

A synoptic revision of *Brexia* (Celastraceae) in Madagascar

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ABSTRACT

KEY WORDS

Celastraceae,
Brexia,
Madagascar,
conservation.

A taxonomic revision of the genus *Brexia* Noronha ex Thouars (Celastraceae) in Madagascar is presented. Reevaluation of morphological characters allows the recognition of 11 species, three of which are described as new. Preliminary conservation assessments of each species are calculated according to IUCN Red List criteria.

RÉSUMÉ

Révision synoptique de Brexia (Celastraceae) à Madagascar.

MOTS CLÉS

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Une révision taxonomique du genre *Brexia* Noronha ex Thouars (Celastraceae) à Madagascar est présentée. La réévaluation de divers caractères morphologiques permet de reconnaître 11 espèces dont trois sont nouvelles et décrites ici. Une analyse préliminaire du statut de conservation pour chaque espèce est effectuée selon les critères des Listes Rouges de l'IUCN.

INTRODUCTION

The genus *Brexia* Noronha ex Thouars has engendered considerable debate among workers with respect to family placement, relationships, and species delimitation. At various times it has

been placed in or near Celastraceae, Escalloniaceae, Grossulariaceae, Hydrangeaceae, Saxifragaceae, or Brexiaceae, either on its own, or including *Ixerba* from New Zealand and *Rousseau* from Mauritius (see KOONTZ & SOLTIS 1999 for a complete history of family placement and

relationships). Similarly, while some authors have considered *Brexia* to be monotypic (CAPURON in herb.; VERDCOURT 1968), others have recognized as many as nine (PERRIER DE LA BÂTHIE 1942), or even 10 (LEROY 1968) species. Recent molecular phylogenetic studies have now definitively resolved the placement of *Brexia* in Celastraceae-Celastrales, and shown that it is unrelated to both *Ixerba* (Ixerbaeae-Crossosomatales) and *Rousseau* (Rousseaceae-Asterales) (KOONTZ & SOLTIS 1999; SIMMONS *et al.* 2001; APG II 2003). Here we reconsider species delimitation within Malagasy *Brexia* as part of a survey of Madagascar eastern littoral forests, as well as part of a study to identify priority areas for plant conservation.

Reevaluation of all material of *Brexia* at the principal herbaria holding Malagasy collections (K, MO, P, TAN, and TEF) was conducted in order to reassess the diagnostic species-delimiting characters proposed by PERRIER DE LA BÂTHIE (1942). In particular, inflorescence characteristics, flower size, and the form of the disc were confirmed as taxonomically important features, as well as the margins of adult leaves. Although not yet documented in all members of the genus, it is likely that the margins of leaves on juvenile and sucker shoots ("gourmands") in most, if not all, species are regularly or at least sometimes spinose, as is most commonly encountered in *B. madagascariensis*. Margins of adult leaves vary among species and sometimes within species; they can be consistently entire (*B. alaticarpa*, *B. arborea*, *B. madagascariensis*), usually entire or rarely subentire (*B. cauliflora*, *B. marioniae*), both entire/subentire and distinctly spinose (*B. apoda*, *B. coursiana*, *B. humbertii*), or consistently spinose (*B. australis*, *B. decurrens*, *B. montana*).

The basic inflorescence of *Brexia* is a cyme, which, however, has been modified and/or reduced to appear essentially unbranched and pseudo-umbellate in *B. apoda*, *B. australis*, *B. humbertii*, *B. madagascariensis* and *B. montana*. In *B. alaticarpa* and *B. cauliflora*, the secondary branches of the inflorescence are very short, with branching only near the apex of the peduncle, and thus the inflorescence appears corymbiform. In *B. arborea*, and occasionally *B. apoda*, the peduncle is essentially absent, resulting in sessile, fasciculate flowers. Distinctly

branched cymose inflorescences occur in *B. coursiana*, *B. decurrens*, and *B. marioniae*. In addition, inflorescences may be solitary and axillary (*B. alaticarpa*, *B. apoda*, *B. australis*, *B. humbertii*, *B. madagascariensis*, *B. montana*), or they may be clustered and borne on the main stem (cauliflory) (*B. cauliflora*, *B. coursiana*, *B. decurrens*, *B. marioniae*). Among the species with pseudo-umbellate inflorescences, *B. humbertii* is easily recognized by its large, persistent bracts subtending the flowers, whereas *B. australis* is distinguished by its reduced inflorescences with one or two flowers and a short peduncle.

The form of the disc varies more or less consistently among species of *Brexia*. Referred to by PERRIER DE LA BÂTHIE (1933, 1942) as "lames pétaloidés", "languettes", or "dents", the disc segments alternate with the stamens and are usually fused at their base to the lower part of the filaments. The disc segments are petaloid and entire in *B. alaticarpa*, whereas in *B. marioniae* they are petaloid, entire (or rarely very shallowly 2-3-lobed) and keeled on the inner surface, and in *B. australis* they are irregularly, shallowly to deeply, 4-8-laciniate.

The following taxonomic framework recognizes 11 species of *Brexia* in Madagascar, 10 of which are endemic, and one of which (*B. madagascariensis*) also occurs in the Comoro Islands, and along the eastern coast of Africa in Mozambique, Tanzania, and Zanzibar (VERDCOURT 1968). Although not treated here, we prefer to recognize the upland form of *Brexia* on the Seychelles as a distinct species, *B. microcarpa* Tul., rather than as a subspecies of *B. madagascariensis* (e.g., by FRIEDMANN 1994). Within Madagascar, morphological variation among species of *Brexia* is well correlated with eco-geographic parameters, including bioclimate (CORNET 1974; SCHATZ 2000, 2001; see also LOWRY *et al.* 1997, 1998) and geological substrate (DU PUY & MOAT 1996). Preliminary conservation assessments have been assigned according to IUCN (2001), and are based primarily on Extent of Occurrence (EO), Area of Occupancy (AO), number of localities/subpopulations, and projected decline in relation to presence/absence in protected areas.

For the Material examined cited below under each species, abbreviations are as follows: FC,

Forêt Classée; PN, Parc National; RNI, Réserve Naturelle Intégrale; RS, Réserve Spéciale; and STF, Station Forestière. A full listing of exsiccatae for each species, with complete localities and latitude/longitude coordinates, is available through W3 TROPICOS (<http://mobot.mobot.org/W3T/Search/vast.html>). Images of selected taxa are also available on the Web at (<http://www.mobot.org/MOBOT/Madagascar/celast.html>). Geographic coordinates indicated in square brackets were assigned *post facto* using available information on Malagasy place names and topographic maps, compiled as a gazetteer of botanical collecting localities in Madagascar

(<http://www.mobot.org/MOBOT/research/madagascar/gazetteer/>).

BREXIA Noronha ex Thouars

Gen. Nov. Madag.: 20 (1806), *nom. cons.*

TYPE. — *Brechia madagascariensis* (Lam.) Ker Gawl.

Venana Lam., Tabl. Encycl. Méth. Bot. 2: t. 131 (1792). — Type: *V. madagascariensis* Lam.

Thomassetia Hemsl. in Hook. Ic. Pl. 28: t. 2736 (1902). — Type: *T. seychellarum* Hemsl. (= *B. microcarpa* Tul.).

Key to the species of *Brechia* in Madagascar

1. Inflorescences borne among the leaves 2
- 1'. Inflorescences borne on woody stems or trunk (cauliflory) 9
2. Inflorescences sessile to subsessile fascicles or borne on a short peduncle < 2 cm long 3
- 2'. Inflorescences borne on a distinct peduncle > 2 cm long 5
3. Inflorescences 2-flowered or sometimes reduced to a single flower; adult leaves often subsessile, occasionally petiole 1-7 mm long, largest blades not exceeding 12 cm long 4. *B. australis*
- 3'. Inflorescences 2-15-flowered; adult leaves with a distinct petiole > 10 mm long, blades at least 13 cm long 4
4. Inflorescences axillary, sessile to short pedunculate, often bearing small bracts at the apex of the peduncle; petaloid disc segments deeply linear-lobed 2. *B. apoda*
- 4'. Inflorescences mostly cauliflorous, rarely axillary, usually a cluster of 2 or more peduncles lacking apical bracts; petaloid disc segments entire or rarely shallowly lobed 10. *B. marioniae*
5. Inflorescences pseudo-umbels, the peduncles unbranched 6
- 5'. Inflorescences small corymbs or cymes, the peduncles usually branched 8
6. Peduncles with 1-2 distinct, persistent bracts at the apex subtending the pseudo-umbel 8. *B. humbertii*
- 6'. Peduncles lacking persistent apical bracts 7
7. Peduncles evidently broadly flattened, > (1.5)-2.5 mm broad; petals 12-15 mm long; anthers c. 5.5 mm long; mature fruit c. 8 × 3 cm 9. *B. madagascariensis*
- 7'. Peduncles slender, filiform to narrowly flattened, 1-1.5 mm broad; petals up to 8 mm long; anthers 2.2-2.3 mm long; mature fruit < 4 × 1 cm 11. *B. montana*
8. Leaves with an acute apex; peduncles slender, < 1 mm broad; inflorescence usually borne on woody stems or trunk, occasionally also among leaves 6. *B. coursiana*
- 8'. Leaves with a rounded apex; peduncles stout, > 2 mm broad; inflorescence borne usually among leaves 1. *B. alaticarpa*
9. Flowers sessile in fascicles; petals 17-20 mm long; fruit to 18 × 10 cm; trees to 10 m tall 3. *B. arborea*
- 9'. Flowers borne on distinct peduncles at least 2 mm long, peduncles clustered in groups of (2)-3 or more; petals at most 17 mm long; fruit not exceeding 13.3 × 4 cm; shrubs to 5 m tall, often unbranched 10
10. Peduncles 2-5 mm long; sepals with fimbriate margins; petaloid disk segments c. 7 mm long; largest leaves at least 7 cm wide 10. *B. marioniae*
- 10'. Peduncles 10-25 mm long; sepal margins entire; petaloid disk segments < 5 mm long; largest leaves < 5.5 cm wide 11
11. Petals 14-15 mm long; ovary 5-sided; fruit 5-ridged; petaloid disk segments entire or shallowly lobed; Nosy Be 5. *B. cauliflora*
- 11'. Petals 8-10 mm long; ovary 10-ribbed (fruit unknown); petaloid disk segments crenulate or irregularly laciniate; central and E Madagascar 12
12. Peduncles slender, < 1 mm broad, with 1-several flowers or secondary axes borne well below the apex; calyx with 5 distinct lobes; petaloid disk segments irregularly laciniate 6. *B. coursiana*
- 12'. Peduncles stout, at least 1 mm broad, branched only at the apex to form a small corymb; calyx irregularly lobed to entire; petaloid disk segments crenulate-denticulate 7. *B. decurrentis*

Clé des espèces de *Brexia* à Madagascar

1. Inflorescences situées parmi les feuilles 2
- 1'. Inflorescences naissant sur les branches ou le tronc (cauliflorie) 9
2. Inflorescences fasciculées, sessiles à subsessiles ou portées sur un court pédoncule < 2 cm de long 3
- 2'. Inflorescences portées sur un pédoncule > 2 cm de long 5
3. Inflorescences biflores ou quelquefois réduites à une seule fleur ; feuilles adultes souvent subsessiles, occasionnellement à pétiole de 1-7 mm de long, les plus grands limbes n'excédant pas 12 cm de long 4. *B. australis*
- 3'. Inflorescences de 2 à 15 fleurs ; feuilles adultes à pétiole distinct > 10 mm de long, limbes d'au moins 13 cm de long 4
4. Inflorescences axillaires, sessiles à brièvement pédonculées, portant souvent de petites bractées à l'apex du pédoncule ; segments pétaloïdes du disque profondément linéarilobés 2. *B. apoda*
- 4'. Inflorescences cauliflores pour la plupart, rarement axillaires, habituellement en bouquet de 2 pédoncules (ou plus), sans bractées apicales ; segments pétaloïdes du disque entiers ou, rarement, peu profondément lobés 10. *B. marioniae*
5. Inflorescences en pseudo-ombelles, pédoncules non ramifiés 6
- 5'. Inflorescences en petits corymbes ou cymes, pédoncules ordinairement ramifiés 8
6. Pédoncules à 1-2 bractées distinctes, persistantes à l'apex sous-tendant la pseudo-ombelle .. 8. *B. humbertii*
- 6'. Pédoncules sans bractées apicales persistantes 7
7. Pédoncules nettement aplatis, > (1,5)-2,5 mm de large ; pétales 12-15 mm de long ; anthères c. 5,5 mm de long ; fruit mûr c. 8 × 3 cm 9. *B. madagascariensis*
- 7'. Pédoncules minces, filiformes à étroitement aplatis, 1-1,5 mm de large ; pétales jusqu'à 8 mm de long ; anthères 2,2-2,3 mm de long ; fruit mûr < 4 × 1 cm 11. *B. montana*
8. Feuilles à apex aigu ; pédoncules minces, < 1 mm de large ; inflorescence naissant habituellement sur les branches ou le tronc, parfois aussi parmi les feuilles 6. *B. coursiana*
- 8'. Feuilles à apex arrondi ; pédoncules épais, > 2 mm de large ; inflorescence naissant généralement parmi les feuilles 1. *B. alaticarpa*
9. Fleurs sessiles en fascicules ; pétales 17-20 mm de long ; fruit jusqu'à 18 × 10 cm ; arbres jusqu'à 10 m de haut 3. *B. arborea*
- 9'. Fleurs portées sur un pédoncule d'au moins 2 mm de long, pédoncules en bouquets de (2)-3 ou plus ; pétales d'au plus 17 mm de long ; fruit jusqu'à 13,3 × 4 cm ; arbustes jusqu'à 5 m de haut, souvent non ramifiés 10
10. Pédoncules 2-5 mm de long ; sépales à marges fimbriées ; segments du disque pétaloïde c. 7 mm de long ; les plus grandes feuilles d'au moins 7 cm de large 10. *B. marioniae*
- 10'. Pédoncules 10-25 mm de long ; marges des sépales entières ; segments du disque pétaloïde < 5 mm de long ; les plus grandes feuilles de moins de 5,5 cm de large 11
11. Pétales 14-15 mm de long ; ovaire à 5 faces ; fruit à 5 arêtes ; segments du disque pétaloïde entiers ou peu profondément lobés ; Nosy Be 5. *B. cauliflora*
- 11'. Pétales 8-10 mm de long ; ovaire à 10 côtes (fruit inconnu) ; segments du disque pétaloïde crénelés ou irrégulièrement laciniés ; centre E de Madagascar 12
12. Pédoncules minces, < 1 mm de large, à une ou plusieurs fleurs ou à axes secondaires portés bien en dessous de l'apex ; calice à 5 lobes distincts ; segments du disque pétaloïde irrégulièrement laciniés ... 6. *B. coursiana*
- 12'. Pédoncules épais, larges d'au moins 1 mm, ramifiés seulement à l'apex et formant un petit corymbe ; calice irrégulièrement lobé à entier ; segments du disque pétaloïde crénelés-denticulés 7. *B. decurrentis*

1. *Brexia alaticarpa* G.E. Schatz & Lowry, sp. nov.

17°17'15"S, 49°25'11"E, 10 m, 26 Nov. 1994, fr. (holo-, MO!; iso-, P!, TAN!).

Haec species a congeneris foliis integris apice rotundato-margine valde revoluto, inflorescentia corymbosa 3- ad 5-flora atque fructibus alatis distinguitur.

TYPUS. — Schatz, Raholivelô, Raharimalala & Randriamampionona 3613, Madagascar, Prov. Toamasina, Tampolo STF, 9 km N of Fenerive,

Tree 5-11 m tall, the young stems flattened. Leaves 7-15 × 1.4-4.1 cm, narrowly oblong to oblanceolate, glabrous above and below, somewhat discolored when dry, the upper surface olive green, the lower surface light chocolate brown, midrib prominently raised above and

below, secondary venation weakly brochidodromous with 6-9 secondary veins per side, the base cuneate to attenuate and slightly decurrent along petiole, the margin entire and strongly revolute, the apex rounded. Petioles 6-18 mm, 1-1.5 mm in diam., terete and narrowly canaliculate above, glabrous. Inflorescences axillary or borne along the branches (ramiflory), 3-5-flowered, corymbiform, the peduncle usually with 1 or 2 short branches, 17-38 mm long, 1-2 mm broad, strongly flattened, the pedicels 13-25 mm long, 1 mm in diam., to 3 mm in diam. in fruit, subtended by a bracteole 4-7 mm long. Sepals connate for 3 mm at their base, 4-5 × 5-6 mm, broadly ovate, glabrous, the margin entire, the apex acute to obtuse. Petals unknown. Disk composed of five, free, entire, petaloid segments, 4-5 × 4 mm, broadly elliptic, membranous, glabrous, the margin entire, the apex obtuse to rounded. Stamens fused to the disk at their base, 18-19 mm long; filaments 13-14 mm long, flattened, 1.5 mm broad at their base; anthers 5 × 2.2 mm, lanceolate, dorsifixated. Ovary 16 mm tall, 3.5 mm in diam. at the base, ovoid, 5-ribbed, narrowed abruptly 8-9 mm above base, stigma capitate. Fruit to 5.2 cm long, 2.5 cm in diam., ellipsoid, deeply 5-angled-winged, the wings 5-9 mm high, the apex apiculate, to 5-9 mm long, woody. Seeds 6 mm long, 2.7 mm in diam., ellipsoid. — Fig. 1.

Brexia alaticarpa is a small to medium sized tree in humid forest, occurring from near sea level between Ambila-Lemaitso STF and Tampolo STF up to mid-elevation sites at Zahamena PN/RNI (Fig. 2). It can be distinguished by its narrowly oblong to oblanceolate leaves with entire, strongly revolute margins and a rounded apex, a branched corymbose inflorescence bearing 3-5 flowers, and strikingly winged fruits.

VERNACULAR NAMES. — Maimbolatra, Maimboholatra (for Maim: to stink, and Holoatra: mushroom; a local edible mushroom called “Holabangoala” smells the same as the slash of the bark), Molompangady.

CONSERVATION STATUS. — With an EO of 7420 km², an AO of 500 km², and only 5 sub-

populations, 2 of which occur in the Zahamena PN/RNI, *Brexia alaticarpa* is assigned a preliminary status of Vulnerable (VU B1ab2ab).

PARATYPES. — MADAGASCAR: *Prov. Toamasina*: *Andrianjafy et al.* 159, Zahamena RNI, Fiv. Ambatondrazaka, près compound d’Andalentitra, 17°52'47"S, 48°44'21"E, 1240-1400 m, 28 Sep. 2001, fr. (MO); *Le Thomas* 102, environs d’Ambila-Lemaitso, [18°49'S, 49°08'E], [0-10 m], 14 Nov. 1986, st. (MO, P); *Raholivelo et al.* 197, 230, Dist. Fenerive-Est, Tampolo STF, 10 km N de Fenerive-Est, 17°17'15"S, 49°25'11"E, 10 m, 25 Jan. 1995, st. (MO); *Rakotozafy* 1310, Forêt d’Analabe, [W of] Foulpointe, [17°31'30"S, 49°17'30"E], [200 m], Aug. 1975, fl. (TAN); *Randrianasolo* 474, Mahatsara STF, 5 km N of Foulpointe, 17°38'S, 49°29'E, 0-5 m, 2 Aug. 1996, fl. (MO, G, P, TAN); *Randrianjanaka & Zafy* 166, Zahamena RNI, partie SE, au bord de la rivière de Namarafana, Miarinarivo, Vavatenina, à 5 km au NW d’Andratantanositra, 17°43'47"S, 48°58'45"E, 420 m, 21 Jul. 1994, fl. (CAS, G, K, MO, P, TAN, US, WAG); *Randrianjanaka & Zafy* 230, same locality, 17°44'S, 48°59'E, 430 m, 22 Oct. 1994, fr. (G, K, MO, P, TAN); *Service Forestier* 12593, Ambila-Lemaitso STF, Jardin Botanique 9, [18°49'S, 49°08'E], 20 July 1954, fl. (TEF); *Service Forestier* (Zavah, P.) 16425, Tampolo STF, Canton Ampasina, Dist. Fenerive, Jardin Botanique 21, [17°17'S, 49°23'30"E], [0-10 m], 12 Oct. 1956, fr. (G, K, MP, P, TEF, WAG); *Service Forestier* (Zavah, P.) 16647, same locality, 12 Mar. 1957, fr. (K, MO, P, TEF); *Service Forestier* 32182, same locality, 25 Mar. 1981, bud (TEF); *Service Forestier* 32963, Mahatsara STF, [17°38'18"S, 49°29'04"E], 6 Mar. 1987, fr. (TEF).

2. *Brexia apoda* H. Perrier

Bull. Soc. Bot. France 80: 204 (1933). — Lectotype (here designated): *Perrier de la Bâthie* 2338, Madagascar, Prov. Fianarantsoa, Bassin du Matitana, Nov. 1911, bud (Pl.).

Brexia apoda is a small, sparsely branched treelet known from low elevation humid forest, from Mandena STF north to Vohipeno (Fig. 2). It can be recognized by its large leaves with usually spinose margins, its axillary, sessile to very short pendunculate inflorescences, often with a pair of small bracts at the apex of the peduncle, and flowers with deeply linear-lobed petaloid disc segments.

Of the two original syntypes (*Perrier de la Bâthie* 2337, 2338) designated by PERRIER DE LA BÂTHIE (1933), the latter is here chosen as the lectotype.

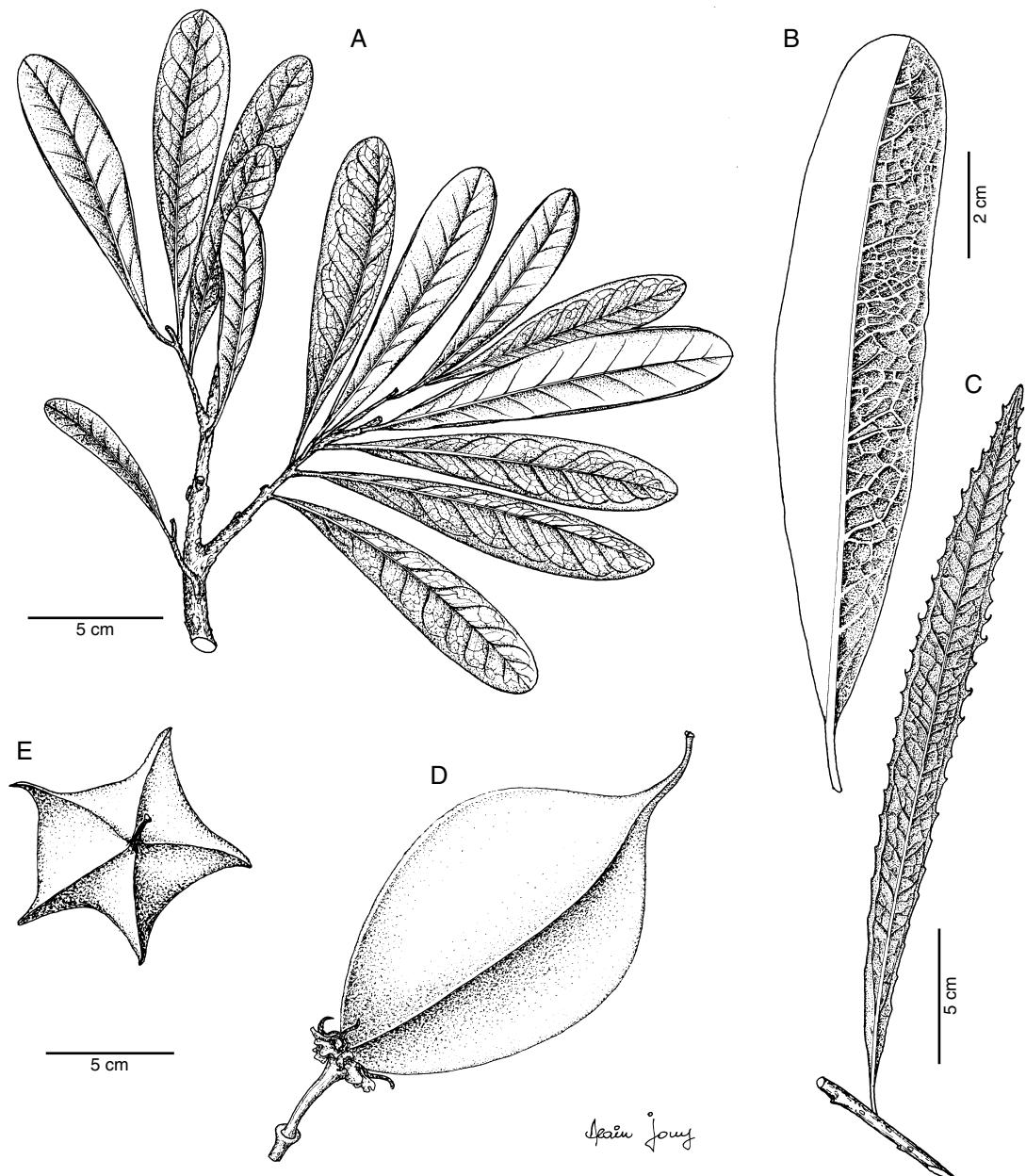


FIG. 1. — *Brexia alaticarpa*: A, adult leaves; B, adult leaf showing detail of venation; C, juvenile leaf; D, mature fruit; E, fruit (top view). Schatz 3613.

CONSERVATION STATUS. — With an EO of 2780 km², an AO of at most 500 km², and only 3 subpopulations, none of which are currently

encompassed within the protected area network, *Brexia apoda* is assigned a preliminary status of Endangered (EN B1ab).

MATERIAL EXAMINED. — MADAGASCAR: *Perrier de la Bâthie* 2337, 2338, bassin du Matitana; *Rabevohipitra* 2034 (= *Service Forestier* 33263), Mandena STF; *Service Forestier* (*Capuron*) 23550, Beravy, 23695, entre Manakara et Vohipeno, 23950, entre Farafangana et Manombo.

3. *Brexia arborea* H. Perrier

Bull. Soc. Bot. France 80: 203 (1933). — Lectotype (here designated): *Perrier de la Bâthie* 16000 (Leg. Ursch), Madagascar, Prov. Toamasina, Est, Analamazaotra, rive gauche de la Vohitra, bud, fl. (P!; iso-, K!, MO!, Pl!, TAN!).

Brexia arborea is assumed to be a cauliflorous medium-sized tree, known only from humid forest at Analamazaotra-Périnet RS (Fig. 2), where it inexplicably has not been collected since 1924. It can be recognized by its leaves with entire margins, and flowers and fruits that are the largest in the genus.

Among the original syntypes designated by PERRIER DE LA BÂTHIE (1933), one of the 3 duplicates in the Paris herbarium of *Perrier de la Bâthie* 16000 carries a "Type" sticker (undoubtedly affixed after the species was described), and is here chosen as the lectotype.

CONSERVATION STATUS. — Although *Brexia arborea* has not been collected since 1924, and therefore in theory has an EO of less than 100 km², an AO of perhaps no more than 10 km², and is known from only a single locality, the projected habitat stability in the effectively protected Analamazaotra-Périnet RS suggests an assessment of Vulnerable (VU D2).

MATERIAL EXAMINED. — MADAGASCAR: *D'Alleizette* 1480, Analamazaotra-Périnet RS; *Humbert* 2261, Analamazaotra-Périnet RS; *Perrier de la Bâthie* 16000, Analamazaotra-Périnet RS.

4. *Brexia australis* G.E. Schatz & Lowry, sp. nov.

Haec species a congeneris foliis subsessilibus margini spinoso atque inflorescentia pseudoumbellata flores geminatos vel solitarios gerente pedunculo 3-17 mm longo insidente distinguitur.

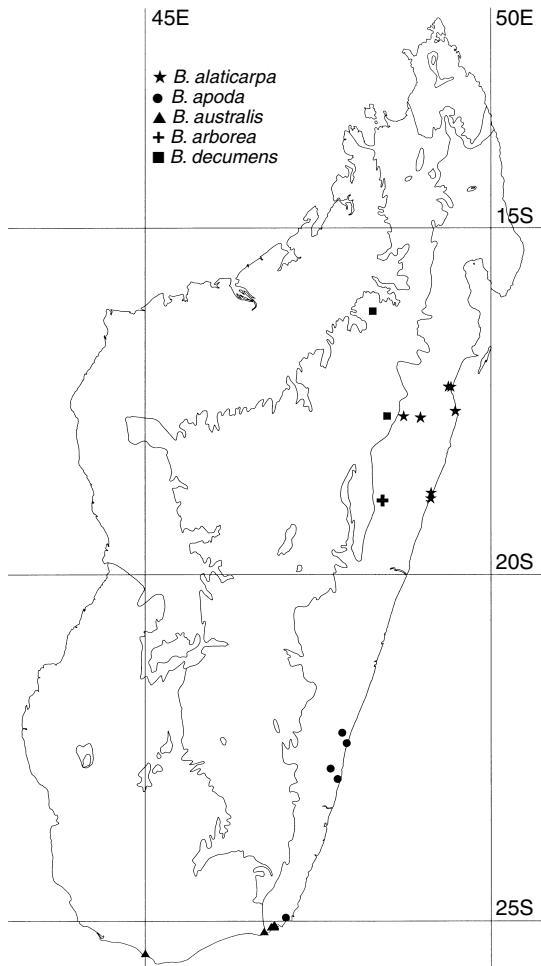


FIG. 2. — Distributions of *Brexia*, mapped on the bioclimatic zones of Madagascar (after CORNET 1974; see SCHATZ 2000).

TYPUS. — *McPherson, Dumetz & Rabevohipitra* 14118, Madagascar, Prov. Toliara, forest of Petriky, region of Fort Dauphin, 25°05'S, 46°52'E, 25 m, 16 Oct. 1989, fl. (holo-, MO!; iso-, Pl!, TAN!).

Shrub to tree 2-5 m tall. Leaves 1.8-12 × 1.4-4.5 cm, elliptic to occasionally obovate (juvenile leaves to 21 × 6.6 cm, oblanceolate to oblong), glabrous above and below, glossy above, midrib flat to slightly raised above, prominently raised below, secondary venation weakly brochidodromous with 6-9 secondary veins per side, the base obtuse to rounded, the margin spinose, the

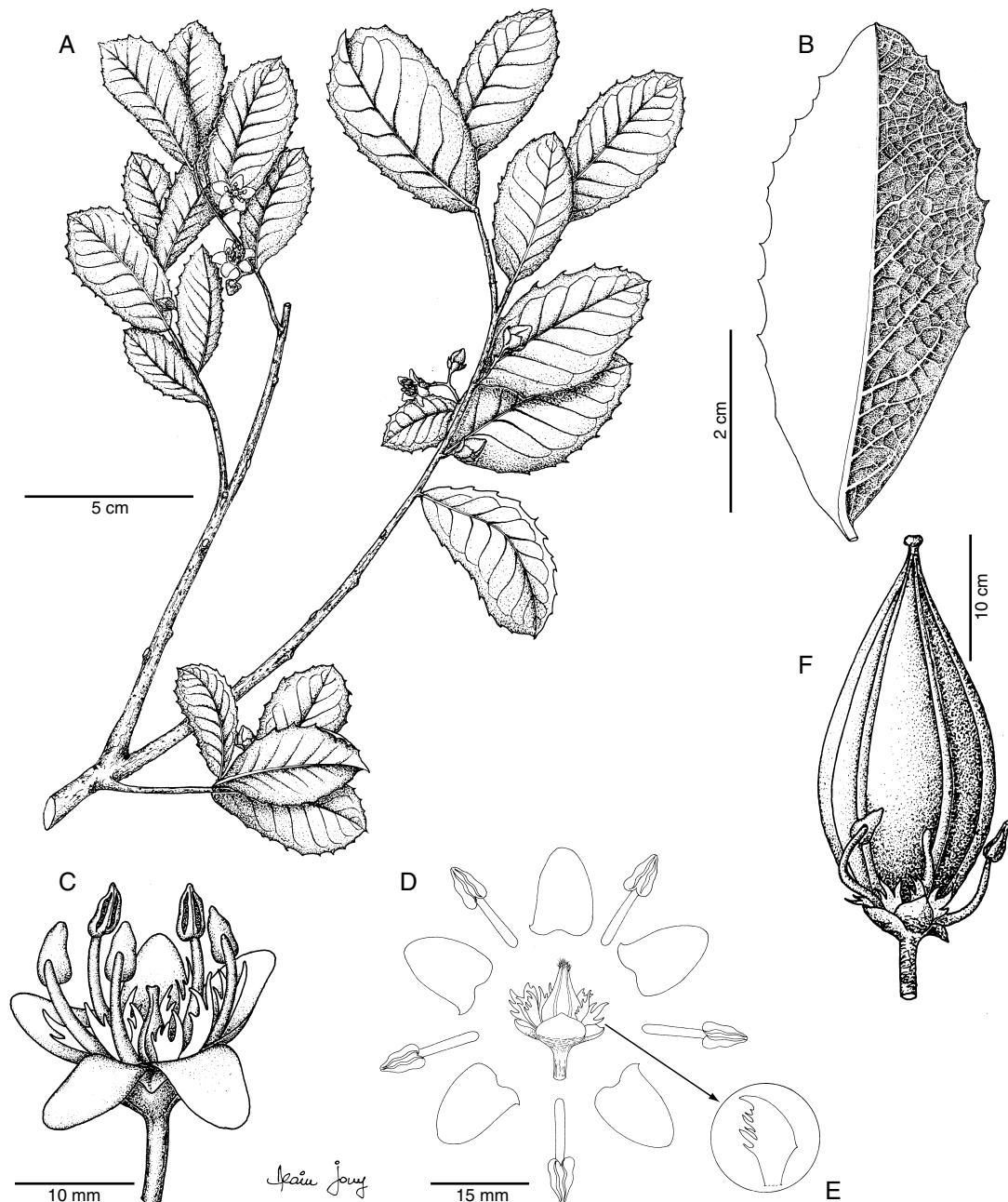


FIG. 3. — *Brexia australis*: A, adult leaves; B, adult leaf showing detail of venation; C, flower; D, flower (exploded diagram); E, petaloid disc segment (enlarged); F, fruit. A-D, McPherson 14118; F, Miller 6204.

spines unequal, some less than 0.1 mm, others to 3 mm, the apex rounded. Petioles often subsessile, occasionally 1-3(-7) mm long (5-21 mm on juvenile leaves), 2 mm in diam., terete, glabrous. Inflorescences axillary, a 2-flowered pseudo-umbel, or sometimes reduced to a single flower, subtended by a minute bracteole, the peduncle 3-17 mm long, the pedicels 4-10 mm long, 1 mm in diam., to 7 mm and 2 mm in diam. in fruit, subtended by a minute bracteole. Sepals connate for 3 mm at their base, 5 × 5 mm, broadly ovate, glabrous, the margin entire, the apex rounded. Petals 10-12 × 7-10 mm, oblong, glabrous, membranous with evident venation, the base truncate, the margin entire, the apex obtuse. Disk 5-lobed, the lobes free, 6 × 4-7 mm, membranous, glabrous, the margin irregularly shallowly to deeply 4-8-laciniate. Stamens fused to the disk at their base, 17 mm long; filaments 12 mm long, flattened, 1.2 mm broad at their base; anthers 5 × 2.5 mm, lanceolate, dorsifixed. Ovary 10 mm tall, 3.5 mm in diam. at the base, ovoid, 10-ribbed, crowned at the apex with 5-lobed stigma, the lobes folded inward. Fruit 2.7-4.0 cm long, 1.3-1.6 cm in diam., ellipsoid to oblong, 5-angled-winged, the wings to 1 mm, the apex acuminate to apiculate, to 4 mm long, woody. Seeds 5-7 mm long, 3-5 mm in diam., ellipsoid. — Fig. 3.

Brexia australis is known from extreme southern Madagascar in humid to subarid forest on sand from west of Fort Dauphin at Petriky to west of Cap Sainte Marie (Fig. 2). It can be distinguished by its subsessile leaves with spinose margins, and inflorescences of paired or sometimes solitary flowers borne on a short peduncle 3-17 mm long.

CONSERVATION STATUS. — With an EO of less than c. 800 km², an AO of perhaps 400 km², and only 3 subpopulations, none of which are encompassed within the protected areas network, *Brexia australis* is assigned a preliminary status of Endangered (EN B1ab2ab).

PARATYPES. — MADAGASCAR. Prov. Toliara: Descoings 2583, environs de Manambaro, W de Fort Dauphin, [25°09'S, 46°45'30"E], 21 Feb. 1957, fl.

(TAN); Dumetz, Gereau & Rabevohipitra 650, Petriky, 15 km WSW of Fort Dauphin, 25°04'S, 46°51'E, 0-10 m, 11 Apr. 1989, fr. (MO, P, TAN); Gereau, Schatz & Dumetz 3224, same locality, 9 Mar. 1989, fl., fr. (MO, P, TAN, TEF); Humbert & Capuron 28992, Baie des Galions (Ranofotsy) au SW de Fort Dauphin, [25°09'S, 46°43'E], 1-100 m, 18-21 Feb. 1955, fl. (P); Humbert & Capuron 28995, same locality, fr. (P); Humbert & Capuron 29321, falaise côtière NW du Cap Sainte Marie, vers Lavanono, [25°28'S, 45°00'E], 1-150 m, 8 Mar. 1955, fl. (P); Miller & Randrianasolo 6204, 5 km S of Manambaro, 23 km W of Fort Dauphin, 25°05'S, 46°49'E, 150 m, 29 Mar. 1991, fl., fr. (MO, P); Rabevohipitra 2119, Petriky, 15 km WSW of Fort Dauphin, 25°04'S, 46°52'E, 10 m, 12 Jan. 1990, bud, fr. (MO, P, TAN, TEF); Randriantafika et al. 77, forêt littorale sur sable de Petriky, Ambovo, Manambaro, Fort Dauphin, 25°03'39"S, 46°52'09"E, 10 m, 17 June 1999, fl. (MO, P, TAN).

5. *Brexia cauliflora* Tul.

Ann. Sci. Nat., Bot., sér. 4, 8: 161 (1857). — Type: *Boivin s.n.*, Madagascar, Prov. Antsiranana, Nosy Be, Mar. 1851, bud (holo-, Pl.; iso-, Pl.).

Brexia cauliflora is a small, sparsely branched treelet known only from the subhumid forest of Lokobe RNI on Nosy Be (Fig. 4). It can be recognized by its large, subentire leaves, inflorescences borne on the main stem (cauliflory), peduncles greater than 5 mm in length, and large flowers with subentire or only shallowly lobed petaloid disc segments. *Brexia cauliflora* can be distinguished from *B. marioniae*, to which it is most similar, by its narrower leaves, longer peduncles, and shorter petaloid disc segments.

CONSERVATION STATUS. — Despite an EO of far less than 100 km², an AO of perhaps 7.4 km², and only a single known locality, *Brexia cauliflora* is assigned a preliminary status of only Vulnerable (VU D2) because of the projected habitat stability in the effectively protected Lokobe reserve.

MATERIAL EXAMINED. — MADAGASCAR: *Antalahimena* 116, Lokobe RNI; *Birkinshaw* 32, 162, 238, Lokobe RNI; *Boivin s.n.*, Lokobe RNI; *Rabenantoandro* 10, Lokobe RNI; *Réserves Naturelles* 4331, Lokobe RNI; *Service Forestier* (Capuron) 11400, 23457, Lokobe RNI.

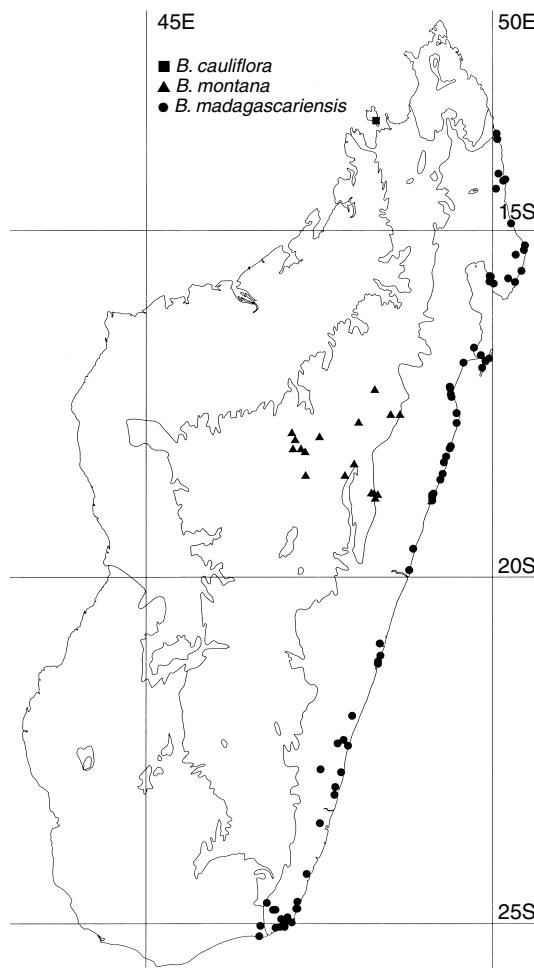


FIG. 4. — Distributions of *Brexia*, mapped on the bioclimatic zones of Madagascar (after CORNET 1974; see SCHATZ 2000).

6. *Brexia coursiana* H. Perrier

Bull. Soc. Bot. France 89: 221 (1942). — Type: *Cours 1194*, Madagascar, Prov. Toamasina, Varania [Varahina]-(Onibé), dist. d'Ambatondrazaka, 850 m, Nov. 1938, bud (holo-, Pl.).

Brexia coursiana is a sparsely branched shrub to treelet in mid-elevation subhumid forest from the region of Zahamena PN/RNI (Fig. 5). It can be recognized by its leaves with an acute apex, inflorescences usually borne on the main stem (cauli-

flory), slender peduncles less than 1 mm broad with secondary axes branching well below the apex, a distinctly 5-lobed calyx, and petaloid disc segments with an irregularly laciniate margin.

CONSERVATION STATUS. — With an AO of 200 km², and only 2 subpopulations, both of which are encompassed within the Zahamena protected area, *Brexia coursiana* is assigned a preliminary status of Endangered (EN B1ab2ab).

MATERIAL EXAMINED. — MADAGASCAR: *Andrianjafy* 326, Zahamena RNI; *Cours 1194*, Varahina; *Randrianjanaka* 600, Zahamena RNI; *Ratovoson* 309, Zahamena RNI.

7. *Brexia decurrens* H. Perrier

Bull. Soc. Bot. France 80: 200 (1933). — Type: *Perrier de la Bâthie* 4502, Prov. Mahajanga, Forêt d'Analamaitsso, vers 900 m, Aug. 1907, bud, fl. (holo-, Pl!).

Brexia decurrens is a poorly known cauliflorous shrub in subhumid forest, known from only 2 localities (Analamaitsso RS and Menaloha) (Fig. 2); it has not been collected since 1938. This species can be distinguished from *B. coursiana* by its stouter peduncle greater than 1 mm broad, with short secondary axes that branch close to the apex to form a corymb, an irregularly lobed to entire calyx, and petaloid disc segments with a crenulate margin.

CONSERVATION STATUS. — With an EO of less than 2000 km², an AO of 200 km², and only 2 subpopulations, only 1 of which is encompassed within the Anlamaitso protected area, *Brexia decurrens* is assigned a preliminary status of Endangered (EN B1ab2ab).

MATERIAL EXAMINED. — MADAGASCAR: *Cours 679* (= *Herb. Jard. Bot. Tan* 3967), Menaloha; *Perrier de la Bâthie* 4502, Analamaitsso RS.

8. *Brexia humbertii* H. Perrier

Bull. Soc. Bot. France 89: 220 (1942). — Lectotype (here designated): *Humbert* 5798, Madagascar, Prov.

Toliara, environs de Fort Dauphin, forêt de Manantantely; 22 Sep. 1928, fl. (Pl; iso- MO!).

Brexia horombensis J.-F. Leroy, Adansonia, n.s. 8: 463 (1968). — Type: *Leroy II-1-22*, Madagascar, savanne arborée de l'Horombe à 18 km d'Ihosy (specimen not relocated), *syn. nov.*

Brexia montana var. *bracteata* H. Perrier, Bull. Soc. Bot. France 80: 201 (1933). — Type: *Perrier de la Bâthie 4510*, Madagascar, Tampoketsa d'Amberimay [Beveromay], versant S du haut Bemarivo, vers 1000 m, Sep. 1907, bud, fl. (holo-, Pl!), *syn. nov.*

Brexia humbertii is a shrub to small tree known from humid forest on sand, subhumid forest on laterite, and transitional subhumid to subarid forest on laterite from the Fort Dauphin region to Ihosy and just W of Ambalavao, with a disjunct collection from the Tampoketsa Beveromay c. 600 km to the N (Fig. 5). It can be recognized easily by its pseudo-umbellate inflorescence, the long peduncle bearing a pair of large persistent bracts at the apex, and its oblanceoloid to obovoid fruits, which have been reported to be edible. The margins of adult leaves can be either entire or spinose.

Among the three original syntypes (*Humbert 5798, 13985 and 14094*) designated by PERRIER DE LA BÂTHIE (1942), *Humbert 5798* is here chosen as the lectotype.

VERNACULAR NAMES. — Fonofonozanahary, Hanana, Hazondrea, Marandravina, Rehampy, Tsikagnomby, Vahomanana, Voakarepoka, Voakarepokala, Voanana, Voanora.

CONSERVATION STATUS. — With an EO of 80000 km², an AO of 1700 km², and 10 subpopulations, 3 of which are encompassed within protected areas (Andohahela PN, and Kalamabatritra RS), *Brexia humbertii* is assigned a preliminary status of Least Concern (LC).

MATERIAL EXAMINED. — MADAGASCAR: *Bernardi 11150*, Iandranbaky; *Croat 31709*, Analamatsaky; *Dumetz 538, 598, 1278*, Mandena STF, 1415, Andohahela PN; *Eboroke 96*, Andohahela PN; *Humbert 3015, 3019*, Ihosy, 5798, Manantantely, 11655bis, Mont Vohipolaka, 13985, Aniampanga, 14094, Andohahela PN; *Laba 129*, Andohahela PN; *Leandri 4312*, Andohahela PN; *McWhirter 190*, Vohitsiandriana; *Peltier 2647*, Ihosy; *Perrier de la*

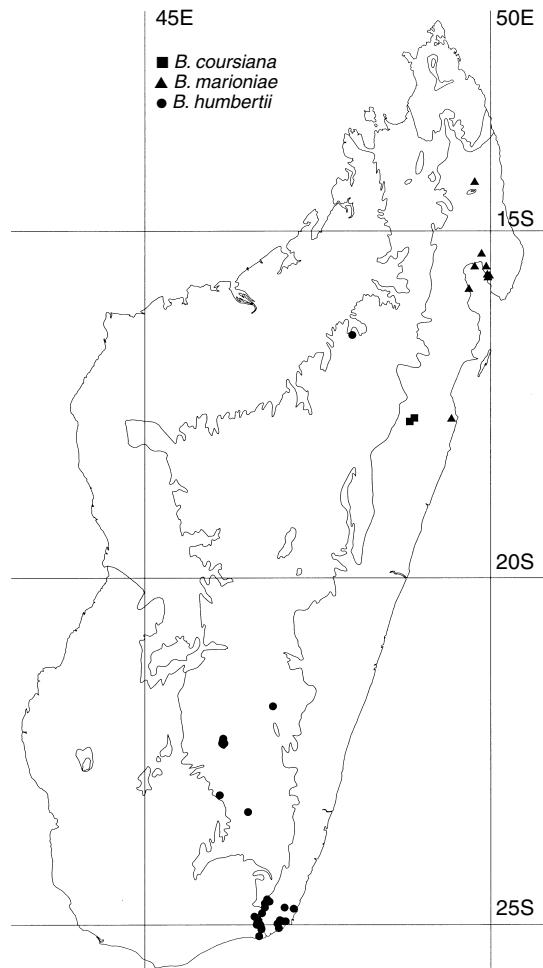


FIG. 5. — Distributions of *Brexia*, mapped on the bioclimatic zones of Madagascar (after CORNET 1974; see SCHATZ 2000).

Bâthie 4510, Amberimay [Beveromay]; *Rabevohitra 1945*, Sainte Luce, 2196, Mandena STF, 3731, Mandromodromotra; *Rakotomalaza 480*, Andohahela PN; *Randriamampionona 44, 76, 130*, Andohahela PN; *Randrianasolo 176, 182*, Andohahela PN; *Réserves Naturelles 6734, 8187, 10466*, Andohahela PN; *Service Forestier 1542*, Mandena STF, 3971, Ranopiso-Fort Dauphin, 6082, Mandena STF, 8502, Ranopiso, 8521, Tsimelahy, 13783, Kalamabatritra RS, 14819, Androtsy-Ihosy, 17213, Andohahela PN, 22378, Vohitsiandriana, 23514, Lalando, 27835, Iarintsena, 28329, Vohitsiandriana, 34984, 34989, Ambinanibe, 158-R-239, Ihosy, 275-R-16, Mandena STF.

9. *Brexia madagascariensis* (Lam.) Ker Gawl.

Bot. Reg. 9: t. 730 (1823). — *Venana madagascariensis* Lam., Tabl. Encycl. Meth. Bot. 2: t. 131 (1792). — Type: *Commerson s.n.*, Madagascar, without precise locality, old infruct. (holo-, Pl!).

Brexia madagascariensis is a shrub to small tree in humid littoral forest on sand from W of Fort Dauphin at Cap Andavaka to just S of Vohemar at Ambaroana (Fig. 4). It can be recognized by its adult leaves with entire margins, pseudo-umbellate inflorescences borne on a long, flattened peduncle greater than 2.5 mm broad (sometimes narrower in flowering material), and large fruits to 8 cm long. This species also occurs in the Comoro Islands, and along the East African coast in Mozambique, Tanzania and Zanzibar (see VERDCOURT 1968; ROBSON 1978, who provide additional synonymy based principally upon cultivated material). In the Seychelles, an upland form with smaller and pinkish petals and markedly smaller fruits (see FRIEDMANN 1994) has been recognized as either a distinct species (*B. microcarpa* Tul.) or as *B. madagascariensis* subsp. *microcarpa* (Tul.) F. Friedmann.

VERNACULAR NAMES. — Jobiapotora, Tsimiranjana, Tsivavena, Vahilava, Voalava, Voankatanana, Voatalanina, Votalanina.

CONSERVATION STATUS. — Within Madagascar, *Brexia madagascariensis* has an EO of c. 28000 km², an AO of 3500 km², and c. 25 subpopulations, 5 of which are encompassed within protected areas (Andohahela PN, Manombo RS, and Masoala PN). It is thus assigned a preliminary status of Least Concern (LC).

MATERIAL EXAMINED. — MADAGASCAR: Baron 1577, 5732, without locality; Beaujard 415, 416, Vohipeno; Bernard 325, 358, Masoala PN; Bernier 285, Ste Marie; Birkinshaw 1148, Vohibola; Boivin 1833, Sahabe, 2552, without locality; Bojer s.n., Toamasina; Bosser 18704, Farafangana-Vangaindrano; Breon s.n., without locality; Cours 2901, Ambila-Lemaitso; Cremers 2318, Mahanoro-Vatomandry; Croat 32598, Fenerive; D'Alleizette 1333, without locality; Decary 4254, Fort Dauphin, 6543, Ambila-Lemaitso, 9922, Sainte Luce, 10333, Ambinanibe, 13792, Mananjary; Deroin 129, Atiala; Dorr 3906, Mananjary, 4477, Ambila-Lemaitso; Dumetz 675,

1292, Mandena STF; Forbes s.n., without locality; Friedmann 163, Manantenina; Ganzin s.n., without locality; Geay 6346, 6362, Cap Andavaka, 6784, Farafangana, 7210, 7211, 7213, 7684, 7685, 7786, 7979, 8105, 8106, Mananjary, 8930, 9071, Fenerive; Giraudy s.n., without locality; Goudot s.n., without locality; Humbert 5726, Fort Dauphin, 20777, Ambinanibe, 24419, Ambatobiribiry; Humbot 168, 343, Lac Nossi Ve; Imbert 95, Antampolo; Keating 2266, Ampandrozonana; Keraudren 24990, 25034, Fort Dauphin; Koopman 138, Ambahy; Leandri 4358, Cap Itapere; Lowry 3967, Ambila-Lemaitso, 4353, Antalavia, 4554, Ambila-Lemaitso; Martine E6, Tampina; McPherson 14185, 14208, Sainte Luce, 18406A, Manombo RS, 18776, Manakana, 18889, Ste Marie; Miller 3684, Ambila-Lemaitso; Monin s.n., without locality; Oumazer s.n., Ambila-Lemaitso; Perrier de la Bâthie 2336, Matitana, 6011, Antalahala, 18182, Ambila-Lemaitso; Poisson 2633, Fort Dauphin; Rabe 149, Masoala PN; Rabenantoandro 636, 651, Mahabo, 1198, Antanambao; Rabevohitra 1802, Vatomirindry, 3707, Mandena STF; Rahajaso 287, 309, 394, Masoala PN; Rakotozafy 1304, Tampolo STF, 1368, Soanierana-Ivongo, 1397, Manompana; Randriamponona 842, Andohahela PN; Randrianaivo 537, Ambila-Lemaitso, 675, Masoala PN, 740, Ambaroana; Randriantafika 78, Petriky, 306, Mandena STF; Ratovoson 96, Manombo RS; Razafimandimbison 156, Tampolo STF; Réserves Naturelles 3357, 5292, 8290, Masoala PN, 8386, Andohahela PN; Richard 556, without locality; Schatz 1493, 3449, Ambila-Lemaitso; Scott Elliot 2725, Fort Dauphin; Service Forestier 873, Ambatobiribiry, 1345, Antetezana STF, 1615, Ambila-Lemaitso STF, 1874, Ankijahana, 2891, Ambila-Lemaitso STF, 4213, Ambondrombe, 4235, Ambila-Lemaitso STF, 4710, Mahanoro, 4933, Ambila-Lemaitso STF, 5571, Mandena STF, 5650, Amboanato, 6225, Analabe, 6358, Tsararano, 6636, Antetezana STF, 10908, 13670, Amboanato Begisy, 14523, Mandena STF, 14805, 17288, Masoala PN, 17333, Andohahela PN, 17832, Mahanoro, 21532, Mahatsara STF, 26107, Antsiraka, 28832, Lonkintsy, 28872 Ambohidenia, 29364, Antohomaro, 29865, Mahatsara STF, 32494, Andranokoditra, 32683, Mahatsara STF, 32911, Mandena STF, 33031, Sainte Luce, 34410, Mahatsara STF, 35293, Mandena STF, 35317, Mandromodromotra; Thouars s.n., without locality; Ursch 124, Tampina; Viguer 367, Ampananalana, 437, Toamasina; Zarucchi 7464, 7594, Mandena STF; Zjhra 537, Masoala PN.

10. *Brexia marioniae* G.E. Schatz & Lowry, sp. nov.

Haec species a Brexia cauliflora foliis latioribus, pedunculo breviore, calyx margine fimbriato atque disci

segmentis altioribus integris vel non profunde 2- vel 3-lobulatis intus carinatis distinguitur.

TYPUS. — *Nicoll, Rakotozafy, Schatz & Suzon* 521, Madagascar, Prov. Toamasina, Masoala Peninsula, beach trail S of Ambanizana, 15°37'S, 49°57'E, 25 m, 12 Apr. 1987, fl. (holo-, MO!; iso-, Pl, TAN!).

Shrub to slender treelet 2-4 m tall. Leaves 13-47.7 × 3.7-11 cm, narrowly elliptic to oblanceolate, usually broader above the middle, glabrous above and below, midrib raised above and below, 2.5 mm broad at the base above, secondary venation weakly brochidodromous with 10-20 secondary veins per side, the base cuneate to attenuate and decurrent along the petiole, the margin entire or often spinose, the spines less than 0.5 mm, the apex acute to acuminate. Petioles 12-43 mm long, 2.5-4.5 mm in diam., terete to slightly flattened above to shallowly canaliculate, glabrous. Inflorescences borne on the main stem (cauliflory), occasionally to within 20 cm of leaves on younger stems, a fascicle of several 2-7-flowered cymose pseudo-umbels each subtended by a minute bracteole, the peduncle 2.5-5 mm long, the pedicels 8-15 mm long, less than 1 mm in diam. in flower, to 3.5 mm in diam. in fruit, each subtended by a minute bracteole. Sepals connate for 2/3 their length, 4 × 4-5 mm, broadly ovate, glabrous, the margin finely fimbriate, the apex acute to rounded. Petals 12-17 × 6-10 mm, ovate to oblong, glabrous, membranous with evident venation, the base truncate, the margin entire, the apex obtuse. Disk 5-lobed, the lobes connate for 2 mm at their base, 4.5-7 × 3-4 mm, oblong to obovate, membranous, glabrous, the margin entire or rarely shallowly 2-3-lobed, the apex truncate, with a distinct medial keel inside. Stamens fused to the disk at their base, 13.2-17.2 mm long; filaments 9-13 mm long, flattened, 1.3 mm broad at their base; anthers 4.2 × 1.8 mm, lanceolate, basifix. Ovary 9 mm tall, 4.7 mm in diam. at the base, ovoid, 10-ribbed, crowned at the apex with 5 tongue-like stigmas, 0.5 mm tall, collectively 2.5 mm in diam., minutely tuberculate. Fruit 10-13.3 cm long, 2.5-4 cm in diam., narrowly ellipsoid to lanceoloid, 5-angled-winged, the wings to 8 mm, the apex acuminate, woody. Seeds 6-7 mm long, 3 mm in diam., ellipsoid. — Fig. 6.

Brexia marioniae is a small, unbranched caulinorous treelet in humid low elevation forest known from Analabe W of Foulpointe to Mont Anjenabe N of the Marojejy protected area (Fig. 5). It can be distinguished from *B. cauliniflora*, to which it is most similar, by its broader leaves, shorter peduncles, calyx with fimbriate margins, and taller, petaloid, entire or rarely 2-3 shallowly lobed disc segments.

ETYMOLOGY. — The species epithet honors our good friend, Marion REGAN, who made many important collections during her time in Madagascar, including the type of this new taxon.

CONSERVATION STATUS. — With an EO of c. 7700 km², an AO of 700 km², and 7 subpopulations, 4 of which are encompassed within protected areas (Masoala PN, Nosy Mangabe RS), *Brexia marioniae* is assigned a preliminary status of Vulnerable (VU B1ab2ab).

PARATYPES. — MADAGASCAR. *Prov. Antsiranana*: *Humbert & Capuron* 24086, vallée inférieure de l'Androranga, affluent de la Bemarivo aux environs d'Antongondriha, Mont Anjenabe, [14°17'S, 49°46'E], c. 800 m, 3-7 Nov. 1950, fl. (MO, P). *Prov. Toamasina*: *Flores & Andriantiana* 29, Nosy Mangabe RS, 15°29'49"S, 49°45'20"E, 0-300 m, 5 Dec. 1998, fl., fr. (MO); *Lowry et al.* 4064, Masoala Peninsula, Trail E of village of Hiaraka, 15°30'S, 49°56'E, 500 m, 10 Oct. 1986, fl. (MO, P, TAN); *Lowry et al.* 4240, Hills E of village of Sahavary, up Andranofotsy River from Maroantsetra, trail towards headwaters of Sahafotra River, 15°19'S, 49°52'E, 300 m, 24 Oct. 1986, fl., y.fr. (MO, TAN); *Miller & Schatz* 3651, Nosy Mangabe RS, 15°30'S, 49°46'E, 0-300 m, 18 Nov. 1988, fl., y.fr. (MO); *Schatz et al.* 1669, same locality, 14 Oct. 1987, fl. (MO); *Schatz & Gentry* 2155, same locality, 13-23 Apr. 1988, st. (MO, TAN); *Schatz & Miller* 2532, same locality, 9 Jan. 1989, fr. (MO); *Schatz et al.* 3353, Masoala Peninsula, Ambanizana, 15°38'S, 49°59'E, 450 m, 29 Oct. 1992, fl. (MO); *Service Forestier (Capuron)* 18227, environs de la Baie d'Antongil, reste de forêts à l'W d'Anandrovolana, [15°49'30"S, 49°41'E], 100-150 m, 11 Nov. 1957, fl., fr. (P, TEF); *Service Forestier (Capuron)* 22804, forêt d'Analalava, à l'W de Foulpointe, [17°42'34"S, 49°26'50"E], [60 m], 30 Oct. 1963, fl. (MO, P, TEF); *Zhra & Hutchison* 520, Masoala Peninsula, Andranobe, ridge S of camp Be-dinta, 15°39'30"S, 49°57'30"E, 560-640 m, July 1993, bud (MO, P, TAN).



FIG. 6. — *Brexia marioniae*: A, adult leaves; B, juvenile leaf; C, inflorescence (borne on bark); D, flower. A, C, Lowry 4064; B, Schatz 3613; D, Service Forestier 18227.

11. *Brexia montana* H. Perrier

Bull. Soc. Bot. France 80: 201 (1933). — Lectotype (here designated): *Perrier de la Bâthie* 16742, Madagascar, Prov. Antananarivo, Tampoketsa entre l'Ikopa et la Betsiboka, vers 1600 m, Dec. 1924, bud, y.fr. (P!; iso-, MO!).

Brexia montana is a shrub to slender treelet in subhumid forest between 1100 and 1600 m ele-

vation, from north of Moramanga to Zahamena PN/RNI and west to the Tampoketsa d'Antsakobe (Fig. 4). It can be recognized by its pseudo-umbellate inflorescences borne on slender peduncles to at most 1.5 mm broad, and small flowers and fruits.

Of the three syntypes (*Humbert* 4481, *Perrier de la Bâthie* 6002, 16742) originally designated by PERRIER DE LA BÂTHIE (1933), the latter with

both flower and mature fruit is here chosen as the lectotype.

CONSERVATION STATUS. — With an EO of c. 19000 km², an AO of 1300 km², and 9 subpopulations, 2 of which are encompassed within protected areas (Ambohitantely RS, Zahamena PN/RNI), *Brexia montana* is assigned a preliminary status of Vulnerable (VU B1ab2ab).

MATERIAL EXAMINED. — MADAGASCAR: *Andriatsiferana* 2326, 2359, Analamay; *Bosser* 7904, 8532, 8599, Manankazo STF, 12803, Ambohitantely RS; *D'Alleizette* 1157, Analabe du Nord; *Decary* 14380, Tampoketsa d'Ankazobe; *Herb. Jard. Bot. Tananarive* 2276, Antsianaka; *Humbert* 4481, Tampoketsa d'Ankazobe, 11061bis, Ambohitantely RS; *Keraudren* 1193, Tampoketsa d'Ankazobe; *Perrier de la Bâthie* 6002, Manankazo STF, 16742, Manerinerina; *Rakotomalaza* 1205, Ambatovy; *Rakotonandrasana* 390, Zahamena PN; *Randrianjanaka* 531, Zahamena PN; *Schatz* 1383, Anjozorobe; *Service Forestier (Capuron)* 11998, Ambohitantely RS, 18781, Maheriarra, 25262, Ankosy, 25297, Marovoay.

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