

# Noronhia tropophylla

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**82. *Noronhia tropophylla*** (H. Perrier) Hong-Wa & Besnard in Mol. Phylogenet. Evol. 67: 377. 2013 (Fig. 67B).

≡ *Linociera tropophylla* H. Perrier in Mém. Inst. Sci. Madagascar, Sér. B, Biol. Vég. 2: 280. 1949.

≡ *Chionanthus tropophyllus* (H. Perrier) Stearn in Bot. J. Linn. Soc. 80: 205. 1980.

**Lectotypus** (designated here): **MADAGASCAR. Prov. Mahajanga:** Plateau d'Antanimena (Boina), [16°29'S 46°11'E], VI.1919, *Perrier de la Bâthie* 12340 (P [P03559134]!); isolecto-: P [P03559129, P03559133]!). **Syntypi:** **MADAGASCAR. Prov. Fianarantsoa:** à l'E d'Ihosy, [22°23'S 46°07'E], 27.VII.1928, *Humbert & Swingle* 4895 (G [G00188829] image seen, P [P03559100, P03868244]!); vallée d'Ihosy, [22°23'S 46°07'E], 700 m, X.1924, *Perrier de la Bâthie* 16564 (P [P03559093, P03559103, P03559104]!). **Prov. Mahajanga:** Bemaraha, [18°41'S 44°46'E], VIII.1943, *Herb. Jard. Bot. Tan.* 6145 (P [P03559126, P03559271]!); Besafotra (Menavava), [17°05'S 46°44'E], X.1899, *Perrier de la Bâthie* 1010 (P [P03559095, P03559096, P03559097, P03559098]!); Manongarivo (Ambongo), [16°16'S 45°22'E], V.1904, *Perrier de la Bâthie* 1725 (P [P03559094, P03559119, P03559120]!); Mahavavy (Ambongo), [16°05'S 46°01'E], VII.1904, *Perrier de la Bâthie* 1791 (P [P03559124, P03559132]!); Manongarivo (Ambongo), [16°16'S 45°22'E], IX.1904, *Perrier de la Bâthie* 8830 (P [P03559131]!); Bongolava, [15°46'S 47°30'E], VI.1907, *Perrier de la Bâthie* 8831 (P [P03559125, P03559127, P03559136]!); bassin moyen du Bemarivo (Boina), II.1907, *Perrier de la Bâthie* 8832 (P [P03559092, P03559102], syntypes); Manongarivo (Ambongo), [16°16'S 45°22'E], VII.1904, *Perrier de la Bâthie* 8833 (P [P03559135]!); Basaka sur le causse d'Ankara (Boina), [17°06'S 46°06'E], X.1901, *Perrier de la Bâthie* 8834 (P [P03559130]!); Ankarafantsika PN, [16°11'S 47°10'E], *Service Forestier* 5 (P [P03559101, P03868248]!); *ibid. loc.*, borne n° 9, [16°11'S 47°10'E], 100-150 m, 7.IX, *Service Forestier* 8 (P [P03559121]!) [as *Service Forestier* 28].

– *Linociera tropophylla* var. *angustata* H. Perrier in Mém. Inst. Sci. Madagascar, Sér. B, Biol. Vég. 2: 281. 1949 [nom. inval.]. ≡ *Noronhia tropophylla* var. *angustata* (H. Perrier) Hong-Wa & Besnard in Mol. Phylogenet. Evol. 67: 377. 2013 [nom. inval.].

**Description** *Trees* to 10 m tall, trunk to 25 cm diameter; young twigs cylindrical, 0.4-1.7 mm diameter, pubescent; bark medium gray, smooth. *Leaves* opposite, deciduous; bud scales rarely persistent; blades medium green above, lighter below, lanceolate to oblong, 5-14 × 1-3 cm, chartaceous, pubescent on lower midrib when young, domatia abundant, base acute to attenuate, margin flat to undulate, apex acute to acuminate, the acumen 1-15 mm long, midrib slightly sunken above, distinctly raised below, secondary veins conspicuous, 7-20 per side, 5-14 mm apart, looping 1-3.5 mm from the margin; petiole yellow, 5-30 × 0.5-1.3 mm, not woody, pubescent when young. *Thyrses* geminate, multiflorous, com-

pect; peduncle 3-15 mm long, moderately to densely pubescent; pedicel 2-5 mm long, moderately to densely pubescent; calyx moderately to densely pubescent outside, glabrous inside, lobes triangular, 0.8-1 × 0.8-1.2 mm; corolla white, subrotate, petals almost free, 4.5-6 mm long, glabrous on both sides, the tube 1.5 mm long, lobes oblong, apex slightly obtuse; corona absent; stamens 1.6-1.8 mm long, anthers oblong, 1.1-1.2 mm long; pistil 1.6-2 mm long, stigma bilobed. *Fruiting* pedicel 2-7 × 0.7-1.8 mm; young fruits green, light to dark brown when mature, subglobose, 9.5-22 × 7-20 mm, surface smooth, sometimes covered with white dots, apex flat to bluntly pointed, style persistent; dry pericarp 0.6-1.8 mm thick; endocarp woody; seed 6.5-11.5 × 5.5-12 mm.

### Distribution, ecology and phenology

*Noronhia tropophylla* occurs in low- to mid-elevation dry forests and woodlands from the Sofia region in the northwest to Ihoisy in the south (Fig. 62). It produces flowers and fruits throughout the year except in September.

### Conservation status

*Noronhia tropophylla* is a widespread species occurring at 29 localities scattered from the northwest to the south. With an EOO of 250,483 km<sup>2</sup>, an AOO of 112 km<sup>2</sup>, and 25 subpopulations representing 22 locations, of which eight occur within protected areas (Ankarafantsika, Baie de Baly, Beanka, Bemaraha, Corridor Bongolava, Menabe-Antanimena, and Sahamalaza-Iles Radama), *N. tropophylla* is assigned a preliminary status of "Least Concern".

### Notes

*Noronhia tropophylla* can be recognized by its non-woody petioles, oblong to lanceolate leaf blades often bearing domatia, white, subrotate flowers that lack a corona, and subglobose fruits. It closely resembles *N. seyrigii* but differs from it by features discussed earlier under that species, mainly flower color and presence/absence of a corona. *Noronhia tropophylla* exhibits slight variations in the narrowness and texture of the leaf blades that may be linked to different environments. PERRIER DE LA BÂTHIE (1949, 1952) used these variations as a basis for recognizing two varieties, which are not adopted here. In any case, the varietal name *Linociera tropophylla* var. *angustata* was not validly published because it was not accompanied by a Latin diagnosis (Art. 39.1; MCNEILL et al., 2012).

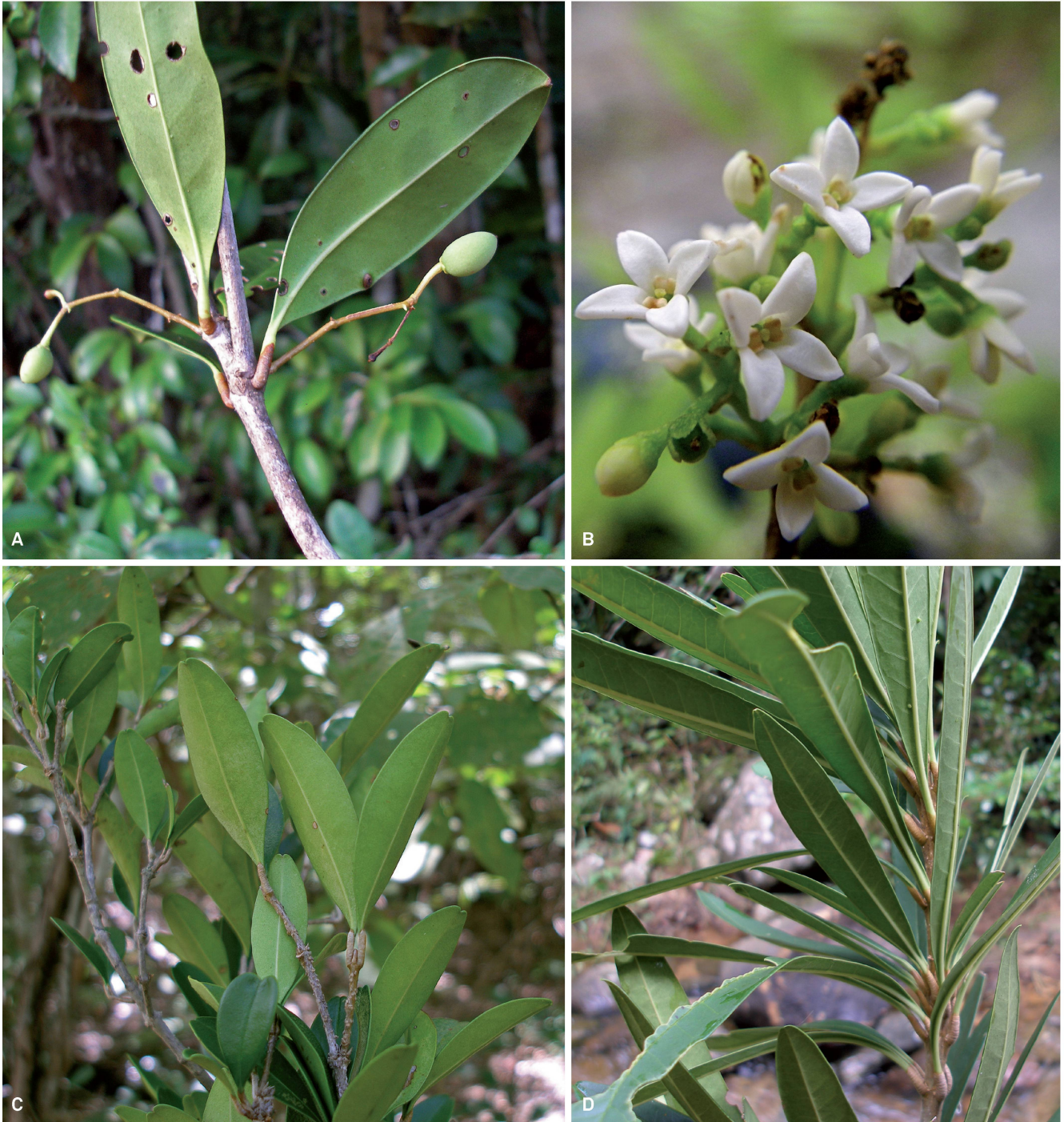
The following syntypes were used as a basis for *Noronhia tropophylla*: *Herb. Jard. Bot. Tan.* 6145, *Humbert & Swingle* 4895, *Perrier de la Bâthie* 1010, 1725, 1791, 8830, 8831, 8832, 8833, 8834, 12340 and 16564, and *Service Forestier* 5 and 28, the latter probably a mistake for *Service Forestier* 8. One of the sheets of *Perrier de la Bâthie* 12340 at P has been chosen as the lectotype because of its overall completeness and quality.

Two collections bearing the same number *Perrier de la Bâthie* 8830, probably due to a numbering mistake, are recognized respectively as *Linociera tropophylla* (P [P03559131]!) and *Noronhia boinensis* (P [P007010251, P04046995]). Similarly, P has two duplicates of *Herb. Jard. Bot. Tan.* 6145 (P [P03559126, P03559271]), one of which was identified as *L. tropophylla* (P [P03559126]) and the other as *N. seyrigii* (P [P03559271]), although the number is cited as *L. tropophylla* in the protologue (PERRIER DE LA BÂTHIE, 1949). In addition, while the labels indicate Bemaraha (western Madagascar) as the place of collection, Perrier de la Bâthie corrected the locality on the one he identified as *N. seyrigii* (P [P03559271]), indicating that it was in fact collected at Ampandrandava (southern Mad-

agascar): “Localité probablement erronée – spécimen provenant probablement d’Ampandrandava et des récoltes de Seyrig”. He nevertheless again cited Bemaraha as the place of collection for this number in both the protologue and the “Flore de Madagascar et des Comores” volume (PERRIER DE LA BÂTHIE, 1949, 1952).

### Additional specimens examined

**MADAGASCAR. Prov. Fianarantsoa:** entre Ambalavao et Ihosy PK 528, [22°23'S 46°07'E], 1.II.1963, *Bosser 17535* (MO, TAN); 35 km S of Ambalavao, 21°52'S 46°48'E, 890 m, 1.IV.1991, *Miller & Randrianasolo 6265* (MO, TAN); Ambalavao, [21°50'S 46°56'E], 11.VIII.1960, *Réserves Naturelles 11199* (MO, P). **Prov. Mahajanga:** Belitsaky, Ankilimanarivo, 17°52'09"S 44°29'14"E, 156 m, 25.X.2009, *Andriamihajarivo et al. 1809* (G, MO, P, TAN, TEF); Beanka, Ambinda-Nord, 18°02'40"S 44°30'07"E, 246 m, 1.XII.2011, *Bolliger 44* (BR, G, K, MO, P, TEF); *ibid. loc.*, 17°56'26"S 44°28'08"E, 172 m, 14.II.2011, *Gautier et al. 5592* (G, K, MO, P, TEF); *ibid. loc.*, Sarodrano, 18°03'01"S 44°31'09"E, 450 m, 5.III.2012, *Hanitrarivo et al. 265* (G, MO); *ibid. loc.*, Andalaposa, 18°00'27"S 44°29'55"E, 291 m, 16.III.2012, *Hanitrarivo et al. 345* (G, MO); *ibid. loc.*, 18°02'42"S 44°30'11"E, 259 m, 27.III.2012, *Hanitrarivo et al. 396* (G, MO); Marovoay, Ampijoroa STF, 16°19'07"S 46°48'13"E, 198 m, 14.III.2009, *Hong-Wa 630* (MO, P, TAN); Tsingy de Bemaraha N of the Manambolo river, 19°09'S 44°49'E, 50 m, 5.XII.1996, *Jongkind et al. 3393* (G, MO, P, WAG); Antsalova, 1 km à l'E d'Ambinda, 18°38'S 44°42'E, 100-200 m, 4.XII.1992, *Labat & Deroin 2302* (MO, P); Port-Bergé, Tsiningia, Marosely, 15°38'58"S 47°35'03"E, 217 m, 16.XI.2004, *Ramananjanahary et al. 68* (G, MO, P, TEF); Mampikony, Betaramahamay, Ambohimanga, 15°57'05"S 47°26'09"E, 232 m, 4.XII.2004, *Ramananjanahary et al. 226* (G, MO, P, TEF); Amboloboza, Analalava, 14°19'27"S 47°54'36"E, 275 m, 23.VII.1999, *Ranaivojoana et al. 241* (MO, P, TAN); Belobaka, Antsahanitra STF, 15°35'23"S 46°26'00"E, 40 m, 27.XI.2003, *Randrianaivo et al. 958* (CNARP, G, MO, P, TAN); Tsaratanana, Bekapaika, Ambalafary, forêt de Koakala, 16°48'09"S 47°28'58"E, 400 m, 8.XII.2003, *Randrianaivo et al. 998* (CNARP, G, MO, P, TAN); Port Bergé, Bongolava, forêt de Marosely, 15°38'58"S 47°35'03"E, 217 m, 17.XI.2004, *Razakamalala et al. 1691* (MO, P, TEF); *ibid. loc.*, forêt d'Andranomena II, 15°34'00"S 47°29'55"E, 115 m, 28.XI.2004, *Razakamalala et al. 1778* (G, MO, P, TEF); Ampijoroa, [16°18'S 46°49'E], 15.VII.1970, *A. Richard 340* (MO); Maintirano, Ambinda, 18°04'S 44°30'E, 203 m, 19.X.2009, *Razakamalala et al. 4450* (MO, P, TAN); Tsaramandroso, Bevazaha, [Ankarafantsika PN], [16°00'S 46°56'E], 15.X.1947, *Réserves Naturelles 1100* (MO, P); *ibid. loc.*, Lac Tsimaloto, [16°11'S 47°10'E], 80 m, *Service Forestier 22* (P); *ibid. loc.*, *Service Forestier 49* (P); Soalala, Antsakoamileka, forêt Marovitika, [16°08'S 45°27'E], 18.IV.1956, *Service Forestier 15917* (P, TEF); Mandritsara, Andohajango, Ambavaranobe, au bord de la Manambendrana, [16°08'S 48°38'E], 14.V.1966, *Service Forestier 25929* (MO, P). **Prov. Toliara:** Zazafotsy, PK 573, II.1962, *Bosser 15822* (MO, P, TAN); Ankirijifotsy, Belo-Tsiribihina, [19°42'S 44°33'E], 27.XI.1953, *Service Forestier 7988* (MO, P).



**Fig. 67.** Photographs of *Noronhia* Stadtm. ex Thouars. **A.** *Noronhia tetrandra* H. Perrier [Hong-Wa 616]; **B.** *Noronhia tropophylla* (H. Perrier) Hong-Wa & Besnard [Bolliger 44]; **C.** *Noronhia tubulosa* H. Perrier [Hong-Wa 629]; **D.** *Noronhia verticillata* H. Perrier [Hong-Wa 634].

Photos : taken by respective collectors