118], here designated).

REMARK

Ursch & Leandri based this variety on a plant “cultivée au Jardin botanique sous le n° 41” from Ankarafantsika.

106. *Euphorbia viguieri* Denis  
var. *capuroniana* Ursch & Leandri

*Mémoires de l’Institut scientifique de Madagascar*, série B, Biologie végétale 5: 124, fig. 26 (1954). — Type: “Jardin de Tsimbazaza n° 8, plante récoltée à Diégo”, integrated in the herbarium as *Leandri 2381* (lecto-, P! [P00078120], here designated).

REMARK

Ursch & Leandri based this variety on a plant “cultivée au Jardin botanique sous le n° 8” collected by Humbert & Capuron in Ankara de Diégo.

107. *Euphorbia viguieri* Denis  
var. *tsimbazazae* Ursch & Leandri

*Mémoires de l’Institut scientifique de Madagascar*, série B, Biologie végétale 5: 120, fig. 23 (1954). — Type: “Jardin de Tsimbazaza n° 25”, integrated in the herbarium as *Leandri 2394* (lecto-, P! [P00078116], here designated).

REMARK

Ursch & Leandri based this variety on a plant of unknown origin “cultivée au Jardin botanique sous le n° 25”.

108. *Euphorbia viguieri* Denis var.  
*vilanandrensis* Ursch & Leandri

*Mémoires de l’Institut scientifique de Madagascar*, série B, Biologie végétale 5: 122, fig. 24 (1954). — Type: “Jar-

din de Tsimbazaza n° 40, plante récoltée à Vilanandro”, integrated in the herbarium as *Leandri 2399* (lecto-, P! [P00078117]).

## REMARK

Ursch & Leandri based this variety on a plant “cultivée au Jardin botanique sous le n° 40” discovered in the 8<sup>e</sup> Réserve naturelle, Vilanandro.

109. *Euphorbia waringiae* Rauh & Gerold

*Succulentas* 2: 5 (1998). — Type: “*apud Esomony, septentrionalis Amboasary, Madagascar meridionalis-occidentalis, in Sables rouges, in margine silvarum Alluaudiae procerae, 400 m. s. m. Euph. waringiae (de loco aequo numero 75005) etiam in Horto Botanico Universitatis cultivata est, november 1996*”, B.G.H. 74938 coll. Raymond Gerold (holo-, HEID!, *in spiritu*).

110. *Euphorbia xanthadenia* Denis

*Les euphorbiées des îles australes d’Afrique*: 79 (1921). — *Euphorbia mahafalensis* var. *xanthadenia* Denis (Leandri), *Notulae Systematicae* 12: 158 (1946). — Type: “rocailles gréseuses de Sakamare près de Benenitsa, juillet 1910”, *Perrier de la Bathie 9766* (holo-, P! [P00078124]; iso-, P! [P00226148]).

## REMARK

Leandri (1946), in a key, considers this name to apply to a variety of *Euphorbia mahafalensis* Denis, to be called *E. mahafalensis* var. *xanthadenia* (Denis) Leandri.

111. *Pedilanthus lycioides* Baker

*Journal of the Linnean Society. Botany* 22: 516 (1887). — *Euphorbia pedilanthoides* Denis, *Les euphorbiées des îles australes d’Afrique*: 76, figs 19, 20 (1921). — *Non Euphorbia lycioides* Boiss., *Centuria Euphorbiarum* (1860). — Type: *s.l.*, *Baron 4772* (lecto, K! [K000158067], here designated; isolecto-, K! [K000185062], P! [P00078066]).

## REMARK

Denis (1921) could not use the name “*Euphorbia lycioides*”, because this one was used in 1860 by Boissier (1860) for a Brazilian plant and thus re-named *Pedilanthus lycioides* Baker which should be called *Euphorbia pedilanthoides* Denis.

Note the existence at P of an ambiguous syntype: *Baron 4772* and *4792* mounted on one sheet (P! [P00078066]).

## NAMES OF HYBRIDS

112. *Euphorbia ×ambohipotsiensis*

Ursch & Leandri

*Mémoires de l’Institut scientifique de Madagascar*, série B, *Biologie végétale* 5: 180, fig. 55 (1954). — Type: “Jardin de Tsimbazaza n° 53”, integrated in the herbarium as *Leandri 2401* (lecto-, P! [P00077931], here designated).

## REMARK

Ursch & Leandri based this name on a plant “cultivée sous le n° 53”.

113. *Euphorbia ×andrefandrovana*

Ursch & Leandri

*Mémoires de l’Institut scientifique de Madagascar*, série B, *Biologie végétale* 5: 182, fig. 57 (1954). — Type: Ursch & Leandri (1954), *Mémoires de l’Institut scientifique de Madagascar*, série B, *Biologie végétale* 5: 184 t. 57 (holo-, !).

## REMARK

Ursch & Leandri (1954) based this species on a plant “cultivée sous le n° 61”. No herbarium material is available, the holotype is thus the illustration number 57 page 184 (McNeill *et al.* 2006: Art 9.1).

114. *Euphorbia ×ingezalahiana*

Ursch & Leandri

*Mémoires de l’Institut scientifique de Madagascar*, série B, *Biologie végétale* 5: 182, fig. 56 (1954). — Type: “Jardin de Tsimbazaza n° 57”, integrated in the herbarium as *Leandri 2403* (lecto-, P! [P00078007], here designated).

## REMARK

Ursch & Leandri based this species on a plant “cultivée sous le n° 57.”

115. *Euphorbia ×lomi* Rauh

*Kakteen und Andere Sukkulente*n 30 (11): 257 (1979). — Type: “*Madagascar austro-orientalis ad margines et in silvis sempervirentibus et dumetis in directione septentrionali 50 km a Fort Dauphin distante*”, *Rauh 47458* (holo-, HEID, *in spiritu*).

116. *Euphorbia* ×*mitsimbinensis*

Ursch & Leandri

*Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 176, fig. 53 (1954). — Type: “Jardin de Tsimbazaza n° 29”, integrated in the herbarium as *Leandri 2397* (lecto-, P! [P00078050], here designated).

REMARK

Ursch & Leandri based this species on a plant “cultivée au Jardin de Tsimbazaza sous le n° 29”.

117. *Euphorbia* ×*soanieranensis*

Ursch & Leandri

*Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 178, fig. 54 (1954). — Type: Ursch & Leandri (1954), *Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 179 t. 54 (holo-, !).

REMARK

Ursch & Leandri based this species on a plant “cultivée sous le n° 49”. No herbarium material is available, the holotype is thus the illustration number 54 page 179 (McNeill *et al.* 2006: Art 9.1).

118. *Euphorbia* ×*zanaharensis* Ursch & Leandri

*Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 174, fig. 52 (1954). — Type: “Jardin de Tsimbazaza n° 18”, integrated in the herbarium as *Leandri 2390* (lecto-, P! [P00078128], here designated).

REMARK

Ursch & Leandri based this species on a plant “cultivée au Jardin botanique sous le n° 18.”

INCERTAE SEDIS

119. *Euphorbia* *isaloensis* Drake

*Bulletin du Muséum national d'Histoire naturelle* 5 (6): 307 (1899), *non satis cognita*. — Type: “in monte Isalo”, *G. Grandidier s.n.*; “in valle fluminis Mandrany”, *Lamère s.n.* (syn-, not found at P).

REMARKS

Both specimens seem to be lost, even as early as from the time of Denis (1921), who rejects this species: “Je n'ai pas vu cette espèce dont l'exsiccata a disparu” (I haven't seen this species for which no *exsiccata* remains).

Ursch & Leandri (1954) consider the name to be a *nomen dubium*: “*E. isaloensis* Drake doit être considérée comme espèce douteuse. En effet, il n'est pas possible de retrouver à l'herbier du Muséum les échantillons qui ont servi à la décrire; en outre, la description [...] pourrait aussi laisser penser qu'elle à été établie sur des matériaux hétérogènes” (*E. isaloensis* Drake must be considered as a dubious species. In fact, it hasn't been possible to locate the samples which were used to describe it in the Muséum herbarium; moreover, the description [...] could lead us to think that it was described on heterogeneous material) (see *Euphorbia isaloensis* Leandri).

120. *Euphorbia* *platyacantha* Drake

*Bulletin du Muséum d'Histoire naturelle* 9: 45 (1903). — Type: “Route de Ranohira à Ihosy, 4 septembre 1898”, *Grandidier s.n.* (holo-, not located).

REMARKS

This name is of doubtful application as no original material seemed to survive, the protologue does not permit to unambiguously identify this species other than that its belonging to subg. *Lacanthis*.

Taxonomic synonym of *Euphorbia splendens* Bojer ex Hook. according to Denis (1921).

121. *Euphorbia* *rubrostriata* Drake  
var. *rubrostriata*

*Bulletin du Muséum national d'Histoire naturelle* 9 (1): 44 (1903) (as “*rubro-striata*”). — Type: “Mont de la Table, septembre 1901”, *Grandidier s.n.* (holo-, not located).

REMARK

Originally published as “*rubro-striata*”, but corrected to “*rubrostriata*” according to McNeill *et al.* (2006: Art. 60.9).

The exact application of this name remains dubious as the original description can match various species with striped cyathophylls growing in this area; hence our choice to list it in the *nomina dubia* section until the taxonomic revision is completed.

122. *Euphorbia rubrostriata*  
var. *doulioti* H. Poisson

*Recherches sur la flore méridionale de Madagascar*: 38 (1912). — Type: “au nord de la partie moyenne du Mangoky, près des sources du Morondava”, *Douliot* (holo-, P! [P00217894]).

REMARK

This name was validly published but is a variety of a dubious name, hence his inclusion in the *incertae sedis*. Furthermore, it is mentioned on the holotype and in the description “suc laiteux rouge” (red latex), the dry type specimen left at P cannot allow to confirm or invalidate this very unlikely assertion (no known red-latexed euphorbia are known, only taxa with a slight yellowish, pinkish or greenish hue are known such as *Euphorbia abdelkuri* from Yemen).

INVALIDLY PUBLISHED NAMES

123. *Euphorbia breoni* Nois.

*Annales de Flore et de Pomone* 1 (11): 189 (1833).

REMARKS

Illegitimate renaming of *Euphorbia splendens* Bojer ex Hook. (McNeill *et al.* 2006: Art 52.2), automatic typification of *E. breoni* Nois. on the type of *E. splendens* Bojer ex Hook. (McNeill *et al.* 2006: Art 7.5).

124. *Euphorbia ambovombensis* Rauh & Razaf.  
var. *ambatomenaensis* Rebmann

*Succulentas* 2003 (3): 20 (2003). — Type: “Collines de sables calcarifères sud-est d’Amboasary, 2 septembre 1999”.

REMARK

In the original description of the new variety *ambatomenaensis*, Rebmann (2003) does not specify any Herbarium where the designed type is conserved. Therefore, this name of variety is treated as a *nomen invalidum*, according to McNeill *et al.* (2006: Art. 37.7).

125. *Euphorbia leandriana* Boiteau

*Bulletin trimestriel de l’Académie malgache* 24: 84 (1942). — Type: “Groupe de plantes ramenées de la vallée du Fiherenana par H. Humbert en 1934, sous les n° 22 et 228 [...] Le type de cette espèce est cultivé sur la rocaille du Jardin botanique.”

REMARK

Boiteau based this species on live plants cultivated at the Parc de Tsimbazaza and “ramenées de la vallée du Fiherenana par H. Humbert en 1934 sous les n° 22 et 228”. As there are no traces of Humbert herbarium specimens (nothing in the literature indicates that such specimens pressed from the live plants ever existed), the name published by Boiteau is illegitimate as the name was based on a group of live plants (McNeill *et al.* 2006: Art. 8.4).

126. *Euphorbia splendens* Bojer ex Hook.  
var. *breonii* Leandri

*Notulae Systematicae* 12: 159 (1946), *nomen*, and *Cactus* (Paris) 34: 114 (1952). — *Euphorbia milii* Des Moul. var. *breonii* Ursch & Leandri, *nom. nud.*, *Mémoires de l’Institut scientifique de Madagascar*, série B, Biologie végétale 5: 148, fig. 38 (1954).

REMARK

According to Newton (1994), *Euphorbia breonii* Nois. is a superfluous renaming of *E. milii* Des Moul., but the epithet was misapplied to a new species by Leandri (1946: 159), without validly describing the taxon (see the section “Names invalidly published by Leandri (1946) and Ursch & Leandri (1954)”). Consequently, *Euphorbia splendens* Bojer ex Hook. var. *breoni* and *Euphorbia milii* Des Moul. var. *breonii* were invalidly published *nomina nuda*, excluding the type of their epithet-bringing synonym.

NAMES INVALIDLY PUBLISHED  
BY LEANDRI (1946)  
AND URSCH & LEANDRI (1954)

Leandri (1946) introduced in an identification key, four new varieties of *Euphorbia splendens* Bojer ex Hook. without descriptions. In their work on the *Euphorbia* from the botanical garden of Tsimbazaza, Ursch & Leandri (1954) revised this group. They based new combinations on these three names but, this time again, did not give any Latin descriptions. These names are not validly published because they were not and still have not been “accompanied by a Latin description or diagnosis or by a reference to a (...) Latin description or diagnosis” (McNeill *et al.* 2006: Art. 36):

*Euphorbia splendens* Bojer ex Hook. var. *betsileana* Leandri, *Notulae Systematicae* 12: 159 (1946).

*Euphorbia splendens* Bojer ex Hook. var. *breoni* Leandri, *Notulae Systematicae* 12: 159 (1946).

*Euphorbia splendens* Bojer ex Hook. var. *imperatae* Leandri, *Notulae Systematicae* 12: 159 (1946).

*Euphorbia splendens* Bojer ex Hook. var. *tanarivae* Leandri, *Notulae Systematicae* 12: 159 (1946).

*Euphorbia splendens* Bojer ex Hook. var. *vulcani* Leandri, *Notulae Systematicae* 12: 159 (1946).

*Euphorbia milii* Des Moul. var. *breonii* Ursch & Leandri, *Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 148, fig. 38 (1954).

*Euphorbia milii* Des Moul. var. *imperatae* (Leandri) Ursch & Leandri, *Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 150 (1954).

*Euphorbia milii* Des Moul. var. *tanarivae* (Leandri) Ursch & Leandri, *Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 150 (1954).

*Euphorbia milii* Des Moul. var. *vulcani* (Leandri) Ursch & Leandri, *Mémoires de l'Institut scientifique de Madagascar*, série B, Biologie végétale 5: 150 (1954).

NAMES INVALIDLY PUBLISHED  
BY W. RAUH *IN* SCHILL (1971)

In a cytotaxonomic study of the genus *Euphorbia* L., Schill (1971) mentions two varieties of spiny euphorbias, announcing their description by Rauh in preparation. These species have never been published and their names are therefore two unpublished *nomina nuda*:

*Euphorbia decaryi* var. *tulearensis* Rauh, *nomen nudum*  
*Euphorbia primulifolia* var. *isaloensis* Rauh, *nomen nudum* (as “*primulaefolia*”).

INDEX TO VALID AND INVALID NAMES  
(ACCEPTED NAMES IN BOLD)

*Euphorbia alfredii* Rauh

*Euphorbia ambarivatoensis* Rauh & Bard.-Vauc.

*Euphorbia ambovombensis* Rauh & Razaf. var. *ambovombensis*

*Euphorbia ambovombensis* Rauh & Razaf. var. *ambatom-enaensis* Rebmann

*Euphorbia analavelonensis* Rauh & Mangelsdorff

*Euphorbia ankarensis* Boiteau

*Euphorbia ankazobensis* Rauh & Hofstätter

*Euphorbia annamariaeae* Rauh

*Euphorbia antankara* Leandri = *Euphorbia pachypodioides* Boiteau

*Euphorbia aureoviridiflora* (Rauh) Rauh

*Euphorbia bailloni* Boiss. *ms.* = *Euphorbia boissieri* Baill.

*Euphorbia banae* Rauh

*Euphorbia beharensis* Leandri var. *adpressifolia* Rauh

*Euphorbia beharensis* Leandri var. *beharensis*

*Euphorbia beharensis* Leandri var. *guillemetii* (Ursch & Leandri) Rauh

*Euphorbia beharensis* Leandri var. *squarrosa* Rauh

*Euphorbia beharensis* Leandri var. *truncata* Rauh

*Euphorbia berevoensis* Lawant & Buddens.

*Euphorbia berorohae* Rauh & Hofstätter

*Euphorbia bevilaniensis* Croizat = *Euphorbia milii* Des Moul. var. *bevilaniensis* (Croizat) Ursch & Leandri

*Euphorbia biaculeata* Denis

*Euphorbia boissieri* Baill.

*Euphorbia boiteaui* Leandri

*Euphorbia bojeri* Hook. = *Euphorbia milii* Des Moul. var. *milii*

*Euphorbia brachyphylla* Denis

*Euphorbia breoni* Nois. = *Euphorbia milii* Des Moul. var. *milii*

*Euphorbia bulbispina* Rauh & Razaf.

*Euphorbia capmanambatoensis* Rauh

*Euphorbia capsaintemariensis* Rauh var. *capsaintemariensis* = *Euphorbia decaryi* var. *capsaintemariensis* (Rauh) Cremers

*Euphorbia capsaintemariensis* Rauh var. *tulearensis* Rauh = *Euphorbia tulearensis* (Rauh) Rauh

*Euphorbia capuronii* Ursch & Leandri

*Euphorbia caput-aureum* Denis

*Euphorbia cremersii* Rauh & Razaf. var. *cremersii*

*Euphorbia cremersii* Rauh & Razaf. forma *viridiflora* Rauh

*Euphorbia cremersii* Rauh & Razaf. var. *rakotozafyi* (Cremers) Rauh

- Euphorbia croizatii* Leandri  
*Euphorbia cylindrifolia* Marn.-Lap. & Rauh subsp. *cylindrifolia*  
*Euphorbia cylindrifolia* Marn.-Lap. & Rauh subsp. *tuberifera* Rauh  
*Euphorbia daphnoides* Baill. = *Euphorbia hexadenia* Denis  
*Euphorbia decaryi* Guillaumin var. *ampanihyensis* Cre-mers  
*Euphorbia decaryi* Guillaumin var. *capsaintemariensis* (Rauh) Cremers  
*Euphorbia decaryi* Guillaumin var. *decaryi*  
*Euphorbia decaryi* Guillaumin var. *robinsonii* Cremers  
*Euphorbia decaryi* Guillaumin var. *spirosticha* Rauh & Buchloh  
*Euphorbia decaryi* Guillaumin var. *tulearensis* Rauh  
*Euphorbia delphinensis* Ursch & Leandri  
*Euphorbia denisiana* Guillaumin  
*Euphorbia didiereoides* Denis ex Leandri  
*Euphorbia duranii* Ursch & Leandri var. *ankaratrae* Ursch & Leandri  
*Euphorbia duranii* Ursch & Leandri var. *duranii*  
*Euphorbia erythroculcata* Mangelsdorff  
*Euphorbia fianarantsoae* Ursch & Leandri  
*Euphorbia fournieri* Rebut = *Euphorbia leuconeura* Boiss.  
*Euphorbia francoisii* Leandri var. *crassicaulis* Rauh  
*Euphorbia francoisii* Leandri var. *crassicaulis* forma *rubrifolia* Rauh  
*Euphorbia francoisii* Leandri var. *francoisii*  
*Euphorbia francoisii* Leandri var. *rakotozafyi* Cremers = *Euphorbia cremersii* Rauh & Razaf. var. *rakotozafyi* (Cremers) Rauh  
*Euphorbia genoudiana* Ursch & Leandri  
*Euphorbia geroldii* Rauh  
*Euphorbia gottlebei* Rauh  
*Euphorbia guillauminiana* Boiteau  
*Euphorbia guillemetii* Ursch & Leandri = *Euphorbia beharensis* Leandri var. *guillemetii* (Ursch & Leandri) Rauh  
*Euphorbia hermanschwartzii* Rauh  
*Euphorbia hexadenia* Denis  
*Euphorbia hislopii* N.E.Br. = *Euphorbia milii* Des Moul. var. *hislopii* (N.E.Br.) Ursch & Leandri  
*Euphorbia hofstaetteri* Rauh  
*Euphorbia horombensis* Ursch & Leandri  
*Euphorbia ibaranae* Rauh  
*Euphorbia isalensis* Leandri  
*Euphorbia isaloensis* Drake  
*Euphorbia itremensis* Kimnach & Lavranos  
*Euphorbia kondoi* Rauh & Razaf.  
*Euphorbia labatii* Rauh & Bard.-Vauc.  
*Euphorbia leandriana* Boiteau  
*Euphorbia leuconeura* Boiss.  
*Euphorbia lophogona* Hort. = *Euphorbia leuconeura* Boiss.  
*Euphorbia lophogona* Lam. var. *lophogona*  
*Euphorbia lophogona* Lam. var. *tenuicaulis* Rauh  
*Euphorbia mabafalensis* Denis var. *mabafalensis*  
*Euphorbia mabafalensis* Denis var. *xanthadenia* (Denis) Leandri  
*Euphorbia mainiana* Poiss.  
*Euphorbia mangelsdorffii* Rauh  
*Euphorbia mangokyensii* Denis  
*Euphorbia melanacantha* Drake = *Euphorbia milii* Des Moul. var. *splendens* (Bojer ex Hook.) Ursch & Leandri  
*Euphorbia milii* Des Moul. var. *bosseri* Rauh = *Euphorbia neobosseri* (Rauh) Rauh  
*Euphorbia milii* Des Moul. var. *breonii* Ursch & Leandri  
*Euphorbia milii* Des Moul. var. *imperatae* (Leandri) Ursch & Leandri  
*Euphorbia milii* Des Moul. var. *longifolia* Rauh  
*Euphorbia milii* Des Moul. var. *tananarivae* (Leandri) Ursch & Leandri  
*Euphorbia milii* Des Moul. var. *tulearensis* Ursch & Leandri  
*Euphorbia milii* Des Moul. var. *vulcani* (Leandri) Ursch & Leandri  
*Euphorbia milii* Des Moul. var. *milii*  
*Euphorbia milii* Des Moul. var. *roseana* Marn.-Lap. ex Demoly  
*Euphorbia milii* Des Moul. var. *splendens* (Bojer ex Hook.) Ursch & Leandri  
*Euphorbia milii* Des Moul. var. *tenuispina* Rauh & Razaf.  
*Euphorbia milii* Des Moul. var. *hislopii* (N.E.Br.) Ursch & Leandri  
*Euphorbia millotii* Ursch & Leandri  
*Euphorbia moratii* Rauh var. *moratii*  
*Euphorbia moratii* Rauh var. *antsingiensis* Cremers  
*Euphorbia moratii* Rauh var. *bemarahaensis* Cremers  
*Euphorbia moratii* Rauh var. *multiflora* Rauh  
*Euphorbia neobosseri* (Rauh) Rauh var. *itampolensis* Rauh  
*Euphorbia neobosseri* (Rauh) Rauh var. *neobosseri*  
*Euphorbia neohumbertii* Boiteau var. *aureoviridiflora* (Rauh) Rauh  
*Euphorbia neohumbertii* Boiteau var. *neohumbertii*  
*Euphorbia pachypodioides* Boiteau  
*Euphorbia parvicathopphora* Rauh  
*Euphorbia paulianii* Ursch & Leandri  
*Euphorbia perrieri* Drake var. *elongata* Denis  
*Euphorbia perrieri* Drake var. *perrieri*  
*Euphorbia platyacantha* Drake = *Euphorbia milii* Des Moul. var. *splendens* (Bojer ex Hook.) Ursch & Leandri  
*Euphorbia primulifolia* Baker var. *begardii* Cremers  
*Euphorbia primulifolia* Baker var. *primulifolia*  
*Euphorbia primulifolia* Baker var. *isaloensis* Rauh  
*Euphorbia quartzitcola* Leandri

*Euphorbia razafindratsirae* Lavranos  
*Euphorbia razafinjohanyi* Ursch & Leandri  
*Euphorbia retrospina* Rauh & Gerold  
*Euphorbia robivelonae* Rauh  
*Euphorbia rossii* Rauh & Buchloh  
*Euphorbia rubrostriata* Drake var. *doulioti* Poiss.  
*Euphorbia rubrostriata* Drake var. *rubrostriata*  
*Euphorbia sakarahaensis* Rauh  
*Euphorbia splendens* Bojer ex Hook. = *Euphorbia milii*  
 Des Moul. var. *splendens* (Bojer ex Hook.) Ursch &  
 Leandri  
*Euphorbia splendens* Bojer ex Hook. var. *betsileana* Le-  
 andri  
*Euphorbia splendens* Bojer ex Hook. var. *bevilaniensis*  
 (Croizat) Leandri = *Euphorbia milii* Des Moul. var.  
*bevilaniensis* (Croizat) Ursch & Leandri  
*Euphorbia splendens* Bojer ex Hook. var. *breonii* Leand-  
 dri  
*Euphorbia splendens* Bojer ex Hook. var. *hislopii* (N.E.Br.)  
 Leandri = *Euphorbia milii* Des Moul. var. *hislopii*  
 (N.E.Br.) Ursch & Leandri  
*Euphorbia splendens* Bojer ex Hook. var. *imperatae* Le-  
 andri  
*Euphorbia splendens* Bojer ex Hook. var. *tananarivae*  
 Leandri  
*Euphorbia splendens* Bojer ex Hook. var. *vulcani* Le-  
 andri  
*Euphorbia subapoda* Baill. = *Euphorbia primulifolia*  
 Baker var. *primulifolia*  
*Euphorbia suzannae-marnierae* Rauh & Pétignat  
*Euphorbia tardieuana* Leandri  
*Euphorbia thuarsiana* Baill.  
*Euphorbia tsimbazazae* Leandri  
*Euphorbia tulearensis* (Rauh) Rauh  
*Euphorbia viguieri* Denis var. *ankarafantsiensis* Ursch &  
 Leandri  
*Euphorbia viguieri* Denis var. *capuroniana* Ursch &  
 Leandri  
*Euphorbia viguieri* Denis var. *tsimbazazae* Ursch &  
 Leandri  
*Euphorbia viguieri* Denis var. *viguieri*  
*Euphorbia viguieri* Denis var. *vilanandrensis* Ursch &  
 Leandri  
*Euphorbia waringiae* Rauh & Gerold  
*Euphorbia xanthadenia* Denis = *Euphorbia mahafalensis*  
 Denis var. *xanthadenia* (Denis) Leandri  
*Euphorbia xambohipotsiensis* Ursch & Leandri  
*Euphorbia xandrefandrovana* Ursch & Leandri  
*Euphorbia xingezalabiana* Ursch & Leandri  
*Euphorbia xlomi* Rauh  
*Euphorbia xmitsimbinensis* Ursch & Leandri  
*Euphorbia xoanieranensis* Ursch & Leandri  
*Euphorbia xzanaharensis* Ursch & Leandri  
*Pedilanthus lycioides* Baker = *Euphorbia pedilanthoides*  
 Denis  
*Sterigmanthe bojeri* (Hook.) Klotzsch & Garcke = *Eu-*

*phorbia milii* Des Moul.

*Sterigmanthe splendens* (Bojer ex Hook.) Klotzsch &  
 Garcke = *Euphorbia milii* Des Moul. var. *splendens*  
 (Bojer ex Hook.) Ursch & Leandri

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