Drypetes (Euphorbiaceae) in Madagascar and the Comoro Islands

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KEY WORDS
Drypetes,
Madagascar,
Comoro Islands,
Mayotte.

ABSTRACT
Drypetes darcyana from Mayotte is described and a key to *Drypetes* in Madagascar and the Comoro Islands is presented.

MOTS CLÉS
Drypetes,
Madagascar,
Comores,
Mayotte.

RÉSUMÉ
Drypetes (Euphorbiaceae) à Madagascar et aux Comores.
Une nouvelle espèce d'Euphorbiaceae de Mayotte, *Drypetes darcyana*, est décrite et une clé des *Drypetes* de Madagascar et des Comores est présentée.

The most recent treatment of *Drypetes* (Euphorbiaceae) in Madagascar and the Comoro Islands was published by LEANDRI in 1958. Shortly thereafter, CAPURON (1960, 1963) added a species to the genus in clarifying the identity of *Stelechanteria thouarsiana* Baillon. Study of recently collected material, as well as reconsideration of the historical collections at P, now indicates the need to recognize a new species from Mayotte and to modify some of the species boundaries set by LEANDRI. Some of the remarkable variability of *D. madagascariensis* in leaf size, shape, and spininess, appreciated by LEANDRI, is echoed in species such as *D. perrieri*, *D. capuronii*, and *D. bathiei*. These latter, now known from many more collections than were available in 1958, are most easily defined by the floral and stipular characters stressed in the following key. Full descriptions will appear in the revised treatment of subfamily Phyllanthoideae now in preparation for the Flore de Madagascar.

Drypetes darcyana McPherson, **sp. nov.**

Drypetes madagascariensi (Lam.) Humbert & Leandri *affinis sed petiolis pubescentibus, fasciculis paucifloris, pedicellis brevibus, et praesertim staminibus septem notabilis.*

TYPUS. — *Pascal 519*, Mayotte, Convalescence, 500 m, 17 Apr. 1996, staminate fl. (holo-, P; iso-, MO).

Small trees 2-5 m, dioecious. Stems pubescent at first, glabrescent. Leaves alternate. Petioles 2-5 mm, channeled, somewhat obscurely pubescent with appressed hairs (best seen on young leaves). Leaf blades oblong-elliptical, (3-)5-12 cm long, (1-)1.7-4 cm wide, sparsely pubescent to glabrescent; secondary nerves 10-11 on each side of the midrib, prominent, as are often the intersecondaries and minor veins; base asymmetrical, acute to obtuse; apex acute, slightly to distinctly acuminate; margins entire. Stipules triangular, 0.7-1 mm long, ca. 0.5 mm wide at base, pubescent, caducous or subpersistent. Staminate flowers on twigs, in leaf-bearing axils or in the axils of fallen leaves, solitary or in pairs; pedicels of buds ca. 2 mm long, sparsely pubescent; buds ca. 3 mm in diam.; sepals 5, (in bud) 2-3 mm long, 2-3 mm wide, obtuse, pubescent on margin and sparsely so abaxially; stamens 7; disk flat centrally, extending between the filaments as raised flaps (which, if the flower is viewed from the side, can appear as separate, extrastaminal disk elements). Pistillate flowers in leaf-bearing axils, not seen at anthesis, apparently solitary. Fruiting specimens with pedicels 3-4 mm long, sparsely pubescent; sepals 5(-6), persistent, 2-3 mm long, 2.5-3.5 mm wide, obtuse, sparsely pubescent at least on margin; disk ca. 6 mm in diam., glabrous. Fruit (immature) ca. 2 cm long, ca. 1.2 cm in diam., bilocular, glabrous, usually bearing 2 persistent styles ca. 1.5 mm long, ca. 0.5 mm wide.

DISTRIBUTION. — Known only from Mayotte.

PARATYPE. — MAYOTTE: *Pascal 635,* Sohoa, 200 m, 20 Aug. 1996, fr. (MO, P).

The new species resembles *D. madagascariensis* in having a calyx of 5 (rarely 6) sepals combined with a pistil of 2 carpels, but differs most notably in having an androecium of 7 stamens (vs. 3), as well as in having pubescent petioles (vs. glabrous), 1-2-flowered fascicles (vs. often several-flowered), and shorter fruiting pedicels (3-4 mm vs. 5-10 mm). Furthermore, *D. darcyana* appears to be endemic to Mayotte, whereas *D. madagascariensis* is unknown from the Comoro Islands.

The species epithet commemorates Dr. W.G. D'ARCY, colleague and friend, who collected on the Comoro Islands in 1987 while preparing the Solanaceae for the Flore de Madagascar et des Comores.

Key to species of *Drypetes* in Madagascar and the Comoro Islands

1. Leaves opposite or subopposite ..... **D. oppositifolia**
1'. Leaves alternate 2
2. Stipules persistent, 3-9 mm long, 1.5-4 mm wide at base ..... **D. stipulacea**
2'. Stipules caducous or persistent, 0.5-2(-5) mm long (if over 2 mm long, then less than 1 mm wide at base)
3. Specimen pistillate 4
3'. Specimen staminate 12
4. Ovary 2-locular; styles 2 5
4'. Ovary 3-6-locular; styles 3-6 9
5. Sepals 5 (rarely -6), persistent; leaves spiny-dentate or entire 6
5'. Sepals 4, caducous or persistent; leaves shallowly dentate or entire 7
6. Petioles glabrous; fruiting pedicels 5-10 mm; leaves spiny-dentate or entire; Madagascar ..... **D. madagascariensis**
6'. Petioles pubescent (sometimes obscurely so); fruiting pedicels 3-4 mm; leaves entire; Mayotte . **D. darcyana**
7. Disk conspicuously pubescent; leaf blade length at least 3 times width ..... **D. ambigua**
7'. Disk glabrous (or sometimes obscurely pubescent in narrow ring at base of ovary); leaf blade length less than 3 times width 8
8. Leaf blades 10-17 cm long, 4-8 cm wide; fruit 20-22 mm long; eastern forests ..... **D. thouarsii**
8'. Leaf blades mostly 5-9 cm long, rarely up to 13 cm long, 1.5-4(-6) cm wide; fruit 10-15 mm long; widespread ..... **D. perrieri**
9. Sepals 5; Comoro Islands ..... **D. comorensis**

9'. Sepals 3; Madagascar 10
10. Fruit lobed on drying, often somewhat obconic; pedicels (2-)5-18 mm; leaves often spiny-dentate but some times entire; stipules at least 1 mm long, broadly triangular ..... **D. bathiei**
10'. Fruit unlobed, spherical (unknown in *D. thouarsiana*); pedicels 1-3 mm (unknown in *D. thouarsiana*); leaves entire; stipules if over 1 mm long, then narrowly triangular 11
11. Stipules narrowly triangular, 1-4 mm long; leaf blades 2.5-8 cm long ..... **D. thouarsiana**
11'. Stipules deltoid, less than 1 mm long; leaf blades (5-)7-18 cm long ..... **D. capuronii**
12. Sepals 5 13
12'. Sepals 3-4 15
13. Stamens 3 (rarely -4); Madagascar ..... **D. madagascariensis**
13'. Stamens 7-15; Comoro Islands 14
14. Stamens ca. 15; leaves dentate ..... **D. comorensis**
14'. Stamens ca. 7; leaves entire ..... **D. darcyana**
15. Sepals 3 (occasionally mixed with flowers with 4 sepals); flowers borne on trunk or on branches (mostly in the axils of fallen leaves) 16
15'. Sepals 4; flowers usually in leafy axils 18
16. Stamens (4-)5-7(-8); stipules 1-4 mm long, narrowly triangular; leaf blades 2.5-8 cm long . **D. thouarsiana**
16'. Stamens 8-16; stipules up to 2 mm long, broadly triangular; leaf blades (5-)7-18 cm long 17
17. Stipules 1-2 mm long; leaves entire or spiny-dentate; pedicels at anthesis (2-)8-17 mm long; stamens 8-12; widespread ..... **D. bathiei**
17'. Stipules less than 1 mm long; leaves entire; pedicels at anthesis 3-6 mm long; stamens 12-16; Masoala Peninsula and NE Madagascar ..... **D. capuronii**
18. Leaf blade length at least 3 times width; stamens 8 ..... **D. ambigua**
18'. Leaf blade length less than 3 times width; stamens 4 19
19. Leaves 10-17 cm long, 4-8 cm wide; bracteate bud clusters ca. 8 mm in diam.; eastern forests . **D. thouarsii**
19'. Leaves mostly 5-9 cm long, rarely up to 13 cm long, 2.5-5(-6) cm wide; bracteate bud clusters ca. 4 mm in diam.; widespread ..... **D. perrieri**

Three taxa recognized by LEANDRI (1958) are absent from the key above. *Drypetes coriifolia* Leandri and *Drypetes radamae* Leandri I consider synonyms of *Drypetes perrieri*, while *Drypetes capuronii* var. *grandiflora* Leandri (an invalid name, see below) has been used for several specimens, most of which belong within *Drypetes bathiei*.

DRYPETES SPECIES IN MADAGASCAR AND THE COMORO ISLANDS

Drypetes ambigua Leandri

Mém. Inst. Sci. Madagascar, Sér. B, Biol. Vég. 8: 245 (1957). — Type: *Service Forestier (Capuron) 8906* (holo-, P; iso-, MO, TEF).

DISTRIBUTION. — Northern half of eastern forest, from Tamatave to Montagne d'Ambre.

Distinguished by its large, narrow leaves (9-27 × 2.5-9 cm), which may be entire or spiny-dentate, 4 sepals, 8 stamens, pubescent pistillate disk, and 2 carpels.

Drypetes bathiei Capuron & Leandri

Flore de Madagascar et des Comores 111: 156 (1958), nom. nov. — *Brexiopsis aquifolia* H. Perrier, Notul. Syst. (Paris) 10: 193 (1942), non *Drypetes aquifolium* (Scott-Elliot) Pax & K. Hoffm. — Type: *Perrier de la Bâthie 17804* (holo-, P).

Drypetes capuronii var. *grandiflora* Leandri, Mém. Inst. Sci. Madagascar, Sér. B, Biol. Vég. 8: 246 (1957). This name was not validly published since no Latin description or type was provided either at its first mention or later in the Flore (LEANDRI 1958: 156). Most of the specimens assigned to it in the latter publication represent *Drypetes bathiei*.

DISTRIBUTION. — Eastern, northern and northwestern forests, from Fort Dauphin to Montagne d'Ambre, and from the Montagnes des Français to Majunga.

Resembling *D. capuronii* in having leaves sometimes up to 18 × 7 cm, 3 sepals and 4-5

carpels, but distinguished by its longer stipules (> 1 mm), often dentate leaf margins, fewer stamens (8-12 vs. 12-16), and lobed fruit.

Drypetes capuronii Leandri

Mém. Inst. Sci. Madagascar, Sér. B, Biol. Vég. 8: 247 (1957). — Type: *Service Forestier (Capuron) 8765* (holo-, P; iso-, TEF).

DISTRIBUTION. — Northeastern forest, from the Bay of Antongil to the Montagnes des Français.

Distinguished by its short stipules (< 1 mm), large leaves (up to 17 × 7 cm) with entire margins (juvenile leaves may be dentate, however), 3 sepals, 12-16 stamens, 4-6 carpels and unlobed fruit.

Drypetes comorensis (Baill.) Pax & K. Hoffm.

In Engl., Pflanzenr. 81: 259 (1922). — *Humblotia comorensis* Baill., Bull. Mens. Soc. Linn. Paris 1: 593 (1886). — Type: *Humblot 366* (holo-, P). Although no collection number was cited by BAILLON, this specimen, now renumbered *1366*, is almost certainly his original material.

Cyclostemon nitidus Pax, Bot. Jahrb. Syst. 15: 527 (1893). — Type: *Humblot 366* (holo-, B (not seen); iso-, P).

DISTRIBUTION. — Comoro Islands (known with certainty only from Mayotte).

Distinguished by its large leaves (10-21 cm long) with dentate margins, 5 sepals, ca. 15 stamens, and 3 carpels.

Drypetes darcyana McPherson, see description above.

Drypetes madagascariensis (Lam.) Humbert & Leandri

Bull. Mus. Hist. Nat. (Paris), sér. 2, 4: 119 (1932). — *Ilex madagascariensis* Lam., Encycl., III: 148 (1789). — Type: *Commerson s.n.* (holo-, P).

Cyclostemon aquifolium Scott-Elliot, J. Linn. Soc., Bot. 29: 49 (1891). — *Drypetes aquifolium* (Scott-Elliot) Pax & K. Hoffm., in Engl., Pflanzenr. 81: 277 (1922). — Type: *Scott-Elliot 2873* (holo-, P).

Drypetes madagascariensis subvar. *inermis* Humbert & Leandri, Bull. Mus. Hist. Nat. (Paris), sér. 2, 4: 119 (1932). — Type: *Humblot 551* (holo-, P; iso-, MO).

Drypetes madagascariensis var. *perrieri* Humbert & Leandri, Bull. Mus. Hist. Nat. (Paris), sér. 2, 4: 119 (1932). — Type: *Perrier de la Bâthie 18260* (lecto-, P, designated here).

DISTRIBUTION. — Widespread in Madagascar.

With highly variable leaves (their margins often spiny-dentate), but distinguished by its glabrous petioles, 5 sepals, 3(-4) stamens, and 2 carpels.

Drypetes oppositifolia Leandri

Mém. Inst. Sci. Madagascar, Sér. B, Biol. Vég. 8: 248 (1957). — Type: *Service Forestier* (*Capuron) 8688* (holo-, P; iso-, TEF).

DISTRIBUTION. — Known from two collections at one site on the Masoala Peninsula.

Remarkable in the genus because of its opposite or subopposite leaves, but similar to *D. perrieri* in its 4 sepals, 4 stamens, and 2 carpels; pistillate flowers and mature fruit unknown.

Drypetes perrieri Leandri

Notul. Syst. (Paris) 7: 194 (1939). — Type: *Perrier de la Bâthie 2118* (holo-, P).

Drypetes coriifolia Leandri, Mém. Inst. Sci. Madagascar, Sér. B, Biol. Vég. 8: 247 (1957). — Type: *Service Forestier (Capuron) 8827* (holo-, P; iso-, MO, TEF).

Drypetes radamae Leandri, Mém. Inst. Sci. Madagascar, Sér. B, Biol. Vég. 8: 250 (1957). — Type: *Service Forestier (Capuron) 8753* (holo-, P; iso-, MO, TEF).

DISTRIBUTION. — Widespread, in both Madagascar and the Comoro Islands.

Variable in leaf size and shape, and sharing 4 sepals, 4 stamens, and 2 carpels with *D. thouarsii*, but differing from the latter in having smaller

leaves (usually 5-9 cm vs. 10-17 cm long) and smaller fruit (10-15 mm vs. 20-22 mm long).

Drypetes stipulacea Leandri

Mém. Inst. Sci. Madagascar, Sér. B, Biol. Vég. 8: 251 (1957). — Type: *Service Forestier (Capuron) 8877* (holo-, P; iso-, TEF).

DISTRIBUTION. — Known from a few widely spaced sites in the eastern forest.

Distinguished from its Madagascan congeners by its large stipules, but resembling *D. bathiei* and *D. capuronii* in having 3 sepals, several stamens (ca. 12), and several carpels (4?); pistillate flowers unknown.

Drypetes thouarsiana (Baill.) Capuron

Adansonia, n.s. 3: 378 (1963). — *Stelechanteria thouarsiana* Baill., Adansonia 4: 147 (1864). — Type: *Du Petit-Thouars s.n.* (holo-, P).

DISTRIBUTION. — Known from a few widely spaced sites in the eastern forest.

Distinguished by its narrowly triangular stipules, small leaves (2.5-8 cm long) with entire margins, 3 sepals, usually 5-7 stamens, and 4-5 carpels; mature fruit unknown.

Drypetes thouarsii (Baill.) Leandri

In Humbert, Fl. Madag. 111: 157 (1958). — *Cometia thouarsii* Baill., Étude Gén. Euphorb.: 643 (1858). — *Henribaillonia thouarsii* (Baill.) Kuntze, Rev. Gen. 2: 607 (1891). — Type: *Du Petit-Thouars s.n.* (lecto-, P, designated here). Although LEANDRI (loc. cit.) indicates that this combination had been made earlier [i.e. in Mém. Inst. Sci. Madagascar, Sér. B, Biol. Vég. 8: 246 (1957)], the name occurs in that paper only in the key to species, and thus was not validly published there.

DISTRIBUTION. — Eastern forest.

Distinguished by its large leaves (10-17 cm long), 4 sepals, 4 stamens, 2 carpels, and large fruits (10-15 mm long).

Acknowledgements

Much of the research for this paper was done while serving as a " Chercheur associé " at the Laboratoire de Phanérogamie, Muséum National d'Histoire Naturelle. I thank Prof. Ph. MORAT and Dr. J.-N. LABAT for facilitating my studies at P. Field work essential to this study was conducted under collaborative agreements between the Missouri Botanical Garden and the Parc Botanique et Zoologique de Tsimbazaza and the Direction de la Recherche Forestière et Piscicole, FOFIFA, Antananarivo, Madagascar. I gratefully acknowledge courtesies extended by the Government of Madagascar (Direction Générale de la Gestion des Ressources Forestières) and by the Association Nationale pour la Gestion des Aires Protégées.

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Manuscript received 28 August 2000;
revised version accepted 29 September 2000.