

# Abrahamia grandidieri

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**11. *Abrahamia grandidieri*** (Engl.) Randrian. & Lowry, **comb. nova** (Fig. 10B-C).

≡ *Protorhus grandidieri* Engl. in Bot. Jahrb. Syst. 1: 422. 1881.

≡ *Rhus grandidieri* (Engl.) Baill. in Grandid., Hist. Phys. Madagascar Atlas: tab. 233. 1892.

**Typus:** MADAGASCAR. **Prov. Toliara:** Morondava, s.d., fl., *Grevé s.n.* (holo-: P [P00722643]!; iso-: P [P00722644]!).

= *Rhus venulosa* Baker in J. Linn. Soc., Bot. 25: 309. 1890. **Typus:** MADAGASCAR: N Androna, s.d., fl., *Baron 5756* (holo-: K [K000423274] image seen).

= *Protorhus heckelii* Dubard & Dop in Bull. Soc. Bot. France 54: 155. 1907. **Typus:** MADAGASCAR. **Prov. Mahajanga:** bords des ruisseaux, Ambongo et Boeny, IX.1904, bud & y. fr., *Perrier de la Bâthie 859* (holo-: P [P06775232]!).

**Description**

*Trees* 4-20 m tall, 20-45 cm DBH, bark with milky white latex; young twigs pubescent, with lenticels. *Leaves* alternate, rarely subopposite; blades oblanceolate or narrowly oblong, 3-16 × 1.5-4 cm, subcoriaceous, apex emarginate, retuse or rounded, margin entire, base acute or cuneate, adaxial surface glaucous, glabrous or sometimes with sericeous indument, especially on and alongside the midvein, abaxial surface with appressed sericeous indument, more so on and alongside the midvein, venation craspedodromous, midvein prominent abaxially, secondary veins 35-40(-47) pairs, parallel, 0.5-5 mm apart, tertiary veins barely visible on both surfaces; petiole 5-15 mm long, canaliculate on adaxial surface, pubescent or glabrescent. *Inflorescence* axillary or terminal, a panicle, 1.5-16 cm long, pubescent or villous. *Male and female flowers* 5-merous; pedicel 0-0.5 mm long, pubescent; calyx lobes deltate, 1-1.2 × c. 1 mm, imbricate, adaxial surface glabrous, abaxial surface pubescent, persistent on fruit; corolla lobes ovate, 2-2.5 × 1-1.5 mm, imbricate, adaxial surface glabrous, abaxial surface pubescent, white to light yellow or yellow green; stamens 5. *Male flowers* with filaments 1-1.2 mm long, glabrous, white, anthers 0.5 mm long, ovoid to subglobose, yellow, glabrous; disk c. 1 mm in diam., glabrous; ovary rudimentary. *Female flowers* with filaments 1-1.3 mm long, glabrous, white, anthers 0.5 mm long, subglobose or ovoid, sterile, yellow, glabrous; disk 1-1.5 mm in diam., glabrous; ovary depressed ovoid, slightly asymmetrical, c. 1 × 1-1.2 mm, glabrous, placentation subapical; style shortly trifid, inserted apically, c. 1 mm long, glabrous. *Fruits* 2-2.8 × 1.1-1.7 cm, ellipsoid, slightly asymmetrical, glabrous, with longitudinal striations.

**Vernacular names**

“Ditimena”, “Lakalaka”, “Manavodrevo”, “Sandramiramy”, “Soahihy”, “Sohihy”, “Sohy”.

**Distribution, ecology and phenology**

*Abrahamia grandidieri* occurs in western and southern Madagascar (Map 4), at elevations ranging from sea level to 1,500 m, and is very often found near rivers or streams. It flowers from August to November and fruits from November through January.

**Conservation status**

With an EOO of 412,300 km<sup>2</sup>, a minimum AOO of 272 km<sup>2</sup>, and 70 known localities, including subpopulations in 6 protected areas (Analavelona, Andohahela, Andringitra, Bemarivo, Namoroka, and Pic d'Ivohibe), *A. grandidieri* is assigned a preliminary conservation status of "Least Concern" [LC] using the IUCN Red List Categories and Criteria (IUCN, 2012).

**Notes**

*Abrahamia grandidieri* most closely resembles *A. sericea*, with which it shares leaves with parallel and very closely spaced secondary veins, but can easily be distinguished by its narrower leaves that are glaucous (vs broader and not glaucous), its flowers with a glabrous (vs pubescent) disk and ovary, and its glabrous (vs velutinous) fruits.

While the protologue of *Protorhus heckelii* indicates that it is based on "Perrier de la Bâthie, no. 3, in Herb. Mus", it is clear that the authors prepared their description using the specimen of *Perrier de la Bâthie* 859 that bears the original label written in Perrier's hand [P06775232], along with another label added later that indicates "No. 3 = 859 Perrier de la Bâthie". Curiously, this specimen also bears a note added some time later by Perrier that reads "Ces spécimens proviennent d'une autre localité que le no. 859 (les bords de l'Iubohago près de l'Ankirihitra (Boina)". A second specimen in the Paris herbarium [P06775233], comprising a single leaf and a small part of an inflorescence in a fragment packet on which someone (clearly not Perrier) has indicated "Protorhus (au sp. nov.). Madagascar. M. Perrier de la Bâthie, envoyé par Mr. Heckel au Lab. Colonial, fin 1906", which appears to have been the basis for the choice of the epithet used by Dubard and Dop. This second specimen does not have an original label, but it does bear a note in Perrier's hand, dated October 1947, that reads "Perrier no. 859! Type (?) de Protorhus Heckelei Dub. & Dop, récolté sur les bords de la Boina Kely, petit affluent de droite de la Betsiboka, à l'est de Mevatenana (Boina)". It is not clear whether Dubard and Dop examined this specimen, and because according to Perrier de la Bâthie it is not part of the same gathering as the holotype, we have refrained from regarding it as either an isotype or a syntype.

**Additional material examined**

**MADAGASCAR. Prov. Antsiranana:** Antsiranana, bord de la rivière Betsieka, I.1938, ster., *Humbert 19093ter* (P); Ambanja, Beampongy, [13°40'30"S 48°27'00"E], 4.X.1953, *Service Forestier 7715* (P, TEF); Befandriana-Nord, Marosakana, le long de la rivière Tsinjomolava, [14°56'S 47°40'E], 11.IX.1956, fl., *Service Forestier 16094* (P, TEF). **Prov. Fianarantsoa:** Ihosy, entre Ankaramena et Zazafotsy, [22°12'S 46°22'E], 9.X.1966, fl., *Boiteau 339* (G, MO, P); *ibid. loco*, *Boiteau 341A-C* (P); Ambalavao, entre Vohitromby et Vohitrosy, [21°50'S 46°56'E], 8.XII.1974, fr., *Cremers 3547* (P [2 sheets], TAN); entre Ihosy et Fianarantsoa, 9.VIII.1938, ster., *Grandidier s.n.* (P); env. d'Ihosy, [22°23'00"S 46°07'30"E], 800-900 m, III.1934, ster., *Humbert 14452ter* (P); Ambohimahaso, Ikalamavony, [21°10'00"S 46°35'30"E], 1955, ster., *Humbert 30255bis* (P); RN Andringitra, Vohitsaoka, 17.IX.1951, fl. & bud, *Réserves Naturelles 3112* (P [2 sheets], TAN); *ibid. loco*, 8.XI.1952, bud, *Réserves*

*Naturelles* 4802 (P [2 sheets], TAN); *ibid. loco*, 27.IX.1957, fr., *Réserves Naturelles* 9300 (P, TEF); Ivohibe, [22°31'30"S 46°59'00"E], 8.XI.1950, *Service Forestier* 1449 (P, TAN, TEF); forêt de Mangidy, [21°15'30"S 46°47'30"E], 15.X.1951, fl., *Service Forestier* 4726 (P, TAN, TEF); Fianarantsoa, forêt Isahafa, [21°27'00"S 47°04'30"E], 27.IX.1951, fl., *Service Forestier* 4762 (P, TEF); Maintinandrina, [21°15'30"S 46°47'30"E], 9.IX.1952, fl., *Service Forestier* 5958 (P, TEF); Ihosy, [22°23'00"S 46°07'30"E], 30.X.1953, bud, *Service Forestier* 7615 (P, TEF).

**Prov. Mahajanga:** bord de ruisseau, env. de Bekodoka, [16°58'E 45°06'E], 10.IX.1930, fl., *Decary* 8303 (G, P, US); Bekodoka, [16°58'S 45°06'E], 19.IX.1930, fl., *Decary* 8096 (P); Ambanja, Forêt d'Andranomatavy, forêt dense humide, bord de rivière, 13°40'29"S 47°59'12"E, 123 m, 28.IX.2013, fl., *Tahinarivony* 746 (G, MO, P, TAN); Befandriana Nord, 14.IX.1942, fl., *Herb. Jard. Bot. Tananarive* 5253 (P); Ambongo et Boeny, IX.1904, *Perrier de la Bâthie* 859 (P); Antajandava, Soalala, [16°33'S 45°49'E], 2.VIII.1951, bud, *Service Forestier* 3990 (P, TEF); Soalala, bassin moyen du Bemarivo, [17°34'S 45°43'E], IX.1907, fl., *Perrier de la Bâthie* 4519 (P [2 sheets], TAN); Bassin du Bemarivo, [16°56'S 44°24'E], c. 80 m, IX.1907, fl., *Perrier de la Bâthie* 5863 (P [3 sheets]); *ibid. loco*, *Perrier de la Bâthie* 5865 (P); plateau d'Ankara, [17°13'S 46°16'E], VIII.1922, bud, *Perrier de la Bâthie* 14825 (P [2 sheets]); env. de Mandritsara, [15°50'00"S 48°49'30"E], 600 m, IX.1922, fr., *Perrier de la Bâthie* 15047 (P); Tsaratanana, forêt de Koakala, 16°48'09"S 47°28'58"E, 385 m, 7.XII.2003, fr., A. *Randrianaivo et al.* 994 (CNARP, MO, P, TAN); Namoroka RN, Andranomavo, [16°36'S 45°34'E], 10. IV.1952, ster., *Réserves Naturelles* 3888 (P [2 sheets]); *ibid. loco*, 8.IX.1956, fl., *Réserves Naturelles* 8139 (= *Service Forestier* 17172) (P, TEF); *ibid. loco*, 17.XI.1960, fr., *Réserves Naturelles* 11437 (P); Maevatanana, Ankaboka, Ambalajanakomby, [17°30'50"S 46°04'30"E], 8.I.1955, fr., *Service Forestier* 13034 (P, TEF); Morafenobe, Beravina, [18°10'30"S 45°13'30"E], 19.VIII.1956, fl., *Service Forestier* 16351 (P, TEF); Befandriana Nord, Canton Ambararata, [16°36'S 46°25'E], 16.I.1959, fr., *Service Forestier* 19403 (P, TEF).

**Prov. Toliara:** PN Andohahela, 24°56'23"S 46°38'40"E, 120 m, 9-12.V.1997, fr., *Birkinshaw et al.* 421 (MO, P, TAN); Rivière de l'Onilahy, E de Maromala, s.d., y. fr., *Geay* 6053 (P); Betroka, Ampandrandava, 8. IV.1942, y. fr., *Herb. Jard. Bot. Tananarive* 4971 (P); Bekily, Ampandrandava, IX-X.1943, bud & fl., *Herb. Jard. Bot. Tananarive* 5793 (P); Andohahela PN, Talakimangery, 24°51'47"S 46°42'34"E, 250-500 m, 10.X.2000, fl., *Hoffmann et al.* 172 (G, K, P); Betioky, vallée de l'Onilahy, env. de Tongobory, [23°32'S 44°20'E], 100-200 m, 1-8.X.1924, *Humbert* 2699 (G, P); Amboasary, vallée de la Menarahaka, [22°33'S 46°30'E], 700-800 m, 31.X.1924, fl. & fr., *Humbert* 3046 (P); près de Bevilany, [25°00'30"S 46°36'E], 200-300 m, 14.IX.1928, fl., *Humbert & Swingle* 5712 (P [2 sheets], TAN); haute vallée du Mandrare, [24°39'S 46°26'E], 8-15. XI.1928, ster., *Humbert* 6487bis (P); Tsivory à Anadabolava, [24°12'40"S 46°19'00"E], 300-400 m, XII.1933, fr., *Humbert* 12287 (P [2 sheets]); *ibid. loco*, 200 m, *Humbert* 12367 (P [2 sheets]); vallée de la Manambolo, env. d'Esomony, [24°32'S 46°41'E], 400-900 m, XII.1933, fr., *Humbert* 12882 (G, P); vallée de l'Onilahy, en aval de Tongobory, [23°31'30"S 44°19'30"E], 0-300 m, 8.XI.1960, ster., *Leandri* 3759 (P); Beroroha, Makay massif, 21°13'02"S 45°19'08"E, 480 m, 22.XI.2010, fr., *Phillipson et al.* 6188 (G, K, MO, NY, P, TAN); PN Andohahela, 22. IX.1994, fl., *Rakotomalaza* 273 (G, K, MO, NY, P, TAN); PN Andohahela, 25°01'S 46°38'E, 15.V.2001, fr., *Randriamampionona* 1013 (G, K, MO, NY, P, TAN, WAG); *ibid. loco*, 24°50'20"S 46°32'17"E, 6.IV.1996, ster., *Randriamampionona* 1241 (MO, TAN); PN Andohahela, Eso-

mony, coté W de la réserve, 24°31'S 46°37'E, 20.IX.1991, fl., *Randriamanantena & Durbin* 58 (MO, P, TAN); Ambatoabo, forêt d'Ankoba, 24°47'28"S 46°42'01"E, 205 m, 24.XI.2008, fr., *Randrianaivo 1716* (G, K, MO, P, TAN); Sakaraha, Mahaboboka, Marotsiraka Betsileo, 22°44'20"S 44°13'24"E, 594 m, 21.III.2011, fr., *Randrianarivony et al.* 294 (G, MO, P, TAN); Ranobe, Behalomboro, 24°18'28"S 46°11'18"E, 210 m, 1.XI.2007, fr., *Randriatsivery* 295 (MO, P, TAN, TEF); Ampasinampoana, Enato, 24°53'05"S 46°58'52"E, 425 m, 16.XII.2009, fr., *Razakamalala et al.* 5102 (G, MO, P, TAN); Betorabato, forêt d'Androtsy, 21°05'17"S 45°05'39"E, 235 m, 11.I.2011, fr., *Razakamalala* 5920 (MO, P, TAN); PN Andohahela, Behara, [24°48'S 46°32'E], 4.X.1951, fl., *Réserves Naturelles* 3407 (MO, P [2 sheets], TAN); Andohahela PN, Canton Enanihila, [24°31'S 46°37'E], 2.VIII.1952, y. fr., *Réserves Naturelles* 3958 (P [2 sheets], TAN); PN Andohahela, Behara, [24°53'S 46°35'E], 25.XI.1953, fr., *Réserves Naturelles* 5956 (G, P [2 sheets], TEF); Imanombo, Behara, [24°26'00"S 45°49'30"E], 16.IX.1950, fl. & y. fr., *Service Forestier* 1518 (P, TAN, TEF); Anapaby, [23°00'S 44°36'E], 1.X.1951, fl., *Service Forestier* 3862 (P, TEF); Morondava, Dabara, [20°24'S 44°47'E], 12.VIII.1951, bud, *Service Forestier* 3915 (P); Ranopiso, [25°03'00"S 46°41'30"E], 10.IX.1951, y. fr., *Service Forestier* 3967 (P, TEF); Betroka, Merarano, [20°30'30"S 45°00'30"E], 16.IX.1952, bud, *Service Forestier* 6337 (P [2 sheets], TEF); Belo sur Tsiribihina, Tsaramandroso, [19°54'30"S 45°08'00"E], 1.VII.1953, fr., *Service Forestier* 7797 (MO, P, TEF); Bekily, [24°13'20"S 45°19'E], 14.I.1954, fr., *Service Forestier* 8392 (P, TEF); vallée de l'Onilahy, en aval de Tongobory, [23°31'30"S 44°19'30"E], 17.IX.1953, bud & fl., *Service Forestier* 8462 (P, TEF); Betroka, Benonoka-I, [23°33'30"S 46°16'30"E], 10.IV.1954, y. fr., *Service Forestier* 10199 (P, TEF); Sakaraha, Sohara, [24°08'S 45°28'E], 26.V.1954, y. fr., *Service Forestier* 10293 (MO, P, TEF); forêt de Befitroa, [20°00'30"S 45°32'E], 20.IX.1954, fl., *Service Forestier* 10876 (P [2 sheets], TEF); km 455, route Ft. Dauphin, [25°02'00"S 46°39'30"E], 9.IX.1954, y. fr., *Service Forestier* 10907 (MO, P, TEF); Sakaraha, Bekily, [24°08'S 45°28'E], 25.XI.1954, fr., *Service Forestier* 11158 (P, TEF); Miandrivazo, Ankilimadinika, [19°31'S 45°28'E], 23.X.1954, ster., *Service Forestier* 11185 (P, TEF); Sakatà, Betroka, [22°53'30"S 45°57'30"E], 17.IX.1954, fl., *Service Forestier* 12124 (P, TEF); Manambolo, [24°34'S 46°36'E], 5.XI.1954, y. fr., *Service Forestier* 12199 (P, TEF); Sakamarakely, [22°11'S 45°10'E], 14.XI.1954, fr., *Service Forestier* 12363 (P); *ibid. loco*, *Service Forestier* 12364 (P, TEF); Vineta, [23°03'30"S 44°15'30"E], 20.XII.1955, fr., *Service Forestier* 15594 (P, TEF); Morondava, Canton Befasy, Tananadava, [20°28'S 44°08'E], 4.X.1956, fl., *Service Forestier* 16556 (P, TEF); Behara, Amboasary, [24°53'S 46°35'E], 3.X.1956, bud, *Service Forestier* 17038 [= *Réserves Naturelles* 7920] (MO, P, TEF); Mahabo, Canton Ankilizato, Migodo, [20°24'S 45°03'E], 4.XII.1957, fr., *Service Forestier* 17869 (P, TEF); Bekily, Ankarano-Sud, [24°13'S 45°19'E], 9.IX.1963, bud, *Service Forestier* 21370 (P, TEF); Bords des ruisseaux, versant W du massif de l'Analavelona, W de Mitia, [22°37'S 44°07'E], 15.XII.1962, fr., *Service Forestier* 22203 (G, MO, P [2 sheets], TEF); Tsihombe, Manindro, bord rivière Manambovo, [25°19'S 45°29'E], 27.IV.1967, y. fr., *Service Forestier* 26502 (MO, P, TEF); Ampanihy, Bekitro, Tranoroa, [24°42'S 45°04'E], 13.IX.1968, bud & fl., *Service Forestier* 26745 (P, TEF); Tanambao Befasy, [20°40'31"S 44°25'E], 1.IX.1954, ster., *Service Forestier* 64-R-19 (P, TEF); Ampandrandava, [24°05'S 45°42'E], 700-800 m, IX.1942, fl., *Seyrig* 1 (P [2 sheets]). **Sine loco**: s.d., *Baron* 9796 (P).