A new species and new combinations in *Cryptocarya* from Madagascar

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ABSTRACT
A new species, *Cryptocarya glabriflora*, is described and illustrated. It differs from other Malagasy species of *Cryptocarya* in being entirely glabrous, in its coriaceous, obovate or obovate-elliptic leaves with a rounded apex and in its inflorescences being 3.5 to 9 cm long. Eight species of *Ravensara*, now considered a synonym of *Cryptocarya*, are transferred to *Cryptocarya*. New names are proposed for six of these eight species.

KEY WORDS
Lauraceae,
Cryptocarya,
Ravensara,
Madagascar,
new species,
new combinations.

RÉSUMÉ
Une nouvelle espèce et des combinaisons nouvelles de Cryptocarya *de Madagascar.*
Une nouvelle espèce, *Cryptocarya glabriflora*, est décrite et illustrée. Elle se distingue des autres espèces malgaches par son état entièrement glabre, ses feuilles coriaces, obovées ou obovées-elliptiques à apex arrondi, et son inflorescence de 3,5 à 9 cm de long. Huit espèces de *Ravensara*, genre dorénavant considéré comme synonyme de *Cryptocarya*, sont transférées dans ce dernier ; de nouveaux noms sont proposés pour six d'entre elles.

MOTS CLÉS
Lauraceae,
Cryptocarya,
Ravensara,
Madagascar,
espèce nouvelle,
combinaisons nouvelles.

INTRODUCTION

The genus *Ravensara*, endemic to Madagascar, was described by Sonnerat (1782) with the single species *R. aromatica* Sonn. Kostermans maintained *Ravensara* in his treatment of the Lauraceae for the *Flore de Madagascar et des Comores* (Kostermans 1950) and in a later publication in which he described an additional nine new species of *Ravensara* (Kostermans 1958). Currently, the estimated number of species of *Ravensara* is about 30 (Rohwer 1993). *Ravensara* has always been considered closely related to *Cryptocarya* R.Br., described in 1810, a pantropical genus with an estimated 350 species (Rohwer 1993). The only difference between the two genera is a fruit character: in *Ravensara* the fruits are ruminate, whereas in *Cryptocarya* they are not. Because some *Cryptocarya* species outside Madagascar also have ruminate fruits (Van der Werff 1992), this one-character difference is insufficient for the separation of two genera. Since *Ravensara* is the older name, merging *Cryptocarya* and *Ravensara* would necessitate the transfer of hundreds of *Cryptocarya* species to *Ravensara*. In order to avoid this, Van der Werff (1992) proposed the conservation of *Cryptocarya* over *Ravensara*, a proposal which was accepted (Brummit 1994). However, because the malgache species placed in *Ravensara* and *Cryptocarya* are still poorly known, a transfer of all *Ravensara* species to *Cryptocarya* seems premature, especially as several will likely be placed in synonymy once revised. In this contribution a new species of *Cryptocarya* from Madagascar is described and eight relatively well-known species described in *Ravensara* are transferred to *Cryptocarya*. New names are proposed for six of these eight species because their epithets are already occupied in *Cryptocarya*.

SYSTEMATICS

Cryptocarya glabriflora Van der Werff, sp. nov. (Fig. 1)

Cryptocaryae alseodaphnifoliae *affinis, sed foliis obovatis, coriaceis, subtus glandulo-punctatis, inflorescentiis majoribus, ad 9 cm longis recedit*.

TYPUS. — **Madagascar.** Toamasina, Vatomandry, Commune Ambalabe, W of Sahamahirana stream,19°09'33"S, 48°34'40"E, 21.XI.2004, *A. Randrianasolo, R. Ranaivojaona & A. Razanatsima 902* (holo-, TAN; iso-, G, MO, P, US).

DESCRIPTION

Tree, to 30 m. Twigs angular or terete, glabrous, terminal buds densely and minutely puberulous. Leaves alternate, obovate to obovate-elliptic, 6-11 × 3-6 cm, glabrous, stiffly coriaceous, the base acute, rarely obtuse, margin flat, the apex rounded, the lower surface minutely but densely gland-dotted, lateral veins 4-6 on each side, reticulation raised on both surfaces, petioles glabrous, 9-14 mm long. Inflorescences 3.5-9 cm long, paniculate, branched from the base, glabrous; bracts along inflorescences mostly deciduous, 1.5 mm long, linear, pubescent. Flowers yellow-green, externally glabrous, tepals initially half-erect, in old flowers spreading, flowers 4-5 mm in diameter; pedicels short, from half the length of the floral tube to equaling it; tepals 6, equal, narrowly ovate, 1.5-2 mm long, glabrous outside, puberulous inside; stamens 9, all 2-celled, pubescent, *c.* 1 mm long, the filament very short, 0.1-0.2 mm, the anther cells large, the connectives slightly prolonged beyond the anther cells; stamens with the same length and width as the tepals and hidden behind them; 2 small globose glands present at the base of the inner three stamens; staminodia small, narrowly ovate, pubescent; pistil glabrous, the style to 1 mm exserted, receptacle tubular, pubescent near the rim, otherwise glabrous. Fruits unknown.

REMARKS

Only two species of *Cryptocarya* from Madagascar (including those previously placed *Ravensara*) have the combination of glabrous twigs and leaves and raised reticulation on both surfaces of the leaves. Of these two, *Ravensara macrophylla* Kosterm., only known from the fruiting type, differs in leaf shape (elliptic) and size (16-20 cm long). The other species, *C. alseodaphnifolia* Kosterm., is known only from the flowering type collection. Like *C. glabriflora*, it has glabrous flowers, a feature unknown in other members of the genus on Madagascar (although flowers are unknown in 13 species, their types having fruits only). *Cryptocarya glabriflora* differs in having stiffly

FIG. 1. — *Cryptocarya glabriflora* Van der Werff: **A**, habit; **B**, flower; **C**, opened flower showing arrangement of stamens and staminodia; **D**, detail of lower leaf surface showing gland dots. *Randrianasolo et al. 902*. Scale bars: A, 2 cm; B-D, 1 mm.

coriaceous leaves (chartaceous in *C. alseodaphnifolia*, although Kostermans (1957) described them as coriaceous), leaves that are obovate to obovate-elliptic (elliptic to broadly elliptic in *C. alseodaphnifolia*), and densely and minutely gland-dotted on the lower surface (without gland-dots in *C. alseodaphnifolia*), and the inflorescences are 3.5 to 9 cm long (1-3 cm in *C. alseodaphnifolia* according to Kostermans (1957) although the isotype I have seen did not have inflorescences longer than 1.5 cm). *Cryptocarya glabriflora* is only known from the type collection, made in primary forest near Ambalabe, at mid-elevation on the east coast of central Madagascar.

Cryptocarya agathophylla
Van der Werff, nom. nov.

REPLACED SYNONYM. — *Ravensara aromatica* Sonn., *Voyage aux Indes orientales et à la Chine* III: 248 (1782), non *C. aromatica* (Becc.) Kosterm. (1949).

TYPUS. — *Commerson s.n.*, s.l. (lecto-, P, designated by Kostermans [1939]).

REMARKS
Cryptocarya agathophylla can be recognized by its sparsely appressed pubescent flowers and its glaucous leaves; most species of *Cryptocarya* from Madagascar have densely puberulous flowers. Its fruits and leaves are used as spice. It is the type species of *Ravensara* and its fragrant leaves are reflected in the generic name (Ravensara means "good leaf", as does the epithet agathophylla).

Cryptocarya krameri Van der Werff, nom. nov.

REPLACED SYNONYM. — *Ravensara lucida* Kosterm., *Bulletin du Jardin botanique de l'État*, Bruxelles 28: 182 (1958), non *C. lucida* Blume (1851).

TYPUS. — **Madagascar.** Beavony, Ambanja, *Service Forestier 2568* (holo-, P).

REMARKS
This species occurs in the NE part of Madagascar (Ambanja-Ambilobe region) and resembles *C. subtriplinervia*, but differs in having narrower leaves with an acute base and pinnate venation. I name this species in memory of Karel U. Kramer, formerly of the State University of Utrecht, the Netherlands, whose encouragement kindled my interest in botany and initiated my passion for ferns.

Cryptocarya litoralis Van der Werff, nom. nov.

REPLACED SYNONYM. — *Agathophyllum acuminatum* Willd. ex C.F.W.Meissn., *Prodromus Systematis Naturalis Regni Vegetabilis* 15 (1): 110 (1864); *Ravensara acuminata* (Willd. ex C.F.W.Meissn.) Baillon, *Adansonia* 9: 330 (1878), non *C. acuminata* Merr. (1906).

TYPUS. — **Madagascar.** *Du Petit-Thouars s.n.* (holo-, B-W 9114; iso-, P).

REMARKS
This species is fairly common in littoral forest and can be recognized by its acuminate leaf apices and the slightly raised reticulation on the upper leaf surface. Often some of the leaves are folded (conduplicate) after drying.

Cryptocarya ovalifolia
(Danguy) Van der Werff, comb. nov.

BASIONYM. — *Ravensara ovalifolia* Danguy, *Bulletin du Muséum d'Histoire naturelle*, Paris 26: 548 (1920).

TYPUS. — **Madagascar.** *Thouvenot 72* (holo-, P).

REMARKS
This species is similar to *Cryptocarya crassifolia* Baker, but differs in having leaves with fewer lateral veins (3 or 4 vs. 5 or 6), a slightly areolate (vs. smooth) upper leaf surface and a longer indument on the young twigs. Mostly because of the indument difference, I accept *C. ovalifolia* as a distinct species. The few collections I have seen all come from the Perinet-Andasibe region.

Cryptocarya retusa
(Willd. ex Nees) Van der Werff, comb. nov.

BASIONYM. — *Agathophyllum retusum* Willd. ex Nees, *Systema Laurinarum* 234 (1836); *Ravensara retusa* (Willd. ex Nees) Baill., *Adansonia* 9: 303 (1878).

TYPUS. — **Madagascar.** *Du Petit-Thouars* s.n., (holo-, B-W 9116; iso-, P).

REMARKS
According to Kostermans (1958), this species is widely distributed on Madagascar and best recognized by its smooth, coriaceous leaves with immersed venation and dense indument on the young growth.

Cryptocarya revoluta Van der Werff, nom. nov.

REPLACED SYNONYM. — *Ravensara bullata* Kosterm., *Bulletin du Jardin botanique de l'État*, Bruxelles 28: 176 (1958), non *C. bullata* Kosterm. (1968).

TYPUS. — **Madagascar.** *Service Forestier 9054* (holo-, P).

REMARKS
This species is easily recognized by its bullate leaves, often with the margins of young leaves strongly revolute. Recent collections are the following: *McPherson 17247* and *Ravelonarivo et al. 364*, from Réserve spéciale d'Anjanaharibe-Sud, and *Rakotomalaza et al. 785*, from Réserve naturelle de Marojejy, all at MO. This species resembles *C. dealbata* Baker from the Central and Southern part of Madagascar which differs in having smaller, smoother leaves.

Cryptocarya septentrionalis
Van der Werff, nom. nov.

REPLACED SYNONYM. — *Ravensara gracilis* Kosterm., *Notulae Systematicae* 8: 101 (1939), non *C. gracilis* Schltr. (1906).

TYPUS. — **Madagascar.** Prope Diego Suarez, 1937, *Ursch 96* (holo-, P).

REMARKS
This species is easily recognized by its narrowly elliptic to narrowly obovate leaves with an obtuse apex. Its leaves are quite similar to those of *Beilschmiedia madagascariensis* (Baill.) Kosterm. and *Potameia incisa* Kosterm., but this species differs in flowers (with nine 2-celled stamens and a deep receptacle) and fruits (fully enclosed by the receptacle). The new name refers to the distribution of *C. septentrionalis*, restricted to the northern part of Madagascar.

Cryptocarya subtriplinervia
(Kosterm.) Van der Werff, comb. nov.

BASIONYM. — *Ravensara subtriplinervia* Kosterm., *Bulletin du Jardin botanique de l'État*, Bruxelles 28: 190 (1958).

TYPUS. — **Madagascar.** Ifarantsa-Fort Dauphin, *Réserves Naturelles 3421* (holo-, P).

REMARKS
The type collection is from the SE part of Madagascar, near Fort Dauphin, and I have seen several recent collections from the same region. It can be recognized by its smooth, glabrous leaves with weakly tripliveined venation. Kostermans (1958) also included collections from the Sambava region in the NE in this species. Recent collections from the area around the Baie d'Antongil differ from typical *C. subtriplinervia* in having larger leaves and inflorescences and their status needs to be reexamined.

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