# Tambourissa manongarivensis Lorence (Monimiaceae) : a new species from Madagascar

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# Tambourissa manongarivensis Lorence (Monimiaceae), a new species from Madagascar

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ABSTRACT

LORENCE, D. H. (2002). Tambourissa manongarivensis Lorence (Monimiaceae), a new species from Madagascar. *Candollea* 57: 71-75. In English, English and French abstracts.

*Tambourissa manongarivensis* Lorence (*Monimiaceae*), a new species from Madagascar, is described and illustrated and its relationships and affinities are discussed.

RÉSUMÉ

LORENCE, D. H. (2002). Tambourissa manongarivensis Lorence (Monimiaceae), une nouvelle espèce décrite de Madagascar. *Candollea* 57: 71-75. En anglais, résumés anglais et français.

*Tambourissa manongarivensis* Lorence (*Monimiaceae*), une nouvelle espèce de Madagascar, est décrite et illustrée. Ses relations et affinités sont discutées.

*KEY-WORDS: Tambourissa* – *MONIMIACEAE* – Madagascar.

*Tambourissa* Sonn. (*Monimiaceae*, subfamily *Monimioideae*) comprises approximately fifty species endemic to Madagascar, the Comoro Islands, and the Mascarene Islands of Mauritius and Réunion (LORENCE, 1985; JÉRÉMIE & LORENCE, 1991). *Tambourissa* was adopted from the pre-Linnaean polynomial "Tambour cissa" and was first validly published by SONNERAT (1782) based on *T. quadrifida* Sonn.

Cavaco recognized twenty-one *Tambourissa* species from Madagascar and the Comoros Islands in the *Flore de Madagascar et des Comores* (CAVACO, 1959). More recently, the genus was treated in monograph of the *Monimiaceae* in the Malagasy region by LORENCE (1985), who recognized fourty-three species of *Tambourissa*, all single island endemics. More recently, six additional species have been described from Madagascar by JÉRÉMIE & LORENCE (1991). It is likely that additional new species remain to be described.

*Tambourissa* possesses more specialized characters than any of the other Malagasy *Monimiaceae* genera (LORENCE, 1985). Members of the genus are monoecious or dioecious shrubs, treelets, or trees with the greatest species diversity being in lowland and montane moist and wet forest communities. Flowers are unisexual, closed in bud, and have a well-developed receptacle bearing few to numerous (several hundred) stamens or carpels within. Most species have a strong staminate/pistillate floral dimorphism. Floral size and morphology are distinctive and species-specific, varying in number, color, and structure of stamens in the staminate flowers and number, structure, and color of styles in pistillate flowers. Floral odors are often sweet- or fermenting-fruity and also species-specific. Staminate flowers may open partially to fully and contain few to very numerous stamens differing in color and structure. The well-developed receptacle of the pistillate flower assumes the functions of a perianth and ovary wall, and the carpels are immersed in and fused with the receptacle wall; consequently they are inferior and syncarpous (Lorence 1985). Fruiting receptacles of *Tambourissa* are many times larger than pistillate flowers but otherwise similar in shape, usually cup-like with a brown, smooth or corky surface. At maturity

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the receptacle splits open irregularly, exposing the numerous, bright orange-red carpels, which are presumably dispersed by birds.

Among *Tambourissa* specimens kindly sent to me for identification by Dr. Laurent Gautier, curator at the Geneva Herbarium (G), were collections of an undescribed species from the vicinity of the Réserve Spéciale de Manongarivo in northwestern Madagascar. This new species is described and illustrated below.

***Tambourissa manongarivensis*** Lorence, **spec. nova** (Fig. 1 & 2)

**Type: MADAGASCAR:** "Besinkara (14°04'S, 48°17'E), chemin d'Ambodisakoana à Ambalafary, en haut de la corniche, coord. précises (Laborde): 597800/1333620, 270 m", 30.VIII.1997, *L. Gautier, N. Messmer & C. D'Amico 3211* (Holo-: G; Iso-: K, MO, P, PTBG, TAN, TEF).

*Species Tambourissa hildebrandtii Perkins affinis, sed differt floribus masculis minoribus 10-15 mm diametro, staminibus paucioribus (50-80) loculis puberulis; floribus femineis grandioribus 12-15 mm longis, 9-10 mm diametro, stylis paucioris (120) non papillosis; receptaculo fructus pyriformibus orificio constricto.*

Monoecious shrub or tree to 10 m tall, the trunk erect or sometimes sarmentose, to 8 cm diam., the twigs and new growth finely and densely velutinous-hirtellous with straight, fulvous trichomes 0.1-0.3 mm long, the leafy twigs 1.5-2 mm diam., finely velutinous-hirtellous. Leaves opposite, petiolate; petiole 5-11 × 0.7-1 mm, densely velutinous- hirtellous; lamina chartaceous, ovate elliptic, elliptic, broadly elliptic or oblong elliptic, (2.5) 3.2-8 × (0.9) 1.5-3.6 cm, the base acute or obtuse, the apex short acuminate, apiculate, the tip 5-10 mm, drying brown-green, dull, discolorous, adaxially sparsely strigillose-hirtellous with fine hairs to 0.5 mm long, these denser along costa, usually glabrescent, abaxially persistently hirtellous, the hairs denser along costa and 2° veins, the 2° veins 3-5 per side, festooned brochidodromous, the venation prominulous, visible to 3° adaxially and to 4° abaxially, the margin ciliolate, entire or rarely apically dentate with 1-3 teeth to 1 mm long on each side. Inflorescences terminal on leafy stems, c. 2 cm long, the pistillate flower solitary and monochasial, or inflorescences pleiochasial and sexually mixed with 2 lateral staminate flowers, or the staminate flowers ramigerous or cauligerous in fascicles or 3-5-flowered pleiochasia 1-1.5 cm long, the floral axis hirtellous, 2-7 mm long, the bracteoles 0.5-7 mm long, deltoid to elliptic oblong, hirtellous. Staminate flowers in bud subglobose, 3.5-4.5 mm diam., smooth, hirtellous, green, apiculate with 2-4 small deltoid to obtuse hirtellous tepals, the pedicel 2.5-6 mm long, hirtellous; at anthesis 4-fid, 10-15 mm diam., splitting to 2/3-3/4 total length of receptacle, the lobes spreading flat or slightly recurved, cream-colored or yellow, stamens 50-80, obovoid to clavate, 1-1.8 × 0.8-1.1 mm, the loculi lateral, separate, connivent apically and bearing scattered, short hairs, the apex obtuse, the connective not prolonged, the filament c. 1/3-1/2 length of stamen, the internal receptacle surface bearing scattered short hairs between the stamens. Pistillate flower in bud obovoid, 8-10 mm long, green, externally densely fulvous villous-hirtellous, 2-4-costate, apiculate, the pedicel 2-3 mm long, bearing a pair of bracts 4-9 mm long or reduced leaves; at anthesis receptacle obovoid, 12-15 × 9-10 mm, the orifice 4-lobed, splitting to c. 1/2 total width of receptacle, the lobes triangular, each with 1 obtuse tepal, styles c. 120, conical, 0.5-0.6 × 0.3-0.5 mm, internal receptacle surface hirtellous between the styles. Mature fruiting receptacle solitary, terminal, c. 4-6 cm diam., pyriform, externally corky brown, the orifice c. 1 cm diam., hollow, the internal surface with very shortly conical, smooth styles 0.1-0.2 mm long × 0.8-1 mm diam. interspersed with short velutinous hairs; peduncle 13 × 5 mm, 4-costate. Fruiting carpels broadly ovoid-compressed, 10-11 × 7-9 mm, covered by the thin, orange mesocarp, the endocarp smooth, dark brown.

*Paratypes.* – **MADAGASCAR:** "Besinkara (14°04'S, 48°17'E), forêt sous Ambalafary, sur le chemin d'Anabotoaka, relevé 1 ha, coord. précises (Laborde): 599800/1332490, 200 m", 24.IX.1996, *Gautier & al. 3131* (G, K, MO, P, PTBG, TAN, TEF); "en contrebas d'Ambalafary sur le chemin d'Anabotoaka, parcelle 1 ha, placeau 23, coord. précises (Laborde) 599784/13332492, 200 m", 12.IX.1997, *Gautier & al. 3287* (G, K, MO, P, PTBG, TAN, TEF); "Ambalafary, coord. Laborde 600189/1333967, 300 m", 19.VI.1994, *Gautier & Chatelain 2395* (G, K, MO, P, PTBG, TAN); 7.VI.1996, *Totozafy Be 571* (G, K, MO, P, PTBG, TAN); "chemin d'Ambodisakoana à Ambalafary, sur le plateau, 300 m", 3.XI.1994,

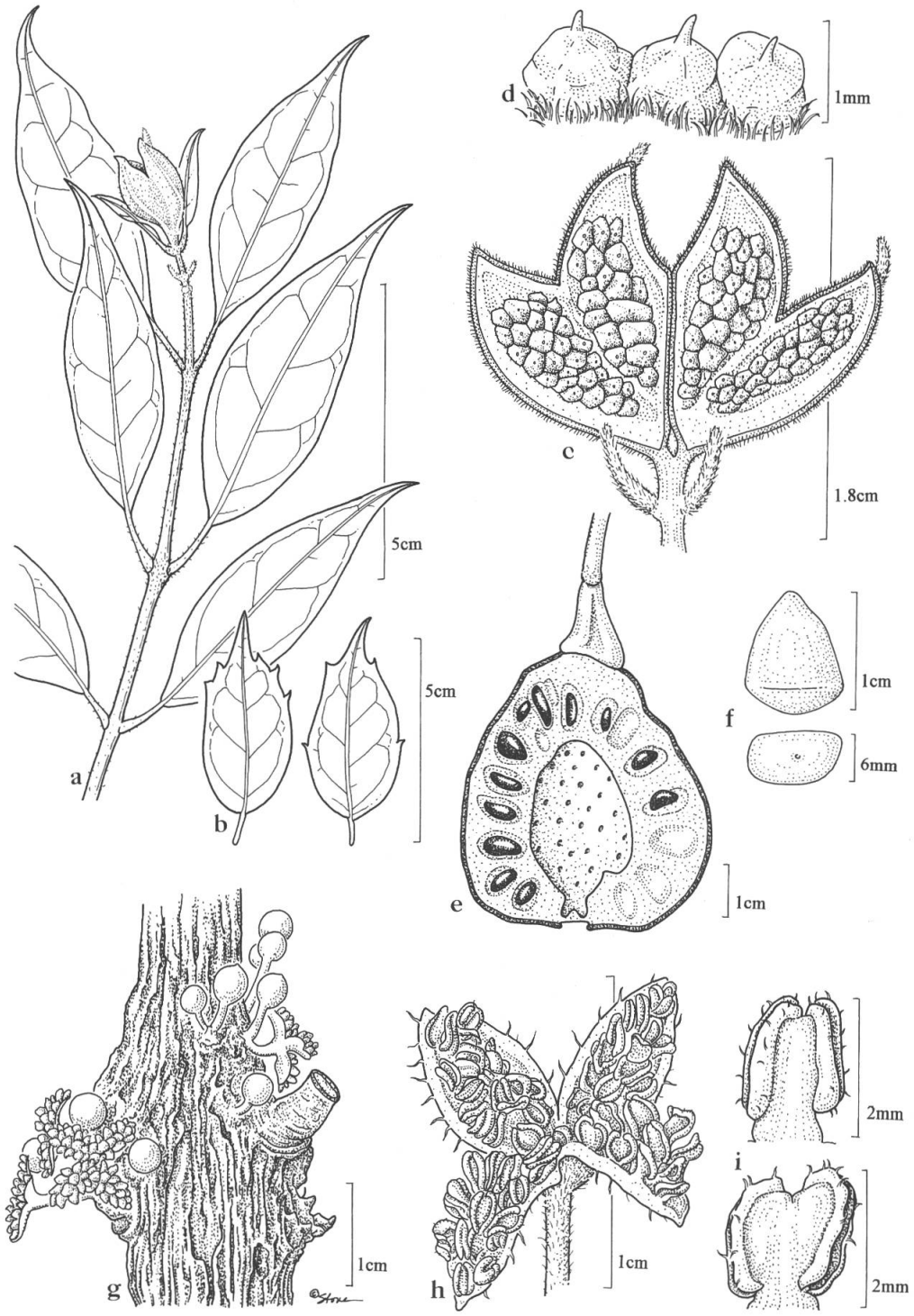


Fig. 1. – *Tambourissa manongarivensis* Lorence. **a**, leafy branch with terminal pistillate flower; **b**, leaf variants, showing dentation; **c**, pistillate flower cut open to reveal inner surface and styles; **d**, detail of styles interspersed with trichomes; **e**, fruiting receptacle, longitudinal section; **f**, mature fruiting carpels, lateral and apical views; **g**, branch with cauligerous staminate buds and flowers at anthesis; **h**, staminate flower at anthesis; **i**, stamens, lateral view showing hairs on the loculi.

[**a**, *Derleth 156*; **b-d**, **h-i**, *Gautier & al. 3211*; **e**, from a photo of *Gautier 2962*; **f**, *Gautier & Chatelain 2395*; **g**, from a photo of *Gautier & al. 3131*]

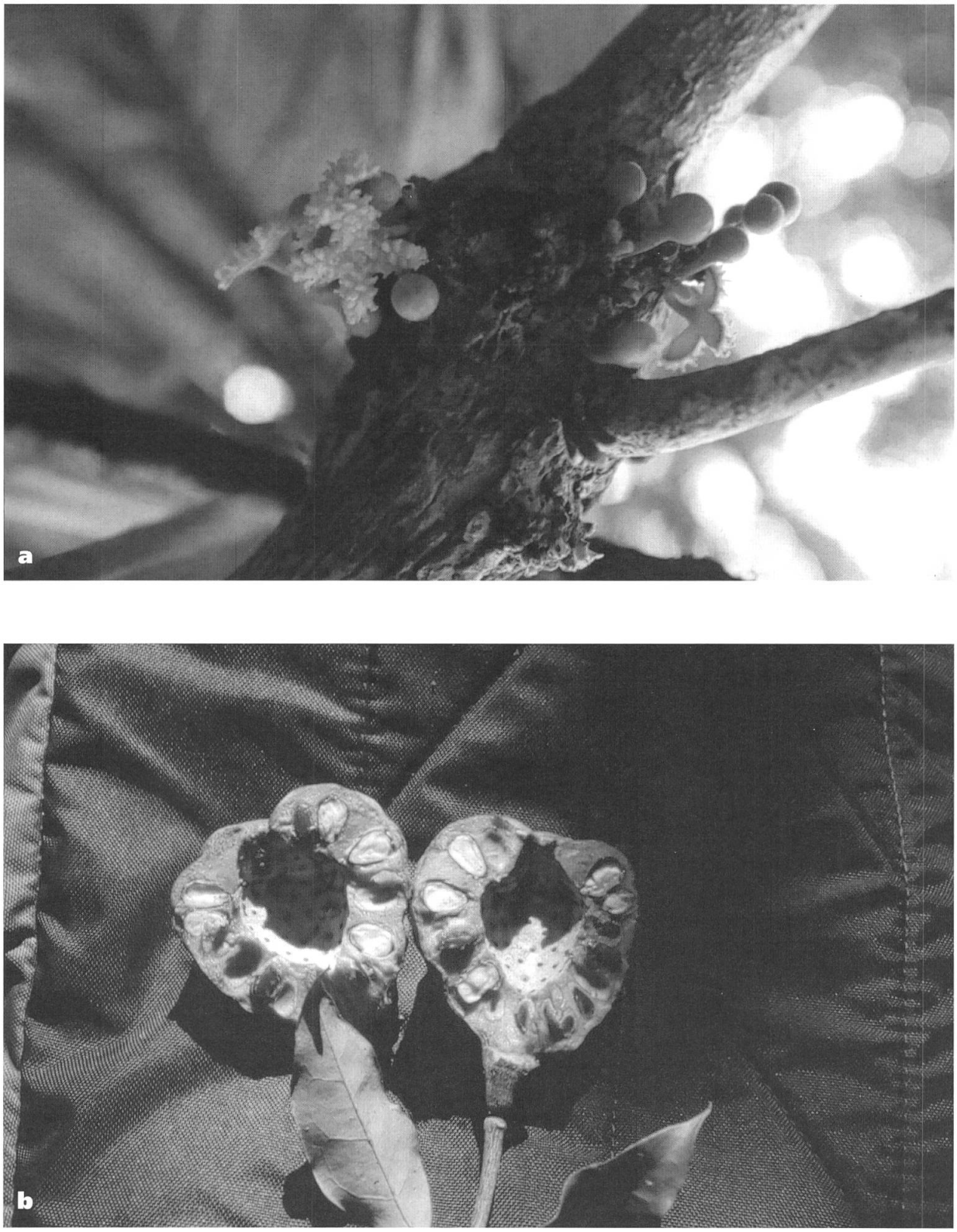


Fig. 2. – *Tambourissa manongarivensis* Lorence. **a**, photo of cauligerous staminate buds and flowers at anthesis; **b**, photo of nearly mature, bisected fruiting receptacle.

[**a**, *Gautier & al. 3131*; **b**, *Gautier 2962*]

*Derleth 156* (G, K, MO, P, PTBG, TAN); "Besinkara (14°14'S, 48°17'E), chemin d'Ambalafary à Ambodisakoana, plateau avant la corniche, coord. précises (Laborde): 587920/1333600", 300 m, 3.IV.1996, *Gautier 2962* (G).

*Etymology.* – The epithet "*manongarivensis*" refers to the Reserve Spéciale de Manongarivo, which formerly (approximately twenty years ago) included the plateau area where this new species occurs. Unfortunately, the borders of the reserve were redefined and this area now comprises patches of shifting rice cultivation and secondary forest of various ages (GAUTIER & al., 1999).

*Malagasy names.* – Ambora, Amboramadinika.

*Distribution and habitat.* – This new species is known only from northwestern Madagascar in the south-western vicinity of (but not yet recorded within) the Réserve Spéciale de Manongarivo near Besinkara at about 14°04'S, 48°17'E, and 200-300 m elevation. It occurs in dense evergreen wet forest, both in primary forest and in secondary forest 15-20 years old regrown after shifting rice cultivation. Dominant woody associates in the primary forest include: *Mauloutchia chapelieri* (Baill.) Warb. (*Myristicaceae*), *Syzygium* sp. (*Myrtaceae*), *Upaca* cf. *ferruginea* Baill. (*Euphorbiaceae*), *Symphonia* cf. *eugenioides* Baker (*Clusiaceae*), *Anthostema madagascariensis* Baill. (*Euphorbiaceae*), and *Ochrocarpus* cf. *decipiens* Baill. (*Clusiaceae*) (D'AMICO & GAUTIER, 2000).

*Affinities.* – This new species belongs to a constellation of Malagasy species comprising Group 1B of LORENCE (1985) based on its densely velutinous-hirtellous pubescence, sexually mixed terminal or unisexual cauliflorous inflorescences, staminate flowers splitting open flat into four segments and bearing scattered hairs between the stamens, and obovoid pistillate receptacle opening by a small 4-lobed orifice, bearing within short, conical styles interspersed with hirtellous pubescence. Although the small leaves and small, terminal fruiting carpels of *T. manongarivensis* superficially resemble those of *T. purpurea* (Tul.) A. DC., these two species are not closely related. *Tambourissa manongarivensis* seems most closely related to the widespread and variable *T. hildebrandtii* Perkins, which differs by its larger staminate flowers containing more numerous stamens with shorter filaments and almost unilateral loculi lacking hairs, pistillate flowers with more numerous papillose styles, and shallowly cupuliform fruiting receptacles with the central cavity small or lacking.

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