An updated checklist of Annonaceae species of the western Indian Ocean with the description of a new species of Fenerivia from Madagascar

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In memory of George E. Schatz (1953–2024)

Abstract

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In the western Indian Ocean islands, which include Madagascar, the Mascarene, Mayotte and Comoros, taxonomic research of the major pantropical family *Annonaceae* is outdated. Based on a taxonomically verified database of 2,794 georeferenced botanical collections (2,752 from Madagascar), 110 native *Annonaceae* taxa (106 species) belonging to 9 genera are recorded for this region. A total of 106 native taxa (102 species) are recorded from Madagascar (105 taxa endemic), including a newly described species of *Fenerivia* Diels. Five species are recorded from Comoros, Mayotte and the Mascarene islands. *Huberantha humblotii* (Cavaco & Keraudren) Chaowasku is the only non-endemic Malagasy species sharing its distribution with Comoros. We make five new combinations, transferring four species from *Popowia* Endl. into *Sphaerocoryne* (Boerl.) Scheff. ex Ridl. and one *Uvaria* L. species into *Huberantha* Chaowasku. Finally, 43 names are lectotypified. The genus *Popowia* is now no longer present in Madagascar, being restricted to Southeast Asia. The genus *Xylopia* L. is the most diverse in Madagascar with 30 species, followed by *Uvaria* (21 spp.) and *Monanthotaxis* Baill. (13 spp.). Endemic Malagasy genera include *Fenerivia* with 11 species and *Ambavia* Le Thomas (2 spp.). The history of botanical collections reflects Madagascar's political and socioeconomic changes. Initial collections were sparse during the royal period but increased significantly during the colonial and post-independence eras. Future research should focus on *Ambavia, Fenerivia*, *Monanthotaxis*, *Sphaerocoryne* and *Uvaria*, which will prove important for better understanding Madagascar's *Annonaceae* diversity.

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Résumé

RAVOMANANA, E.O., V.T. RAMAROSANDRATANA, A. ELLIOTT, R. VEROHANITRA, M. RAKOTOARINIVO & T.L.P. COUVREUR (2025). Une check-list mise à jour des espèces d'Annonaceae de l'océan Indien occidental avec la description d'une nouvelle espèce de *Fenerivia* de Madagascar. *Candollea* 80: 69–94. En anglais, résumés anglais et français. DOI: http://dx.doi.org/10.15553/c2025v801a8

Dans les îles de l'océan Indien occidental, qui incluent Madagascar, les Mascareignes, Mayotte et les Comores, les recherches taxonomiques sur la famille pantropicale des *Annonaceae* sont obsolètes. Sur la base d'une base de données taxonomiquement vérifiée de 2794 collections botaniques géoréférencées (dont 2752 proviennent de Madagascar), nous enregistrons 110 taxons natifs représentant 106 espèces et 9 genres d'*Annonaceae* pour cette région. Un total de 106 taxons natifs, dont 102 espèces, sont enregistrés pour Madagascar (105 taxons endémiques), y compris une espèce nouvellement décrite dans le genre *Fenerivia* Diels. Cinq espèces sont enregistrées aux Comores, à Mayotte et dans les îles Mascareignes. *Huberantha humblotii* (Cavaco & Keraudren) Chaowasku est la seule espèce malgache non endémique partageant sa répartition avec les îles Comores. Nous présentons cinq nouvelles combinaisons, transférant quatre espèces de *Popowia* Endl. dans *Sphaerocoryne* (Boerl.) Scheff. ex Ridl. et une espèce d'*Uvaria* L. dans *Huberantha* Chaowasku. Enfin, nous avons réalisé 43 lectotypifications à travers la famille. Le genre *Popowia* n'est plus présent à Madagascar et se limite désormais à l'Asie du Sud-Est. Le genre *Xylopia* L. est le plus diversifié à Madagascar avec 30 espèces, suivi de *Uvaria* (21 spp.) et *Monanthotaxis* Baill. (13 spp.). Les genres malgaches endémiques comprennent *Fenerivia* avec 11 espèces et *Ambavia* Le Thomas (2 spp.). L'histoire des collections botaniques reflète les changements politiques et socio-économiques de Madagascar. Les premières collections étaient rares durant la période royale, mais ont considérablement augmenté pendant les périodes coloniale et post-indépendance. Les recherches futures devront se concentrer sur les genres *Ambavia*, *Fenerivia*, *Monanthotaxis*, *Sphaerocoryne* et *Uvaria*, ce qui sera important pour mieux décrire la diversité des *Annonaceae* de Madagascar.

Keywords

ANNONACEAE – *Fenerivia* – *Popowia* – Madagascar – Mascarene – Checklist – New combination – New species – Taxonomy – Typification

Introduction

Madagascar is home to incredible biodiversity, with over 11,000 plant species of which over 80 % are endemic (Lowry et al., 2018). However, research into the taxonomy of its flora remains incomplete, despite important advances. *Annonaceae* (Magnoliales) is a major pantropical plant family, especially dominant in tropical rain forests of the world. Despite large scale progress on the family in terms of taxonomy in regions such as the Neotropics (i.e. Maas et al., 2015; Erkens et al., 2017), Africa (i.e. Johnson & Murray, 2018; Couvreur et al., 2022) or Southeast Asia (i.e. Su & Saunders, 2006; Johnson & Murray, 2022), the study of *Annonaceae* in Madagascar and the surrounding islands has lagged behind. Indeed, most of our knowledge about the taxonomy and descriptions of *Annonaceae* in Madagascar and Comoros rely on a now outdated flora published more than 60 years (Cavaco & Keraudren, 1958). Since then, several new species to science have been described (Le Thomas, 1972a; Schatz & Thomas, 1990; Deroin & Gautier, 2006, 2008; Callmander et al. 2009; Gautier & Deroin, 2013; Hoekstra et al., 2020; Johnson & Murray, 2020), and taxonomic rearrangements across the family have been made.

When compared to the *Flore de Madagascar et des Comores* treatment (Cavaco & Keraudren, 1958), the major recent changes concern the recircumscription of two genera: *Polyalthia* Blume and *Popowia* Endl., based on morphology, palynology and/or molecular data. The Malagasy species of *Polyalthia* were shown not to belong to this now Southeast Asian restricted genus, and species were recombined into two different genera: the paleotropical *Huberantha* Chaowasku (first as *Hubera* Chaowasku, then as *Huberantha*; Chaowasku et al., 2012, 2015) and the endemic Malagasy genus *Fenerivia* Diels (Saunders et al., 2011). The Malagasy species of *Popowia* have now been recombined into three genera: *Monanthotaxis* Baill., *Sphaerocoryne* (Boerl.) Scheff. ex Ridl. and the endemic Malagasy genus *Ambavia* Le Thomas. This process started with the morphological and palynological study of Le Thomas (1972b), who transferred two species of *Popowia* to a new genus named *Ambavia*. This has since been confirmed using molecular data, showing that *Ambavia* belongs to an old and pantropical clade, as also suggested by the carpel vasculature (Deroin & Le Thomas, 1989) within *Annonaceae* in subfamily *Ambavioideae* (Chatrou et al., 2012; Couvreur et al., 2019; Nge et al., 2024). Most of the Malagasy (and African) species of *Popowia* have been transferred to the liana genus *Monanthotaxis* (Verdcourt, 1971). However, when Verdcourt transferred African *Popowia* names to *Monanthotaxis*, he did not treat four Malagasy *Popowia* names stating lack of material (Verdcourt, 1971). Thus, to date, the name *Popowia* still persists in the Madagascar flora. These remaining species actually belong to the genus *Sphaerocoryne* (Bygrave, 2000), a paleotropical genus of lianas with discolourous leaves, morphologically close to *Monanthotaxis* but phylogenetically distinct (*Sphaerocoryne* belongs to subtribe *Cleistochlamydinae* while *Monanthotaxis* belongs to subtribe *Desminae*; Nge et al., 2024). Finally, the genus *Hexalobus* A. DC. was initially represented by a single species (*H. callicarpus* (Baill.) Baill.) in Madagascar (Cavaco & Keraudren, 1958), but this species has since been synonymised with *Uvaria callicarpa* Baill., and returned to that genus (Botermans et al., 2011).

Taxonomic revisions of Malagasy genera are scarce. The most important contribution to *Annonaceae* taxonomy in Madagascar to date was the revision of *Xylopia* L. (Johnson & Murray, 2020), the most diverse genus of *Annonaceae* in Madagascar with 30 species. The genus *Isolona* Engl. was also revised (Couvreur, 2009) but because of a lack of adequate material, no changes were adopted when compared to Cavaco & Keraudren (1958). Finally, the genus *Polyalthia* (Schatz & Le Thomas, 1990) as circumscribed at the time was also partially revised (see above).

A major online tool concerns the Catalogue of the plants of Madagascar [http://legacy.tropicos.org/Project/Madagascar] which inventories the number of species for all plant families on the island. The *Annonaceae* checklist is mostly up to date, but several issues persist and no curated database of revised specimens is available. Thus, a complete updated and taxonomically verified checklist of *Annonaceae* species with associated specimens is here presented for this important biodiversity hotspot. An updated key to the genera of *Annonaceae* in Madagascar and new lectotypifications are also provided.

Historical frame of collecting Annonaceae in Madagascar

The history of the botanical collections of Malagasy *Annonaceae* has been subject to the political and socioeconomic history of the Island (Fig. 1A). The collecting activity began during the royal period (1710–1896), but the number of specimens gathered during this time was scarce compared to the subsequent colonial (1896–1960) and independence (1960–present) periods. The peak was reached in the early colonial era, spearheaded by prominent French botanists like Henri Perrier de la Bâthie and René Capuron. However, this trend was interrupted due to the nation's political and socioeconomic crisis in the 1980s, which resulted in Madagascar's significant isolation from the international community. Botanical activity resumed a few years later, after 1992, when the country reopened its doors. Another peak is seen around 2003 corresponding to the Malagasy government's adoption of the Vision Durban commitment, which tripled the extent of terrestrial protected areas (Rakotoson & Razafimahatratra, 2018) and associated research. Data from floristic inventories and botanical collections provide a basis for developing management plans and conservation strategies. The number of botanical collections experienced a decline in 2009 due to the politico-military crisis, followed by a resurgence. Finally, the global health crisis triggered by the Covid-19 pandemic led to another downward trend.

Materials and methods

Specimen database

To generate an authoritative checklist of *Annonaceae* species we compiled all available vouchered data for Madagascar from four important herbaria: MO, P, TAN and WAG (incl. L and U). The first author consulted the collections at TAN and compared them with the duplicates kept at MO and WAG (incl. L and U). Specimen data from P came from a recent citizen science project of "Les Herbonautes", which aimed to database and georeference all *Annonaceae* specimens held at P (see Streiff et al., 2024). In order to compile a unique and taxonomically verified database, the most recent identification by the specialist was retained if determinations of duplicates mismatched. Finally, we georeferenced the records for which geographic coordinates were not provided on the specimen labels using GeoNames [https://www.geonames.org], GPS Converter [https://www.lecampingsauvage.fr/gps-convertisseur] and Google Maps [https://www.google.com/maps].

Typification

Several names in the *Annonaceae* that were published without a holotype remain untypified. Only very occasionally it has been possible to determine that the author of a name used one particular specimen of a gathering, which is here regarded as the holotype. In most cases, when a single gathering was indicated, it consists of several specimens, the holotype of which was not formally identified. These must all be treated as syntypes (Turland et al., 2018: ICN Art. 9.6, 40 Note 1). In the process of lectotypification, we generally selected the best-preserved specimen among the existing syntypes.

For names described by Friedrich Ludwig Emil Diels, where duplicates with his handwriting are also found at P, lectotypes were designated as far as possible on the material housed at B where he worked.

Taxonomy

All names in our database were updated according to determinations made by both specialists (Couvreur, 2009; Johnson & Murray, 2020) or the authors of this work. For accepted names and resolving issues concerning the nomenclature, we consulted the Catalogue of the Plants of Madagascar [http://legacy.tropicos.org/Project/Madagascar], the World Flora Online website [http://www.worldfloraonline.org], the International Plant Names Index [https://www.ipni.org], the Catalogue of Life [https://www.catalogueoflife.org/data/taxon/5CLZX] and Plants of the World Online [https://powo.science.kew.org].

Nomenclatural changes were then made to World Flora Online website for *Annonaceae* which is curated by the Taxonomic Expert Network (TEN) *Annonaceae* [https://about.worldfloraonline.org/tens/annonaceae], using the Rhakhis taxonomic editor (Hyam et al., 2022). Each species name is assigned a link towards that database. In addition, five previously published infraspecific names not registered in IPNI were added to that database via the system available for this purpose [https://www.ipni.org/registration].

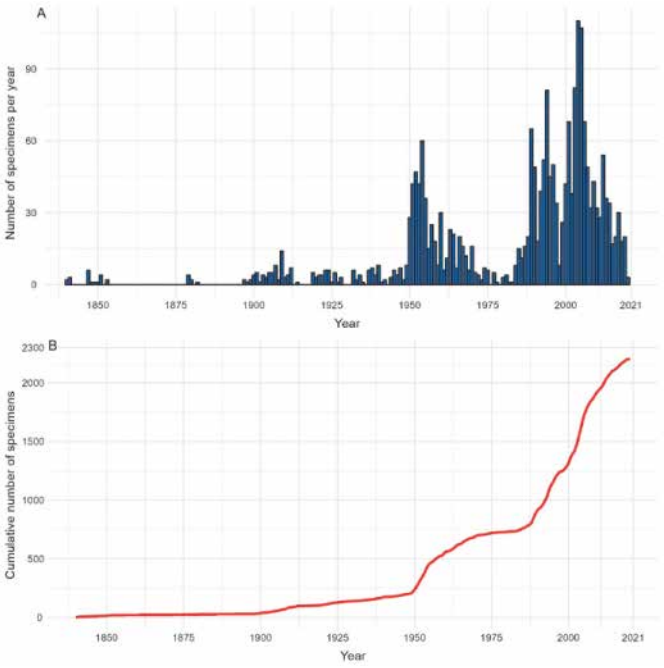

Fig. 1. – History of native *Annonaceae* species sampling through time in Madagascar. **A.** Histogram of total number of specimens collected per year (native species only). **B.** Cumulative plot of total number of specimens collected since 1840 (specimens collected before 1840 were not georeferenced and not included in this graph, see text).

In the checklist, each accepted species is accompanied by (1) the World Flora Online registration number in square brackets; (2) indication of the type material; (3) description of the habit, extracted from label information and Cavaco & Keraudren (1958); and (4) distribution. Species of *Artabotrys*, *Monanthotaxis*, *Sphaerocoryne* and *Uvaria* are usually lianas, but in some cases the individual ressembles a scambling shrub, or shrub, and this precision has been indicated accordingly.

Conservation status

Preliminary conservation assessment was evaluated under criterion B following the IUCN Red List Categories and Criteria (IUCN, 2012). We used GeoCAT (Bachman & Moat, 2012) to calculate the extent of occurrence (EOO) and the area of occupancy (AOO), the latter based on a minimum cell size of 2 × 2 km. We also used the protected areas of Madagascar downloaded as a shape file taken from Protected Planet [http://www.protectedplanet.net] to count for specimens collected in and out of these areas.

Results

Our database comprised 2,914 georeferenced collections (2,821 from Madagascar), of which 120 (69 from Madagascar) were from cultivated and non-native species, which were removed. Specimens of the native species computed 2,794 (2,752 from Madagascar), of these 2,295 (2,256 for Madagascar) identified to species level. After taxonomic cleaning and verification, we report 110 accepted taxa for the region and 106 for Madagascar (representing nine genera), including *Fenerivia madinidravina* Couvreur & Ravomanana (described below) and the new combination *Sphaerocoryne microsperma* (Ghesq. ex Cavaco & Keraudren) Couvreur. Comoros has two species; Mauritius has three species; and the French departments of Mayotte and Réunion have one species each (see checklist for details). In Madagascar, all species are endemic except for *Huberantha humblotii* (Drake ex Cavaco & Keraudren) Chaowasku, which is also present in Comoros. In Madagascar, the tree genus *Xylopia* stands out as the most diverse with 30 species, followed by the two lianescent genera *Uvaria* (21 spp.) and *Monanthotaxis* (13 spp.). Two genera of trees are endemic to Madagascar: *Ambavia* (2 spp.) and *Fenerivia* (11 spp.).

Compared to Cavaco & Keraudren's treatment (1958), who accepted 80 species belonging to seven genera, 21 new species have been added. Cavaco & Keraudren (1958) overlooked two species that were known at that time: *Uvaria caroli-afzelii* R.E. Fr. and *Polyalthia lucens* Baker, probably because these species were only known from the type and were not available at P where these authors worked. *Uvaria caroli-afzelii* is now represented by three specimens from the Toliara region, whereas *Polyalthia lucens* was synonymized with *P. chapelieri* Baill. (Schatz & Le Thomas, 1990), now *Fenerivia chapelieri* (Baill.) R.M.K. Saunders.

Regarding to the nomenclature, 43 names are lectotypified in this work. In the genus *Xylopia*, several lectotypifications were already made by Johnson & Murray (2020).

The collection dates of specimens of native *Annonaceae* species in our database for Madagascar range from the year 1840 to 2024 (Fig. 1A). However, several collections were made before, but the collection dates remain imprecise. The first collections can be attributed to Philibert Commerson, who was based in Mauritius from 1768 until his death in 1773. Similarly, Louis-Marie Aubert Aubert Du Petit-Thouars collected in Madagascar in 1794–95 and later published the genus *Marenteria* Thouars in 1806 (now synonym of *Uvaria*). The earliest collections with precise date were made by Auguste Pervillé in 1841, and then by Louis H. Boivin between 1847 and 1851. Sampling through time was quite heterogeneous (Fig. 1A). Collecting activity increased substantially in the 1950s and 1980s (Fig. 1B).

Taxonomy

Fenerivia madinidravina Couvreur & Ravomanana, **sp. nov.** [wfo-1000070711] (Fig. 2).

Holotypus: Madagascar. Reg. Atsinanana [Prov. Toamasina]: Distr. Toamasina II, Comm. Sahambala, Fkt. Sahavongo, village le plus proche de Sahavongo, 18°01'25"S 49°07'12"E, 683 m, 11.XII.2016, fl. & fr, *Ralaijaona, Rakotonirina, Syde, Rasoanindriana & Antilahimena 27* (TAN!; iso-: L [L.3988476]!, MO-3026094!, P, TEF!).

Fenerivia madinidravina resembles F. chapelieri (Baill.) R.M.K. Saunders in the shape of its leaves and the overall flower dimensions, but differs in having smaller leaves (1.5–2.5 cm long vs 4–6 cm long in F. chapelieri) with small verrucae on the lower side in dried material (vs. absent), young branches densely pubescent (vs. glabrous) and the monocarps that are distinctly rostrate (vs. rounded).

Trees to 6 m tall, to 7 cm DBH. Young *branches* densely pubescent with short pale brown hairs; older branches becoming glabrous, grey or black. *Petioles* 1–2 mm long, densely to sparsely pubescent. *Leaf blades* 1.5–2.5(–3) cm long, length/width ratio 1.2–2(–2.5), broadly elliptic to broadly obovate, sometimes nearly circular, base acute, apex rounded or emarginate, more rarely acute, abaxial surface sparsely pubescent to glabrous, with verrucae present, adaxially glabrous; midrib impressed above, glabrous, raised below, pubescent to sparsely pubescent; secondary veins 4–7 pairs, indistinct above, distinct below; tertiary veins loosely reticulate, slightly raised and distinct. *Flowering pedicel* 1.1–1.5 cm long in total, slender, black and glabrous, articulated at c. 3 mm from base, articulation pubescent, light brown; bracts two, one at base of articulation, one mid-way on main pedicel, c. 2 mm long, c. 1 mm wide, elliptic, glabrous, margins ciliate; presence of a small disk, flange at the base of the flowers. *Flowers* bisexual, actinomorphic. *Sepals* 3, generally free, but sometimes two of them fused to up to ¾ of their length, valvate, c. 5 mm long, c. 3 mm wide, elliptic, apex rounded, glabrous on both sides, margins ciliate. *Petals* in 2 whorls of 3, valvate, both whorls equal in size and shape, 6 to 10 mm long, c. 2 mm wide, linear, apex rounded, glabrous on both sides, margins sparsely ciliate, color not recorded. *Stamens* c. 100, 0.8 to 1 mm long; connective flat, glabrous. *Carpels* 10 to 11, 0.5 mm long, glabrous; stigma pubescent with golden small hairs. *Fruits* apocarpous, 6 to 7 monocarps, 1.5 cm long, 1 cm in diam., glabrous, green *in vivo*, stipe c. 6–8 mm long, apex distinctly rostrate, 5–7 mm long. *Seed* 1, c. 14 mm long, c. 9 mm wide, seed structure not seen.

Etymology. – The vernacular name in the Tanala and Merina dialectes is reported to be "madinidravina", which means very small ("madini") leaves ("dravina"). Indeed, this species has one

of the smallest leaves for an *Annonaceae* species in Madagascar and even for *Annonaceae* in general.

Distribution. – *Fenerivia madinidravina* is restricted to the humid forests of eastern Madagascar, found at elevations ranging from 300 to 700 meters above sea level (Fig. 3). This species is often found on lower slopes characterized by open canopies. The canopy is dominated by large trees, and the soils are typically ferralitic, common in humid tropical regions.

Vernacular names and uses. – "Ombavy" (Betsimisaraka) (*Ralaijona 27*); "hazoambo" (Betsimisaraka); "Madini-dravina" (Merina) (*Rakotondrafara 132*).

Rakotondrafara 132 reports that the wood is used for heating.

Conservation status. – *Fenerivia madinidravina* has a geographic range in the form of an AOO of 24 km^2 and an EOO of 1805 km^2, both within the threshold of the "Endangered" category. The species is also known from just five localities to date, two of these situated in the protected area network (RNI of Betampona and Zahamena). The species was last collected in 2016, with a possible more recent collection in 2024 from the Betampona RNI where the species seems to be still present (*Ravomanana 30*; sterile specimen with determination to be confirmed). The main threats in these protected areas include logging, especially illegal logging, the collection of non-timber forest products, and the proliferation of invasive species (Goodman et al., 2018). However, these pressures are less significant because, unlike other regions of Madagascar, Betampona RNI does not experience massive deforestation or the practice of "tavy" (slash-and-burn agriculture). We nevertheless infer a decrease in AOO, EOO and number of localities within the next ten years. *Fenerivia madinidravina* is therefore preliminary assessed as "Endangered" [EN B1ab(i,ii,ii,iv)+B2ab(i,ii,ii,iv)].

Notes. – The taxonomy of *Fenerivia* has yet to be properly studied. The latest overview of this genus was undertaken by Le Thomas & Schatz (1990) at the time when *Fenerivia* was still considered under *Polyalthia* (including *Huberantha*). They identified five informal groups (A to D) based on leaf and petal characters, with group A and D corresponding to species now placed in *Huberantha*. Within *Fenerivia*, Group B contained "small flowered" species with petals less than 10 mm long, generally twice as long as the sepals, while group C was suggested to have long and linear petals and Group D characterized by large leaves and large elliptic petals. Based on this, *F. madinidravina* would belong to Group B. The molecular phylogenetic study by Saudners et al. (2011), based on plastid data, led to unresolved relationships within the genus, except for a clade that grouped four species: *F. heteropetala*, *F. chapelieri*, *F. madagascariensis* and *F. angustielliptica*. The latter three species indeed belong to the Group B, while *F. heteropetala* was placed in Group C. A higher resolved phylogenetic tree of *Fenerivia* is needed to confirm this informal classification.

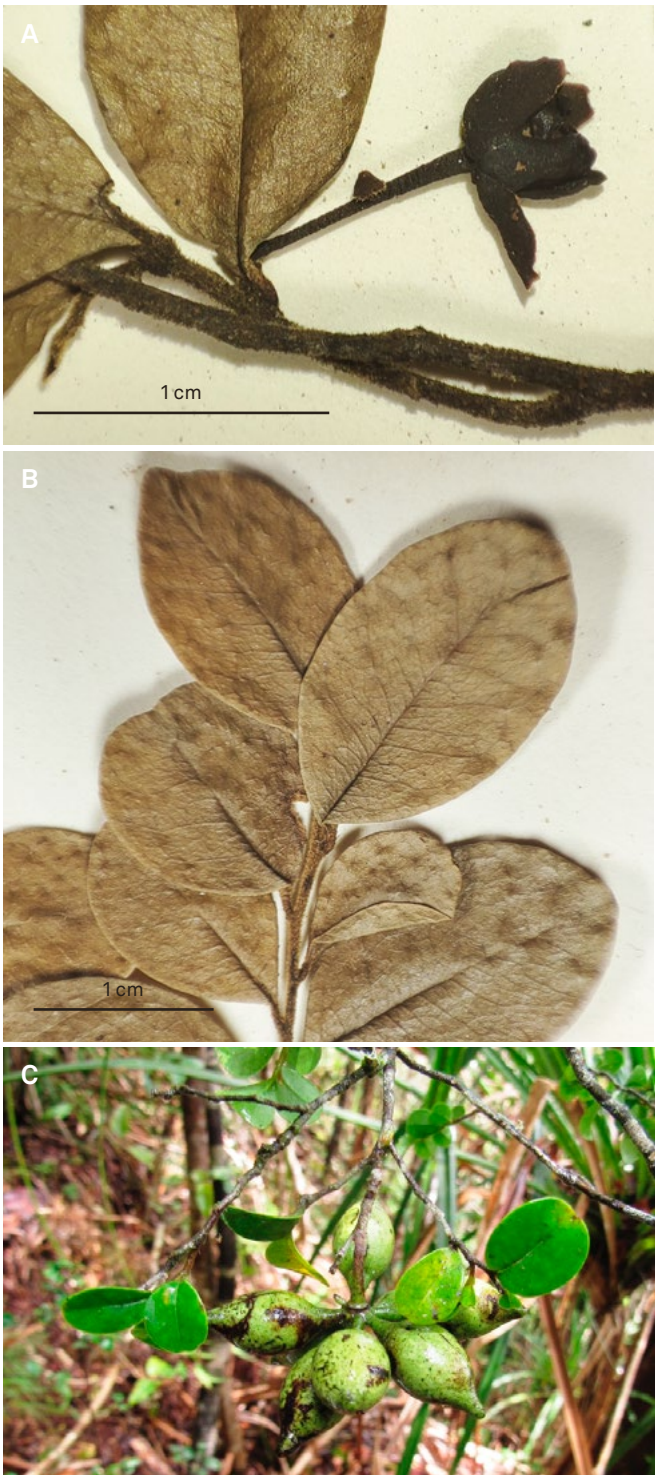

Fig. 2. – *Fenerivia madinidravina* Couvreur & Ravomanana. **A.** Detail of a flower. **B.** Detail of leaves and young branches. **C.** Fruits. [*Ralaijaona et al. 27*, TAN] [photo: P. Antilahimena].

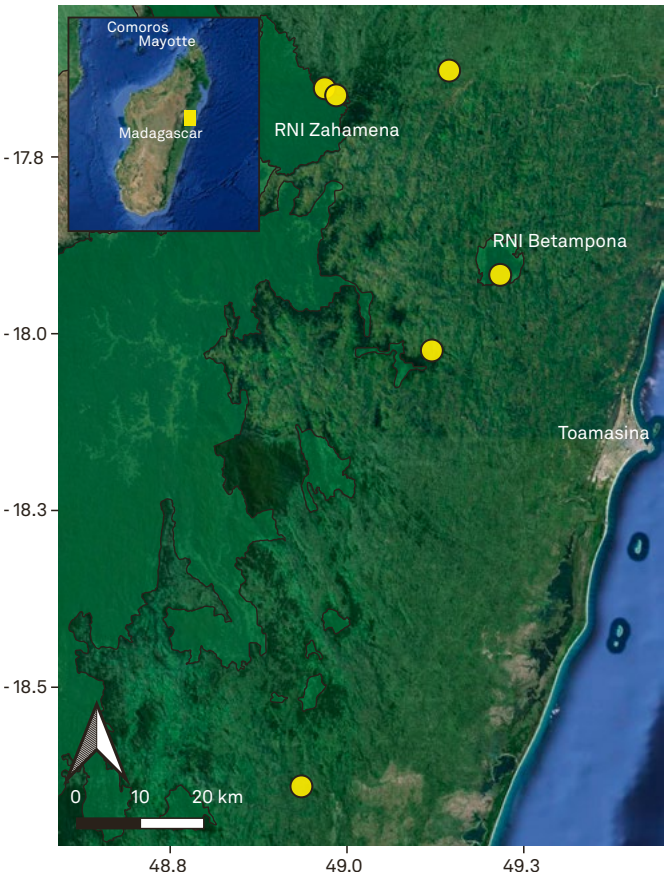

Fig. 3. – Distribution map of *Fenerivia madinidravina* Couvreur & Ravomanana (yellow dots). Yellow rectangle in upper left map indicates zoomed area. Satellite image from Google Satellite, with protected areas in green. [https://www.protectedplanet.net]

Fenerivia madinidravina may be confused with *F. madagascariensis* (Cavaco & Keraudren) R.M.K. Saunders based on the shape and small size of its leaves (2.5–4.5 cm long). However, *Fenerivia madagascariensis* is easily distinguished by its completely glabrous young branches (vs. densely pubescent in *F. madinidravina*), petioles 8–9 mm long (vs. 1–2 mm), and fruits with rounded apex (vs. clearly rostrate).

It is also remarkable that this species has one of the smallest leaves ever described for an *Annonaceae* species, as its vernacular name stresses. Nevertheless, in Madagascar, the liana species *Monanthotaxis heteropetala* Baill. (Cavaco & Keraudren, 1958) and the tree *Xylopia retusa* D.M. Johnson & N.A. Murray (Johnson & Murray, 2020) are also reported to have leaves equal or less than 3 cm long, which occurs respectively on the northwestern and central-eastern parts of the island. Outside of Madagascar, this condition is very rare with a single other species based on our knowledge with leaves less than 3 cm long: *Annona nipensis* Alain which is endemic to Cuba (leaves 7–17 mm long; Alain, 1960).

Fenerivia madinidravina was first collected in fruit by Cours in the 1950's, and remained unidentified since then confirming that an important number of species remain undescribed in herbaria (Bebber et al., 2010).

Additional specimens examined. – **Madagascar. Reg. Atsinanana [Prov. Toamasina]:** RNI Betampona, piste Sahabefoza, 17°55'S 49°13'E, 300–400 m, 1.XII.1994, fl. & fr., *Andrianarisata et al. 260* (MO, P, TAN, WAG); itinéraire de Didy à Brickaville (forêt orientale), s.d., fr., *Cours s.n.* (P); Betampona RNI, 40 km NW of Toamasina, 17°31'S 49°07'E, 275–650 m, 30.IX.1993, fr., *Lewis & Razafimandimbison 703* (MO, P, TAN); Préf. Fénérive Est, Com. Ambodimangavalo, Fkt. Manakambahiny I, à 1 km de la riv. d'Ihofika Andranofantsona, à 10 km au S de Manakambahiny I, 600 m, 24.X.2002, fl., *Rakotondrafara et al. 132* (MO, P). **Reg. Alaotra-Mangoro [Prov. Toamasina]:** Fiv. Ambatondrazaka, RNI Zahamena, 15–20 km au SE d'Ambarifotsy, riv. d'Ihofika, 17°39'46"S 48°59'05"E, 560–630 m, 31.V.2003, fr., *Andrianjafy et al. 379* (MO, P, WAG).

Key to the native genera of Annonaceae in Madagascar

1. Inflorescences on hook-shaped peduncles on branches, even when young; lianas or scrambling shrubs ..... 2. ***Artabotrys***
1a. Infloresences not on hook-shaped peduncles, either absent or straight; trees, scrambling shurbs or lianas 2
2. Leaves discolourous, light green below; generally lianas, but sometimes scrambling shrubs 3
2a. Leaves concolourous; lianas, shrubs or trees 4
3. Secondary veins forming clear loops near margins (brochidodromous) ..... 7. ***Sphaerocoryne***
3a. Secondary veins tapering towards margins without forming loops (eucamptodromous) ..... 6. ***Monanthotaxis***
4. Hairs stellate or fasciculate, always present, even in seemingly glabrous specimens; generally lianas, but sometimes scandent shrubs ..... 8. ***Uvaria***
4a. Hairs simple or glabrous; trees 5
5. Midrib raised on upper side; petals fused into a single whorl; fruits syncarpous ..... 5. ***Isolona***
5a. Midrib impressed or flat on upper side; petals free in two whorls; fruits apocarpous 6
6. Axis of midrib and secondary veins (abaxial surface) with hairy domatia ..... 4. ***Huberantha*** p.p.[1]
6a. Axis of midrib and secondary veins (abaxial surface) without hairy domatia 7
7. Petals concave at base; monocarps dehiscent; seeds 3–9 ..... 9. ***Xylopia***

1 Some species are known only from flowering collections and others only from fruiting collections. In Madagascar, three species of *Huberantha* do not have hairy domatia: *H. decora*, *H. keraudreniae* and *H. pendula*. Sterile, they are hard to distinguish from *Fenerivia*. In flower and fruit, *Fenerivia* species have a distinct flange, i.e., a small disk-like structure, at the apex of the pedicels, just before the sepals.

7a. Petals flat at base, monocarps indehiscent; seeds 1–2 ... 8

8. Petals rounded, covering or arching over receptacle; connective of stamens elongated; monocarps 1–2, sessile .... 1. ***Ambavia***

8a. Petals generally elliptic to linear, spreading horizontally; connective of stamens truncate; monocarps usually > 3, shortly but clearly stipitate 9

9. Pedicel apices with a small disk-like structure (flange), even in fruit ..... 3. ***Fenerivia***

9a. Pedicel apices without a disk-like structure .... 4. ***Huberantha*** p.p.

Checklist to the species of Annonaceae from the western Indian Ocean region

1. ***Ambavia*** Le Thomas in Compt. Rend. Hebd. Séances Acad. Sci., Sér. D 274: 1655. 1972 [wfo-4000001494].

Notes. – *Ambavia*, with two species endemic to Madagascar, is the only genus of the subfamily *Ambavioideae* representing a clade of different genera with disjunct distributions across the tropics (Surveswaran et al., 2010).

Ambavia capuronii (Cavaco & Keraudren) Le Thomas in Compt. Rend. Hebd. Séances Acad. Sci., Sér. D 274: 1655. 1972 [wfo-0000530677]. ≡ *Popowia capuronii* Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 81. 1957 [wfo-0001065834] (Fig. 4).

Lectotypus (designated here): **Madagascar. Reg. Analanjirofo [Prov. Toamasina]:** forêt orientale, env. de la baie d'Antongil, piste de Maroantsetra à Antalaha, entre Ankovana et le col d'Ambatondradama, c. 500 m, 13.XII.1953, fl., *Service Forestier 8751* (P [P030238]!; isolecto-: P [P030241, P030240]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Ambavia gerrardii (Baill.) Le Thomas in Compt. Rend. Hebd. Séances Acad. Sci., Sér. D 274: 1655. 1972 [wfo-0000530678]. ≡ *Unona gerrardii* Baill. in Bull. Mens. Soc. Linn. Paris 1: 540. 1885 [wfo-0001065854]. ≡ *Polyalthia gerrardii* (Baill.) T. Durand & Schinz, Consp. Fl. Afr. 1(2): 37. 1898 [wfo-0000393676]. ≡ *Popowia gerrardii* (Baill.) Ghesq. ex Cavaco & Keraudren in Humbert, Fl. Madagascar Comores 78: 90. 1958 [wfo-0001065846].

Holotypus: Madagascar: sine loco, 21.VI.1866, fl., *Gerrard s.n.* (P [P030244]!; iso-: K [K000199035]!).

= *Popowia maritima* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 344. 1925 [non (Baill.) Cavaco & Keraudren, 1958] [wfo-0001065904]. **Lectotypus** (designated here): **Madagascar: Reg. Atsinanana [Prov. Toamasina]:** Tampina, au S de Tamatave, X.1920, fl. & fr., *Perrier de la Bâthie 13258* (B [B 10 0154214] image!; isolecto-: P [P030242, P030243, P030245, P01755841, P01755840]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Fig. 4. – *Ambavia capuronii* (Cavaco & Keraudren) Le Thomas. [*Schatz 1679*] [Photo: G.E. Schatz]

2. ***Artabotrys*** R. Br. in Bot. Reg. 5: tab. 423. 1820 [wfo-4000003139].

Notes. – A genus with c. 110 species, 6 in Madagascar, all endemic. *Artabotrys* is also present in Tropical Africa and Southeast Asia.

Artabotrys darainensis Deroin & L. Gaut. in Candollea 63: 94. 2008 [wfo-0000508423].

Holotypus: Madagascar. Reg. SAVA [Prov. Antsiranana]: sous-préfecture de Vohemar, Daraina, forêt d'Antsahabe, 13°12'61"S 49°33'45"E, 520 m, 11.I.2004, fl., *Nusbaumer LN903* (G [G00006986]!; iso-: K [K001081875]!, MO [MO-2325593]!, P [P02141262]!, TEF).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Artabotrys hildebrandtii O. Hoffm., Sert. Pl. Madagasc.: 3. 1881 [wfo-0000549778].

Lectotypus (designated here): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** Nosy-Be, XII.1879, fl., *Hildebrandt 3274* (P [P030285]!; isolecto-: K [K00019894]!, LE [LE00012560]!, P [P030286]!).

= *Artabotrys hildebrandtii* var. *bathiei* Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 75. 1957 [wfo-0000738055]. **Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]:** Mt Tsitondroina, sur les flancs droits de la vallée du Sambirano, IX.1908, fl., *Perrier de la Bâthie 4967* (P [P030287]!; iso-: K [K000198940]!).

Habit. – Liana.
Distribution. – Endemic to Madagascar.

Artabotrys luxurians Ghesq. ex Cavaco & Keraudren in Baileya 12: 149. 1957 [wfo-0000549804] (Fig. 5).

Lectotypus (designated here): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** Sambirano, forêt de Lokobe, IX.1932, fl., *Perrier de la Bâthie 18715* (P [P030288]!; isolecto-: P [P030289, P030290]!).

Habit. – Liana.
Distribution. – Endemic to Madagascar.

Artabotrys mabifolius Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 355. 1925 [wfo-0000549805].

Lectotypus (designated here): **Madagascar. Reg. Alaotra-Mangoro [Prov. Toamasina]:** Analamazaotra, 800 m, fl., *Perrier de la Bâthie 4937* (P [P030291]!; isolecto-: K [K000198939], P [P030292, P030293]!).

Habit. – Liana.
Distribution. – Endemic to Madagascar.
Notes. – The name *Artabotrys mabifolius* Oliv. was synonymized by Verdcourt (1971) with *A. monteiroae* Diels from East Africa. However, Deroin & Gautier (2008) disagreed and kept *A. mabifolius* separated based on morphology, which we follow here. In addition, preliminary phylogenetic analyses of Malagasy species of *Artabotrys* support this decision, as *A. mabifolius* clusters in a clade with *A. darainensis* Deroin & L. Gaut., and *A. scytophyllus* (Diels) Cavaco & Keraudren as suggested by Deroin & Gautier (2008) based on morphology.

Artabotrys madagascariensis Miq. in Ann. Mus. Bot. Lugduno-Batavi 2: 42. 1865 [wfo-0000549808].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: Sambirano, Nosy-Be, Antalotes, 1841, fl., *Pervillé 396* (2-part specimen: L [L.1749559, L.1749560]!; iso-: B [B 10 0153037] image!, P [P030298]!).

Habit. – Liana.
Distribution. – Endemic to Madagascar.

Fig. 5. – *Artabotrys luxurians* Ghesq. ex Cavaco & Keraudren. [*Bidault 50*] [Photo: E. Bidault]

Artabotrys scytophyllus (Diels) Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 74. 1957 [wfo-0000549856]. ≡ *Popowia scytophylla* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 347. 1925 [wfo-0001065810].

Holotypus: Madagascar. Reg. Atsimo-Andrefana [Prov. Toliara]: Mont Vatoka, Onilahy, fl., VII.1910, *Perrier de la Bâthie 4972* (P [P030299]!).

= *Xylopia decaryana* Cavaco & Keraudren in Bull. Soc. Bot. France 103: 275. 1956 [wfo-0001065812]. **Holotypus: Madagascar. Reg. Ihorombe [Prov. Fianarantsoa]:** bassin de la Malio (affluent de Mangoky), près d'Ambalabe, c. 400–450 m, fl., 23.XI.1956, *Humbert 19422* (P [P01757008]!).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

3. ***Fenerivia*** Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 355. 1925 [wfo-4000014662].

Notes. – *Fenerivia* is currently represented in Madagascar by 11 endemic species. Most of these were treated under *Polyalthia* in the *Flore de Madagascar et des Comores* (Cavaco & Keraudren, 1958).

Fenerivia angustielliptica (G.E. Schatz & Le Thomas) R.M.K. Saunders in Taxon 60: 1412. 2011 [wfo-0001042802]. ≡ *Polyalthia angustielliptica* G.E. Schatz & Le Thomas in Bull. Mus. Natl. Hist. Nat., B, Adansonia, sér. 4, 12: 120. 1990 [wfo-0001066111].

Holotypus: Madagascar. Reg. Analanjirofo [Prov. Toamasina]: Baie d'Antongil, forêt à l'Ouest d'Anandrovola, c. 100–150 m, 11.IX.1957, fl., *Service Forestier 18237* (P [P00364210]!; iso-: MO [MO-1133886]!, P [P00364211]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Fenerivia capuronii (Cavaco & Keraudren) R.M.K. Saunders in Taxon 60: 1413. 2011 [wfo-0001042794]. ≡ *Polyalthia capuronii* Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 75. 1957 [wfo-0001065851] (Fig. 6A).

Lectotypus (designated here): **Madagascar. Reg. Anosy [Prov. Toliara]:** Fort-Dauphin, forêt de Bemangidy, au N de Mahatalaky, c. 100 m, 1.II.1955, fl., *Service Forestier 11795* (P [P00364212]!; isolecto-: MO [MO-1145684]!, P [P00364213, P00800919]!, TAN).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Fenerivia chapelieri (Baill.) R.M.K. Saunders in Taxon 60: 1412. 2011 [wfo-0001042795]. ≡ *Polyalthia chapelieri* Baill. in Adansonia 8: 349. 1868 [wfo-0001065817]. ≡ *Unona chapelieri* (Baill.) Baill. in Bull. Mens. Soc. Linn. Paris 1: 338. 1882 [wfo-0001065818].

Holotypus: Madagascar. Reg. Atsinanana [Prov. Toamasina]: "Côte Est de Madagascar", s.d., fl., *Chapelier s.n.* (P [P00364214]!).

= *Polyalthia lamii* Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 76. 1957 [wfo-0001065823]. **Holotypus: Madagascar. Reg. Atsinanana [Prov. Toamasina]:** "Tamatave, Tampina, Rés. For. Chemins de Fer", 21.XII.1938, fl. & fr., *Lam 6047* (P [P00364215]!; iso-: BR [BR0000008801777]!, L [L0038120]!, WAG [WAG0000092, WAG0000093]!).

= *Polyalthia lucens* Baker in J. Linn. Soc., Bot. 21: 318. 1884 [wfo-0001066062]. ≡ *Unona lucens* (Baker) Drake in Grandidier, Hist. Phys. Madagascar 30: 14. 1903 [wfo-0001253400]. **Lectotypus** (designated here): **Madagascar:** sine loco, s.d., fl. & fr., *Baron 3116* (K [K000198921] image!; isolecto-: K [K000198922] image!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Fenerivia emarginata (Diels) R.M.K. Saunders in Taxon 60: 1412. 2011 [wfo-0001042796]. ≡ *Polyalthia emarginata* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 340. 1925 [wfo-0001065815].

Lectotypus (designated here): **Madagascar. Reg. Atsinanana [Prov. Toamasina]:** forêt littorale près de Tamatave, s.d., fl., *Perrier de la Bâthie 14910* (B [B 10 0154086] image!; isolecto-: P [P00364207]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Fenerivia ghesquiereana (Cavaco & Keraudren) R.M.K. Saunders in Taxon 60: 1412. 2011 [wfo-0001042797]. ≡ *Polyalthia ghesquiereana* Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 77. 1957 [wfo-0001065826].

Holotypus: Madagascar. Reg. Analanjirofo [Prov. Toamasina]: Maroantsetra, Farankaraina, 26.XII.1954, fl., *Service Forestier 12910* (P [P00364208]!; iso-: K [K000198919] image!).

Habit. – Tree

Distribution. – Endemic to Madagascar.

Fenerivia heteropetala Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 356. 1925 [wfo-0000686223]. ≡ *Polyalthia heteropetala* (Diels) Ghesq. in Rev. Zool. Bot. Africaines 32: 142. 1939 [wfo-0001065850] (Fig. 6B).

Holotypus: Madagascar. Reg. Atsinanana [Prov. Toamasina]: Fénérive-Est, c. 100 m, IX.1912, fl., *Perrier de la Bâthie 4942* (B [B 10 93389] image!: iso-: P [P00573600]!, MO [MO-3279839] image!, TAN!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Fenerivia humbertii (Cavaco & Keraudren) R.M.K. Saunders in Taxon 60: 1413. 2011 [wfo-0001042798]. ≡ *Polyalthia humbertii* Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 76. 1957 [wfo-0001065824].

Lectotypus (designated here): **Madagascar. Reg. Analanjirofo [Prov. Toamasina]:** env. du col d'Ambatondradama, piste de Maroantsetra à Antalaha, entre les bassins de la Mahalevona et de la Sahafihitra, c. 600 m, 25.XII.1953, fl., *Service Forestier 8792* (P [P00364202]!; isolecto-: P [P00364203, P00364204]!).

= *Polyalthia leandrii* Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 76. 1957 [wfo-0001065825]. **Holotypus: Madagascar. Reg. Ihorombe [Prov. Fianarantsoa]:** Angodongodona. Ivohibe, 30.XI.1951, fl., *Service Forestier 5148* (P [P00364205]!; iso-: MO [MO1133708] image!; TAN).

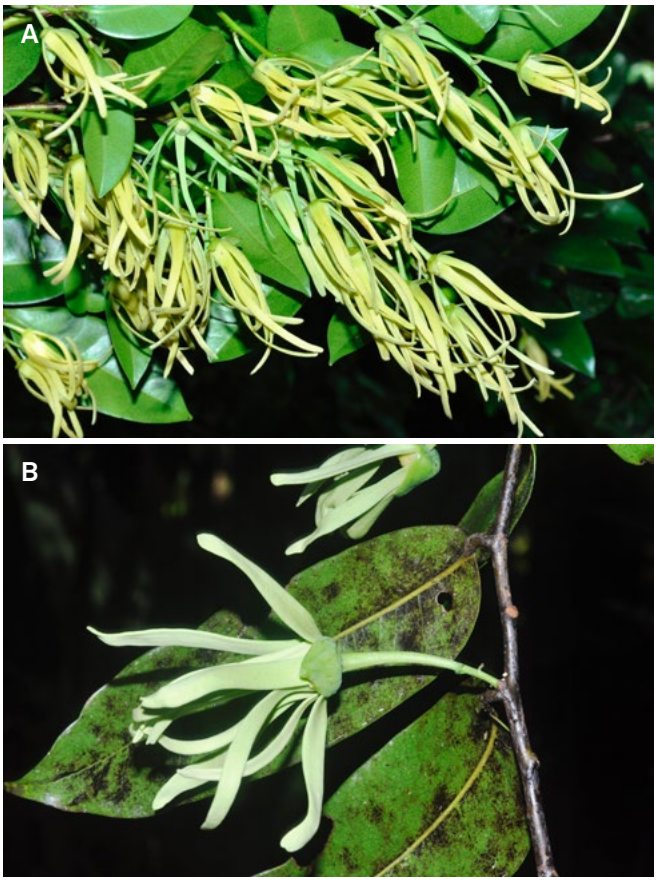

Fig. 6. – *Fenerivia* Diels on Madagascar. **A.** *Fenerivia capuronii* (Cavaco & Keraudren) R.M.K. Saunders; **B.** *Fenerivia heteropetala* Diels. [**A:** *Schatz 4376*; **B:** *Schatz 4431*] [Photos: G.E. Schatz]

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Fenerivia madagascariensis (Cavaco & Keraudren) R.M.K. Saunders in Taxon 60: 1413. 2011 [wfo-0001042799]. ≡ *Polyalthia madagascariensis* Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 78. 1957 [wfo-0001065816].

Lectotypus (designated here): **Madagascar. Reg. Anosy [Prov. Toliara]:** Fort-Dauphin, Mandena, 2.IX.1955, fl., *Service Forestier 14599* (P [P00363237]!; isolecto-: MO [MO-1132850] image!, P [P00363235, P00363236]!, TAN!).
Habit. – Tree.
Distribution. – Endemic to Madagascar.

Fenerivia madinidravina Couvreur & Ravomanana in Candollea 80: 73. 2025 [wfo-1000070711].

Holotypus: Madagascar. Reg. Atsinanana [Prov. Toamasina]: Distr. Toamasina II, Comm. Sahambala, Fkt. Sahavongo, village le plus proche Sahavongo, 18°01'25"S 49°07'12"E, 683 m, 11.XII.2016, fl. & fr., *Ralaijaona et al. 27* (TAN!; iso-: L [L.3988476]!, MO [MO-3026094]!, P, TEF).
Habit. – Tree.
Distribution. – Endemic to Madagascar.

Fenerivia oligosperma (Danguy) R.M.K. Saunders in Taxon 60: 1413. 2011 [wfo-0001042800]. ≡ *Artabotrys oligospermus* Danguy in Bull. Mus. Natl. Hist. Nat. 28: 247. 1922 [wfo-0000549826]. ≡ *Polyalthia oligosperma* (Danguy) Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 341. 1925 [wfo-0001065822].

Lectotypus (designated here): **Madagascar. Reg. Alaotra-Mangoro [Prov. Toamasina]:** Analamazaotra, I.[?], fl., *Randrianasolo 62* (P [P00363233]!; isolecto-: P [P00363231, P00363232]!).
Habit. – Tree.
Distribution. – Endemic to Madagascar.

Fenerivia richardiana (Baill.) R.M.K. Saunders in Taxon 60: 1414. 2011 [wfo-0001042801]. ≡ *Polyalthia richardiana* Baill. in Adansonia 8: 350. 1868 [wfo-0001065821]. ≡ *Unona richardiana* (Baill.) Baill. in Bull. Mens. Soc. Linn. Paris 1: 339. 1882 [wfo-0001065897].

Lectotypus (designated here): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** Nosy-Be, 1840, fl. & fr., *Richard s.n.* (P [P00364194]!; isolecto-: P [P00364196]!).

= *Polyalthia dielsii* Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 77. 1957 [wfo-0000393653]. **Lectotypus** (designated here): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** Nosy-Be, R.N.6, 2.III.1951, fl., *Réserves Naturelles 2725* (P [P00364197]!; isolecto-: P [P00364198]!).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

4. ***Huberantha*** Chaowasku (≡ *Hubera* Chaowasku [nom. illeg. hom. by binding decision]) in Kew Bull. 70(23): 1. 2015 [wfo-4001303256].

Notes. – A genus represented by 34 species, 9 in Madagascar (8 endemic and 1 shared between Madagascar and Comoros). *Huberantha* is also present in tropical East Africa and Southeast Asia.

Huberantha decora (Diels) Chaowasku in Kew Bull. 70(23): 2. 2015 [wfo-0001315280]. ≡ *Polyalthia decora* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 342. 1925 [wfo-0001065820]. ≡ *Hubera decora* (Diels) Chaowasku in Phytotaxa 69: 48. 2012 [wfo-0001334362].

Holotypus: Madagascar. Reg. Vatovavy [Prov. Fianarantsoa]: sur la riv. Rienana, bassin du Matitana, vers 100 m d'alt., No date, fl., *Perrier de la Bâthie 4974* (B [B 10 0154085] image!; iso-: P [P00364216, P]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Huberantha henrici (Diels) Chaowasku in Kew Bull. 70(23): 2. 2015 [wfo-0001315281]. ≡ *Polyalthia henrici* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 342. 1925 [wfo-0001065853]. ≡ *Hubera henrici* (Diels) Chaowasku in Phytotaxa 69: 48. 2012 [wfo-0001334365].

Lectotypus (designated here): **Madagascar. Reg. Melaky [Prov. Mahajanga]:** Ambongo, 1.X.1905, fl., *Perrier de la Bâthie 4960* (B [B 10 0154087] image!; isolecto-: P [P01986933, P01986934]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Huberantha humbertii (Ghesq. ex Cavaco & Keraudren) Couvreur & Ravomanana, **comb. nov.** [wfo-1000070712].

≡ *Uvaria humbertii* Ghesq. ex Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 84. 1957 [wfo-0001065778].

Lectotypus (designated here): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** Ambondrofe, Ankarana, 1.XII.1937, fl., *Humbert 18964* (P [P030268]!; isolecto-: P [P030269]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Notes. – This species was originally described under the genus *Uvaria*. After examining the type specimen at P (Fig. 7), we observed that it shows the typical characters of the genus *Huberantha*, i.e., presence of pubescent domatia on both the underside of the leaves and the axils of the main and secondary veins, simple hairs, and axillary position of the inflorescences (Chaowasku et al., 2012). We therefore transfer *Uvaria humbertii* to *Huberantha*.

Huberantha humblotii (Drake ex Cavaco & Keraudren) Chaowasku in Kew Bull. 70(23): 2. 2015 [wfo-0001342040]. ≡ *Polyalthia humblotii* Drake ex Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 77. 1957 [wfo-0001065852]. ≡ *Hubera humblotii* (Drake ex Cavaco & Keraudren) Chaowasku in Phytotaxa 69: 48. 2012 [wfo-0001334367].

Lectotypus (designated here): **Comoros. Grande Comore [Ngazidja]:** sine loco, 1886–87, fl. & fr., *Humblot 1578* (P [P00213902]!; isolecto-: BM [BM000754375] image!, P [P00213903, P00213904, P (3 sheets)]!).

Habit. – Tree.

Distribution. – Madagascar and Comoros.

Notes. – This is the only non-endemic species of *Annonaceae* for Madagascar.

Huberantha keraudreniae (Le Thomas & G.E. Schatz) Chaowasku in Kew Bull. 70(23): 2. 2015 [wfo-0001315282]. ≡ *Polyalthia keraudreniae* Le Thomas & G.E. Schatz in Bull. Mus. Natl. Hist. Nat., B, Adansonia 12: 124. 1990 [wfo-0000394062]. ≡ *Hubera keraudreniae* (Le Thomas & G.E. Schatz) Chaowasku in Phytotaxa 69: 49. 2012 [wfo-0001334369] (Fig. 8).

Holotypus: Madagascar. Reg. Analanjirofo [Prov. Toamasina]: Tampolo, au N de Fénérive, 26.XI.1962, fl. & fr., *Service Forestier 22117* (P [P00363238]!; iso-: P [P01986413, P01986414, P01986415, P01986416]!, MO [MO-1144576]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Huberantha multistamina (G.E. Schatz & Le Thomas) Chaowasku in Kew Bull. 70(2) 23: 2. 2015 [wfo-0001315283]. ≡ *Polyalthia multistamina* G.E. Schatz & Le Thomas in Bull. Mus. Natl. Hist. Nat., B, Adansonia 12: 126. 1990 [wfo-0001066113]. ≡ *Hubera multistamina* (G.E. Schatz & Le Thomas) Chaowasku in Phytotaxa 69: 49. 2012 [wfo-0001334374].

Holotypus: Madagascar. Reg. SAVA [Prov. Antsiranana]: Sambava, Maroambihy, 13.IX.1958, fl., *Réserves naturelles 9764* (P [P00363234]!; iso-: MO [MO-758297], TAN).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Huberantha pendula (Capuron ex G.E. Schatz & Le Thomas) Chaowasku in Kew Bull. 70(23): 2. 2015 [wfo-0001315284]. ≡ *Polyalthia pendula* Capuron ex G.E. Schatz & Le Thomas in Bull. Mus. Natl. Hist. Nat., B, Adansonia 12: 128. 1990 [wfo-0001066114]. ≡ *Hubera pendula* (Capuron ex G.E. Schatz & Le Thomas) Chaowasku in Phytotaxa 69: 50. 2012 [wfo-0001334376].

Holotypus: Madagascar. Reg. Anosy [Prov. Toliara]: forêt du Vinanibe, Fort-Dauphin, 10.XII.1961, fl. & fr., *Service Forestier 20530* (P [P00364191]!; iso-: MO [MO-1139460], P [P01986430, P01986431, P01986432, P01986436, P01986437]!, TAN).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Huberantha perrieri (Cavaco & Keraudren) Chaowasku in Kew Bull. 70(23): 2. 2015 [wfo-0001315285]. ≡ *Polyalthia*

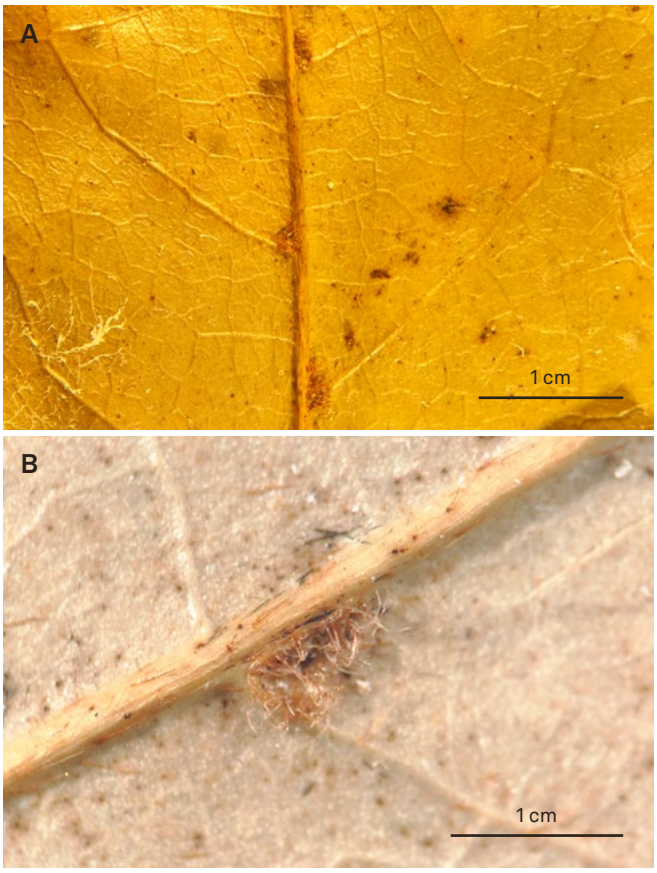

Fig. 7. – Details of domatia on lower surface of leaves from the holotype of *Uvaria humbertii* Ghesq. ex Cavaco & Keraudren (≡ *Huberantha humbertii* (Ghesq. ex Cavaco & Keraudren) Couvreur & Ravomanana) clearly showing it is a species of *Huberantha* Chaowasku and not *Uvaria* L. [Photos: C. Rodrigues-Vaz].

perrieri Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 75. 1957 [wfo-0001065819]. ≡ *Hubera perrieri* (Cavaco & Keraudren) Chaowasku in Phytotaxa 69: 50. 2012 [wfo-0001334377].

Lectotypus (designated here): **Madagascar. Reg. SAVA [Prov. Antsiranana]:** Analalava, Vohémar, 22.XII.1954, fr., *Service Forestier 13087* (P [P00364192]!; isolecto-: MO [MO-1142703], P [P00364193]!, TAN, TEF[TEF000061] image!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Huberantha sambiranensis (Capuron ex Le Thomas & G.E. Schatz) Chaowasku in Kew Bull. 70(23): 2. 2015 [wfo-0001342049]. ≡ *Polyalthia sambiranensis* Capuron ex Le Thomas & G.E. Schatz in Bull. Mus. Natl. Hist. Nat., B, Adansonia 12: 116. 1990 [wfo-0001066110]. ≡ *Hubera sambiranensis* (Capuron ex Le Thomas & G.E. Schatz) Chaowasku in Phytotaxa 69: 50. 2012 [wfo-0001334379].

Fig. 8. – *Huberantha keraudreniae* (Le Thomas & G.E. Schatz) Chaowasku.
[*Schatz 4399*] [Photo: G.E. Schatz]

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: Sambirano, Antsahabe, entre Djangoa et Ankaramy Be, 12.X.1966, fl. & fr., *Service Forestier 24836* (P [P00364199]!; iso-: K [K000198918] image!, MO [MO-279008, MO-279009, MO-279013] images!, P [P02088638]!, TAN, TEF[TEF000010] image!, U [U0000370, U0000371] images!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

5. ***Isolona*** Engl. in Engler & Prantl, Nat. Pflanzenfam., Nachtr. 1: 161. 1897 [wfo-4000019285].

Notes. – A genus containing 20 species, 5 of which are endemic to Madagascar. The remaining 15 species grow in Tropical Africa.

Isolona capuronii Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 80. 1957 [wfo-0000732619].

Lectotypus (designated here): **Madagascar. Reg. Atsinanana [Prov. Toamasina]:** Ambodiatafana, N de Mahasoa, embouchure de la Rantabe, 20.I.1956, fl., *Service Forestier 8941* (P [P030342]!; isolecto-: MO [MO-1583249], P [P030343, P030344]!, TAN, WAG [WAG0027027]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Isolona ghesquierei Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 80. 1957 [wfo-0000732627] (Fig. 9).

Lectotypus (designated here): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** Andongozabe, Maromandia, Antalaha, Sambirano, 18.XI.1954, fl., *Service Forestier 12451* (P [P030345]!; isolecto-: MO [MO-1142361],

P [P030346, P030347, P030348, P030349, P030350]!, WAG [WAG0220135]!).

= *Isolona ghesquierei* var. *longipedicellata* Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 80. 1957 [wfo-0001315660]. **Holotypus: Madagascar. Reg. Atsinanana [Prov. Toamasina]:** RN Betampona, 4.XI.1953, fl., *Service Forestier 8587* (P [P030348]!; iso-: MO [MO-100285596], P [P030349, P030350]!).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Isolona humbertiana Ghesq. ex Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 80. 1957 [wfo-0000732631].

Lectotypus (designated here): **Madagascar. Reg. Betsiboka [Prov. Mahajanga]:** Ankaladina, Betsiboka, Boïna, I.1903, fl., *Perrier de la Bâthie 1511* (P [P030351]!; isolecto-: P [P030352, P030353]!).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Isolona madagascariensis (Baill.) Engl. in Engler & Prantl, Nat. Pflanzenfam., Nachtr. 1: 161. 1897 [wfo-0000732634]. ≡ *Monodora madagascariensis* Baill. in Adansonia 8: 299. 1868 [wfo-0001065766].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: au bord de la rivière Ampanihy, Diégo-Suarez, s.d., fl., *Bernier 131* (P [P030354]!)

= *Hexalobus madagascariensis* A. DC. in Mém. Soc. Phys. Genève 5: 213. 1832 [wfo-0000721782]. **Holotypus: Madagascar:** sine loco, s.d., fl., *Anon. s.n.* (G [G00011568]!).

Habit. – Tree, sometimes suggested to be leaning/climbing.
Distribution. – Endemic to Madagascar.
Notes. – The authorship of *Isolona madagascariensis* was clarified by Couvreur (2009: 75), who stated that "(A. DC.) Engl." was incorrect.

Isolona perrieri Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 357. 1925 [wfo-0001065767].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: base S du massif de Manongarivo, V.1909, fl., *Perrier de la Bâthie 4951* (B [B 10 0154215] image!; iso-: P [P030355]!).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

6. ***Monanthotaxis*** Baill. in Bull. Soc. Linn, Paris 2. 878. 1890 [wfo-4000024631].

Notes. – A genus with c. 90 species including 13 species and three varieties endemic to Madagascar and one to Comoros and Mayotte. The remaining species grow in Tropical Africa. Most of the Malagasy names were treated under the genus *Popowia* in the *Flore de Madagascar et des Comores* (Cavaco & Keraudren, 1958). *Monanthotaxis* is in need of a taxonomic revision. Ten new species remain to be published (Hoekstra et al., 2021).

Fig. 9. – *Isolona ghesquierei* Cavaco & Keraudren. [*Schatz 2889*] [Photo: G.E. Schatz]

Monanthotaxis ambrensis (Cavaco & Keraudren) Verdc. in Kew Bull. 25: 23. 1971 [wfo-0001066392]. ≡ *Popowia ambrensis* Cavaco & Keraudren in Bull. Mus. Natl. Hist. Nat. sér. 2, 29: 352. 1957 [wfo-0001065830] (Fig. 10A).

Lectotypus (designated here): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** Camp d'Ambre, XI.1932, fl., *Perrier de la Bâthie 18826* (P [P030305]!; isolecto-: P [P030306]!).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

Monanthotaxis boivinii (Baill.) Verdc. in Kew Bull. 25: 24. 1971 [wfo-0001066396]. ≡ *Popowia boivinii* Baill. in Adansonia 8: 317. 1868 [wfo-0001065838]. ≡ *Unona boivinii* (Baill.) Baill. in Bull. Mens. Soc. Linn. Paris 1: 339. 1882 [wfo-0001065840].

Holotypus: Madagascar: sine loco, 1841, fr., *Pervillé s.n.* (P [P030308]!).

= *Popowia pervillei* Baill. in Adansonia 8: 317. 1868 [wfo-0001065839]. ≡ *Unona boivinii* var. *pervillei* (Baill.) Baill. in Bull. Mens. Soc. Linn. Paris 1: 339. 1882 [wfo-

0001065900]. ≡ *Popowia boivinii* var. *pervillei* (Baill.) Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 346. 1925 [wfo-0001065901]. **Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]:** Nosy-Be, 1853, fr., *Pervillé s.n.* (P [P030307]!).

= *Popowia stenophylla* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 346. 1925 [wfo-0001065902]. **Lectotypus** (designated here): **Madagascar. Reg. Boeny [Prov. Mahajanga]:** Boina, Bemarivo, fr., *Perrier de la Bâthie 2297* (P [P01967700]; isolecto-: P [P01967689]!, B [B 10 0153013] image!).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

Monanthotaxis boivinii var. ***brevipedicellata*** (Cavaco & Keraudren) Verdc. in Kew Bull. 25: 25. 1971 [wfo-0001066397]. ≡ *Popowia boivinii* var. *brevipedicellata* Cavaco & Keraudren in Bull. Mus. Natl. Hist. Nat., sér. 2, 29: 352. 1957 [wfo-0001065841].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: Nosy-Be, I.1909, fl., *Perrier de la Bâthie 4959* (P [P030309]!).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

Monanthotaxis brachytricha (Diels) Verdc. in Kew Bull. 25: 24. 1971 [wfo-0001066395]. ≡ *Popowia brachytricha* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 346. 1925 [wfo-0001065835].

Holotypus: Madagascar. Reg. Atsinanana [Prov. Toamasina]: env. du confluent de l'Onive et du Mangoro, II.1925, fr., *Perrier de la Bâthie 16989* (B [B 10 0153014] image!; iso-: P [P030310]!, TAN).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

Monanthotaxis caesia (Diels) Verdc. in Kew Bull. 25: 24. 1971 [wfo-0001066400]. ≡ *Popowia caesia* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 345. 1925 [wfo-0001065855].

Holotypus: Madagascar. Reg. Melaky [Prov. Mahajanga]: bois de Kamakama, sur le causse d'Ankara, I.1901, fl., *Perrier de la Bâthie 1192 bis* (B [B 10 0153016] image!; iso-: P [P030316]!).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

Monanthotaxis caesia var. ***elongata*** (Ghesq. ex Cavaco & Keraudren) Verdc. in Kew Bull. 25: 24. 1971 [wfo-0001066401]. ≡ *Popowia caesia* var. *elongata* Ghesq. ex Cavaco & Keraudren in Bull. Mus. Natl. Hist. Nat., sér. 2, 29: 352. 1957 [wfo-0001065905].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: Mt Tsaratanana, XII.1923, fl., *Perrier de la Bâthie 15545* (P [P030311]!).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

Monanthotaxis caesia var. ***subacuta*** (Ghesq. Ex Cavaco & Keraudren) Verdc. in Kew Bull. 25: 24. 1971 [wfo-0001066402]. ≡ *Popowia caesia* var. *subacuta* Ghesq. ex Cavaco & Keraudren in Bull. Mus. Natl. Hist. Nat., sér. 2, 29: 352. 1957 [wfo-0001065906].

Lectotypus (designated here): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** collines et plateaux calcaires de l'Ankarana, XII.1937, fl., *Humbert 18889* (P [P030317]!; isolecto-: P [P030318, P030319]!).

Habit. – Liana or small tree.
Distribution. – Endemic to Madagascar.

Monanthotaxis glaucocarpa (Baill.) Verdc. in Kew Bull. 25: 26. 1971 [wfo-0001066399]. ≡ *Popowia glaucocarpa* Baill. in Adansonia 8: 319. 1868 [wfo-0001065844]. ≡ *Unona glaucocarpa* (Baill.) Baill. in Bull. Mens. Soc. Linn. Paris l: 339. 1882 [wfo-0001065845].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: Nosy-Be, 8.XII.1840, fr., *Pervillé 374* (P [P030320]!).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

Monanthotaxis heterantha (Baill.) Verdc. in Kew Bull. 25: 26. 1971 [wfo-0001066393]. ≡ *Bocagea heterantha* Baill. in Adansonia 8: 173. 1867 [wfo-0000567092]. ≡ *Popowia heterantha* (Baill.) Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 347. 1925 [wfo-0001065831].

Lectotypus (designated here): **Madagascar. Reg. Melaky [Prov. Mahajanga]:** Ambongo, 14.II.1841, fr., *Pervillé 602* (P [P030322]!; isolecto-: P [P030321, P030324]!).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

Monanthotaxis komorensis P.H. Hoekstra in PhytoKeys 69: 85. 2016 [wfo-0001330588].

Holotypus: Mayotte: Grande Terre, Mont Combani, départ du GR menant au sommet, 10.I.2002, fl., *Barthelat 671* (P [P00273165]!; iso-: G [G00404210] image!, K, MAO, MO [MO5735265]).

Habit. – Liana or shrub.
Distribition. – Endemic to the Islands of Mayotte and Comoros.

Monanthotaxis madagascariensis (Cavaco & Keraudren) Verdc. in Kew Bull. 25: 27. 1971 [wfo-0001066084]. ≡ *Popowia madagascariensis* Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 82. 1957 [wfo-0001065833].

Lectotypus (designated here): **Madagascar. Reg. SAVA [Prov. Antsiranana]:** Ampitambarina, Antalaha, 14.III.1955, fl., *Réserves Naturelles 7092* (P [P030325]!; isolecto-: P [P030326, P030327]!).

Habit. – Liana.
Distribution. – Endemic to Madagascar.

Monanthotaxis malacophylla (Diels) Verdc. in Kew Bull. 25: 27. 1971 [wfo-0001066085]. ≡ *Popowia malacophylla* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 348. 1925 [wfo-0001065827].

Lectotypus (designated here): **Madagascar. Reg. Melaky [Prov. Mahajanga]:** bassin moyen du Bemarivo, Boina, III.1907, fr., *Perrier de la Bâthie 4947* (P [P030329]!; isolecto-: P [P030330, P01967708]!).

Habit. – Liana.
Distribution. – Endemic to Madagascar.

Monanthotaxis micrantha (Baker) Verdc. in Kew Bull. 25: 27. 1971 [wfo-0001066077]. ≡ *Popowia micrantha* Baker in J. Linn. Soc., Bot. 22: 442. 1887 [wfo-0001065843].

Holotypus: Madagascar: sine loco, s.d., fl., *Baron 4773* (K [K000198961] image!; iso-: BM [BM000553850] image!).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

Monanthotaxis pilosa (Baill.) Verdc. in Kew Bull. 25: 28. 1971 [wfo-0001066089]. ≡ *Popowia pilosa* Baill. in Adansonia 8: 322. 1868 [wfo-0001065828]. ≡ *Clathrospermum pilosum* (Baill.) T. Durand & Schinz, Consp. Fl. Afric. 1(2): 44. 1898 [wfo-0000608616].

Lectotypus (designated here): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** Lokobe, III.1851, fl., *Boivin 2114ter* (P [P030336]!; isolecto-: P [P030335]!).

– *Unona pilosa* Boivin ex Baill. in Adansonia 8: 322. 1868 [nom. nud.] [wfo-0001065898].

Habit. – Liana.
Distribution. – Endemic to Madagascar.

Monanthotaxis podocarpa (Diels) Verdc. in Kew Bull. 25: 29. 1971 [wfo-0001066394]. ≡ *Popowia podocarpa* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 345. 1925 [wfo-0001065832].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: Manongarivo, Sambirano, IV.1909, fr., *Perrier de la Bâthie 4955* (B [B 10 0153040] image!; iso-: P [P030338]!).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

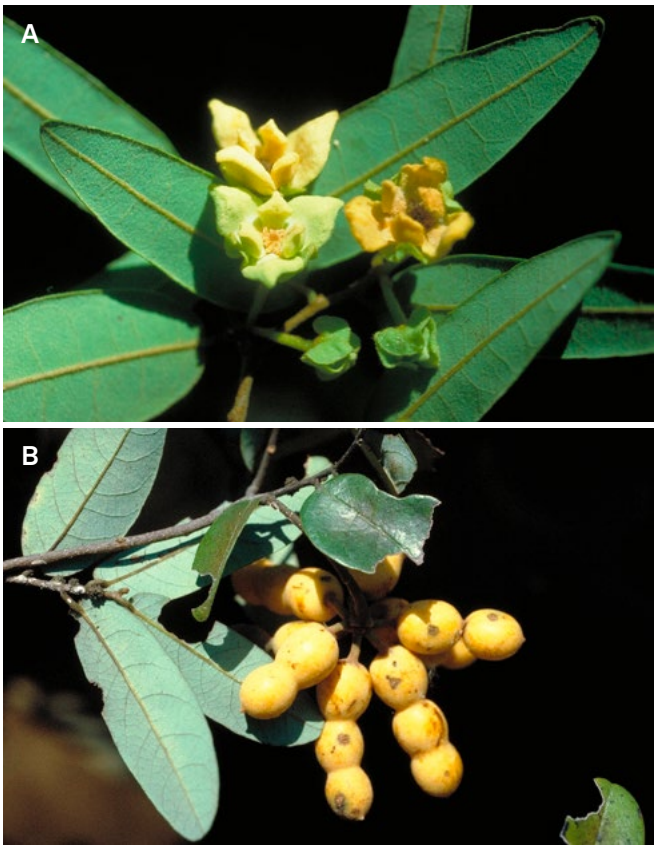

Fig. 10. – *Monanthotaxis* Baill. on Madagascar. **A.** *Monanthotaxis ambrensis* (Cavaco & Keraudren) Verdc. **B.** *Monanthotaxis valida* (Diels) Verdc.
[**A:** *Schatz 2940*; **B:** *Schatz 1581*] [Photos: G.E. Schatz]

Monanthotaxis sororia (Diels) Verdc. in Kew Bull. 25: 29. 1971 [wfo-0001066391]. ≡ *Popowia sororia* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 349. 1925 [wfo-0001065829].

Lectotypus (designated here): **Madagascar. Reg. Melaky [Prov. Mahajanga]:** Bemarivo, Boina, VII.1907, fr., *Perrier de la Bâthie 4962* (P [P030339]!; isolecto-: P [P01967769]!).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

Monanthotaxis valida (Diels) Verdc. in Kew Bull. 25: 29. 1971 [wfo-0001066170]. ≡ *Popowia valida* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 348. 1925 [wfo-0001065842] (Fig. 10B).

Lectotypus (designated here): **Madagascar. Reg. Boeny [Prov. Mahajanga]**: Madirovalo, Boina, VII.1901, fr., *Perrier de la Bâthie 1301* (P [P030340]!; isolecto-: B [B 10 0153049] image!, P [P01967745]!).

Habit. – Liana or shrub.

Distribution. – Endemic to Madagascar.

7. ***Sphaerocoryne*** Scheff. ex Ridley in J. Straits Branch Roy. Asiat. Soc. 75: 8. 1917 [wfo-4000035976].

Notes. – A paleotropical genus with 8 species (5 endemic to Madagascar). This genus remains poorly known and in need of a taxomonic revision. Most species were treated under the name *Popowia* in the *Flore de Madagascar et des Comores* (Cavaco & Keraudren, 1958).

Sphaerocoryne coursii (Cavaco & Keraudren) Couvreur & Ravomanana, **comb. nov.** [wfo-1000070713].

≡ *Popowia coursii* Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 81. 1957 [wfo-0000394116].

Lectotypus (designated here): **Madagascar. Reg. Analanjirofo [Prov. Toamasina]:** Amboditafonana, 11.X.1945, fr., *Cours 2840* (P [P00046733]!; isolecto-: P [P00046734, P00046735]!).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Sphaerocoryne greveana (Baill.) Couvreur & Ravomanana, **comb. nov.** [wfo-1000070714].

≡ *Unona greveana* Baill. in Bull. Mens. Soc. Linn. Paris 1: 339. 1882 [wfo-0001065848]. ≡ *Polyalthia greveana* (Baill.) T. Durand & Schinz, Consp. Fl. Afric. 1(2): 37. 1898 [wfo-0001065907]. ≡ *Popowia greveana* (Baill.) Ghesq. in Zool. Bot. Africaines 32: 141. 1939 [wfo-0001065847].

Holotypus: Madagascar. Reg. Menabe [Prov. Toliara]: "Mouroundava", s.d., fl., *Grevé 21* (P [P00046742]!).

= *Popowia riparia* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 344. 1925 [wfo-0001065908]. **Holotypus: Madagascar. Reg. Menabe [Prov. Toliara]:** env. de Miandrivaza, IX.1910, fl., *Perrier de la Bâthie 4970* (B [B 10 0154094] image!; iso-: P [P00046746]!, WAG).

Habit. – Liana or shrub.

Distribution. – Endemic to Madagascar.

Sphaerocoryne humbertii (Cavaco & Keraudren) Couvreur & Ravomanana, **comb. nov.** [wfo-1000070716].

≡ *Popowia humbertii* Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 82. 1957 [wfo-0000394137].

Lectotypus (designated here): **Madagascar. Reg. SAVA [Prov. Antsiranana]:** vallée de l'Andalangy, affluent de l'Androranga, bassin de la Bemarivo du NE, 12.XI.1950, fr., *Humbert 24174* (P [P00046729]!; isolecto-: P [P00046730, P00046732]!).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Sphaerocoryne maritima (Baill.) Couvreur & Ravomanana, **comb. nov.** [wfo-1000070715].

≡ *Polyalthia maritima* Baill. in Adansonia 8: 348. 1868 [wfo-0001065836]. ≡ *Unona maritima* (Baill.) Baill. in Bull. Mens. Soc. Linn. Paris 1: 339. 1882 [wfo-0001065918]. ≡ *Popowia maritima* (Baill.) Cavaco & Keraudren in Humbert, Fl. Madagascar Comores 78: 85. 1958 [nom. illeg.] [non *P. maritima* Diels, 1925] [wfo-1200027715].

Holotypus: Madagascar: sine loco, s.d., fr., *Du Petit-Thouars s.n.* (P [P00046736]!).

= *Popowia macrocarpa* Baill. in Adansonia 8: 316. 1868 [wfo-0001065837]. ≡ *Unona macrocarpa* (Baill.) Baill. in Bull. Mens. Soc. Linn. Paris 1: 339. 1882 [wfo-0001065899]. **Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]:** Nosy-Bé, II.1861, fr., *Boivin s.n.* (P [P00046737]!).

Habit. – Liana, sometimes referred to as a shrub.

Distribution. – Endemic to Madagascar.

Notes. – Although the name *Sphaerocoryne macrocarpa* was published several pages before the name *S. maritima* (316 vs. 348; Baillon 1868), Cavaco & Keraudren (1958: 85) chose the latter as the name of this species. We thus retain this name here.

Cavaco & Keraudren (1958: 85) suggested that the name *Sphaerocoryne macrocarpa* is synonym of *S. maritima*. This has to be confirmed, especially because there are no fruits on the type of *S. maritima*, and the paratype (*Boivin s.n.* [P00046739, P00046740]) has flower fragments only.

Sphaerocoryne microsperma (Ghesq. ex Cavaco & Keraudren) Couvreur, **comb. & stat. nov.** [wfo-1000077013].

≡ *Popowia gerrardii* var. *microsperma* Ghesq. ex Cavaco & Keraudren in Bull. Mus. Natl. Hist. Nat., sér. 2, 29: 352. 1957 [wfo-1200027764].

Lectotypus (designated here): **Madagascar: Reg. Fianarantsoa [Prov. Vatovavy]:** Mananjary, zone côtière, III.–IV.1909, fr., *Geay 7360* (P [P02428208]!; isolecto-: P [P02428207] image!).

Habit. – Liana or shrub.

Distribution. – Endemic to Madagascar.

Notes. – Le Thomas (1972a) supported that the variety *microsperma* does not belong to the genus *Ambavia* but

Monanthotaxis based on the morphology of its fruits and seeds. Because of the leaves with loop forming secondary veins and cuneate leaf bases, both characters not known in *Monanthotaxis* (P. Hoekstra, pers. comm.), we place this taxon under *Sphaerocoryne*. This genus generally has one or two seeds per monocarp. However, one of the specimens of the original material at P, *Geay 7360* (P02428207), has a simple sketch of a 4-seeded moniliform monocarp with an annotation that reads "à 4 ovules ou moins [4 ovules or less]", although the monocarps are now fragmented. In this line, Le Thomas also annotated on the paratype *Baron 5946* (P02034668) that some monocarps are 3-seeded. Despite the inconsistency on the number of seeds per monocarp, we transfer this taxon to the genus *Sphaerocoryne* on the basis of the aforementioned leaf characters.

The citation of the type reads "Ouest : zone côtière de Mananjary, Geay 7360 (Typ. var., P)". Two sheets are deposited at P, i.e., P02428207 and P02428208. It is noteworthy that the collection number of the former appears to be corrected to "7361" but this was added later by an unknown hand. As shown by the phenology and the preservation condition of both specimens, no reason exists to do not treat them as duplicates of the same collection. We therefore designate here the sheet with the uncorrected collection number P02428208 as the lectotype.

Sphaerocoryne microsperma ressembles *S. greveana* in the shape and size of the leaves, but the former has longer pedicels (c. 5–6 cm long vs. 0.6–0.7 cm in *S. greveana*).

8. ***Uvaria*** L., Sp. Pl.: 536. 1753 [wfo-4000039910].

   = *Marenteria* Thouars, Gen. Nov. Madagasc. 18. 1806 [wfo-4000044129].

Notes. – *Uvaria* is a paletropical genus including c. 166 species. It is represented in Madagascar by 21 species and one variety; all are endemic to Madagascar. The malagasy species of *Uvaria* is currently revised by the first author.

Uvaria ambongoensis (Baill.) Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 337. 1925 [wfo-0001065774]. ≡ *Unona ambongoensis* Baill. in Adansonia 8: 350. 1868 [wfo-0001066061].

Holotypus: Madagascar. Reg. Melaky [Prov. Mahajanga]: Ambongo, 17.II.1841, fr., *Pervillé 675* (B [B 10 0153063] image!; iso-: P [P030253, P030254]!).

Habit. – Liana, sometimes reported as a shrub.
Distribution. – Endemic to Madagascar.

Uvaria ambongoensis var. ***sciocarpa*** Ghesq. ex Diels in Bull. Acad. Malgache 19: 98. 1936 [wfo-1200011347].

Holotypus: Madagascar. Reg. Bongolava [Prov. Mahajanga]: Boina, Bongolava, IX.1907, fr., *Perrier de la Bâthie 4963* (P [P00692917]!).

Habit. – Liana, sometimes reported as a shrub.
Distribution. – Endemic to Madagascar.

Uvaria amplexicaulis Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 339. 1925 [wfo-0000415915].

Holotypus: Madagascar. Reg. Boeny [Prov. Mahajanga]: Causse du Ketsa ou Kelifely, sur la riv. gauche Mahavavy, Ambongo, IX.1904, fr., *Perrier de la Bâthie 1743* (B [B 10 0153063]!; iso-: P [P030250]!).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

Uvaria antsiranensis Le Thomas in Adansonia, sér. 2, 3: 293. 1963 [wfo-0001066066].

Lectotypus (designated here): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** près du Mt. Reynaud, Diego-Suarez, XI.1958, fl., *Service Forestier 20143* (P [P030246]!; isolecto-: MO [MO-1138725], P [P030247, P030248, P030249]!, TEF).

Habit. – Liana or shrub.
Distribution. – Endemic to Madagascar.

Uvaria bathiei Ghesq. ex Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 84. 1957 [wfo-0001065783].

Holotypus: Madagascar. Reg. Boeny [Prov. Mahajanga]: env. de Majunga, XI.1903, fr., *Perrier de la Bâthie 4958* (P [P030255]!).

Habit. – Liana.
Distribution. – Endemic to Madagascar.

Uvaria callicarpa Baill. in Adansonia 8: 347. 1868 [wfo-0001065895]. ≡ *Hexalobus callicarpus* (Baill.) Baill. in Bull. Mens. Soc. Linn. Paris 1: 338. 1882 [wfo-0000721774].

Holotypus: Madagascar. Reg. Alaotra-Mangoro [Prov. Toamasina]: forêt d'Analamazaotra, fl., *Chapelier s.n.* (P [P030301]!; iso-: B [B 10 0153073] image!).

Habit. – Liana.
Distribution. – Endemic to Madagascar.

Uvaria capuronii Keraudren in Adansonia sér. 2, 12: 115. 1972 [wfo-0001066065].

Lectotypus (designated here): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** plateau de l'Ankarana, au N.W. d'Ambondronifaly, 28.XII.1963, fl. & fr. *Service Forestier 23157* (P [P030257]!; isolecto-: P [P01966188]!, P01966260, P01966261, P02088633).

Habit. – Liana.
Distribution. – Endemic to Madagascar.

Uvaria caroli-afzelii R.E. Fr. in Repert. Spec. Nov. Regni Veg. 24: 246. 1928 [wfo-0000415893].

Lectotypus (designated here): **Madagascar [Prov. Toliara]:** Manasoa, 11.I.1913, fl., *Afzelius s.n.* (S [S07-13314] image!; isolecto-: S [S07-13312, S07-13313] image!).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Notes. – This species was not cited in Cavaco & Keraudren (1958).

Uvaria catocarpa Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 339. 1925 [wfo-0001065776]. ≡ *Uvaria acuminata* var. *catocarpa* (Diels) Cavaco & Keraudren in Humbert, Fl. Madagascar Comores 78: 15. 1958 [wfo-0001065892].

Holotypus: Madagascar: sur la Vohitra, X.1921, fl. & fr., *Perrier de la Bâthie 14022* (B [B 10 1094915] image!; iso-: P [P030261]!).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Uvaria combretifolia Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 336. 1925 [wfo-0001065768].

Lectotypus (designated here): **Madagascar. Reg. Sofia [Prov. Mahajanga]:** bord d'un torrent env. d'Ampasimantera, IX.1906, fl., *Perrier de la Bâthie 4946* (B [B 10 1095104] image!; isolecto-: P [P030256, P01964948]!).

= *Uvaria marenteria* f. *acuta* Cavaco & Keraudren in Humbert, Fl. Madagascar Comores 78: 19. 1958 [wfo-0001065782]. **Lectotypus** (designated here): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** collines et plateaux calcaires de l'Analamera, I.1938, fl., Humbert 19198 (P [P030280]!; isolecto-: P [P030279]!).

Habit. – Liana or shrub.

Distribution. – Endemic to Madagascar.

Uvaria commersoniana Baill. in Adansonia 8: 346. 1868 [wfo-0000415870].

Holotypus: Madagascar: sine loco, s.d., fr., *Commerson s.n.* (P [P030262]!).

Habit. – Liana or shrub.

Distribution. – Endemic to Madagascar.

Uvaria decaryana Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 86. 1957 [wfo-0001065769].

Lectotypus (designated here): **Madagascar. Reg. Sofia [Prov. Mahajanga]:** basse Sofia, s.d., fl., *Decary 14881bis* (P [P030263]!; isolecto-: P [P030264]!).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Uvaria diplocampta Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 338. 1925 [wfo-0001065777].

Holotypus: Madagascar. Reg. Boeny [Prov. Mahajanga]: env. d'Andranomena, Ambongo, IX.1904, fl., *Perrier de la Bâthie 1758* (B [B 10 0153089] image!; iso-: P [P030265]!).

Habit. – Liana or shrub.

Distribution. – Endemic to Madagascar.

Uvaria furfuracea (A. DC.) Walp. in Repert. Bot. Syst. 1: 79. 1842 [wfo-0000416363]. ≡ *Unona furfuracea* A. DC. in Mém. Soc. Phys. Genève 5: 205. 1832 [wfo-0000416104].

Holotypus: Madagascar: sine loco, s.d., fr., *Du Petit-Thouars s.n.* (G [G00439812] image!; iso-: P [P030266, P030267]!).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Uvaria leandrii Ghesq. ex Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles, 27: 84. 1957 [wfo-0001065773].

Lectotypus (designated here): **Madagascar. Reg. Melaky [Prov. Mahajanga]:** Tsingy du Bemaraha, 10.II.1933, fr., *Leandri 859* (P [P030270]!; isolecto-: P [P030271]!, MO [MO-100871006]!).

– *Uvaria ambongoensis* var. *botulina* Ghesq. in Bull. Acad. Malgache, n.s., 19: 98. 1936 [nom. nud.] [wfo-1200027766].

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Uvaria lemurica Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 338. 1925 [wfo-0001065772].

Holotypus: Madagascar. Reg. Melaky [Prov. Mahajanga]: Bemarivo, Boina, X.1906, fl., *Perrier de la Bâthie 2272* (B [B 10 0153147] image!; iso-: P [P030272, P030273]!).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Uvaria lombardii L. Gaut. & Deroin in Candollea 68: 238. 2013 [wfo-0001315138].

Holotypus: Madagascar. Reg. SAVA [Prov. Antsiranana]: s.-préf. de Vohemar, comm. rurale de Daraina, forêt d'Ambohitsitondroina, 13°07'50"S 49°27'46"E, 250 m, 5.I.2006, fl., *Ranirison & Nusbaumer 1046* (G [G00090474]; iso-: K, MO [MO-3047461], P [P02297742, P06901555]!, TEF).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Uvaria manjensis Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 86. 1957 [wfo-0001065779].

Lectotypus (designated here): **Madagascar. Reg. Menabe [Prov. Toliara]:** Manja, forêt Ankotrofotsy, 23.V.1952, fl., *Service Forestier 5309* (P [P030274]!; isolecto-: P [P030275, P030276]!, MO [MO-1134254], TAN).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Uvaria marenteria (DC.) Baill. in Adansonia 8: 304. 1868 [wfo-0001065780]. ≡ *Unona marenteria* DC., Syst. Nat. 1: 487. 1817 [wfo-0001065781]. ≡ *Uva marenteria* (DC.) Kuntze, Revis. Gen. Pl. 1: 7. 1891 [wfo-0000415761] (Fig. 11).

Lectotypus (designated here): **Madagascar:** sine loco, *Du Petit Thouars s.n.* (P [P030278]!; isolecto-: P [P030277]!).

= *Uvaria marenteria* var. *obtusiuscula* Ghesq. ex Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 336. 1925 [wfo-0001065894]. ≡ *Uvaria marenteria* f. *obtusiuscula* (Ghesq. ex Diels) Cavaco & Keraudren in Humbert, Fl. Madagascar Comores 78: 20. 1958 [wfo-0001065893]. **Lectotypus** (designated here): **Madagascar. Reg. Atsinanana [Prov. Toamasina]:** Mt Vohitrilongo, c. 1400 m, XI.1922, fl., *Perrier de la Bâthie 14966* (P [P030281]! isolecto-: P [P030282]!).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Uvaria relambo Deroin & L. Gaut. in Candollea 61: 52. 2006 [wfo-0001279706].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: RS Manongarivo, Besinkara, 14°04'S 48°17'E, Ambalafary, chemin d'Ambodisakoana, crête après le premier ruisseau, 350 m, 23.III.1996, fl., *Gautier & Totozajy Be LG2866* (G [G00098634]!; iso-: TAN, TEF, P [P02141263]!, MO, K [K000381696]).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Uvaria saboureaui Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 83. 1957 [wfo-0001065771].

Lectotypus (designated here): **Madagascar. Reg. Alaotra-Mangoro [Prov. Toamasina]:** Moramanga, Périnet Moramanga, 27.XII.1947, fl., *Service Forestier 1303* (P [P030283]!; isolecto-: P [P030284]!).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

Uvaria sambiranensis Deroin & L. Gaut. in Candollea 61: 53. 2006 [wfo-0001279707].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: RS Manongarivo, Besinkara, 14°04'S 48°17'E, Ambalafary, 50 m à l'E du hameau, 330 m, 3.X.1996, fl., *Gautier & Totozafy Be LG3175* (G [G00098635]; iso-: K [K000381697, K000381698], MO, P [P02141264]!, TAN, TEF, WAG [WAG0346028]).

Habit. – Liana.

Distribution. – Endemic to Madagascar.

9. ***Xylopia*** L., Syst. Nat., Ed. 10: 1250. 1759 [wfo-4000041030].

Notes. – A Pantropical genus including 191 species with 30 endemic to Madagascar and three in the Mascarene Islands. The genus was recently revised by Johnson & Murray (2020) and included the description of 10 new species.

Xylopia ambanjensis Cavaco & Keraudren in Bull. Soc. Bot. France 103: 275. 1956 [wfo-0001065792].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: Anaborano-Ambanja, Sambirano, 18.IX.1951, fl., *Service Forestier 3878* (P [P030362]!; iso-: TEF).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia amplexicaulis (Lam.) Baill. in Adansonia 4: 142. 1863 [wfo-0001065785]. ≡ *Annona amplexicaulis* Lam., Encycl. 2: 127. 1786 [wfo-0000537668]. ≡ *Pseudannona amplexicaulis* (Lam.) Saff. in J. Washington Acad. Sci. 3: 18. 1913 [wfo-0001236533].

Lectotypus (designated by Johnson & Murray, 2020: 16): **Madagascar:** sine loco, s.d., fl., *Commerson s.n.* (P [P030364]!).

Habit. – Tree.

Distribution. – Endemic to Mauritius.

Xylopia anomala D.M. Johnson & N.A. Murray in Adansonia, sér. 3, 42: 42. 2020 [wfo-1000025234].

Holotypus: Madagascar. Reg. SAVA [Prov. Antsiranana]: Anjangoveratra, Antanandava, Makirovana, 14°10'01"S 49°57'12"E, 685 m, 4.V.2010, fl., *Razakamalala 5422* (MO [MO-2744807]).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia australis D.M. Johnson & N.A. Murray in Adansonia, sér. 3, 42: 44. 2020 [wfo-1000025235].

Holotypus: Madagascar. Reg. Anosy [Prov. Toliara]: Préfecture de Taolagnaro, Fort-Dauphin, Petriky, 25°04'S 46°51'E, 0–10 m, 9.III.1989, fl., *Schatz et al. 2641* (MO [MO-3241639]; iso-: BR, K).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Fig. 11. – *Uvaria marenteria* (DC.) Baill. [*Schatz 2930*] [Photo: G.E. Schatz]

Xylopia beananensis Cavaco & Keraudren in Bull. Soc. Bot. France 103: 275. 1956 [wfo-0001065790].

Lectotypus (designated by Johnson & Murray, 2020: 20): **Madagascar. Reg. Analanjirofo [Prov. Toamasina]:** bassin de la Rantabe, env. de Beanana, 650 m, 25.II.1954, fl. & fr., *Service Forestier 9077* (P [P030365]!; isolecto-: P [P030366, P030367, P00697844]!, TEF, WAG [WAG0027035] image!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia bemarivensis Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 352. 1925 [wfo-0001065797] (Fig. 12A).

Holotypus: Madagascar. Reg. Boeny [Prov. Mahajanga]: "Boina: ad rivum Bemarivo superiorem", III.1907, fr., *Perrier de la Bâthie 4945* (B [B 10 0153135] image!; iso-: P [P00524385]!).

= *Xylopia decidua* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 353. 1925 [wfo-0001065798]. **Holotypus: Madagascar. Reg. Boeny [Prov. Mahajanga]:** Boina, env. du Mont Tsitondroina, XII.1900, fl. & fr., *Perrier de la Bâthie 1167* (B; iso-: P [P030368, P030369]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia buxifolia Baill. in Adansonia 4: 143. 1863 [wfo-0001065805].

Lectotypus (designated by Johnson & Murray, 2020: 48): **Madagascar:** sine loco, s.d., fl. & fr., *Du Petit-Thouars s n.* (P [P030370]!; isolecto-: P [P030371]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia capuronii Cavaco & Keraudren in Bull. Soc. Bot. France 103: 274. 1956 [wfo-0001065784].

Lectotypus (designated by Johnson & Murray, 2020: 51): **Madagascar. Reg. Analanjirofo [Prov. Toamasina]:** forêt orientale de l'Anketrabe, Rantabe, au N de Sahajinja, c. 700 m, 6.III.1954, fl., *Service Forestier 9110* (P [P030372]!; isolecto-: P [P030373, P030374, P030375, P00697845]!, TEF, WAG [WAG0027037]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia carinata D.M. Johnson & N.A. Murray in Adansonia, sér. 3, 42: 52. 2020 [wfo-1000025236].

Holotypus: Madagascar. Reg. Atsinanana [Prov. Toamasina]: Mangalimaso, à l'Ouest de Foulpointe, 29.X.1963, fl., *Service Forestier 22777* (P [P00524381]!; iso-: A, K [K001208446, K001208447]).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia danguyella Ghesq. ex Cavaco & Keraudren in Bull. Mus. Natl. Hist. Nat., sér. 2, 29: 351. 1957 [wfo-0001065799].

Lectotypus (designated by Johnson & Murray, 2020: 54): **Madagascar. Reg. Alaotra-Mangoro [Prov. Toamasina]:** forêt d'Analamazaotra, I.1919, fr., *Ramanantoavolana 94* (P [P030380]!; isolecto-: P [P030377, P030378]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia dielsii Cavaco & Keraudren in Bull. Soc. Bot. France 103: 277. 1956 [wfo-0001065801].

Lectotypus (designated by Johnson & Murray, 2020: 56): **Madagascar. Reg. Analanjirofo [Prov. Toamasina]:** forêt de Tampolo, au N de Fénérive, XI.1953, fl., *Service Forestier 8627* (P [P030383]!; isolecto-: OWU, P [P030384, P030385]!, TEF).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia fananehanensis Cavaco & Keraudren in Bull. Soc. Bot. France 103: 277. 1956 [wfo-0001065795].

Lectotypus (designated by Johnson & Murray, 2020: 58): **Madagascar. Reg. Analanjirofo [Prov. Toamasina]:** bassin de la Fananehana, environs du village d'Aditavolo, vers 300 m d'alt., 30.I.1954, fl., *Service Forestier 8960* (P [P030386]!; isolecto-: P [P030387, P00364245]!, TEF).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia flexuosa Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 350. 1925 [wfo-0001065787].

Lectotypus (designated by Johnson & Murray, 2020: 22): **Madagascar. Reg. Alaotra-Mangoro [Prov. Toamasina]:** Beforona, 700 m, X.1921, fl. & fr., *Perrier de la Bâthie 14057* (P [P030388]!; isolecto-: P [P030389]!).

= *Xylopia flexuosa* var. *latiflora* Ghesq. ex Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 88. 1957 [wfo-0001065788]. **Lectotypus** (designated by Johnson & Murray, 2020: 22): **Madagascar. Reg. Atsimo-Atsinanana [Prov. Fianarantsoa]:** pointe de Farafangana, 5.X.1926, fl., *Decary 5570* (P [P030390]!; isolecto-: K [K001208445]!, P [P030391]!).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Xylopia galokothamna D.M. Johnson & N.A. Murray in Adansonia, sér. 3, 42: 60. 2020 [wfo-1000025237].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: Ambilobe, Beramanja, Anketrabe, forêt de Kalabenono, Ambatoharanana, 13°38'46"S 48°40'30"E, 706 m, 24.XI.2006, fl. & fr., *Callmander et al. 585* (P [P01986966]!; iso-: G [G00360445]!, MO [MO-2744752], OWU).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Xylopia ghesquiereana Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 87. 1957 [wfo-0000428949].

Holotypus: Madagascar. Reg. Atsinanana [Prov. Toamasina]: Vohimarangitra, Betampona, 22.II.1950, fl., *Réserves Naturelles 2440bis* (P [P030392]!; iso-: P [P030393, P030394]!).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Xylopia humbertii Ghesq. ex Cavaco & Keraudren in Bull. Jard. Bot. État Bruxelles 27: 87. 1957 [wfo-0000428938].

Lectotypus (designated by Johnson & Murray, 2020: 64): **Madagascar. Reg. Sofia [Prov. Mahajanga]:** entre Mandritsara et Andilamena, 900–1200 m, XI.1937, fl., *Humbert 17980* (P [P030395]!; isolecto-: P [P030396, P030397]!).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Xylopia humblotiana Baill. in Bull. Mens. Soc. Linn. Paris 1: 340. 1882 [wfo-0001065803] (Fig. 12B).

Lectotypus (designated by Johnson & Murray, 2020: 24): **Madagascar. Reg. Atsirananana [Prov. Toamasina]:** lac Nosive, Sud de Tamatave, IV.1882, fl. & fr., *Humblot 117* (P [P030398]!; isolecto-: K [K000199050]), P [P030399]!).

= *Xylopia platynema* Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 351. 1925 [wfo-0001065804]. **Lectotypus** (designated by Johnson & Murray, 2020: 24): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** près d'Ambilo, II.1924, fl. & fr., *Perrier de la Bâthie 15998* (P [P00524382]!; isolecto-: P [P00608328]!).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Fig. 12. – *Xylopia* L. on Madagascar. **A.** *Xylopia bemarivensis* Diels; **B.** *Xylopia humblotiana* Baill.
[**A:** *Schatz 4271*; **B:** *Schatz 4475*] [Photos: G.E. Schatz]

Xylopia kalabenonensis D.M. Johnson, Deroin & Callm. in Candollea 64: 183. 2009 [wfo-0000746016].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: Préf. d'Ambilobe, comm. Beramanja, Anketrabe, forêt de Kalabenono, chaîne du Galoka, 7 km au SE d'Anketrabe, 13°38'23"S 48°40'06"E, 854 m, 18.XI.2006, fl. & fr., *Razafitsalama et al. 1041* (MO [MO-3241552] image!; iso-: G [G00165579] image!, P, OWU, TAN).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Xylopia lamarckii Baill. in Adansonia 4: 142. 1863 [wfo-0001065786]. ≡ *Annona grandiflora* Lam., Encycl. 2: 126. 1786 [wfo-0000537777]. ≡ *Pseudannona grandiflora* (Lam.) Saff. in J. Washington Acad. Sci. 3: 18. 1913 [wfo-0001236534]. ≡ *Xylopia grandiflora* (Lam.) Ghesq. ex Cavaco & Keraudren in Humbert, Fl. Madagascar Comores 78: 26. 1958 [wfo-1000078289][nom. illeg.] [non *X. grandiflora* A. St.-Hil., 1825].

Lectotypus (designated by Johnson & Murray, 2020: 28): **Mauritius:** "Isle de Bourbon", s.d., fl. *Commerson s.n.* (P [P0034246]!; isolecto-: P [P0034247]!).

= *Annona madagascariensis* Pers., Syn. Pl. 2: 95. 1806 [wfo-0000537830]. ≡ *Annona grandiflora* var. *madagascariensis* (Pers.) DC., Syst. Nat. 1: 475. 1817 [wfo-1200027776]. **Holotypus: Mauritius:** "Hab. In ins. Madagasc., herb. Juss[ieu]" (P-JU, not found).

= *Annona pyriformis* Bojer ex Baker, Fl. Mauritius: 3. 1877 [wfo-1200027900]. **Holotypus: Mauritius:** sine loco, s.d., *Bojer s.n.* (K, not found).

Habit. – Tree.
Distribution. – Endemic to the island of Mauritius.

Xylopia lamii Cavaco & Keraudren in Bull. Soc. Bot. France 103: 275. 1956 [wfo-0001065791].

Lectotypus (designated by Johnson & Murray, 2020: 66): **Madagascar. Reg. Analanjirofo [Prov. Toamasina]:** bassin de la Manonga, affluent de la Rantabe, aux env. de Sahajinja, 700 m, 3.III.1954, fl., *Service Forestier 9087* (P [P030401]!; isolecto-: OWU, P [P030402, P030403]!, WAG [WAG0027036]!).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Xylopia lastelliana Baill. in Adansonia 4: 144. 1863 [wfo-0001065806].

Holotypus: Madagascar: sine loco, 1841, fl., *Lastelle s. n.* (P [P030304]!).

= *Xylopia lastelliana* var. *acuta* Ghesq. ex Cavaco & Keraudren in Bull. Jard. Bot. État, Bruxelles 27: 88. 1957 [wfo-0001065807]. **Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]:** Antalaha, IX.1912, fl., *Perrier de la Bâthie 4940* (P [P030405]!; iso-: B [B 10 0312908] image!).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Xylopia lemurica Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 350. 1925 [wfo-0001065800].

Lectotypus (designated by Johnson & Murray, 2020: 70): **Madagascar. Reg. Alaotra-Mangoro [Prov. Toamasina:** Analamazaotra, 800 m, II.1912, fl. & fr., *Perrier de la Bâthie 4975* (P [P030406]!; isolecto-: B [B100153146] image!).

= *Xylopia microphylla* Cavaco & Keraudren in Bull. Soc. Bot. France 103: 277. 1956 [wfo-0001065794]. **Lectotypus** (designated by Johnson & Murray, 2020: 70). **Madagascar. Reg. SAVA [Prov. Antsiranana]:** massif du Beanjada, N de la presqu'île Masoala, c. 1000 m, 28.XII.1953, fl., *Service Forestier 8815* (P [P030407]!; isolecto-: P [P030408, P030409]!).

= *Xylopia pseudolemurica* Cavaco & Keraudren in Bull. Soc. Bot. France 103: 276. 1956 [wfo-0001065793]. **Lectotypus** (designated by Johnson & Murray, 2020: 70). **Madagascar. Reg. SAVA [Prov. Antsiranana]:** massif de l'Ambohitsitondroina de Mahalevona, N de la presqu'île de Masoala, vers 400 m d'alt., 28.XI.1953, fl., *Service Forestier 8674* (P [P030416]!; isolecto-: OWU!, P [P030417, P030418]).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Xylopia lokobensis D.M. Johnson & N.A. Murray in Adansonia, sér. 3, 42: 72. 2020 [wfo-1000025238].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: Nosy-Be, Lokobe, Ampasindava, 13°24'44"S 48°18'53"E, 300 m, 7.XII.1996, fl. & fr., *Antilahimena 340* (P [P01986965]!; iso-: MO [MO-3241654]).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Xylopia longirostra D.M. Johnson & N.A. Murray in Adansonia, sér. 3, 42: 73. 2020 [wfo-1000025239].

Holotypus: Madagascar. Reg. Atsinanana [Prov. Toamasina]: Vohibola, forest N to NNW of village of Andranokoditra, N of Lac Ampitabe, 18°33'34"S 49°15'17"E, 5 m, 12.II.2003, fr., *Lowry et al. 6064* (MO [MO-3241533]; iso-: OWU, P [P01987028]!).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Xylopia madagascariensis Cavaco & Keraudren in Bull. Soc. Bot. France 103: 276. 1956 [wfo-0001065802] (Fig. 13).

Lectotypus (designated by Johnson & Murray, 2020: 31): **Madagascar. Reg. Atsinanana [Prov. Toamasina]:** Vohimarangitra, Betampona, 17°55'S 49°13'E, 22.II.1950, fl., *Réserves Naturelles 2440* (P [P030410]!; isolecto-: K [K000199049], P [P030411, P030412]!).

Habit. – Tree.
Distribution. – Endemic to Madagascar.

Xylopia marojejyana D.M. Johnson & N.A. Murray in Adansonia, sér. 3, 42: 74. 2020 [wfo-1000025240].

Holotypus: Madagascar. Reg. SAVA [Prov. Antsiranana]: Marojejy, w slopes of Mt. Beondroka, 14°27'S 49°47'E, 660–830 m, 23–24.X.1989, fr., *Miller & Randrianasolo 4423* (MO [MO-3241629]).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia perrieri Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 351. 1925 [wfo-0001065808].

Lectotypus (designated by Johnson & Murray, 2020: 74): **Madagascar. Reg. Alaotra-Mangoro [Prov. Toamasina]:** forêt d'Analamazaotra, [18°56'S 48°25'E], 800 m, XII, fl., *Perrier de la Bâthie 4936* (P [P030413]!; isolecto-: P [P030414, P030415]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia ravelonarivoi D.M. Johnson & N.A. Murray in Adansonia, sér. 3, 42: 32. 2020 [wfo-1000025241].

Holotypus: Madagascar. Reg. Atsinanana [Prov. Toamasina]: Brickaville, Maroseranana, Ambodilendemy, suivant la rivière d'Andrangato, 18°26'05"S 48°46'51"E, 658 m, 14.III.2011, fl., *Ravelonarivo et al. 3641* (MO [MO-2744806]; iso-: P [P06806802]!, TAN).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia retusa D.M. Johnson & N.A. Murray in Adansonia, sér. 3, 42: 78. 2020 [wfo-1000025242].

Holotypus: Madagascar. Reg. Analanjirofo [Prov. Toamasina]: Sainte Marie, Firaisana Lokintsy, Fokontany Ambohidena, 16°51'11"S 49°57'18"E, 18.II.2004, fl., *Rabevohitra et al. 5073* (MO [MO-3241541]; iso-: OWU, P [P06170327]).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia richardii Boivin ex Baill. in Adansonia 4: 145. 1863 [wfo-0000428691]. ≡ *Xylopicrum richardii* (Boiv. ex Baill.) Kuntze, Revis. Gen. Pl. 1: 8. 1891 [wfo-0000428797].

Lectotypus (designated by Johnson & Murray, 2020: 34): **La Réunion:** "Île Bourbon", Montagne de St. Denis, s.d., fl. & fr., *Richard s. n. [687?]* (P [P030420, lower specimen with two fragments]!; isolecto-: K [K001208416]!, P [P030419]!).

Habit. – Tree.

Distribution. – Endemic to the the islands of Mauritius and La Réunion.

Fig. 13. – *Xylopia madagascariensis* Cavaco & Keraudren. [*Schatz 4420*] [Photo: G.E. Schatz]

Xylopia sahafariensis Cavaco & Keraudren in Bull. Soc. Bot. France 103: 277. 1956 [wfo-0001065796].

Lectotypus (designated by Johnson & Murray, 2020: 35): **Madagascar. Reg. DIANA [Prov. Antsiranana]:** bassin de la Saharaina, forêt de Sahafary, 23.X.1956, fl., *Service Forestier 11370* (P [P030422]!; isolecto-: OWU, P [P030423, P030424, P00800918]!, TEF!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia sclerophylla D.M. Johnson & N.A. Murray in Adansonia, sér. 3, 42: 80. 2020 [wfo-1000025243].

Holotypus: Madagascar. Reg. DIANA [Prov. Antsiranana]: massif de la Montagne d'Ambre, rive droite de la Rivière des Makis entre la Station des Roussettes et la grande cascade, 18–20.XI.1958, fl. & fr., *Service Forestier 20041* (BR; iso-: K [K001208409], OWU).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

Xylopia sericolampra Diels in Notizbl. Bot. Gart. Berlin-Dahlem 9: 353. 2020 [wfo-0001065789].

Holotypus: Madagascar. Reg. Bongolava [Prov. Mahajanga]: Boina, Bongolava, X.1907, fl., *Perrier de la Bâthie 4966* (B [B 100312900] image!; iso-: P [P030425, P00364248]!).

Habit. – Tree.

Distribution. – Endemic to Madagascar.

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