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One new endemic plant species on average per month in New Caledonia, including eight more new species from Île Art (Belep Islands), a major micro-hotspot in need of protection

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Abstract. The New Caledonian biodiversity hotspot contains many micro-hotspots that exhibit high plant micro-endemism, and that are facing different types and intensities of threats. The Belep archipelago, and especially Île Art, with 24 and 21 respective narrowly endemic species (1 *Extinct*, 21 *Critically Endangered* and 2 *Endangered*), should be considered as the most sensitive micro-hotspot of plant diversity in New Caledonia because of the high anthropogenic threat of fire. Nano-hotspots could also be defined for the low forest remnants of the southern and northern plateaus of Île Art. With an average rate of more than one new species described for New Caledonia each month since January 2000 and five new endemics for the Belep archipelago since 2009, the state of knowledge of the flora is steadily improving. The present account of eight new species from Île Art (*Bocquillonia montrouzieri* Gâteblé & McPherson, *Cleidion artense* Gâteblé & McPherson, *Endiandra artensis* Munzinger & McPherson, *Eugenia belepiana* J.W.Dawson ex N.Snow, *Eugenia insulartensis* J.W.Dawson ex N.Snow, *Macaranga latebrosa* Gâteblé & McPherson, *Planchonella serpentinicola* Swenson & Munzinger and *Psychotria neodouarrei* Barrabé & A.Martini) further demonstrates the need both to recognise the Belep Islands as a major New Caledonian micro-hotspot and to formulate concrete conservation programs for the archipelago.

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Introduction

Since the concept of biodiversity hotspots was first proposed (Myers 1988; Myers *et al*. 2000), the recognition of the more recent concept of hotspots within hotspots *sensu* Cañadas *et al*. (2014) has become crucial for effective conservation. Fenu *et al*. (2010) proposed recognition of micro- and nano-hotspots for small regions with high levels of endemism and exemplified this with biodiversity-rich areas in Sardinia (Italy), one of 335 km^2 (micro-hotspot), and others less than 3 km^2 (nano-hotspots). This idea may challenge older concepts such as 'key biodiversity areas' *sensu* Eken *et al*. (2004), but we believe that small oceanic islands rich in biodiversity are easy to recognise as micro- or nano-hotspots.

Within the New Caledonian biodiversity hotspot, the Belep archipelago (Fig. 1) is a striking example combining high endemism and high threat level that could meet the definitions of micro- or nano-hotspots of Fenu *et al*. (2010). The Belep archipelago, ~35 km north-west of the main island of Grande Terre (Fig. 1), is formed by Île Art (51.08 km^2), Île Pott (11.69 km^2) just north of Île Art, and some other small islands in the south (Dau Âc and Daos), totaling 1.96 km^2 (Gouvernement de la Nouvelle-Calédonie 2018). Île Art has two low elevation plateaus, plateau Nord (~200–280 m high) and plateau Sud (~200–250 m high) and is the only permanently inhabited island. These quite isolated ultramafic islands are (or were) covered by typical low-elevation maquis (a shrubby sclerophyll vegetation) and by one of the most endangered ecosystems in New Caledonia, i.e. low-elevation rainforest on ultramafic substrate (Isnard *et al*. 2016). According to Wulff *et al*. (2013), Île Art is the fourth-most diverse area in

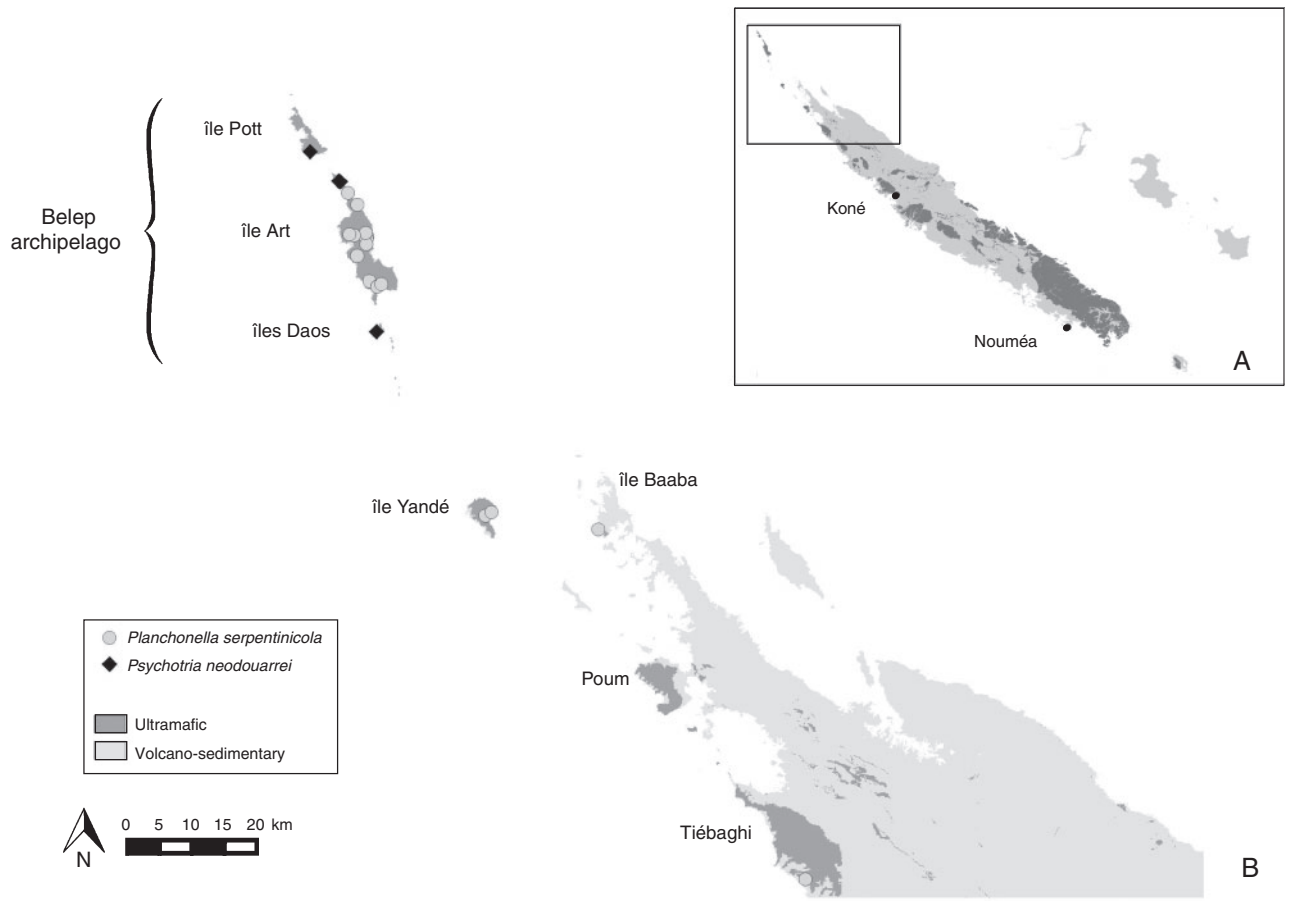

Fig. 1. A. General map of New Caledonia. B. Distribution of *Planchonella serpentinicola* and *Psychotria neodouarrei* in the north of Grande Terre and in the Belep archipelago.

New Caledonia (equaling the Dogny–Rembai–Table Unio–Amieu area) in terms of narrow endemic species richness (NES1) with 12 micro-endemic species (Table 1). Under the New Caledonian Mining Code, 18 mining concessions in Île Art and Île Pott are presently assigned to mining companies, and these mining concessions represent 72% (45.16 km^2 of 62.77 km^2) of the total surface (Gouvernement de la Nouvelle-Calédonie 2009, 2018). However, there is no active nickel mining at the moment because of a memorandum of understanding between the mining company Société Le Nickel and the (local) tribal custom authorities. The Belep Islands also are currently free of a major threat to the mainland flora, the rusa deer (*Rusa timorensis*), which does not seem to have been introduced (Endemia Red List Authority 2017). Presently, anthropogenic fires are the main threat to the biodiversity in this archipelago. Deliberately set fires are of great concern because they occur regularly between August and January (OEIL 2018) and are usually difficult to fight because of a limited fire brigade and lack of roads in this quite rugged terrain.

New Caledonian biodiversity is facing major threats that led to its early recognition as one of the 10 original world biodiversity hotspots (Myers 1988); however, unfortunately, these threats have evolved and increased since then. Although the understanding and quantification of the main threats have improved greatly, the need to better assess and undertake concrete and urgent actions to dramatically lower these threats remains. For instance, the preliminary results of the local IUCN Red List Authority, established in 2014 to evaluate the risk of extinction of New Caledonian species, are particularly of concern. Of the 1040 plant species assessed thus far (30.7% of the total New Caledonian native flora), 42% are threatened across all categories, of which 100 are listed as *Critically Endangered* (CR), 183 as *Endangered* (EN) and 153 as *Vulnerable* (VU; Endemia Red List Authority 2017). The main threats associated with these 436 species are anthropogenic fires (62% of the species potentially being affected), nickel mining activities (42%) and invasive species (41%), especially the exotic rusa deer.

The purpose of this paper is to describe eight new species from the Belep Islands and provide IUCN Red List assessments. We also draw attention to the Belep Islands as a micro-hotspot area within the New Caledonian hotspot, and provide a current account of our knowledge of the New Caledonian flora and especially in the Belep archipelago. We emphasise how rich but vulnerable the biodiversity can be in micro- or nano-hotspots.

Table 1. List of species endemic to the Belep Islands

Island distributions are northern (N) and southern (S) plateau distribution for Île Art micro-endemic species. Proposed IUCN statuses are given in the latest reference. Revised IUCN statuses are from assessments made by the local Red List Authority (Endemia Red List Authority 2017), V. Tanguy, pers. comm. EN, *Endangered*; EX, *Extinct*; CR, *Critically Endangered*; NE, not evaluated

Island distribution	Île Art 'NES1' in Wulff *et al*. (2013)	Taxon name	Date of publication (earliest name)	Oldest specimen (collector and year)	Latest reference	Proposed IUCN status	Revised IUCN status
Art (N)	1	*Alphandia resinosa*	1873	Balansa 1871	McPherson and Tirel (1987)	NE	
Art (N)	1	*Eugenia belepiana*	This paper	Veillon 1972	Present paper	CR	
Art (N)	1	*Eugenia insulartensis*	This paper	MacKee 1975	Present paper	CR	
Art (N)	1	*Geissois belema*	2012	MacKee 1975	Hopkins *et al*. (2014)	CR	CR
Art (N)	1	*Guettarda artensis*	1930	Balansa 1871		NE	
Art (N)	1	*Oxanthera fragrans*	1860	Montrouzier ?	Stone (1985)	NE	
Art (N)	1	*Phyllanthus artensis*	1991	Veillon 1972	Schmid (1991)	NE	
Art (S)	1	*Phyllanthus rozennae*	1991	Jaffré 1975	Schmid (1991)	NE	
Art (S)	1	*Phyllanthus veillonii*	1991	Jaffré 1975	Schmid (1991)	NE	
Art (N, S)	1	*Psychotria belepensis*	1860	Montrouzier ?	Barrabé et *al*. (2013)	NE	CR
Art (N)	1	*Pycnandra belepensis*	2010	MacKee 1975	Swenson and Munzinger (2010)	CR	CR
Art (N)	1	*Xanthostemon lateriflorus*	1934	Balansa 1871	Dawson (1992)	NE	
Art (S)		*Bocquillonia montrouzieri*	This paper	Montrouzier 1866	Present paper	CR	
Art (N)		*Cleidion artense*	This paper	MacKee 1975	Present paper	CR	
Art (N, S)		*Cyclophyllum cardiocarpum*	1878	Balansa 1871	Mouly and Jeanson (2015)	EN	CR
Art (N, S)		*Endiandra artensis*	This paper	MacKee 1975	Present paper	CR	
Art (N)		*Jasminum promunturianum*	1933	Däniker 1925	Green (1998)	NE	
Art (N, S)		*Macaranga latebrosa*	This paper	Veillon 1972	Present paper	CR	
Art (N, S)		*Pittosporum artense*	1936	Balansa 1871	Tirel and Veillon (2002)	NE	CR
Art (N)		*Pleioluma belepensis*	2018	Veillon 1978	Swenson *et al*. (2018)	CR	
Art (?)		*Pycnandra micrantha*	1901	Montrouzier 1866	Munzinger and Swenson (2015)	EX	EX
Art, Pott		*Myrsine belepensis*	2009	Balansa 1871	Schmid (2009)	VU	
Art, (Daos)		*Pandanus belepensis*	2011	Jaffré 1975	Callmander *et al*. (2011)	VU	CR (EX in Daos)
Art, Daos, Pott		*Psychotria neodouarrei*	This paper	MacKee 1968	Present paper	EN	

Materials and methods

Species count

A list of putative endemics from the Belep archipelago was compiled using the series *Flore de Nouvelle-Calédonie*, various taxonomic papers, unpublished data and personal communications. The herbarium specimens of each putative Belep endemic were reviewed to crosscheck that each is a true micro-endemic and were mapped according to their label data (Appendix 1). To provide a current overview of the New Caledonian flora, a second robust list of new species described from New Caledonia since 2000 was compiled (Appendix 2), primarily using the International Plant Names Index (see http://www.ipni.org, accessed September 2018) and complemented by bibliographic data gathered by the authors during the past 18 years. The new species awaiting description are listed as 'ined.' and were extracted from Munzinger *et al*. (2016). Various publications were examined to check species names and entities. We have excluded doubtful species (seven), hybrids (four), taxa of lower taxonomic rank (subspecies and varieties) as well as nomenclatural novelties (*comb. nov*. and *nom. nov*.).

Taxonomy

For the descriptions of the eight new species, careful examination and measurements of morphological characters were taken from fresh material as well as herbarium specimens, and character terminology follows that of previous authors, for example, McPherson and Tirel (1987) for Euphorbiaceae, Kostermans (1974) and Munzinger and McPherson (2016) for Lauraceae, Snow *et al*. (2016*a*, 2016*b*) for *Eugenia* L. (Myrtaceae), Barrabé (2014) and Barrabé *et al*. (2014) for *Psychotria* L. (Rubiaceae), Munzinger and Swenson (2009) and Swenson *et al*. (2007) for *Planchonella* Pierre (Sapotaceae). The species concept used here is based on morphological characters, usually in combination with molecular phylogenetic analyses, as previously used by the

authors. Voucher specimens are deposited primarily in BRI, G, MO, MPU, NOU, P and S (abbreviations follow *Index Herbariorum*, see http://sweetgum.nybg.org/science/ih/, accessed 4 June 2018). Numbers given after herbaria abbreviations are barcode numbers, except for MO and S where they represent accession numbers.

Conservation assessment

The IUCN Standards and Petitions Subcommittee (2017) bases threat analyses on a variety of criteria and subcriteria involving population size and its reduction (Criteria A, C and D), population geographic range, including fragmentation and decline (Criterion B), decline or fragmentation of small to very small populations (Criteria C, D), and quantitative analyses of the probability of extinction (E). Geographic range is measured as *extent of occurrence* (EOO) and *area of occupancy* (AOO), where EOO is the minimum convex polygon containing all points of occurrence and AOO is the area estimated by superimposing a grid (2 × 2 km) onto occurrence points and calculating the cumulative area of the cells occupied by the species. Herbarium specimens were geo-referenced (Appendix 1), as much as possible, according to label information (locality, coordinates, elevation and type of vegetation). For our assessments, we used the data gathered in Appendix 1 to calculate EOO and AOO with the online 'GeoCAT' software (ver. 9.1, S. Bachman and J. Moat, Botanic Gardens Conservation International, see http://geocat.kew.org, accessed September 2018; Bachman *et al*. 2011). Criterion B was also applied by characterising the nature and level of the threats.

Systematic progress, endemic species and threats

New Caledonia

Some studies suggest that New Caledonia may be the region with the world's highest vascular plant endemism density, with an estimated 1350 species per 10 000 km^2 (Kier *et al*. 2009). A calculation based on the checklist of the indigenous vascular flora of New Caledonia (Morat *et al*. 2012; Munzinger *et al*. 2016) leads to a similar value of 1341 endemic species per 10 000 km^2. With a complete identification key of the Flora known at that time made by Guillaumin (1948), and an ongoing *Flore de Nouvelle-Calédonie* (*et Dépendances*) that started in 1967, one might consider that the flora is fairly well known. However, we believe that a significant amount of work still needs to be conducted on the basis of both existing herbarium specimens and on discoveries made in the field (see, for example, the series *Novitates neocaledonicae*, Munzinger 2015). Supporting this idea are recently published studies estimating that 9% of New Caledonian plant and 12% of New Caledonian animal species have very narrow distributions, i.e. plant species being restricted to one locality (Wulff *et al*. 2013) and where the total distribution area is less than 5.2 km^2 for animals (Caesar *et al*. 2017).

Systematic studies since the year 2000 have shown many novelties for New Caledonia (Appendix 2). Between January 2000 and December 2017, no fewer than four endemic genera (McPherson and Lowry 2004; Snow 2009; Schmid 2012; Hopkins *et al*. 2015) and 217 new endemic plant species have been described across 38 families and 65 genera (Table 2). This is equivalent to an average description rate of slightly more than one new endemic species per month. According to Munzinger *et al*. (2016), this rate is likely to be maintained in the near future, given that 71 new species were then listed as 'ined.' and are now at various stages of being described. These data bear on the question of how many additional new plant species are to be expected within the New Caledonian biodiversity hotspot and partly address the 'impossible prediction' formulated by Joppa *et al*. (2011) who were unable to predict the percentage of the New Caledonian flora remaining to be described. Earlier, this question was also considered by Morat (1993), who tentatively concluded that 5–10% of the vascular plant flora remained to be described. Significantly, in light of the study cited above (Wulff *et al*. 2013), 40% of the new species described since 2000 have very narrow distributions (data not shown), a trend that we predict will be even more pronounced in the future (e.g. Meve *et al*. 2018, for Île des Pins) and one that clearly applies to the Belep archipelago, for which 12 micro-endemic (5 between 2009 and 2018 and 7 in the present paper) species have been described during the past 10 years (Table 1).

Table 2. Taxonomic novelties (plants) published for New Caledonia (NC) and the Belep Islands (BI) since January 2000

New NC endemic species that are doubtful species and hybrid taxa included in Appendix 2 are excluded here

Year period	New NC endemic genera (*n*)	New NC endemic species (*n*)	New BI endemic species (*n*)	Number of families	Number of genera
2000–2004	1	34	0	15	17
2005–2009	1	81	2	13	19
2010–2014	1	58	3	14	23
2015–2017	1	44	0	14	19
Total	4	217	5	38	65

Belep archipelago

The French naturalist and priest Jean Xavier Hyacinthe Montrouzier (1820–1897) was the first to document the flora of Belep in his *Flore de l'Île Art* (Montrouzier 1860). Later, the Frenchman Gaspard Joseph Benedict Balansa (1825–1891) and the Swiss Albrecht Ulrich Däniker (1894–1957) visited and collected specimens in 1871 and 1925 respectively. Thereafter, the Belep flora was neglected until the 1960s and 1970s when botanists such as Jean-Pierre Blanchon, Dominique Bourret (1940–present), Pierre Cabalion (1947–present), Tanguy Jaffré (1942–present), Hugh Shaw MacKee (1912–1995), Philippe Morat (1937–present), Christiane Tirel (1939–present) and Jean-Marie Veillon (1939–present) visited the islands. A few more collections have been made in the 21st Century by four of the authors (L. Barrabé, G. Gâteblé, J. Munzinger and U. Swenson) and by Jean-Pierre Butin (DDEE) and Antony Pain (IAC). The flora of Île Art is the most thoroughly collected, whereas only some hundred specimens have been collected on Île Pott. Specimens from the smaller islands in the south are even fewer, partly because of inaccessibility and partly because of their degraded vegetation.

From the data presented here, the number of species restricted to the Belep archipelago is 17, and we herein add another seven Belep endemic new species (Table 1). Putative Île Art endemics linked to old dubious names that are most probably synonyms or taxa published in Montrouzier (1860), Beauvisage (1894; 1901) and so on, such as *Acrostichum forsteri* Montrouz., *Canavalia bouquete* Montrouz., *Gardenia artensis* Montrouz. and *Korthalsella amentacea* (Tiegh.) Engl., were considered but rejected. *Codia belepensis* H.C.Hopkins is excluded because it also occurs in Île Yandé (Poum). *Oxanthera* (*Citrus*) *fragrans* Montrouz. and *Guettarda artensis* Guillaumin may not be endemic to the Belep Islands, but according to Stone (1985) for the former and the determination of specimens in the Paris herbarium for the latter, these two are here considered endemic to Île Art. *Myrsine belepensis* (M.Schmid) Ricketson & Pipoly and *Pandanus belepensis* Callm. & Munzinger also are known from Pott and Daos islands respectively, but the latter is considered extinct on Daos (Table 1). The present account raises the number of strictly Belep endemic species from 17 to 24 (Table 1) and the number of Île Art micro-endemics from 15 (16 with *Pandanus belepensis* extinct on Daos and now restricted to Île Art) to 21 (22 with *Pandanus belepensis*). Even more significantly, 12 Île Art micro-endemics are restricted to the northern part of the island and three to the southern plateau, whereas five occur on both parts of the island (Table 1). Half of Belep endemic species have been described since 2009, but all are known from collections that date back at least to the 1970s (Table 1).

Our addition of seven micro- or narrowly endemic species increases the density of micro-endemic species per square kilometre for the Belep archipelago, and for Île Art in particular, from 0.26 to 0.37 and from 0.29 (0.31) to 0.41 (0.43) respectively. Compared with the data presented by Wulff *et al*. (2013), Île Art now can be considered the richest area of narrow endemism in New Caledonia, ahead of Mount Panié with its 16 narrowly endemic species (NES1). By itself, the northern plateau of Île Art hosts 12 very narrowly endemic species and could easily qualify as a nano-hotspot. However, it is possible that some Île Art species here considered as micro-endemics are indeed present on the other plateaus, or even on Pott or Daos, as future fieldwork may show. Moreover, we predict that the number of species endemic to the Belep archipelago will increase as future field trips, phylogenetic analyses, population-genetics studies and revisions are conducted, for example, in *Alyxia* Banks ex R. Br., *Arthropodium* R.Br., *Gynochthodes* Blume, *Ochrosia* Juss., *Meryta* J.R.Forst. & G.Forst., *Pittosporum* Banks ex Gaertn., *Stigmaphyllon* A.Juss. and *Vitex* L.

Threats to the Belep Islands flora

The most serious threat to the flora in the Belep archipelago, especially in Île Art, is deliberately set fire. For instance, during July–December 2016, more than 1000 ha (20% of the entire surface) of Île Art was burnt, and much of the maquis and remnant forest of this area succumbed to the flames (Fig. 2). Île Art is indeed recognised as one of the worst places in New Caledonia for the number and intensity of fires detected by satellites (see http://geoportail.oeil.nc/AlerteIncendies, accessed September 2018). According to the study of Curt *et al*. (2015) on Grande Terre, the total area of the ultramafic maquis could be burnt within a 34-year period. Gomez *et al*. (2015, their fig. 3) also considered the potential biodiversity loss as high in the central parts of the southern and northern plateaus of Art and Pott islands.

Nickel mining is also a potential threat to the Belep flora, because three mining concessions (three more being expired) are recorded on Île Pott and no less than 15 (two more being expired) on Île Art (Gouvernement de la Nouvelle-Calédonie 2018). Presently, a *status quo* exists between the local tribal custom authorities and nickel mining companies, and no mining is expected to occur in the near future. Other potential threats to the biodiversity include introduced deer and pigs, feral cattle and horses, exotic and invasive plants, and land clearings for agriculture and infrastructures, but these problems must be ranked as minor in the Belep archipelago.

Past, present and future threats to the biodiversity in Belep archipelago have led to the Red Listing of seven micro-endemic species by the local Red List Authority (Endemia Red List Authority 2017), six as *Critically Endangered* (CR), and one as *Extinct* (EX, Table 1). Another nine Belep endemics have not yet been assessed against the IUCN criteria by the local Red List Authority (Table 1), but on the basis of the previous evaluations, eight are likely to be *Critically Endangered* (CR) and one (*Myrsine belepensis*) *Endangered* (EN). The seven new Île Art endemic species (six published in the present paper and one in Swenson *et al*. 2018) also are all assessed as being CR. Once all endemic species of Île Art have been assessed by the local Red List Authority, 21 CR and one EX species, in total, are expected to be listed. Île Art would then be the place with the highest number of *Critically Endangered* species compared with other areas in New Caledonia. Given its exceptional concentration of micro-endemism and the number of CR and EX taxa, the Belep archipelago, and Île Art in particular, deserves recognition as the hottest plant micro-hotspot within the New Caledonian biodiversity hotspot. The southern and northern plateaus of Île Art could further be considered each as a nano-hotspot because their total areas above 200 m are just 3.45 and 7.22 km^2 respectively. Indeed, 88% of occurrences and 20 of the 21 Île Art's CR endemic species would be protected if a reserve were established to include all the area above 200 m (data calculated from Appendix 1, Fig. 2–4). So as to fit exactly to the definition by Fenu *et al*. (2010) of a nano-hotspot of less than 3 km^2, it would require being above 209 m for the southern plateau and 247 m for the northern plateau, but this would not be adequate to protect the rainforest remnants of both plateaus.

Eight new species

Euphorbiaceae

Bocquillonia montrouzieri Gâteblé & McPherson, sp. nov.

(Fig. 3, 5A–B, 6A–B.)

Diagnosis: Bocquillonia montrouzieri resembles *B. brachypoda* Baill. in having small leaves with short petioles and condensed ♂ inflorescences, but differs most notably from the latter species in having caducous stipules 1.5–2.0 mm long (*v.* persistent, 1.5–4.0 mm long), petioles

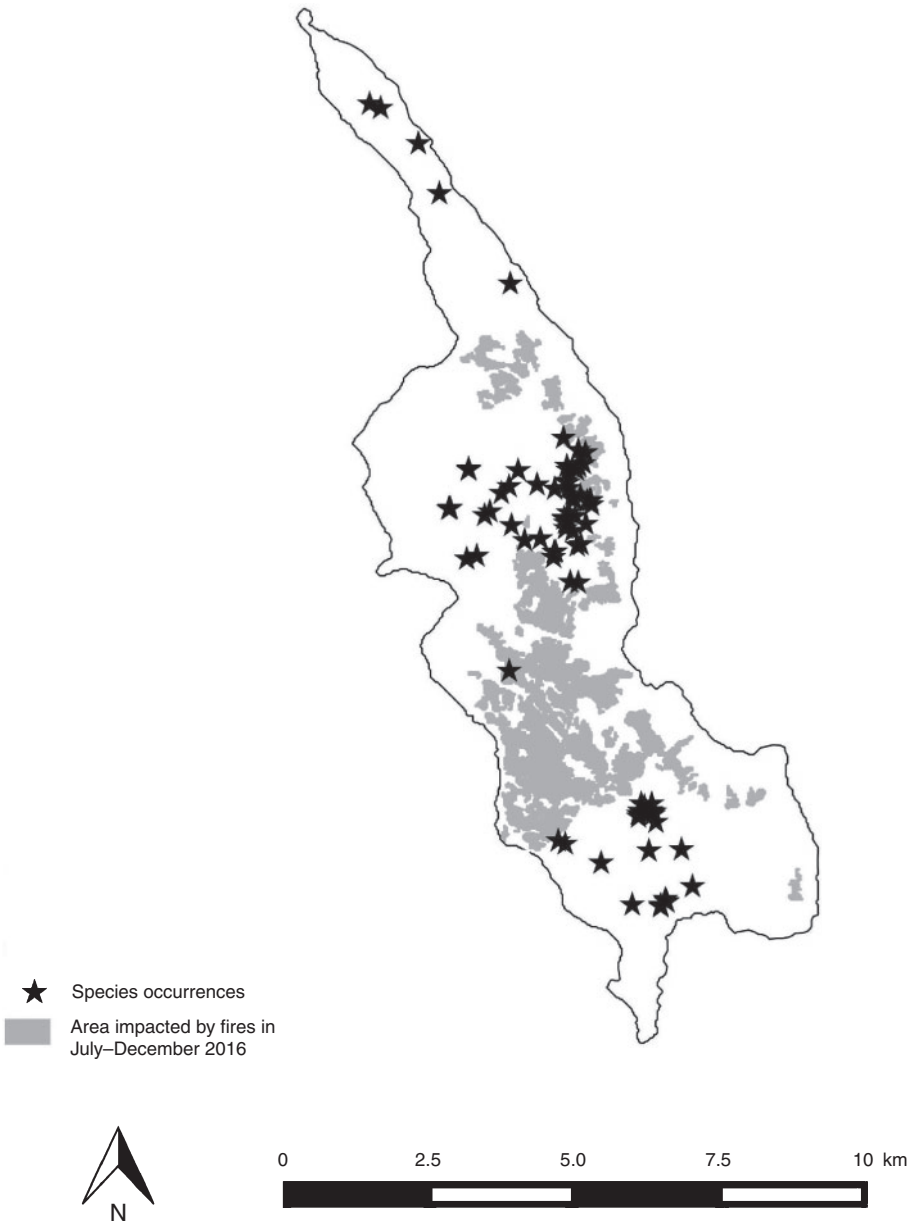

Fig. 2. Map of Île Art, showing the area affected by fires (shaded areas) between July and December 2016 with the distribution of Belep micro-endemic species (stars). The extension of anthropogenic fires are based on data gathered from Observatoire de l'Environnement en Nouvelle-Calédonie (OEIL), Earth Observing System Data and Information System (EOSDIS) and European Union's Earth Observation Programme (COPERNICUS), F. Albouy (OEIL), pers. comm. Belep micro-endemic species are listed in Table 1.

typically with a prominent distal pulvinus (*v*. without apparent distal pulvinus), one ♀ flower per pistillate inflorescence (*v*. several), and ovaries and fruits that bear many short, spine-like appendages or crests (*v*. ovaries and fruits smooth).

Type: New Caledonia, Province Nord, Belep, Île Art, plateau Sud, 24.viii.1978, *J.-M.Veillon 3685* [♀] (holo: P 00160297!; iso: NOU 046131!).

Shrubs dioceous 50 cm to 2.5 m tall, usually well branched, young *stems* sparsely appressed-puberulent, quickly glabrescent. *Leaf* simple, blade narrowly elliptic to oblanceolate, 5.0–11.5 × 1.5–3.0 cm, base narrowly obtuse to cuneate, apex acuminate, margin dentate, teeth (3–)6–12 on each side, chartaceous to subcoriaceous, adaxial surface glabrous, abaxial surface sparsely and obscurely appressed-puberulent to glabrous, with many minute, circular gland-like inclusions often visible under the microscope, and with 0–2 larger sunken *laminar glands* on each side of the midvein, ~0.2 mm in diameter, secondary veins ~11–16 on each side of the midrib below the acumen, not or barely raised adaxially, prominent abaxially, tertiary veins not or barely raised on both surfaces. *Petiole* 4–12 mm long, ~1 mm

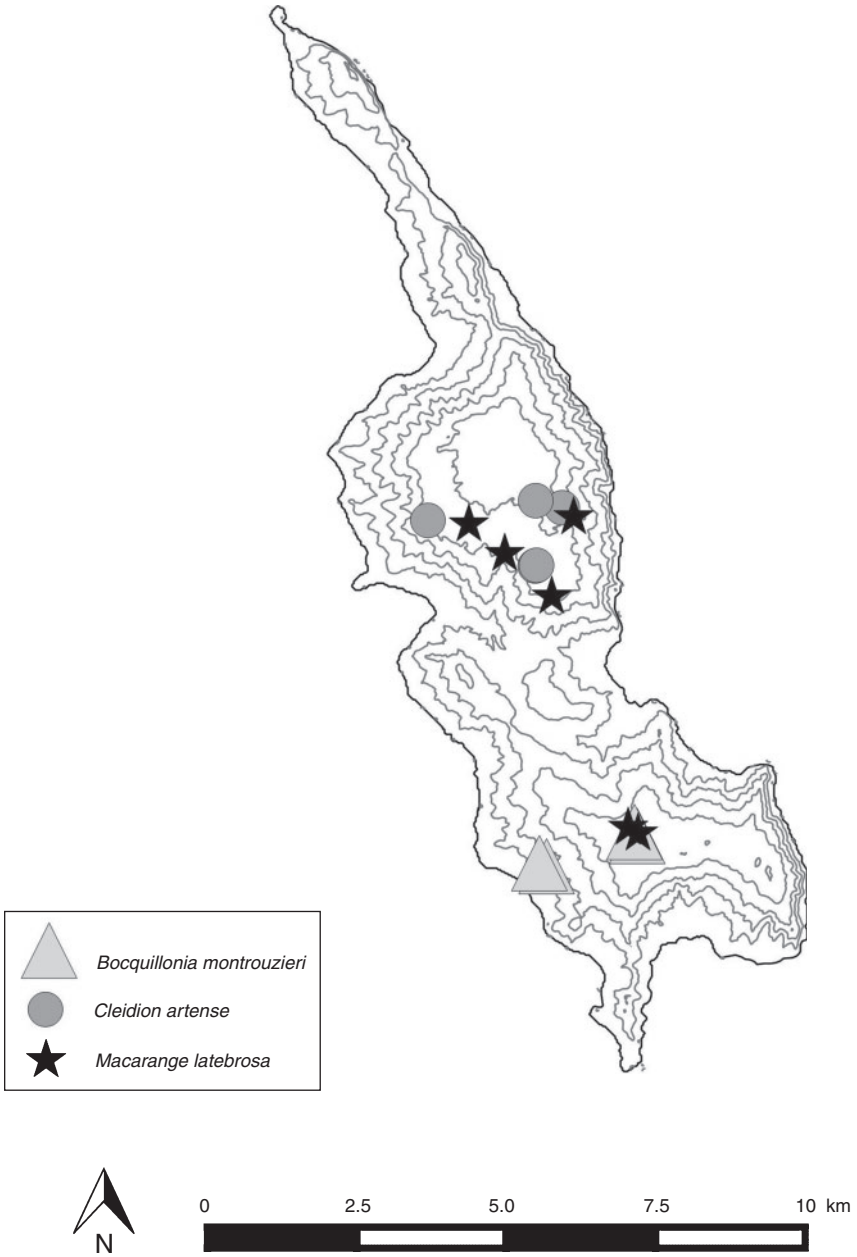

Fig. 3. Map of Île Art, showing the distribution of the new Île Art endemic species of Euphorbiaceae *Bocquillonia montrouzieri*, *Cleidion artense* and *Macaranga latebrosa*. Elevation is represented by 50-m contour lines that show the two main plateaus (southern and northern) of the island.

in diameter, prominently pulvinate at both ends, flat or shallowly channeled adaxially, sparsely appressed-puberulent or glabrous. *Stipules* subulate, 1.5–2.0 mm long, caducous. *Staminate inflorescence* reduced to axillary sessile glomerules 1–3 mm in diameter and up to 5 mm long; bracts minute; *staminate flower* subsessile when immature (mature flowers unknown). *Pistillate inflorescence* reduced to axillary, solitary flowers; *bracts* ~1 mm long, pubescent, glands not evident; *pistillate flowers* sessile on stout, bracteate bases up to 2 mm long; *sepals* 1.0–1.5 mm long; *ovary* spherical, ~2 mm in diameter, verruculose, pubescent; *stylodia* 2–3 mm long, red. *Fruit* capsule 3-lobed, ~10 mm in diameter, ~8 mm high, bearing many short, spine-like appendages or crests, pubescent; *column* 5–6 mm long; *seeds* 5–6 × 4 mm, covered with low, blister-like swellings.

Recognition

The reduced inflorescences of *Bocquillonia montrouzieri*, glomerulate in staminate and one-flowered in pistillate specimens, recall those of *B. grandidens* Baill., *B. sessiliflora* Baill., *B. castaneifolia* Guillaumin and *B. brachypoda* Baill.

Fig. 4. Map of Île Art, showing the distribution of the new Île Art endemic species *Endiandra artensis*, *Eugenia belepiana* and *Eugenia insulartensis*. Elevation is represented by 50-m contour lines that show the two main plateaus (southern and northern) of the island.

However, the first three have much longer and wider leaves than those of the new species, which do not surpass 11.5 × 3.0 cm, as well as smooth fruit. The similarly small-leaved *B. montrouzieri* can be most easily distinguished from *B. brachypoda* by its petioles, which lack a distal pulvinus, as well as by its persistent, longer stipules (1.5–4.0 mm in *B. brachypoda v.* caducous and 1.5–2.0 mm in *B. montrouzieri*) and smooth (*v.* ornamented) fruit. Of these four somewhat similar species, only *B. castaneifolia* is known to occur on Île Art.

Distribution

Bocquillonia montrouzieri is known only from the southern plateau of Île Art in the remnants of rainforests between 80 and 230 m. This new species is locally common in the forest surrounding the antenna located at the summit, but was not seen at lower elevations during fieldwork in 2017.

Etymology

The species is named after its first collector, the Marist missionary and naturalist Xavier Montrouzier, who wrote an early account of the Île Art flora (Montrouzier 1860) and who spent the last years of his life and is buried in the tribal area of Saint-Louis, Mont-Dore, where both authors have also lived and worked.

Conservation status

Bocquillonia montrouzieri has been found in only one locality, namely, in the rainforest remnants of the southern plateau, which

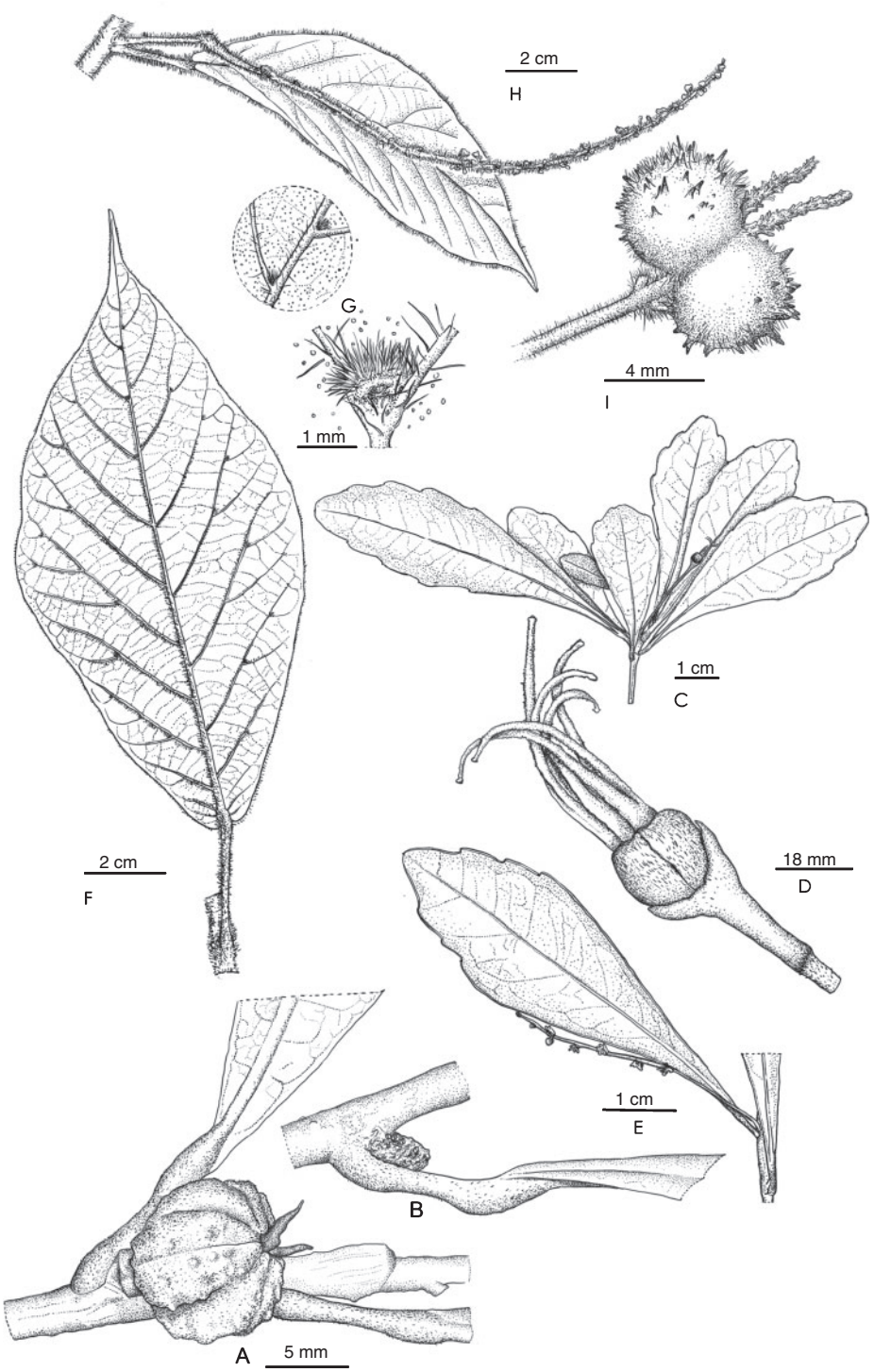

Fig. 5. A, B. *Bocquillonia montrouzieri*. C–E. *Cleidion artense*. F–I. *Macaranga latebrosa*. A. Close-up of a sessile ornamented fruit with its elongated stylodia. B. Glomerulate staminate inflorescence and base of a leaf with its prominent distal pulvinus. C. Branch tip showing subverticillate leaves with a solitary long pistillate inflorescence. D. Close-up of the tip of the pistillate inflorescence, showing the articulation between the peduncle and the pedicel, the sparsely pubescent ovary and the long stylodia. E. Leaf shape with a long staminate inflorescence. F. Abaxial surface of a leaf showing the narrowly cordate base, the long-pubescent midrib and secondaries and the domatia. G. Close-up of densely pubescent domatias. H. Leaf with long-pubescent and long staminate inflorescence. I. Bilobed fruit bearing many soft spines. Drawn from *G.Gâteblé 904* (A), *J.-P.Butin 255* (C–D), *G.Gâteblé et al. 885* (E), *G.Gâteblé 901*(F, H–I), *D. Bourret 1885* (G) and G.Gâteblé field image (B). Drawings by Laurence Ramon.

Fig. 6. A, B. *Bocquillonia montrouzieri*. C–D. *Cleidion artense*. E, F. *Macaranga latebrosa*. A, B. *G.Gâteblé 904*; C, D. *G.Gâteblé et al. 885*; E. *G.Gâteblé 901*. Photos: Gildas Gâteblé.

represents a single location (*sensu* IUCN) with respect to the main threat. It is highly threatened by recurrent anthropogenic fires that progressively reduce the surface of the remaining patches of forests, resulting in an observed and projected decline in EOO, AOO, habitat quality and number of mature individuals. The calculated EOO being smaller than the AOO, the AOO value of 8 km^2 also applies to the EOO. On the basis of IUCN Standards and Petitions Subcommittee (2017) Categories and Criteria, *B. montrouzieri* is assigned the preliminary status of *Critically Endangered* CR B1ab(i,ii,iii,v)+2ab(i,ii,iii,v).

Specimens examined

NEW CALEDONIA, Province Nord. Belep. *s.loc*., *Montrouzier 342*, (MPU 312123); Île Art, partie Sud, 80 m, *C.Tirel 1277* (P 00160305); Île Art, forêt de Païromé en bordure de marais, sommet du plateau, *D.Bourret 1910* (NOU 046110); Île Art, plateau Sud, forêt autour de l'antenne, 19°44′59.19″S, 163°40′40.30″E, 230 m, *G.Gâteblé 904* (NOU, P).

Cleidion artense Gâteblé & McPherson, sp. nov.

(Fig. 3, 5C–E, 6C–D.)

Diagnosis: Cleidion artense resembles *C. verticillatum* Baill. and *C. marginatum* McPherson in that all three species have subverticillate, small (less than 10 × 4 cm) leaves with acute bases and pistillate inflorescences typically reduced to a solitary flower. However, *C. artense* has longer staminate inflorescences (2.0–5.5 *v*. 0.1–0.8 cm), staminate flowers with fewer stamens (~30–35 *v*. 50–60) and longer pistillate inflorescences (1.5–2.0 *v*. 0.5–1.5 cm) than does *C. verticillatum*, and it has wider leaves (1.0–3.5 *v*. 0.8–2.2 cm) with attenuate bases (*v*. cuneate) and fewer marginal teeth (2–5 *v*. 5–9 per side) than does *C. marginatum*, as well as lacking the broad whitish band typical of *C. marginatum*, having shorter staminate inflorescences (up to 5.5 *v*. up to 10 cm) and longer pistillate inflorescences (1.5–2.0 *v*. up to ~0.6 cm) .

Type: New Caledonia, Province Nord, Belep, Île Art, plateau Nord, 10.xii.1975, *T.Jaffré 1657* [♂] (holo: P 00066651!; iso: NOU 024370!, P 00066652!).

Shrubs apparently dioecious (only 5 collections known, all unisexual) up to 1.5 m tall, well branched; young *stems* drying brown, pubescent at first, eventually glabrescent. *Leaf* simple, loosely clustered near the ends of twigs, blade obovate, 2.5–8.5 × 1.0–3.5 cm, base attenuate, apex shortly acuminate or rounded, margin dentate in distal part, the teeth 2–5 on each side; subcoriaceous, adaxial surface glabrous, abaxial surface thinly pubescent when immature, glabrescent, laminar glands 0–4 in the basal half, subcircular to narrowly elliptic, up to 1.0 × 0.5 mm, secondary veins 6–8 on each side of the midvein, essentially flush adaxially, slightly raised abaxially as are the higher-order veins. *Petiole* 2.0–3.5 mm long, ~1 mm in diameter, shallowly channeled, pubescent at first then glabrescent. *Stipules* ovate to subulate, 3 mm long, pubescent, deciduous. *Staminate inflorescence* spiciform, 2.0–5.5 cm long, the axis ~0.8 mm in diameter, pubescent, bearing 5–11 glomerules of flowers; *bracts* 1.5 mm long, pubescent, pedicels 1–2 mm long, pubescent; *calyx* in bud typically glabrous to slightly pubescent except for a tuft of hairs at the apex and around the base, splitting into 4 lobes 1.5 mm long; *stamens* ~30–35. *Pistillate inflorescence* reduced to a single axillary flower, the axes totalling 1.5–2.0 cm long, consisting of the peduncle ~1.3–1.7 cm long and the pedicel 2.0–2.5 mm long; *peduncle* sparsely pubescent; *pedicel* almost glabrous, articulation between peduncle and pedicel densely pubescent; *bracts* not seen; sepals ~1 mm long; *ovary* spherical, ~2.5 mm in diameter, sparsely pubescent, hairs ~0.1 mm long; 4–6 stylodia, 4–5 mm long, densely pubescent abaxially. *Fruit* unknown.

Recognition

Cleidion artense resembles *C. verticillatum* Baill. and *C. marginatum* McPherson in that all three species have subverticillate, small (less than 10 × 4 cm) leaves with acute bases, and pistillate inflorescences typically reduced to a solitary flower. However, *C. artense* has longer staminate inflorescences (2.0–5.5 *v*. 0.1–0.8 cm), staminate flowers with fewer stamens (~30–35 *v*. 50–60), and longer pistillate inflorescences (1.5–2.0 *v*. 0.5–1.5 cm) than does *C. verticillatum*, and it has wider leaves (1.0–3.5 *v*. 0.8–2.2 cm) with attenuate bases (*v*. cuneate) and fewer marginal teeth (2–5 *v*. 5–9 per side) than does *C. marginatum*, and lacking the broad whitish band typical of *C. marginatum*, as well as shorter staminate inflorescences (up to 5.5 *v*. up to 10 cm) and longer pistillate inflorescences (1.5–2.0 *v*. up to ~0.6 cm). *Cleidion vieillardii* Baill., which has much longer leaves and inflorescences, also occurs on Île Art.

Distribution

Cleidion artense is known only from the northern plateau of Île Art in the remnants of rainforests and dense shrubby maquis between 200 and 250 m. The new species is not common at this locality.

Etymology

This species is named after Île Art, where it is a newly recognised micro-endemic.

Conservation status

Cleidion artense has been found in only one locality, in the rainforest and shrubby maquis remnants of the northern plateau, which represents a single location (*sensu* IUCN) with respect to the main threat. The main threats to it are the frequent anthropogenic fires in the area that progressively reduce the surface of the remaining patches of forests resulting in an observed and projected decline in EOO, AOO, habitat quality and number of mature individuals. The calculated EOO being smaller than the AOO, the AOO value of 8 km^2 also applies to the EOO. From IUCN Standards and Petitions Subcommittee (2017) Categories and Criteria, *C. artense* is assigned the preliminary status of *Critically Endangered* CR B1ab(i,ii,iii,v)+2ab(i,ii, iii,v).

Specimens examined

NEW CALEDONIA, Province Nord. Belep. Île Art, plateau Nord (rebord Est), 250 m, *H.S.MacKee 30383* (MO 3603593, P 00166146); Île Art, plateau Nord, 200 m, *H.S.MacKee 30523* (NOU 024369, P00166147); Île Art, plateau Nord, *J.-P.Butin 255* (NOU 084489); Île Art, sentier du plateau au dessus de chez Donatienne,

19°41′58.91″S, 163°38′41.26″E, 200 m, *G.Gâteblé, E.Bourguet & G. Templier 885* (NOU, P).

Macaranga latebrosa Gâteblé & McPherson, sp. nov.

(Fig. 3, 5F–I, 6E–F.)

Diagnosis: among New Caledonian members of the genus, *Macaranga latebrosa* is most similar to *M. corymbosa* (Müll. Arg.) Müll.Arg., with which it shares basally obtuse to cordate and domatia-bearing leaves as well as fruits with soft, spine-like appendages, but from which it can be most easily distinguished by its long-pubescent stems (*v.* puberulence appressed-scurfy) and its longer pistillate inflorescences (5.5–15.0 *v.* 1–3 cm).

Type: New Caledonia, Province Nord, Belep, Île Art, plateau Sud, forêt autour de l'antenne, 19°44′55.68″S, 163°40′36.30″E, 230 m, 26.iv.2017, *G.Gâteblé 901* [♀, ♂] (holo: P!; iso: NOU!).

Shrubs dioecious or monoecious, the individual inflorescences unisexual, 1.0–2.5 m tall, multicaulous, with reddish sap; young *stems* abundantly pubescent with hairs of two lengths, the shorter ones erect, straight, ~0.5 mm long, the longer ones erect, straight or somewhat bent, 1.5–2.2 mm long. *Leaf simple*, blade elliptic to ovate or oblanceolate, 7.0–18.5 × 2.5–8.5 cm, base narrowly obtuse to narrowly cordate; apex acuminate, the acumen typically 1.0–1.5 cm long, margin entire to somewhat irregularly and coarsely dentate, chartaceous, adaxial surface evenly and openly pubescent with long hairs, abaxial surface similarly but more densely pubescent, abundantly granulose-glandular the midvein and secondary veins also bearing some short hairs, secondary veins (6–)10–15 on each side of the midvein, barely raised adaxially, prominent abaxially and many of them abmedially forked 1–4 times, tertiary veins arranged in a scalariform pattern, raised abaxially, proximal embedded laminar glands occasionally present, 0–4 pairs, often more apparent adaxially than abaxially, up to 0.5 mm long, domatia often present in the axils of the midrib and distal secondary veins as well as in the axils at the abmedial forkings of the secondaries, each domatium formed by a triangular to rounded flap of tissue and densely pubescent (medium hair length) within. *Petiole* 1.0–3.7 cm long, 0.8–1.8 mm in diameter, nearly terete, pubescent like the stem. *Stipules* ovate, acute, 1.0–1.5 mm long, pubescent, caducous. *Staminate inflorescence* spiciform or often with a pair of branches arising at the lowest node, 8–17 cm long, the axis ~0.5 mm in diameter, pubescent like the stem; *peduncle* up to ~0–3 cm long; *bracts* ~0.3 mm long; *staminate flowers* subsessile; *pedicel* ~0.7 mm long, densely pubescent; *sepals* 3, ~1 mm long; *stamens* 5–6, ~1 mm long, shorter than the sepals. *Pistillate inflorescences* 5.5–15.0 cm long, the axis 0.5–1.0 mm in diameter, often flattened distally, 1–3(–4)-flowered, pubescent like the stem; *pedicel* 2–7 mm long; *bracts* 1.0–4.0 × 0.3 mm; *calyx* at first apparently suburceolate (only one young flower seen), with 5(?) acute lobes, soon splitting into 5 narrow sepal-like segments ~2 mm long, acute, pubescent; ovary densely long-pubescent and granulose-glandular; *stylodia* 6–13 mm long. *Fruit* bilobed, 7–9 mm wide, 5–6 mm high, ~3 mm thick, pubescent with both long and short hairs, densely granulose-glandular, bearing many soft spines ~1 mm long; column 3 mm high, 2.5–3.0 mm wide distally; *seeds* spherical, 4.0–4.5 mm in diameter, smooth, black.

Recognition

With its narrowly obtuse to narrowly cordate leaf bases, domatia on the abaxial leaf surface, (sub)spiciform staminate inflorescences, and long pistillate inflorescences (5.5–15.0 cm) producing softly spiny fruits, *Macaranga latebrosa* stands apart from its congeners in New Caledonia. *Macaranga vedeliana* (Baill.) Müll.Arg. also occurs on Île Art, in coastal forests and also, atypically, on the ultramafic plateau. The two species are very easily distinguished from each other even with sterile material and were not observed growing in sympatry.

Distribution

Macaranga latebrosa is known only from Île Art on both plateaus (southern and northern) within or at the edges of the remnants of the higher-elevation (200–230 m) rainforests. It is not common on the southern plateau.

Etymology

The species is named after its very distinctive acarodomatia (H. Jourdan, pers. comm.), '*latebrosa*' meaning full of hiding places.

Conservation status

This new micro-endemic species occurs in the narrow ecological ecosystem of higher-elevation rainforests of the island. Like most of this island's endemic species, *M. latebrosa* is highly threatened by anthropogenic bushfires that can simultaneously affect the remnant rainforests on both plateaus and that progressively reduce the surface of the remaining patches of forests, resulting in an observed and projected decline in EOO, AOO, habitat quality and the number of mature individuals. Both plateaus represent a single location (*sensu* IUCN) with respect to the fire threat. The calculated EOO being smaller than the AOO, the AOO value of 12 km^2 also applies to the EOO. According to IUCN Standards and Petitions Subcommittee (2017) Categories and Criteria, *Macaranga latebrosa* is assigned the preliminary status of *Critically Endangered* CR B1ab(i,ii,iii,v).

Specimens examined

NEW CALEDONIA, Province Nord. Belep. Île Art, plateau au nord du terrain d'aviation, *D.Bourret 1885* (NOU 025124); Île Art, plateau Nord (rebord Est), 220 m, *H.S.MacKee 30459* (MO 3603856, NOU 025109, P 00172334); Île Art, plateau Nord, 200 m, *H.S.MacKee 30525* (P 00172335); Île Art, plateau Sud, antenne, 19°44′59″S, 163°40′42″E, *J.Munzinger, U.Swenson & L.Barrabé 5737* (NOU 051015); Île Art, plateau au dessus de Wala, ~230 m, *J.-M.Veillon 2708* (MO 6053173, NOU 025112).

Lauraceae

Endiandra artensis Munzinger & McPherson, sp. nov.

(Fig. 4, 7A–E, 8C.)

Diagnosis: among New Caledonian species of *Endiandra*, the new species most closely resembles *E. lecardii* Guillaumin and *E. neocaledonica* Kosterm. in its mid-sized, glabrescent leaves (blade up to 8 cm long, petiole more than 10 mm long) and glabrescent stems; however, in *E. artensis* the tepals are

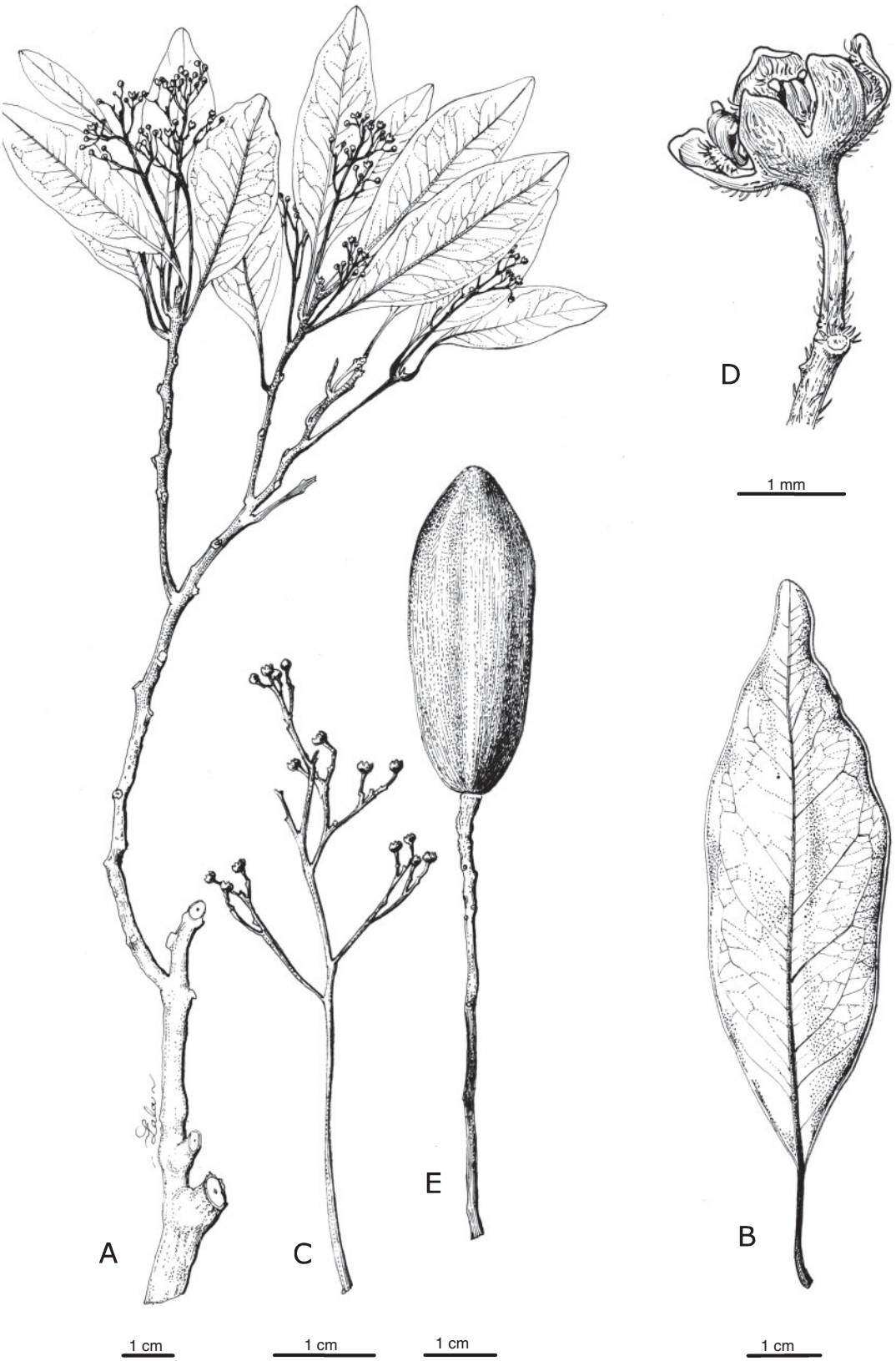

Fig. 7. *Endiandra artensis*. A. Flowering branch. B. Shape of a leaf (adaxial surface). C. Detail of an inflorescence. D. Close-up of a flower. E. Fruit. Drawn from *H.S.MacKee 30476* (A–D) and *C.Tirel 1298* (E). Drawings by Roger Lala Andriamiarisoa.

Fig. 8. A. View from O'ono of the peninsula in the north of Île Art, showing the degraded vegetation and Île Pott in the background. B. *Psychotria neodouarrei*. C. *Endiandra artensis*. D–F. *Planchonella serpentinicola*. B. *J.Fambart-Tinel (leg. J.-P.Butin) 213*; C. *J.-P.Butin 251*. D. *G.Gâteblé 926*; E. *U.Swenson & J.Munzinger 1117*; F. *U.Swenson & J.Munzinger 715*. Photos: Jean-Pierre Butin (A–C); Gildas Gâteblé (D); Ulf Swenson (E, F).

shorter (1.0–1.5 mm long *v*. 1.5–2.0 mm in *E. lecardii* and *E. neocaledonica*), the staminodes are at least half as long as the fertile stamens (*v*. up to one-third as long), the leaf blades are thinner and smooth (*v*. coriaceous and muricate), and the species is restricted to Île Art (*v*. widespread on Grande Terre).

Type: New Caledonia, Province Nord, Belep, Île Art, plateau Nord, rebord Est, 220 m, forêt dense humide, terrain rocheux serpentineux, 9.xii.1975, *H.S.MacKee 30476* (holo: P 01753198!; iso: MO 6850477!, NOU 016556!, MPU 310777!).

Trees hermaphroditic, 4–10 m tall. *Diameter* ~35 cm. *Bark* nearly smooth to rather rough, light brown. *Terminal buds* densely appressed-pubescent with brownish or greyish hairs, the *young stems* quickly glabrescent, shallowly lined and wrinkled when dry, lenticellate only well below leafy portion, the *lenticels* somewhat raised. *Leaf* simple, subopposite to alternate, blade elliptic, 4.0–8.0 × 1.8–4.0 cm, base attenuate to acute, apex obtuse, chartaceous, adaxial and abaxial surfaces sparsely appressed-puberulent at first, quickly glabrescent, muricate only along the midvein, secondary veins 8–9 on each side, slightly raised on both surfaces as is the higher-order venation. *Petiole* 10.0–16.0 × ~1.5 mm, flat adaxially, appressed-puberulent at first, quickly glabrescent. *Inflorescence* axillary, paniculate, 1.2–7.5 cm long, the axes sparsely puberulent; *peduncle* 8–38 mm long, ~0.6 mm in diameter; *bracts* minute; *pedicels* 1.0–2.5 mm long. *Flowers* yellow, 1.5 mm long, up to 3 mm in diameter at full anthesis; *tepals* ovate, 1.5 mm long, spreading at anthesis, subequal, abaxially glabrous or sparsely pubescent, adaxially densely pubescent except near margins. *Fertile stamens* 3, ~0.8 mm long, *filaments* ~0.3 mm long, pubescent, *anthers* lateral, ~0.5 mm long, glabrous, basal glands sessile, subtriangular, 0.5 mm long, glabrous; *staminodes* 3, ~0.4–0.6 mm high (i.e. at least half as long as the fertile stamens), pubescent basally. *Ovary* ovoid, ~1 mm high, glabrous. *Fruit* ellipsoid, smooth, purple-black, 3.2–4.0 × 1.6–1.9 cm.

Recognition

Endiandra artensis is easily recognised in the field, because it is the only member of its genus known to occur on Île Art. The two species that it most closely resembles, namely, *E. lecardii* and *E. neocaledonica*, are restricted to Grande Terre and have more coriaceous leaves with thicker petioles, as well as longer tepals (1.5–2.0 mm *v*. 1.0–1.5 mm) and shorter staminodes (up to 1/3 the length of the fertile stamens *v*. at least 1/2 the length of the fertile stamens).

Distribution

Endiandra artensis is endemic to low rainforests of the ultramafic plateaus of Île Art.

Etymology

This species is named after Île Art, where it is a newly recognised micro-endemic.

Conservation status

Endiandra artensis was seen only in the remnants of rainforest of the northern and southern plateaus of Île Art. The plant is threatened by anthropogenic bush fires on both plateaus and as a single fire can affect both plateaus, it is considered as a single location (*sensu* IUCN). The successive fires are source of an observed and projected decline in EOO, AOO, habitat quality and the number of mature individuals.The calculated EOO being smaller than the AOO, the AOO value of 12 km^2 also applies to the EOO. *Endiandra artensis* is assigned the preliminary status of *Critically Endangered* CR B1ab(i,ii,iii,v).

Specimens examined

NEW CALEDONIA, Province Nord. Belep. Île Art, plateau Nord, 200 m, *H.S.MacKee 30524* (MO 6850478, NOU 016553, P 01753201, P 02116875); Île Art, *Ph.Morat 6176* (MO 6850479, NOU 016555, P 02003038); Île Art, partie Sud, *P.Cabalion 663* (NOU 016552); Île Art, partie Sud, *C.Tirel 1298* (P 02194641); Île Art, plateau Sud, *J.-M.Veillon 3703* (MO 6850480, NOU 016554, P 02003056, P 02033072); Île Art, plateau Nord, 220 m, *J.-P.Butin 251* (NOU 084485).

Myrtaceae

Eugenia belepiana J.W.Dawson ex N.Snow, sp. nov.

(Fig. 4, 9A–C.)

Diagnosis: among other New Caledonian members of the genus, *Eugenia belepianiana* resembles *E. ericoides* Guillaumin but differs from that species by its prostrate to spreading growth habit, narrower and shorter leaves (6.0–14.0 × 0.4–0.8 mm), and sessile flowers. The reddish flaking bark and spreading growth habit of the new species resemble those of *E. horizontalis* Pancher ex Brongn. & Gris, but that species differs by its broader leaves (2–15 mm), its long-pedicellate flowers, and its bark, which peels to a greater extent than that of *E. belepiana*.

Type: New Caledonia, Province Nord, Belep, Île Art, plateau Nord (rebord Est), 250 m, 8.xii.1975, *H.S.MacKee 30377* (holo: P 05121251!; iso: NOU 082631!).

Shrubs hermaphroditic, prostrate, of low stature (height unconfirmed), comprising a few to several thicker spreading branches, each moderately to densely crowded with thinner short shoots bearing moderate to dense foliage. *Plants* glabrous and eglandular except as noted. *Branchlets* terete or slightly laterally compressed, the epidermal layers reddish-maroon to dark brown or nearly blackish and flaking irregularly in thin layers continuously (including older stems). *Leaf* simple, opposite (rarely 3 per node), blade (4.0–) 6.0–14.0 × 0.4–0.8(–3.0) mm, linear or somewhat falcate, base tapering slightly into petiole, apex obtuse and sometimes somewhat curving downwards, often diverging widely, margin flat, coriaceous, slightly discolorous, surfaces matte, sparsely sericeous on emergence (trichomes dibrachiate) but otherwise glabrous, oil glands few but pronounced (with magnification) and concentrated near margin; secondary veins (and midvein usually) obscure above and below. *Petiole* ~0.5 mm. *Inflorescence* of small sessile flowers, axillary or terminal; *bracteoles* 0.5–0.9 × < 0.5 mm, narrowly triangular to narrowly elliptic. *Hypanthium* 0.6–1.3 mm, obconic, sparsely glandular; ovary apex glabrous. *Calyx* lobes 4, 0.6–1.3 mm, broadly triangular, slightly dimorphic, apex broadly acute,

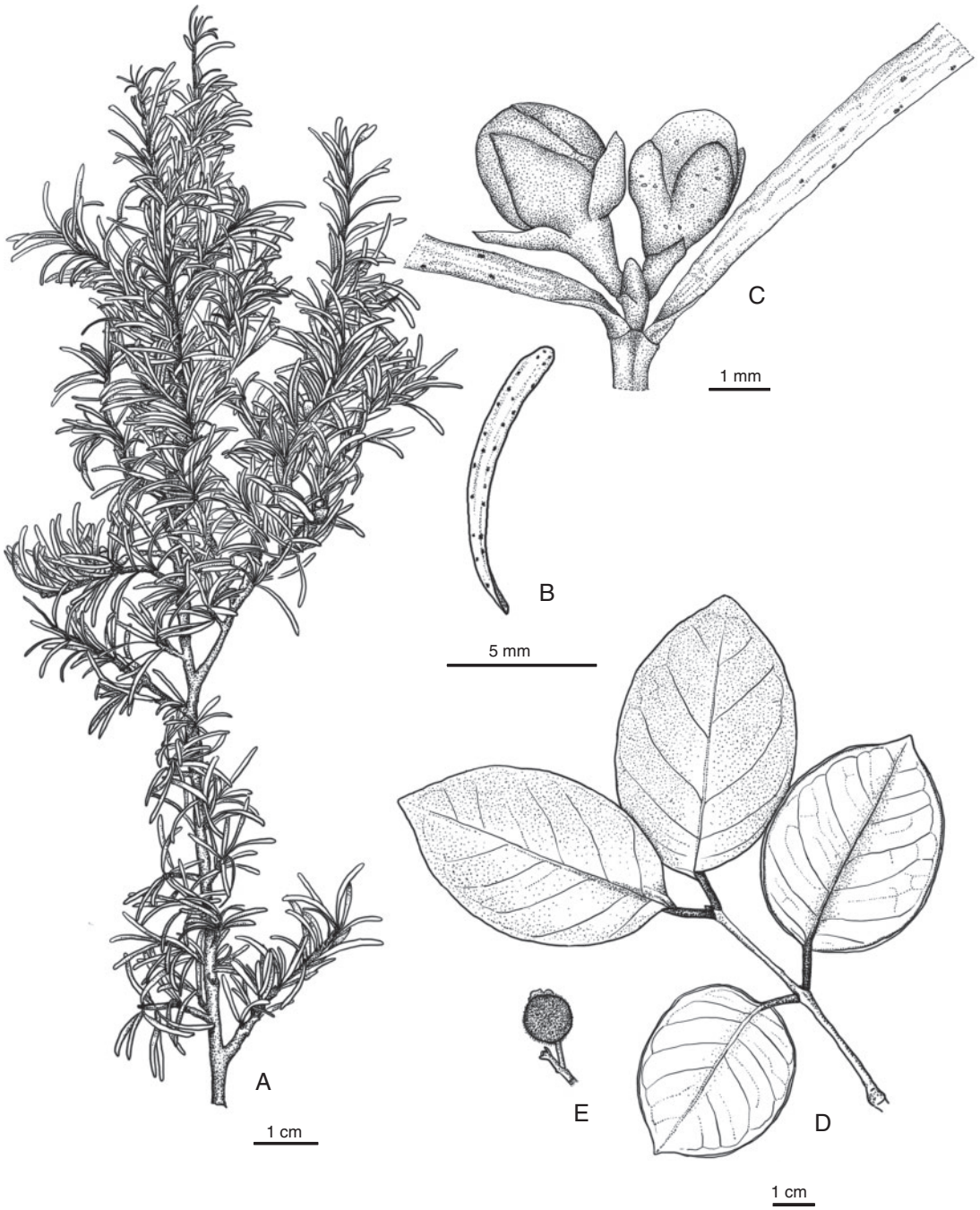

Fig. 9. A–C. *Eugenia belepiana*. D, E. *Eugenia insulartensis*. A. Branch. B. Close-up of a leaf with its oil glands. C. Close-up of flower buds D. Branch E. Close-up of a velutinous fruit. Drawn from *H.S.MacKee 30377* (A), *T.Jaffré 1538* (B, C), *H.S.MacKee 30468* (D, E). Drawings by Laurence Ramon.

minutely and sparsely ciliate apically. *Petals* 4, ~1.7–2.5 mm, widely obovate to oblate, minutely sparsely ciliate, white or pinkish. *Staminal ring* sparsely ciliate or glabrous. *Stamens* <30; *filaments* ~2–3 mm, white; *anthers* 0.3–0.4 mm, globular to subglobular, with terminal gland, tawny. *Style* 2.5–5 mm; *stigma* narrow. *Fruit* unknown.

Recognition

The short, linear to falcate leaf blades coupled with the prostrate or nearly prostrate growth and sessile flowers of *E. belepiana* are unmistakable in the genus. The species sometimes has three leaves per node, and individuals may have a few narrowly elliptic

leaves interspersed with the overwhelmingly linear-falcate ones. Its scraggly, spreading growth habit also helps differentiate it from other species of the genus in New Caledonia, such as an undescribed species *Eugenia* sp. 'adenosticta' from Mont Taom, Unio and Tontouta, which consistently has elliptic leaves.

Distribution

Known only from the northern plateau of Île Art on ultramafic substrate up to ~250 m. The label of the type gathering indicates that the plant was quite common in shaded areas, but that was over 40 years ago. From its recent collection and observation (J.-P. Butin, pers. comm.), there are not that many plants left in a secondary type of vegetation mainly composed of *Acacia spirorbis* Labill.

Etymology

The species is named after the Belep archipelago, Île Art being part of this archipelago, where it is a newly recognised micro-endemic.

Conservation status

Eugenia belepiana has been confirmed so far only in the remnants of rainforest of the northern plateau of Île Art, in one location. However, one of the co-authors (GG) recalls seeing what he believed was the same species in the rainforest of the southern plateau in 2017, but was unable to collect or photograph the specimen. The main threats to it are the anthropogenic fires that occur frequently in the area that are sources of of an observed and projected decline in EOO, AOO, habitat quality and the number of mature individuals. The calculated EOO being smaller than the AOO, the AOO value of 4 km^2 also applies to the EOO. From IUCN Standards and Petitions Subcommittee (2017) Categories and Criteria, *E. belepiana* is assigned the preliminary status of *Critically Endangered CR* B1ab(i,ii,iii,v)+2ab(i,ii,iii,v).

Specimens examined

NEW CALEDONIA, Province Nord. Belep. Île Art, plateau Nord, *T. Jaffré 1538* (NOU 082629, P 05094280); Île Art, plateau vers 220 m, *J.-M.Veillon 2899* (NOU 082630); Île Art, plateau Nord, *J.-P.Butin 227* (NOU 084469).

Eugenia insulartensis J.W.Dawson ex N.Snow, sp. nov.

(Fig. 4, 9D, E.)

Diagnosis: among other New Caledonian members of the genus, *Eugenia insulartensis* differs by the combination of branchlets that often arch slightly between successive nodes, the glabrous, elliptic to broadly elliptic leaves that sometimes are slightly conduplicate above the petiole, and especially by the densely tomentose fruits bearing a coppery indumentum.

Type: New Caledonia, Province Nord, Belep, Île Art, plateau Nord (rebord Est), 220 m, 9.xii.1975, *H.S.MacKee 30468* (holo: P 05094571!; iso*:* NOU 082595!).

Shrubs hermaphroditic, 3–4 m, slender. *Bark* of main stem greyish-brown, becoming irregularly roughened. *Branchlets* terete or compressed (immature), light brown–grey, glabrous, smooth, eglandular, sometimes somewhat arching between successive nodes. *Leaf* simple, opposite, blade (3.0–) 4.5–12.0 × 2.0–6.8 cm, elliptic to broadly elliptic, base rounded to somewhat cuneate and sometimes slightly conduplicate at junction with petiole, apex broadly acute to mostly obtuse, margin flat or slightly revolute, coriaceous, eglandular, surfaces matte or slightly glossy above; venation brochidodromous, discolorous, glabrous, adaxial midvein broadly sulcate proximally, typically flush (or nearly so) distally; abaxial secondary veins faint, more or less straight between midvein and marginal vein, marginal vein indistinct, 1.5–3.0 mm from margin at midpoint of blade. *Petiole* 8–14 mm, sulcate above, coarsely rugose, minutely grey-tomentose. *Inflorescence* consisting of monads, triads or short brachyblasts, solitary, cauliflorous, paired, or fascicled ~1–2 cm long; *peduncle* 5–9 mm, rigid, densely short ferrugineous-velutinous; *bracteoles* not seen. *Hypanthium* 3–5 mm, cupulate, pinkish in bud, densely short ferrugineous-velutinous. *Calyx* lobes 4, 2–4 mm long, broadly rounded to elliptic, apex obtuse, indumentum of both surfaces as on hypanthium, persistent on and more or less crowning mature fruit. *Petals* 6–7 × 4–5 mm, elliptic to narrowly obovate, minutely ciliate on margins, whitish. *Stamens* >150, multiseriate; *filaments* 4–6 mm; *anthers* 0.5–0.8 mm, globose to subellipsoid, basifixed, eglandular; *staminal disk* densely short velutinous. *Style* ~4–5 mm, glabrous; stigma narrowly if at all capitate. *Fruit* globose or subglobose, rounded at base, ~7–20 mm, sepal lobes persistent and crowning the fruit, densely brownish-velutinous.

Recognition

The glabrous leaves of this new species contrast with the densely pubescent flowers and fruits (of the latter, see especially *MacKee 30385* in fragment packet). Among congeners on Île Art, the slightly arching branchlets between successive nodes, elliptic leaves with sulcate petioles, narrow peduncles of the flowers and fruits, and densely velutinous fruits are reliable diagnostic field traits. Leaves that appear to be pruinose, in fact, are densely ingrown by fungal hyphae; the whitish colour, therefore, is not a waxy covering. *Eugenia insulartensis* might be confused with the widespread *E. gacognei* Montrouz., but its longer petioles (8–14 mm), pedicillate flowers, and sometimes conduplicate leaf bases differ from the latter. *Eugenia insulartensis* also somewhat resembles *E. mendute* Guillaumin in leaf size and shape, but the former has densely velutinous flowers.

Distribution

In dense and (often shaded) rainforests on rocky serpentines on the eastern edge of the northern plateau near the east-central coast on Île Art at 220–250 m. *Eugenia insulartensis* is presently known from only one locality, the gatherings of which were made on consecutive days.

Etymology

A Latin derivation of Île Art, its only known location.

Conservation status

Eugenia insulartensis has been collected only in the rainforest remnants of the eastern border of the northern plateau of Île Art.

The main threats in this area are the anthropogenic fires that progressively reduce the surface of the remaining patches of forests, resulting in an observed and projected decline in EOO, AOO, habitat quality and the number of mature individuals. The calculated EOO being smaller than the AOO, the AOO value of 4 km^2 also applies to the EOO. From IUCN Standards and Petitions Subcommittee (2017) Categories and Criteria, *E. insulartensis* is assigned the preliminary status of *Critically Endangered CR* B1ab(i,ii,iii,v)+2ab(i,ii,iii,v).

Specimens examined

NEW CALEDONIA, Province Nord. Belep. Île Art, plateau Nord, *T. Jaffré 1567* (NOU 054945, P 05094287); Île Art, plateau Nord (rebord Est), 250 m, *H.S.MacKee 30385* (NOU 082593, P 05094570).

Rubiaceae

Psychotria neodouarrei Barrabé & A.Martini, sp. nov.

(Fig. 1B, 8A, B, 10A–I.)

Diagnosis: *Psychotria neodouarrei* resembles *P. gabriellae* (Baill.) Guillaumin in having bifid, caducous and free stipules, glabrous leaves, compound cymes, and funnelformed, not pure white corolla, but differs most notably from the latter species in having obovate (*v*. elliptic) leaf blades, angular (*v*. round) buds, bluish-white (*v*. pink) corolla, and bluish-black (*v*. white to blue grey) fruits with a thin (*v*. white and spongy) mesocarp.

Type: New Caledonia, Province Nord, Belep, Île Art, plateau au nord d'Oono, 29.vii.2009, *J.Fambart-Tinel (leg. J.-P.Butin) 213* (holo*:* P!; iso*:* NOU052690!).

Shrubs hermaphroditic, up to 1 m tall, branched; *bark* light grey when dry, glabrous, slightly striate longitudinally, without lenticels; young shoots, petioles, and terminal vegetative buds glabrous. *Leaf* simple, spread along stem, glabrous, blade generally obovate, sometimes elliptic, 2.6–9.0 × 0.9–4.4 cm, acute and slightly decurrent at base, briefly acuminate at apex, margin entire and slightly revolute, chartaceous and leathery, concolorous when dry, midvein brown–red when dry, raised and slightly channeled on adaxial surface, raised on abaxial surface, secondary veins 5–11 on each side, spaced at 1.5–11.0 mm, at 38–55° angle with the midvein, slightly raised to impressed on adaxial surface, slightly raised on abaxial surface, tertiary venation obscure on both surfaces. *Petiole* slightly wrinkled when dry, 0.4–1.7 cm long, 1.0–1.5 mm thick, plano-convex, slightly channeled on adaxial face, dark brown to black when dry. *Stipules* free, ovate, 3.0–5.0 × 1.0–2.5 mm, margins entire, bifid, chartaceous, colour unknown, glabrous, deciduous, lobes narrowly triangular with a base of 1.5–3.0 mm; colleters present on the inner surface, narrowly triangular, brown. *Inflorescence* erect, a compound cyme, 3 or 4 times branched, glabrous, pedunculate; *peduncule* 3–16 mm long, 1.25–1.5 mm width, slightly striate longitudinally; *bracts* axillary to each secondary peduncule, lanceolate, tapered, navicular, acute, 1.5–2.0 × 0.5 mm, margin entire, brown when dry, glabrous on adaxial side; *pedicel* up to 0.5 mm long, 0.75 mm wide; *bracteoles* 1 or 2, axillary to each flower, narrowly triangular, up to 1.5 mm long. *Flowers* 5-merous, erect, slightly pedicellate, style heterogeneity unknown; buds obovoid and angular. *Hypanthium* turbinate, 1.0–1.5 × 1.0 mm, colour unknown, glabrous; *nectary disk* entire, dome-shaped, 1 mm in diameter, glabrous. *Calyx* coriaceous, light green, glabrous outside, hirsute inside; *tube* up to 2 mm long, 1 mm wide, colleters lacking; lobes triangular, up to 0.25 mm long, obtuse at apex with a rounded apicule, erect, margin entire. *Corolla* actinomorphic, funnelform, chartaceous, bluish-white, glabrous outside, sparsely hirsute inside on lobes and on a cylinder of 5.5 mm high, then glabrous 2.8 mm from the base; tube straight, 7.0–9.2 mm long, throat slightly flared, 3.0–4.5 mm wide at mouth, base 1–2 mm wide; lobes narrowly triangular, 2.0–5.5 × 1.0–2.0 mm, rounded at apex, erect (at anthesis). *Stamens* partially included, glabrous; *filaments* linear, ~0.75 mm long, terete, adnate to corolla ~1 mm below the mouth; anthers oblongoid, ~2.9–1.0 mm, medifixed. *Style* filiform, 9.0–10.5 × 0.3 mm, terete, glabrous, *stigma* bilobed, papillate, lobes up to 0.3 mm long. *Fruit* (unripe) globose, 9.7 × 7.5 mm; *exocarp* smooth, colour unknown, glabrous; *mesocarp* thin, not spongy; *pyrenes* (unripe) plano-convex, ovoid, 2.25–2.5 × 1.1 × 4.1 mm, round at base, obtuse at apex; dorsal side convex, strongly wrinkled, 4-channelled; ventral side flat, wrinkled, with a thin raised median crest; *pregermination slits* lacking, basal aperture present; *exotesta* unknown.

Recognition

Psychotria neodouarrei shares a similar morphology of its inflorescences, flowers and fruits with a group of 11 New Caledonian species that includes the well known hyperaccumulator *P. gabriellae*, *P. belepensis* Barrabé & Mouly, *P. ferdinandi-muelleri* Guillaumin, *P. guillauminiana* Barrabé & Mouly, *P. oua-tilouensis* Guillaumin, *P. pininsularis* Guillaumin, *P. semperflorens* (Pancher ex Beauvis.) Guillaumin and four other new species not yet described. The bluish-white corolla and bluish-black fruits of *P. neodouarrei* recall those of *P. oua-tilouensis*. However, the latter has narrowly ovate abaxially velutinous leaf blades greater than 9 cm in length, and large, elongated inflorescences with numerous flowers (>50) *v*. obovate glabrous leaf blades less than 9 cm, and small, compact inflorescences with few flowers (<30). The bifid stipules ressemble those of *P. gabriellae*, and *P. belepensis*; however, *P. gabriellae* and *P. belepensis* differ from *P. neodouarrei* in having a pink corolla, elliptic and narrowly ovate leaf blades with an acute apex and generally acute base. The angular buds of *P. neodouarrei* are similar to those of *P. ferdinandi-muelleri* and *P. guillauminiana* but both *P. ferdinandi-muelleri* and *P. guillauminiana* have pink corollas and linear leaf blades with a white prominent adaxially midvein. *Psychotria ferdinandi-muelleri* has also large persistent light green and involute stipules (>1 cm long) *v*. small caducous and flat stipules (<5 mm long) in *P. neodouarrei*. Last, *P. pininsularis* and *P. semperflorens* differ from *P. neodouarrei* by having pink corollas, connate stipules and round buds.

Distribution

Psychotria neodouarrei is known from three islands of the Belep archipelago, namely, Île Art, Île Pott, Île Daos du Nord, where it

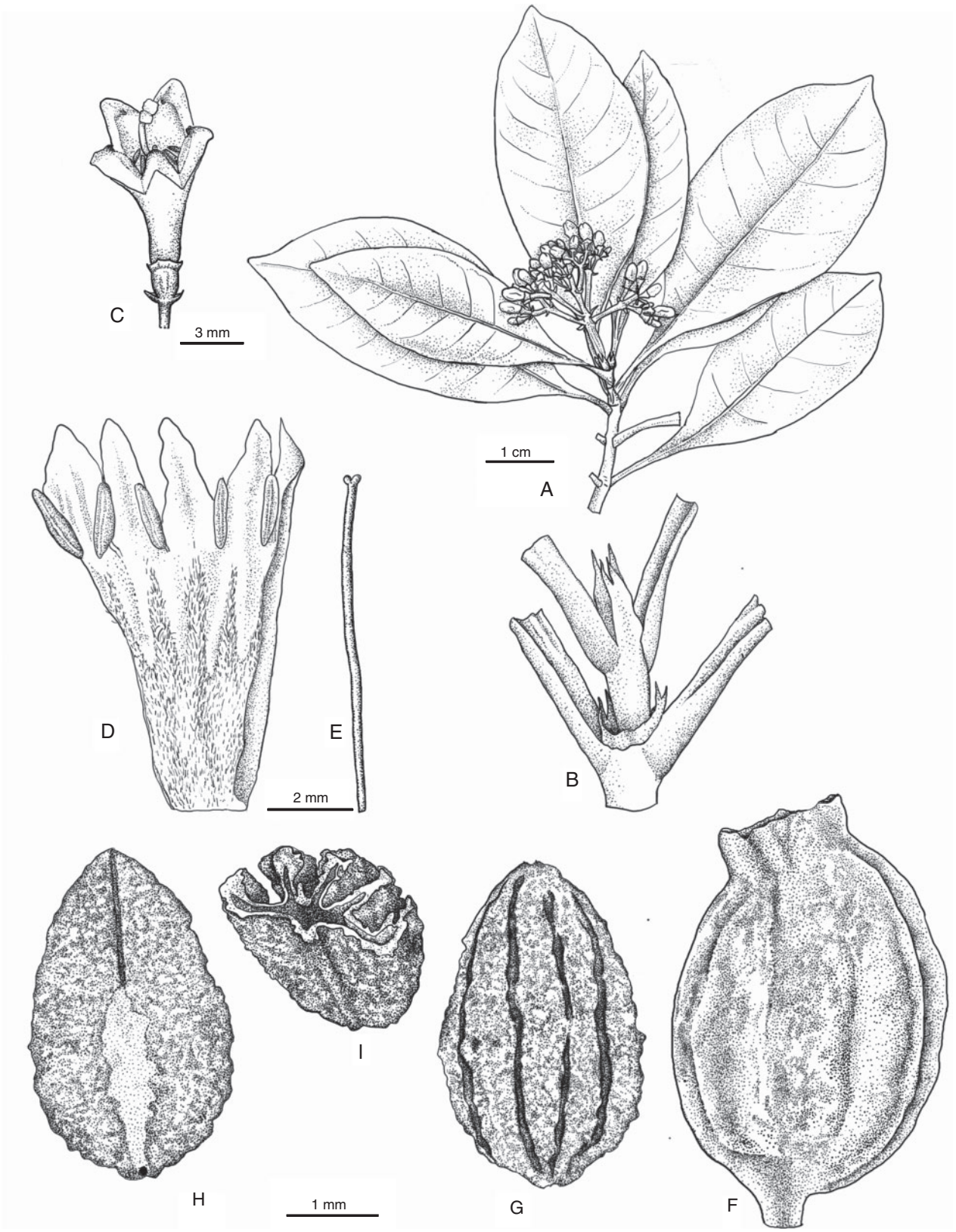

Fig. 10. *Psychotria neodouarrei*. A. Flowering branch. B. Close-up of the branch tip showing the stipules. C. Flower. D. Inner surface of flower. E. Pistil. F. Fruit. G. Dorsal view of pyrene. H. Ventral view of pyrene. I. Cross-section of pyrene. Drawn from *J.Fambart-Tinel (leg. J.-P. Butin) 213* (A–C), *J.Fambart-Tinel (leg. J.-P. Butin) 256* (D, E), *J.-P.Butin 30* (F–I). Drawings by Laurence Ramon.

occurs in low maquis at elevations near the sea level. This new species is locally rare (only two individuals recorded at O'ono; J.-P. Butin, pers. comm.).

Etymology

Barrabé *et al*. (2013) raised the question of an uncertain taxon from the Belep archipelago described in 1860 by Montrouzier as *Douarrea alba* Montrouz., which was later recognised as *Mapouria douarrei* Beauvis. by Beauvisage in 1894. The type specimen was considered to have been destroyed, and the diagnosis was insufficient to attribute this name precisely to one of the four species occurring in the Belep. One of these four species clearly belongs to the genus *Eumachia* DC. (i.e. *E. collina* (Labill.) Barrabé, C.M.Taylor & Razafim., see Taylor *et al*. 2017). Another has pink flowers (i.e. *Psychotria belepensis*), and the last two have white to bluish-white corollas (i.e. *P. montrouzieri* Barrabé & J.Florence with large sepals and a previously nameless species with small sepals). The original diagnosis of *D. alba* mentioned that it possesses white flowers and a short calyx that correspond better to the un-named species. However, considering that the Belep archipelago could shelter a fifth species that is not rediscovered and that the type specimen of *D. alba* is lost, it seems best to attribute this name to the species with bluish-white flowers and small calyx. We have, consequently, decided to consider *D. alba* as a doubtful species and to describe here the species with bluish-white flower as *P. neodouarrrei* to recall the names of Montrouzier and Beauvisage.

Conservation status

Psychotria neodouarrei has been found in three localities, namely, Île Art, Île Daos du Nord and Île Pott, which represent three locations with respect to the main threat, the recurrent anthropogenic fires that progressively reduce the surface of the native vegetation and result in an observed and projected decline in EOO, AOO, habitat quality and the number of mature individuals.The calculated EOO and AOO are 31 km^2 and 16 km^2 respectively. On the basis of IUCN Standards and Petitions Subcommittee (2017) Categories and Criteria, *P. neodouarrei* is assigned the preliminary status of *Endangered EN* B1ab(i,ii,iii,v)+2ab(i,ii,iii,v).

Specimens examined

NEW CALEDONIA, Province Nord. Belep. Île Art, plateau au nord d'Oono, *J.Fambart-Tinel (leg. J.-P.Butin) 256* (NOU 083380); Île Daos du Nord (Dau âc), *Butin 30* (NOU 079682); Île Pott, Mouane, 0–60 m, *H. S.MacKee 19375* (NOU 032616, P 04531115).

Sapotaceae

Planchonella serpentinicola Swenson & Munzinger, sp. nov.

(Fig. 1B, 8D–F, 11A–G.)

Diagnosis: *Planchonella serpentinicola* differs from the other members of the genus in New Caledonia, especially *P. contermina* and *P. povilana*, by the combination of its oblanceolate–obovate leaves, with usually four pairs of secondary veins, tubular flowers with fimbriate corolla margin, and ovoid to pear-shaped fruits.

Type: New Caledonia, Province Nord, Belep, Île Art, north plateau, along the most eastern prospecting track, 19°42′06″S, 163°39′49″E, 256 m alt., 26.viii.2009, *U.Swenson, J.Munzinger & L.Barrabé 921* (holo: P 01156238!; iso: NOU 051206!, S 09-36604!).

Shrub or small *tree* hermaphroditic, up to 5 m tall, usually much branched. *Leaf* simple, blade oblanceolate to obovate, 2.8–5.5 × 1.0–3.0 cm, base cuneate, apex round to slightly retuse, flat with a pronounced margin, first ferruginous tomentulose on both surfaces, soon glabrous above, turning greyish tomentulose below, partly glabrescent; venation brochidodromous, weak on both surfaces; secondary veins straight, meeting the midvein at 40–55°, usually of 4 pairs (sometimes 3 or 5), intersecondaries rarely present, tertiary veins laxly reticulate, very weak. *Petiole* 3–8 mm long, tomentulose, ferruginous, turning greyish. *Flowers* usually solitary, axillary, 5-merous, borne on a *pedicel* 6–12 mm long with the same indument as the petiole. *Sepals* 5–10 mm long, glabrous inside, with the same indument as the pedicel outside, the inner sepals usually with a glabrous margin. *Corolla* tubular, cream or pale greenish, 8–10 mm long, glabrous, the lobes with a ciliate margin. *Stamens* inserted just above the middle of the corolla tube, not exserted; anthers 1.5–1.8 mm long; *staminodes* flat, linear or lanceolate, entire. *Gynoecium* flask-shaped, with a proportionally long style (~8 mm), hispid at base, with 5 round stigmatic areas. *Fruit* ovoid to pear-shaped, not ridged, 15–25 × 6–15 mm, 3–5-seeded, pubescent, partly glabrescent, with a remnant style 4–8 mm long; *seeds* shaped like segments of an orange, laterally compressed, 10–14 mm long, 3–4 mm wide; *seed scar* 90–100% of the seed length; *testa* light brown, shiny, thin, ~0.4 mm thick; *cotyledons* foliaceous, white, with an exserted radicle below the commissure; endosperm present.

Recognition

Planchonella serpentinicola could be confused with two congeners, *P. contermina* Pierre ex Dubard and *P. povilana* Swenson & Munzinger, all belonging to the same clade of 14 endemic species from New Caledonia (Swenson *et al*. 2007; U. Swenson, unpubl. data). In this clade, *P. serpentinicola* is sister to the remaining species in the clade. *Planchonella serpentinicola* is distinguished from these two species by the shape of the leaves, the number of secondary veins, corolla morphology and fruit shape. Leaves of all three are somewhat similar, usually oblanceolate to obovate in *P. serpentinicola*, spathulate to orbicular in *P. povilana*, and obovate–oblanceolate–linear in *P. contermina*, but the former usually has four pairs of secondary veins *v.* six or more in the latter two species. Moreover, *P. serpentinicola* has the longest corolla (8–10 mm) with fimbriate corolla-lobe margins *v.* 6–8 mm long in *P. contermina* and 7 mm long in *P. povilana*, both of which have glabrous lobe margins. Around Voh and the Plateau de Tiéa grow populations of *P. contermina* with small, oblanceolate leaves (Fig. 11H) similar to those of *P. serpentinicola*, but the fruit of *P. contermina* is more globose and not ovoid or pear-shaped as in *P. serpentinicola* (Fig. 11F).

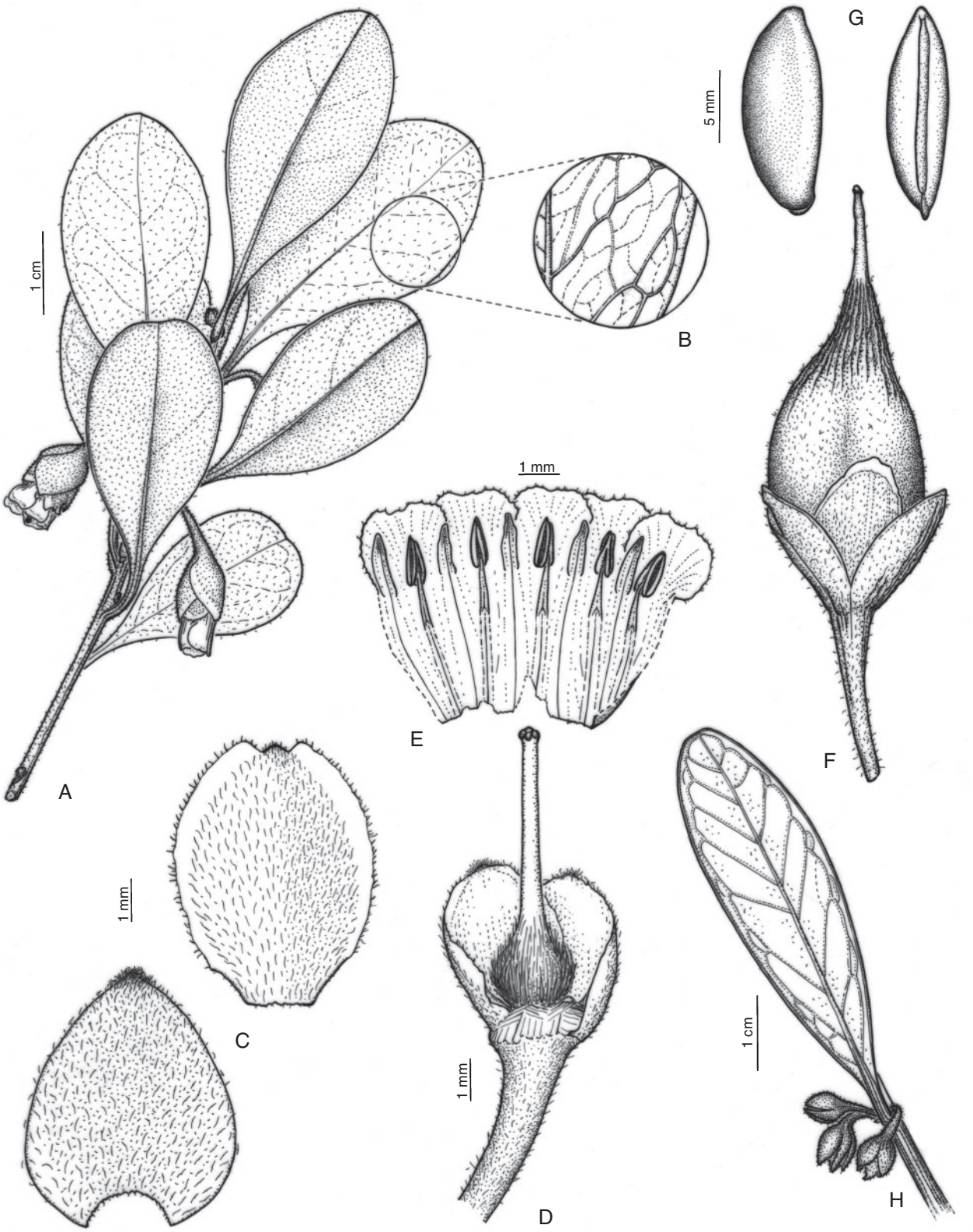

Fig. 11. *Planchonella serpentinicola*. A. Flowering branch. B. Close-up of leaf venation (upper surface). C. Outer surface of sepals, outer (bottom) and inner (top). D. Gynoecium on its receptacle. E. Open five-merous corolla from the inside showing corolla lobes, stamens, and staminodes. F. Fruit. G. Seed, side view (left) and seed scar (right). H. *Planchonella contermina* from Plateau de Tiéa (*H.S.MacKee 30048*), for comparing leaf shape, number of secondary veins, and size of flower. Drawn from *U.Swenson & J.Munzinger 1117* (A–E) and *U.Swenson & J.Munzinger 715* (F, G). Drawings by Monika Osterkamp.

Distribution

Planchonella serpentinicola is known from Île Art in the Belep archipelago, and also occurs in Baaba and Yandé islands (Poum municipality). The species is a naturally common (at least before the severe fire in August 2016) shrub or small tree on Île Art, being a dominant member of the low and dense forest on ultramafic soil, primarily serpentine (Fig. 1B). One population is known from Grande Terre, on the western slope of Mount Tiébaghi, where it occurs in maquis vegetation.

Etymology

This species is named *serpentinicola* because it occurs (-*cola*, -dweller) on serpentine.

Conservation status

The known distribution of *Planchonella serpentinicola* form an EOO of 700 km^2 and an AOO of 40 km^2. None of the locations is protected, but instead half of the known locations are located in mining concessions, and, thus, are under risk from future mining activities. Anthropogenic fires are also an important threat in that area. With an observed and projected decline in EOO, AOO and the number of mature individuals, *Planchonella serpentinicola* is assigned an IUCN preliminary status of *Endangered*, EN B1ab(iii,v)+2ab(iii,v).

Specimens examined

NEW CALEDONIA, Province Nord. Koumac. Western base of Mount Tiébaghi, 50 m, 20°30′22″S, 164°12′50″E, *U.Swenson & J.Munzinger 1117* (BRI, G, MO, NOU, P, S 13-19098). Poum. Île Baaba, secteur sud-ouest (Tiomatch), 30–130 m, *H.S.MacKee 23165* (NOU 009869, P 00538591); Île Yandé, 50–100 m, *H.S.MacKee 22626* (G, MO, MPU, NOU 009870, NY, P 00352923, S 14-30127); Yandé, on the eastern slope, 120 m, 20°02′49″S, 163°49′19″E, *U.Swenson & J.Munzinger 715* (NOU 009932, P, S 05-10376). Belep. Île Art, après le creek Weaa, *J.-P.Butin 32* (NOU); Île Art Sud, *P.Cabalion 667* (NOU 009867, P 00538592); Île Art, Centre-Ouest, *J.-M.Veillon 3671* (NOU 009872); Île Art, northern plateau, along the most eastern prospecting track, 256 m, 19°42′10″S, 163°40′01″E, *U.Swenson, J.Munzinger & L.Barrabé 910* (MO, NOU 051200, P 06707415, S 09-36482); Île Art, northern plateau, along the most eastern prospecting track, 256 m, 19°42′21″S, 163°39′58″E, *U.Swenson, J.Munzinger & L.Barrabé 914* (BRI, MO, NOU 051211, P 06707408, S 09-36486); Île Art, northern plateau, along the most eastern prospecting track, 256 m, 19°42′06″S, 163°39′49″E, *U.Swenson, J.Munzinger & L.Barrabé 919* (NOU 051208, S 09-36602); Île Art, partie Nord, 200 m, *H.S.MacKee 30450* (G, MO, NOU 009866, P 00428189, S 14-33648); Île Art, partie Sud, 50 m, *C. Tirel 1295* (P 00292110); Île Art, plateau, *T.Jaffré 1528* (NOU 009871, P, S 07-15266); Île Art, plateau Sud, *J.-M.Veillon 3699* (NOU 009865, P 02089456); Île Art, *s.loc*., *J.M.Veillon 2701* (P 02089463, S 14-33697); Île Art, *s.loc*., *J.-M.Veillon 3725* (NOU 009868, P 02089455); Île Art, sentier du plateau au dessus de chez Donatienne, 19°41′58.91″S, 163°38′41.26″E, 200 m, *G.Gâteblé, E.Bourguet & G.Templier 859* (NOU, P); Île Art, maquis de Keyani au nord, 19°38′53.08″S, 163°38′35.19″E, 80 m, *G.Gâteblé 926* (NOU, P).

Concluding remarks

The Belep archipelago, as part of the *Zone du Grand Lagon Nord*, is a part of a site on the UNESCO World Heritage List in recognition of its reef diversity and associated ecosystems. However, its highly endemic and threatened terrestrial biota also should be considered a major part of this natural heritage. We hope this new taxonomic account will raise public awareness of the unique Belep flora and the need for urgent and concrete actions to ensure its conservation. This could include (1) delineating one or several North Province reserves on both Art and Pott islands, (2) increasing awareness among the local population (custom authorities, local Belep UNESCO management committee) of the importance of preventing deliberately set fires, (3) formalising the memorandum of understanding to ensure that no future nickel mining activities take place on Pott and Art islands and (4) setting up urgent *in situ* and *ex situ* conservation programs for the most *Critically Endangered* and *Endangered* taxa on the brink of extinction.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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Appendix 1. List of species endemic to the Belep archipelago (New Caledonia) with reference to the vouchers and coordinates used

Species	Vouchers	X	Y
Alphandia resinosa	*Jaffré 1648*	163,6532825	–19,6972613
Alphandia resinosa	*MacKee 30388*	163,6640489	–19,6927889
Bocquillonia montrouzieri	*Bourret 1910*	163,678211	–19,7501341
Bocquillonia montrouzieri	*Gâteblé 904*	163,6777818	–19,7494878
Bocquillonia montrouzieri	*Tirel 1277*	163,6626327	–19,754476
Bocquillonia montrouzieri	*Veillon 3685*	163,6637807	–19,7549809
Cleidion artense	*Butin 255*	163,6620426	–19,6965365
Cleidion artense	*Gâteblé et al. 885*	163,6448658	–19,699688
Cleidion artense	*Jaffré 1657*	163,6619568	–19,7069807
Cleidion artense	*MacKee 30383*	163,6662698	–19,6976678
Cleidion artense	*MacKee 30523*	163,6621714	–19,7068595
Cyclophyllum cardiocarpum	*Barrabé 950*	163,6642742	–19,7004557
Cyclophyllum cardiocarpum	*Gâteblé 909*	163,6778462	–19,7496292
Cyclophyllum cardiocarpum	*Jaffré 1541, MacKee 30429*	163,6659265	–19,6901727
Cyclophyllum cardiocarpum	*Jaffré 1636*	163,6763549	–19,7497806
Cyclophyllum cardiocarpum	*Morat 6155*	163,6779749	–19,7483771
Endiandra artensis	*MacKee 30476*	163,6679649	–19,6984759
Endiandra artensis	*MacKee 30524*	163,6545539	–19,6961324
Endiandra artensis	*Morat 6176*	163,6804506	–19,7645378
Endiandra artensis	*Tirel 1298*	163,6803943	–19,7644318
Endiandra artensis	*Veillon 3703*	163,6804157	–19,7644772
Eugenia belepiana	*Butin 227*	163,6596823	–19,7047384
Eugenia belepiana	*Jaffré 1538*	163,6651325	–19,6983143
Eugenia belepiana	*MacKee 30377*	163,6650038	–19,6974658
Eugenia belepiana	*Veillon 2899*	163,6549616	–19,7025566
Eugenia insulartensis	*Jaffré 1567*	163,6673427	–19,6986173
Eugenia insulartensis	*MacKee 30385*	163,66539	–19,7010213
Eugenia insulartensis	*MacKee 30468*	163,6673856	–19,6985567
Geissois belema	*Barrabé 960*	163,6638719	–19,6952335
Geissois belema	*MacKee 30438*	163,6642206	–19,6934354
Guettarda artensis	*Jaffré 1652, MacKee 30517*	163,6479074	–19,6934178
Jasminum promunturianum	*Däniker 1681*	163,6396623	–19,6396774
Macaranga latebrosa	*Bourret 1885*	163,6645961	–19,7118591
Macaranga latebrosa	*Gâteblé 901*	163,676776	–19,7487885
Macaranga latebrosa	*MacKee 30459*	163,6680937	–19,6991628
Macaranga latebrosa	*MacKee 30525*	163,6571074	–19,7050212
Macaranga latebrosa	*Munzinger et al. 5737*	163,6783397	–19,7497201
Macaranga latebrosa	*Veillon 2708*	163,6513996	–19,7002941
Myrsine belepensis	*Jaffré 1603*	163,595953	–19,5868819
Myrsine belepensis	*Morat 6221, Tirel 1343, Veillon 3746*	163,5986996	–19,5841527
Myrsine belepensis	*Tirel 1316*	163,6492646	–19,7075766
Oxanthera fragrans	*Jaffré 1523, MacKee 30436*	163,6678362	–19,6983951
Pandanus belepensis	*Gâteblé et al. 874*	163,6446512	–19,6998395
Pandanus belepensis	*Jaffré 1591*	163,676827	–19,7496191
Pandanus belepensis	*MacKee 30446*	163,6656046	–19,6934455
Pandanus belepensis	*Munzinger et al. 5736*	163,6780822	–19,7496696
Pandanus belepensis	*Veillon 3681*	163,6811614	–19,8186121
Pandanus belepensis	*Veillon 3698*	163,6757755	–19,7500634
Pandanus belepensis	*Veillon 3711*	163,6828566	–19,7559199
Phyllanthus artensis	*Jaffré 1550, MacKee 30434, Veillon 2719*	163,6659908	–19,6928395
Phyllanthus artensis	*Munzinger 5743*	163,66402	–19,69533
Phyllanthus rozennae	*Cabalion 666*	163,6760008	–19,7495686
Phyllanthus rozennae	*Jaffré 1644*	163,6765695	–19,7499725
Phyllanthus rozennae	*Veillon 3702*	163,677063	–19,7496191
Phyllanthus veillonii	*Cabalion 665*	163,674767	–19,7649972
Phyllanthus veillonii	*Jaffré 1641*	163,6775136	–19,7561118
Phyllanthus veillonii	*Tirel 1299, Veillon 3708*	163,6802119	–19,7641036
Pittosporum artense	*Jaffré 1624*	163,675797	–19,7505481
Pittosporum artense	*MacKee 30424*	163,665905	–19,6924556
Pittosporum artense	*Pain s.n.*	163,6591566	–19,6958496

(*continued next page*)

Appendix 1. (*continued*)

Species	Vouchers	X	Y
Planchonella serpentinicola	*Butin 32*	163,6547524	–19,662765
Planchonella serpentinicola	*Cabalion 667*	163,6696601	–19,7581212
Planchonella serpentinicola	*Gâteblé 926*	163,6431062	–19,6479302
Planchonella serpentinicola	*Gâteblé et al. 859*	163,6448604	–19,6997789
Planchonella serpentinicola	*Jaffré 1528*	163,665154	–19,6979102
Planchonella serpentinicola	*MacKee 22626*	163,8146281	–20,0511944
Planchonella serpentinicola	*MacKee 23165*	163,955487	–20,0685084
Planchonella serpentinicola	*MacKee 30450*	163,665905	–19,7120106
Planchonella serpentinicola	*Swenson & Munzinger 1117*	164,2139769	–20,5061389
Planchonella serpentinicola	*Swenson & Munzinger 715*	163,8220417	–20,0470395
Planchonella serpentinicola	*Swenson et al. 910*	163,6671603	–19,7023243
Planchonella serpentinicola	*Swenson et al. 914*	163,6663449	–19,7056878
Planchonella serpentinicola	*Swenson et al. 919*	163,6635903	–19,7013496
Planchonella serpentinicola	*Swenson et al. 921*	163,6635661	–19,701491
Planchonella serpentinicola	*Tirel 1295*	163,6794448	–19,7650477
Planchonella serpentinicola	*Veillon 2701*	163,6505413	–19,7009001
Planchonella serpentinicola	*Veillon 3671*	163,6545754	–19,7265138
Planchonella serpentinicola	*Veillon 3699*	163,6794448	–19,7653102
Planchonella serpentinicola	*Veillon 3725*	163,684659	–19,7619984
Pleioluma belepensis	*Swenson et al. 917*	163,6641347	–19,6955718
Pleioluma belepensis	*Tirel 1311, Veillon 3719*	163,6476016	–19,7080715
Psychotria belepensis	*Barrabé 951*	163,6643493	–19,7004759
Psychotria belepensis	*Barrabé 958*	163,6786616	–19,7513963
Psychotria belepensis	*Barrabé 962*	163,6642957	–19,6964506
Psychotria belepensis	*Butin 107*	163,66323	–19,71455
Psychotria belepensis	*Jaffré 1554*	163,6560452	–19,6935263
Psychotria belepensis	*MacKee 19410*	163,6634803	–19,6881524
Psychotria belepensis	*MacKee 30431*	163,6670905	–19,6905666
Psychotria belepensis	*MacKee 30516*	163,6479181	–19,6932132
Psychotria belepensis	*Veillon 3689*	163,6762342	–19,7483493
Psychotria neodouarrei	*Butin 30*	163,6786938	–19,8214988
Psychotria neodouarrei	*Fambart-Tinel 213*	163,6334825	–19,633857
Psychotria neodouarrei	*Fambart-Tinel 256*	163,6316586	–19,6331497
Psychotria neodouarrei	*MacKee 19375*	163,5958778	–19,5964235
Pycnandra belpensis	*Cabalion 671*	163,6638236	–19,7030415
Pycnandra belpensis	*Jaffré 1666*	163,6638236	–19,7021627
Pycnandra belpensis	*MacKee 30482*	163,6667633	–19,6923849
Pycnandra belpensis	*Swenson 913*	163,6657333	–19,7058848
Pycnandra belpensis	*Veillon 3720*	163,6649823	–19,7035061
Xanthostemon lateriflorus	*Butin 59*	163,66277	–19,6995
Xanthostemon lateriflorus	*Jaffré 1658*	163,6618441	–19,7077938

Appendix 2. List of published and unpublished (*ined.*) new taxa for New Caledonia between January 2000 and December 2017

All endemic except for *Hymenophyllum braithwaitei* and *Sphaeromorphaea subintegra.* Species statuses are: D, doubtful taxon; H, hybrid taxon; V, valid species; ined., unpublished species

Year	Family	Taxon name	Reference	Species status
2000	Myrtaceae.	*Metrosideros rotundifolia* J.W.Dawson	*Blumea* 45: 437	V
2000	Myrtaceae	*Metrosideros whitakeri* J.W.Dawson	*Blumea* 45: 435	V
2001	Violaceae	*Agatea lecointei* Munzinger	*Bot. J. Linn. Soc*. 137: 93	V
2001	Violaceae	*Agatea veillonii* Munzinger	*Bot. J. Linn. Soc*. 137: 91	V
2002	Apocynaceae	*Alyxia veillonii* D.J.Middleton	*Blumea* 47: 73	V
2002	Pittosporaceae	*Pittosporum cherrieri* Tirel & Veillon	*Fl. N. Caléd*. 24: 103	V
2002	Pittosporaceae	*Pittosporum sessilifolium* Tirel & Veillon	*Fl. N. Caléd.* 24: 165	V
2002	Simaroubaceae	*Soulamea dagostinii* Jaffré & Fambart	*Adansonia* 24: 160	V
2002	Simaroubaceae	*Soulamea moratii* Jaffré & Fambart	*Adansonia* 24: 162	V
2002	Simaroubaceae	*Soulamea pelletieri* Jaffré & Fambart	*Adansonia* 24: 166	V
2002	Simaroubaceae	*Soulamea rigaultii* Jaffré & Fambart	*Adansonia* 24: 162	V
2003	Podocarpaceae	*Podocarpus beecherae* de Laub.	*New Zealand J. Bot*. 41: 715	D
2003	Malvaceae	*Acropogon grandiflorus* Morat & Chalopin	*Adansonia* 25: 194	V
2003	Malvaceae	*Acropogon macrocarpus* Morat & Chalopin	*Adansonia* 25: 198	V
2003	Malvaceae	*Acropogon merytifolius* Morat & Chalopin	*Adansonia* 25: 192	V
2003	Malvaceae	*Acropogon schistophilus* Morat & Chalopin	*Adansonia* 25: 196	V
2003	Pandanaceae	*Freycinetia modica* Huynh	*Candollea* 58: 298	V
2003	Pandanaceae	*Freycinetia panica* Huynh	*Candollea* 58: 298	V
2003	Pandanaceae	*Freycinetia pseudograminifolia* Huynh	*Candollea* 58: 300	V
2003	Pandanaceae	*Freycinetia separata* Huynh	*Candollea* 58: 301	V
2003	Hymenophyllaceae	*Hymenophyllum paniense* Ebihara & K.Iwats.	*Syst. Bot*. 28: 229	V
2003	Rutaceae	*Neoschmidia calycina* T.G.Hartley	*Adansonia* 25: 10	V
2003	Rutaceae	*Picrella glandulosa* T.G.Hartley	*Adansonia* 25: 253	V
2003	Winteraceae	*Zygogynum fraterculus* Vink	*Blumea* 48: 183	V
2004	Fabaceae	*Canavalia veillonii* I.C.Nielsen	*Adansonia* 26: 150	V
2004	Celastraceae	*Dicarpellum paucisepalum* Hürl. ex M.P.Simmons	*Fl. N. Caléd.* 25: 14	V
2004	Ericaceae	*Dracophyllum mackeeanum* S.Venter	*New Zealand J. Bot.* 42: 747	V
2004	Pandanaceae	*Freycinetia delicata* Huynh	*Candollea* 59: 175	V
2004	Pandanaceae	*Freycinetia involuta* Huynh	*Candollea* 59: 176	V
2004	Pandanaceae	*Freycinetia subulata* Huynh	*Candollea* 59: 177	V
2004	Lamiaceae	*Gmelina magnifica* Mabb.	*Fl. N. Caléd*. 25: 23	V
2004	Lamiaceae	*Gmelina tholicola* Mabb.	*Fl. N. Caléd.* 25: 26	V
2004	Cunoniaceae	*Hooglandia ignambiensis* McPherson & Lowry	*Ann. Missouri Bot. Gard.* 91: 261	V
2004	Cunoniaceae	*Pancheria minima* J.Bradford	*Biodivers. & Conservation* 13: 2262	V
2004	Cunoniaceae	*Pancheria ouaiemensis* J.Bradford	*Biodivers. & Conservation* 13: 2263	V
2004	Cunoniaceae	*Hooglandia* McPherson & Lowry	*Ann. Missouri Bot. Gard.* 91: 261	V
2004	Hymenophyllaceae	*Hymenophyllum braithwaitei* Ebihara & K.Iwats.	*Taxon* 53: 943	V
2005	Malvaceae	*Acropogon bosseri* Morat & Chalopin	*Adansonia* 27: 261	V
2005	Malvaceae	*Acropogon chalopiniae* Morat	*Adansonia* 27: 258	V
2005	Malvaceae	*Acropogon jaffrei* Morat & Chalopin	*Adansonia* 27: 256	V
2005	Malvaceae	*Acropogon margaretae* Morat & Chalopin	*Adansonia* 27: 263	V
2005	Fabaceae	*Callerya neocaledonica* I.C.Nielsen & Veillon	*Adansonia* 27: 82	V
2005	Fabaceae	*Storckiella neocaledonica* I.C.Nielsen, Labat & Munzinger	*Adansonia* 27: 219	V
2006	Elaeocarpaceae	*Elaeocarpus tremulus* Tirel & McPherson	*Adansonia* 28: 138	V
2006	Cunoniaceae	*Geissois velutina* Guillaumin ex H.C.Hopkins	*Adansonia* 28: 320	V
2006	Primulaceae	*Maesa jaffrei* M.Schmid	*Adansonia* 28: 146	V
2006	Cucurbitaceae	*Zehneria neocaledonia* W.J.de Wilde & Duyfjes	*Blumea* 51: 67	V
2007	Podocarpaceae	*Dacrydium* × *suprinii* Nimsch	*Feddes Repert*. 118: 52	H
2007	Malvaceae	*Acropogon calcicola* Morat & Chalopin	*Adansonia* 29: 96	V
2007	Malvaceae	*Acropogon paagoumenensis* Morat & Chalopin	*Adansonia* 29: 94	V

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Year	Family	Taxon name	Reference	Species status
2007	Malvaceae	*Acropogon pilosus* Morat & Chalopin	*Adansonia* 29: 101	V
2007	Malvaceae	*Acropogon tireliae* Morat & Chalopin	*Adansonia* 29: 99	V
2007	Cunoniaceae	*Codia belepensis* H.C.Hopkins	*Kew Bull*. 62: 260	V
2007	Cunoniaceae	*Codia jaffrei* H.C.Hopkins & Fogliani	*Kew Bull.* 62: 265	V
2007	Cunoniaceae	*Codia mackeeana* H.C.Hopkins & Fogliani	*Kew Bull.* 62: 263	V
2007	Cunoniaceae	*Codia triverticillata* H.C.Hopkins & Pillon	*Kew Bull.* 62: 268	V
2007	Cunoniaceae	*Geissois bradfordii* H.C.Hopkins	*Kew Bull.* 62: 275	V
2007	Annonaceae	*Goniothalamus dumontetii* R.M.K.Saunders & Munzinger	*Bot. J. Linn. Soc*. 155: 497	V
2007	Rubiaceae	*Ixora aoupinieensis* Hoang & Mouly	*Adansonia* 29: 124	V
2007	Ericaceae	*Paphia paniensis* S.Venter & Munzinger	*New Zealand J. Bot.* 45: 505	V
2007	Sapotaceae	*Planchonella crenata* Munzinger & Swenson	*Taxon* 56: 338	V
2007	Sapotaceae	*Planchonella glauca* Swenson & Munzinger	*Taxon* 56: 340	V
2007	Sapotaceae	*Planchonella latihila* Munzinger & Swenson	*Taxon* 56: 341	V
2007	Sapotaceae	*Planchonella luteocostata* Munzinger & Swenson	*Taxon* 56: 342	V
2007	Sapotaceae	*Planchonella mandjeliana* Munzinger & Swenson	*Taxon* 56: 344	V
2007	Sapotaceae	*Planchonella povilana* Swenson & Munzinger	*Taxon* 56: 346	V
2007	Sapotaceae	*Planchonella roseoloba* Munzinger & Swenson	Taxon 56: 348	V
2007	Sapotaceae	*Planchonella rufocostata* Munzinger & Swenson	*Taxon* 56: 348	V
2008	Stemonuraceae	*Gastrolepis alticola* Munzinger, McPherson & Lowry	*Bot. J. Linn. Soc.* 157: 776	V
2008	Rubiaceae	*Ixora clarae* Mouly & Pisivin	*Nordic J. Bot.* 25: 14	V
2008	Rubiaceae	*Ixora elisae* Mouly & Pisivin	*Nordic J. Bot.* 25: 16	V
2009	Araucariaceae	*Araucaria bernieri* J.Buchholz subsp. buchholzii Silba	*J. Int. Conifer Preserv. Soc.* 16: 104	D
2009	Cunoniaceae	*Cunonia* × *koghicola* H.C.Hopkins, J.Bradford & Pillon	*Kew Bull*. 63: 423	H
2009	Cunoniaceae	*Cunonia dickisonii* Pillon & H.C.Hopkins	*Kew Bull*. 63: 420	V
2009	Myrtaceae	*Kanakomyrtus dawsoniana* N.Snow	*Syst. Bot*. 34: 338	V
2009	Myrtaceae	*Kanakomyrtus longipetiolata* N.Snow	*Syst. Bot.* 34: 337	V
2009	Myrtaceae	*Kanakomyrtus mcphersonii* N.Snow	*Syst. Bot*. 34: 340	V
2009	Myrtaceae	*Kanakomyrtus prominens* N.Snow	*Syst. Bot*. 34: 334	V
2009	Myrtaceae	*Kanakomyrtus revoluta* N.Snow	*Syst. Bot.* 34: 332	V
2009	Cunoniaceae	*Pancheria ajiearoana* H.C.Hopkins, Pillon & J. Bradford	*Kew Bull.* 64: 442	V
2009	Cunoniaceae	*Pancheria dognyensis* H.C.Hopkins, Pillon & J. Bradford	*Kew Bull*. 64: 438	V
2009	Cunoniaceae	*Pancheria mcphersonii* H.C.Hopkins, Pillon & J. Bradford	*Kew Bull.* 64: 436	V
2009	Sapotaceae	*Planchonella cauliflora* Munzinger & Swenson	*Adansonia* 31: 177	V
2009	Sapotaceae	*Planchonella ericiflora* Munzinger & Swenson	*Adansonia* 31: 179	V
2009	Sapotaceae	*Planchonella minutiflora* Munzinger & Swenson	*Adansonia* 31: 182	V
2009	Sapotaceae	*Pycnandra atrofusca* Swenson & Munzinger	*Austral. Syst. Bot.* 22: 444	V
2009	Sapotaceae	*Pycnandra cylindricarpa* Swenson & Munzinger	*Austral. Syst. Bot.* 22: 450	V
2009	Sapotaceae	*Pycnandra glaberrima* Swenson & Munzinger	*Austral. Syst. Bot*. 22: 450	V
2009	Sapotaceae	*Pycnandra linearifolia* Swenson & Munzinger	*Austral. Syst. Bot.* 22: 456	V
2009	Sapotaceae	*Pycnandra longipetiolata* Swenson & Munzinger	*Austral. Syst. Bot.* 22: 456	V
2009	Sapotaceae	*Pycnandra paucinervia* Swenson & Munzinger	*Austral. Syst. Bot.* 22: 461	V
2009	Sapotaceae	*Pycnandra viridiflora* Swenson & Munzinger	*Austral. Syst. Bot*. 22: 461	V
2009	Primulaceae	*Rapanea albiflorens* M.Schmid	*Adansonia* 31: 362	V
2009	Primulaceae	*Rapanea arborea* M.Schmid	*Adansonia* 31: 382	V
2009	Primulaceae	*Rapanea belepensis* M.Schmid	*Adansonia* 31: 356	V
2009	Primulaceae	*Rapanea boulindaensis* M.Schmid	*Adansonia* 31: 361	V
2009	Primulaceae	*Rapanea discocarpa* M.Schmid	*Adansonia* 31: 366	V
2009	Primulaceae	*Rapanea dumbeaensis* M.Schmid	*Adansonia* 31: 356	V
2009	Primulaceae	*Rapanea humboldtensis* M.Schmid	*Adansonia* 31: 372	V
2009	Primulaceae	*Rapanea katrikouensis* M.Schmid	*Adansonia* 31: 390	V
2009	Primulaceae	*Rapanea koghiensis* M.Schmid	*Adansonia* 31: 385	V
2009	Primulaceae	*Rapanea kuebiniensis* M.Schmid	*Adansonia* 31: 366	V

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Year	Family	Taxon name	Reference	Species status
2009	Primulaceae	*Rapanea mcphersonii* M.Schmid	*Adansonia* 31: 366	V
2009	Primulaceae	*Rapanea memaoyaensis* M.Schmid	*Adansonia* 31: 382	V
2009	Primulaceae	*Rapanea munzingeri* M.Schmid	*Adansonia* 31: 374	V
2009	Primulaceae	*Rapanea nigricans* M.Schmid	*Adansonia* 31: 362	V
2009	Primulaceae	*Rapanea nitens* M.Schmid	*Adansonia* 31: 370	V
2009	Primulaceae	*Rapanea oblanceolata* M.Schmid	*Adansonia* 31: 388	V
2009	Primulaceae	*Rapanea obovalifolia* M.Schmid	*Adansonia* 31: 362	V
2009	Primulaceae	*Rapanea ouameniensis* M.Schmid	*Adansonia* 31: 394	V
2009	Primulaceae	*Rapanea ouazangouensis* M.Schmid	*Adansonia* 31: 364	V
2009	Primulaceae	*Rapanea ovicarpa* M.Schmid	*Adansonia* 31: 391	V
2009	Primulaceae	*Rapanea paniensis* M.Schmid	*Adansonia* 31: 384	V
2009	Primulaceae	*Rapanea parvicarpa* M.Schmid	*Adansonia* 31: 377	V
2009	Primulaceae	*Rapanea poumensis* M.Schmid	*Adansonia* 31: 392	V
2009	Primulaceae	*Rapanea spissifolia* M.Schmid	*Adansonia* 31: 383	V
2009	Primulaceae	*Rapanea taomensis* M.Schmid	*Adansonia* 31: 384	V
2009	Primulaceae	*Rapanea tchingouensis* M.Schmid	*Adansonia* 31: 374	V
2009	Primulaceae	*Rapanea verrucosa* M.Schmid	*Adansonia* 31: 368	V
2009	Primulaceae	*Rapanea yateensis* M.Schmid	*Adansonia* 31: 370	V
2009	Symplocaceae	*Symplocos paniensis* Pillon & Noot.	*Adansonia* 31: 192	V
2009	Myrtaceae	*Kanakomyrtus* N.Snow	*Syst. Bot.* 34: 330	V
2010	Rhizophoraceae	*Rhizophora* × *tomlinsonii* N.C.Duke	*Blumea* 55: 185	H
2010	Araliaceae	*Polyscias mackeei* Lowry & G.M.Plunkett	*Pl. Diversity Evol.* 128: 69	V
2010	Sapotaceae	*Pycnandra belepensis* Swenson & Munzinger	*Austral. Syst. Bot.* 23: 189	V
2010	Sapotaceae	*Pycnandra blaffartii S*wenson & Munzinger	*Austral. Syst. Bot.* 23: 191	V
2010	Sapotaceae	*Pycnandra bourailensis* Swenson & Munzinger	*Austral. Syst. Bot*. 23: 337	V
2010	Sapotaceae	*Pycnandra bracteolata* Swenson & Munzinger	*Austral. Syst. Bot.* 23: 192	V
2010	Sapotaceae	*Pycnandra caeruleilatex* Swenson & Munzinger	*Austral. Syst. Bot.* 23: 339	V
2010	Sapotaceae	*Pycnandra canaliculata* Swenson & Munzinger	*Adansonia* 32: 244	V
2010	Sapotaceae	*Pycnandra confusa* Swenson & Munzinger	*Austral. Syst. Bot*. 23: 341	V
2010	Sapotaceae	*Pycnandra elliptica* Swenson & Munzinger	*Austral. Syst. Bot*. 23: 347	V
2010	Sapotaceae	*Pycnandra glabella* Swenson & Munzinger	*Austral. Syst. Bot*. 23: 202	V
2010	Sapotaceae	*Pycnandra ouaiemensis* Swenson & Munzinger	*Austral. Syst. Bot*. 23: 210	V
2010	Sapotaceae	*Pycnandra pubiflora* Swenson & Munzinger	*Austral. Syst. Bot*. 23: 360	V
2010	Sapotaceae	*Pycnandra sessiliflora* Swenson & Munzinger	*Austral. Syst. Bot.* 23: 364	V
2011	Arecaceae	*Basselinia moorei* Pintaud & F.W.Stauffer	*Candollea* 66: 150	V
2011	Araliaceae	*Meryta rivularis* Lowry	*Candollea* 66: 264	V
2011	Orchidaceae	*Microtatorchis labatii* M. Pignal & Munzinger	*Adansonia* 33: 185	V
2011	Pandanaceae	*Pandanus belepensis* Callm. & Munzinger	*Phytotaxa* 38: 37	V
2011	Pandanaceae	*Pandanus taluucensis* Callm.	*Candollea* 66: 268	V
2011	Iridaceae	*Patersonia neocaledonica* Goldblatt & J.C.Manning	*Adansonia* 33: 203	V
2011	Malpighiaceae	*Stigmaphyllon mackeeanum* C.E.Anderson	*Blumea* 56: 88	V
2011	Malpighiaceae	*Stigmaphyllon mcphersonii* C.E.Anderson	*Blumea* 56: 91	V
2011	Rubiaceae	*Thiollierea dagostinii* Barrabé & Mouly	*Adansonia* 33: 140	V
2011	Rubiaceae	*Thiollierea rigaultii* Barrabé & Mouly	*Adansonia* 33: 137	V
2012	Cyperaceae	*Chorizandra gigantea* J.Raynal ex K.L.Wilson	*Telopea* 14: 129	V
2012	Cunoniaceae	*Cunonia bopopensis* Pillon & H.C.Hopkins	*Kew Bull*. 66: 406	V
2012	Cunoniaceae	*Geissois belema* Pillon & H.C.Hopkins	*Kew Bull.* 66: 409.	V
2012	Primulaceae	*Mangenotiella stellata* M.Schmid	*Adansonia* 34: 340	V
2012	Cunoniaceae	*Pancheria xaragurensis* H.C.Hopkins & Pillon	*Kew Bull.* 66: 416	V
2012	Sapotaceae	*Pichonia grandiflora* Swenson & Munzinger	*Austral. Syst. Bot*. 25: 44	V
2012	Goodeniaceae.	*Scaevola barrierei* A.S.Wulff & Munzinger	*Adansonia* 34: 124.	V
2012	Cyperaceae	*Schoenus rivularis* J.Raynal ex K.L.Wilson	*Telopea* 14: 132	V
2012	Primulaceae	*Tapeinosperma amieuense* M.Schmid	*Adansonia* 34: 322	V
2012	Primulaceae	*Tapeinosperma ateouense* M.Schmid	Adansonia 34: 306	V
2012	Primulaceae	*Tapeinosperma boulindaense* M.Schmid	*Adansonia* 34: 332	V
2012	Primulaceae	*Tapeinosperma brevipedicellatum* M.Schmid	*Adansonia* 34: 314	V
2012	Primulaceae	*Tapeinosperma deroinii* M.Schmid	*Adansonia* 34: 394	V
2012	Primulaceae	*Tapeinosperma golonense* M.Schmid	*Adansonia* 34: 304	V
2012	Primulaceae	*Tapeinosperma kaalaense* M.Schmid	*Adansonia* 34: 334	V
2012	Primulaceae	*Tapeinosperma mackeei* M.Schmid	*Adansonia* 34: 290	V

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Year	Family	Taxon name	Reference	Species status
2012	Primulaceae	*Tapeinosperma paniense* M.Schmid	*Adansonia* 34: 328	V
2012	Primulaceae	*Tapeinosperma poueboense* M.Schmid	*Adansonia* 34: 333	V
2012	Primulaceae	*Tapeinosperma storezii* M.Schmid	*Adansonia* 34: 310	V
2012	Primulaceae	*Tapeinosperma tchingouense* M.Schmid	*Adansonia* 34: 336	V
2012	Primulaceae	*Tapeinosperma veillonii* M.Schmid	*Adansonia* 34: 293	V
2012	Primulaceae	*Mangenotiella* M.Schmid	*Adansonia* 34: 338	V
2013	Podocarpaceae	*Podocarpus letocartii* A.D.Silba & Silba	*J. Int. Conifer Preserv. Soc.* 20: 6	D
2013	Dicksoniaceae	*Dicksonia munzingeri* Noben & Lehnert	*Phytotaxa* 155: 29	V
2013	Dicksoniaceae	*Dicksonia perriei* Noben & Lehnert	*Phytotaxa* 155: 31	V
2013	Pandanaceae	*Pandanus letocartiorum* Callm. & Buerki	*Candollea* 68: 57	V
2013	Araliaceae	*Plerandra veilloniorum* Bernardi ex Lowry, G.M. Plunkett & Frodin	*Brittonia* 65: 57	V
2013	Asteraceae	*Sphaeromorphaea subintegra* A.R.Bean	*Austrobaileya* 9: 48	V
2014	Araucariaceae	*Araucaria lavoixii* Silba	*J. Int. Conifer Preserv. Soc.* 21: 5	D
2014	Podocarpaceae	*Podocarpus lavoixii* Silba	*J. Int. Conifer Preserv. Soc*. 21: 6	D
2014	Cunoniaceae	*Codia xerophila* Pillon, H.C.Hopkins & Gâteblé	*Fl. N. Caléd*. 26: 96	V
2014	Pandanaceae	*Pandanus bernardii* H.St.John ex Callm.	*Adansonia* 36: 47	V
2014	Sapindaceae	*Podonephelium cristagalli* Munzinger, Lowry, Callm. & Buerki	*Syst. Bot.* 38: 1110	V
2014	Sapindaceae	*Podonephelium davidsonii* Munzinger, Lowry, Callm. & Buerki	*Syst. Bot.* 38: 1112	V
2014	Sapindaceae	*Podonephelium pachycaule* Munzinger, Lowry, Callm. & Buerki	*Syst. Bot.* 38: 1118	V
2014	Sapindaceae	*Podonephelium plicatum* Munzinger, Lowry, Callm. & Buerki	*Syst. Bot*. 38: 1119	V
2014	Rubiaceae	*Psychotria fambartiae* Barrabé	*Phytotaxa* 173: 102	V
2014	Rubiaceae	*Psychotria ireneae* Barrabé	*Phytotaxa* 173: 106	V
2014	Rubiaceae	*Psychotria nigotei* Barrabé	*Phytotaxa* 173: 109	V
2014	Rubiaceae	*Psychotria veillonii* Barrabé	*Phytotaxa* 173: 113	V
2015	Araucariaceae	*Araucaria mackeei* Silba	*J. Int. Conifer Preserv. Soc*. 22: 25	D
2015	Araucariaceae	*Araucaria neocookii* Silba	*J. Int. Conifer Preserv. Soc.* 22: 25	D
2015	Malvaceae	*Acropogon moratianus* Callm., Munzinger & Lowry	*Adansonia* 37: 132	V
2015	Rubiaceae	*Cyclophyllum guillauminianum* Baum.-Bod. ex Mouly & Jeanson	*Acta Bot. Gallica Bot. Lett.* 162: 176	V
2015	Rubiaceae	*Cyclophyllum letocartiorum* Mouly	*Acta Bot. Gallica Bot. Lett*. 162: 181	V
2015	Rubiaceae	*Cyclophyllum macphersonii* Mouly	*Acta Bot. Gallica Bot. Lett.* 162: 183	V
2015	Rubiaceae	*Cyclophyllum memaoyaense* Mouly	*Acta Bot. Gallica Bot. Lett*. 162: 287	V
2015	Rubiaceae	*Cyclophyllum pindaiense* Mouly	*Acta Bot. Gallica Bot. Lett*. 162: 180	V
2015	Rubiaceae	*Cyclophyllum tieaense* Mouly	*Acta Bot. Gallica Bot. Lett*. 162: 178	V
2015	Rubiaceae	*Cyclophyllum tiebaghiense* Mouly & Jeanson	*Acta Bot. Gallica Bot. Lett*. 162: 177	V
2015	Sapotaceae	*Planchonella ulfii* Munzinger	*Phytotaxa* 201: 72	V
2015	Sapotaceae	*Pycnandra amplexicaulis* Munzinger & Swenson	*Austral. Syst. Bot.* 28: 95	V
2015	Sapotaceae	*Pycnandra sclerophylla* Munzinger & Swenson	*Austral. Syst. Bot.* 28: 105	V
2015	Malpighiaceae	*Stigmaphyllon patricianum-firmenichianum* Butaud	*PhytoKeys* 55: 120	V
2015	Rhamnaceae	*Jaffrea* H.C.Hopkins & Pillon	*Kew Bull.* 70: 15	V
2016	Orchidaceae	*Corybas* × *halleanus* E.Faria	*Adansonia* 38: 184	H
2016	Cardiopteridaceae	*Citronella hirsuta* Munzinger	*Phytotaxa* 245: 225	V
2016	Orchidaceae	*Corybas echinulus* E.Faria	*Adansonia* 38: 178	V
2016	Orchidaceae	*Corybas pignalii* E.Faria	*Adansonia* 38: 182	V

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Year	Family	Taxon name	Reference	Species status
2016	Lauraceae	*Cryptocarya adpressa* Munzinger & McPherson	*Adansonia* 38: 166	V
2016	Lauraceae	*Cryptocarya barrabeae* Munzinger & McPherson	*Adansonia* 38: 168	V
2016	Lauraceae	*Cryptocarya chrysea* Munzinger & McPherson	*Adansonia* 38: 171	V
2016	Orchidaceae	*Diplodium repandum* M.A.Clem. & D.L.Jones	*Austral. Orchid Rev.* 81: 47	V
2016	Myrtaceae	*Eugenia amosensis* N.Snow	*Candollea* 71: 68	V
2016	Myrtaceae	*Eugenia homedeboana* N.Snow	*Candollea* 71: 70	V
2016	Myrtaceae	*Eugenia plurinervia* N.Snow, Munzinger & Callm.	*Candollea* 71: 212	V
2016	Myrtaceae	*Eugenia sicifolia* J.W.Dawson & N.Snow	*Candollea* 71: 70	V
2016	Myrtaceae	*Eugenia tchambaensis* J.W.Dawson & N.Snow	*Candollea* 71: 74	V
2016	Myrtaceae	*Eugenia tiwakaensis* J.W.Dawson & N.Snow	*Candollea* 71: 76	V
2016	Sapotaceae	*Pycnandra comptonioides* Swenson & Munzinger	*Austral. Syst. Bot*. 29: 6	V
2016	Sapotaceae	*Pycnandra kouakouensis* Swenson & Munzinger	*Austral. Syst. Bot.* 29: 8	V
2016	Sapotaceae	*Pycnandra montana* Swenson & Munzinger	*Austral. Syst. Bot.* 29: 10	V
2016	Sapotaceae	*Pycnandra poindimiensis* Swenson & Munzinger	*Austral. Syst. Bot*. 29: 12	V
2016	Sapotaceae	*Pycnandra versicolor* Swenson & Munzinger	*Austral. Syst. Bot*. 29: 14	V
2016	Sapindaceae	*Storthocalyx corymbosus* Munzinger, Lowry, Buerki & Callm.	*Syst. Bot.* 41: 393	V
2016	Myrtaceae	*Syzygium dawsonianum* N.Snow, S.L.Young & Callm.	*Syst. Bot*. 41: 197	V
2016	Rubiaceae	*Thiollierea laureana* Mouly	*Candollea* 71: 100	V
2017	Malvaceae	*Acropogon mesophilus* Munzinger & Gâteblé	*Phytotaxa* 307: 185	V
2017	Araucariaceae	*Araucaria goroensis* R.R.Mill & Ruhsam	*Edinburgh J. Bot.* 74: 125	V
2017	Capparaceae	*Capparis parvifolia* Fici	*Phytotaxa* 314: 285	V
2017	Hymenophyllaceae	*Hymenophyllum soriemersum* Rouhan & C.Del Rio	*Taxon* 66 : 1056	V
2017	Apocynaceae	*Marsdenia kaalaensis* Meve, Gâteblé & Liede	*Adansonia* 39: 56	V
2017	Apocynaceae	*Marsdenia mackeeorum* Meve, Gâteblé & Liede	*Adansonia* 39: 60	V
2017	Apocynaceae	*Marsdenia neocaledonica* Meve, Gâteblé & Liede	*Adansonia* 39: 62	V
2017	Apocynaceae	*Marsdenia paulforsteri* Meve, Gâteblé & Liede	*Adansonia* 39: 64	V
2017	Apocynaceae	*Marsdenia weberlingiana* Liede	*Adansonia* 39: 68	V
2017	Orchidaceae	*Nervilia multinervis* Cavestro	*Internet Orchid Sp. Photo Encycl. Nomencl. Notes* 5: 1	V
2017	Phellinaceae	*Phelline barrierei* Barriera & Schlüssel	*Candollea* 72: 362	V
ined.	Orchidaceae	*Dendrobium butinii* M.Pignal & Munzinger	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Orchidaceae	*Dendrobium letocartiorum* M.Pignal & Munzinger	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia adenosticta* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia boulindensis* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia calcarea* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia dagostinii* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia excorticata* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia jaffrei* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia lepredourii* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia letocartii* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia mandjelia* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia mcphersonii* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia megacalyx* J.W.Dawso	*FLORICAL* (Munzinger *et al*. 2016)	ined.

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Appendix 2. (*continued*)

Year	Family	Taxon name	Reference	Species status
ined.	Myrtaceae	*Eugenia metzdorfii* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia munzingeri* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia nekoroensis* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia ouaiemensis* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia pinensis* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia poindimiensis* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia poroensis* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia pouemboutii* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia povilaensis* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Eugenia taomensis* J.W.Dawson	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Rubiaceae	*Gea boulindaensis* Achille	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Rubiaceae	*Gea connatistipula* Achille	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Rubiaceae	*Gea crassifolia* Achille	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Gossia angustifolia* N.Snow	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Gossia bourailensis* N.Snow	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Gossia conduplicata* N.Snow	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Gossia grandiflora* N.Snow	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Gossia kaalaensis* N.Snow	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Gossia katepahiensis* N.Snow	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Gossia mandjeliaensis* N.Snow	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Gossia ngaensis* N.Snow	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Gossia ouazangouensis* N.Snow	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myrtaceae	*Gossia ramiflora* N.Snow	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Meryta colnettensis* F.Tronchet & Lowry	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Meryta dagostinii* F.Tronchet & Lowry	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Meryta expensa* F.Tronchet & Lowry	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Meryta heleneae* Lowry	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Meryta koniamboensis* Lowry & F.Tronchet	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Meryta ouaiemensis* F.Tronchet & Lowry	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Meryta pedunculata* Lowry & F.Tronchet	*FLORICAL* (Munzinger *et al*. 2016)	ined.

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Appendix 2. (*continued*)

Year	Family	Taxon name	Reference	Species status
ined.	Myodocarpaceae	*Myodocarpus nervatus* Lowry	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Myodocarpaceae	*Myodocarpus touretteorum* Lowry	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Plerandra calcicola* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Plerandra gordonii* Lowry, G.M.Plunkett & Frodin	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Plerandra letocartiorum* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Plerandra longistyla* Lowry, G.M.Plunkett & Frodin	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Plerandra mackeei* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Plerandra memaoyaensis* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Plerandra moratiana* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Plerandra neocaledonica* Lowry, G.M.Plunkett & Frodin	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Plerandra pouemboutensis* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Plerandra taomensis* Lowry, G.M.Plunkett & Frodin	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Plerandra tronchetii* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Polyscias calophylla* Guillaumin ex Lowry & G.M. Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Polyscias dzumacensis* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Polyscias gracilipes* Lowry & Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Polyscias jaffrei* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Polyscias munzingeri* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Polyscias nitida* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Polyscias nothisii* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Polyscias ouaiemensis* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Polyscias puberula* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Polyscias regalis* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Polyscias suprinorum* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Polyscias taomensis* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Araliaceae	*Polyscias veillonii* Lowry & G.M.Plunkett	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Cyperaceae	*Scleria rheophila* J.Raynal	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Rutaceae	*Zanthoxylum unifoliatum* T.G.Hartley	*FLORICAL* (Munzinger *et al*. 2016)	ined.
ined.	Rubiaceae	*Gea* Achille	*FLORICAL* (Munzinger *et al*. 2016)	ined.