



Magnolia sanchez-vegae, a new species of Magnoliaceae from northern Peru

JOSÉ LUIS MARCELO-PEÑA^{1,2} & MARIO TOMAZELLO FILHO²

¹Herbario MOL, Departamento de Manejo Forestal, Facultad de Ciencias Forestales, Universidad Nacional Agraria La Molina. Av. La Universidad s/n, Lima Perú: E-mail: jlmarcelop@lamolina.edu.pe

²Laboratório de Anatomia e Dendrocronologia, Departamento de Ciências Florestais. Escola Superior de Agricultura Luiz de Queiroz, Universidade de São Paulo. Brasil.

Introduction

The family Magnoliaceae Jussieu (1789: 280) in South America includes a total of 50 species. Thirty species are listed for Colombia, ten for Ecuador, eight for Peru, three each for Brazil and Venezuela, and one for Bolivia (Lozano-Contreras, 1994; Nee, 1994; Dillon & Sanchez, 2009; Arroyo & Pérez 2013; Marcelo-Peña & Arroyo 2013; Vázquez *et al.* 2013). The following species are currently known to occur in Peru: *Magnolia rimachii* (Lozano 1994: 104) Govaerts (1996: 71), *M. amazonica* (Ducke 1915: 11) Govaerts (1996: 70), *M. bankardiorum* Dillon & Sánchez-Vega (2009: 7), *M. jaenensis* Marcelo-Peña (2013: 110), *M. manguillo* Marcelo-Peña & Arroyo (2013: 113), *M. elfina* Vázquez (2012: 100), *M. gentryi* Vázquez (2012: 104) and *M. peruviana* Vázquez (2012: 117).

According to the classification system proposed for the subfamily Magnolioideae by Figlar & Nooteboom (2004), in Peru only *M. jaenensis* belongs to section *Talauma* Jussieu (1789: 284), subsection *Dugandiodendron* Lozano (1975: 33), because of its stipules free from the petiole, stamens with connective prolonged into a long filament attached to the gynoeceum and carpels with circumscissile dehiscence. In contrast *Magnolia amazonica*, *M. bankardiorum*, *M. boliviana*, *M. gentryi*, *M. manguillo* and *M. rimachi*, belong to subsection *Talauma* of section *Talauma* because of their stipules adnate to the petiole and carpels with circumscissile dehiscence (Figlar & Nooteboom, 2004).

Many regions in Peru are botanically poorly known. However, funding for further botanical explorations has allowed an increase in the number of species for this family (e.g. Marcelo-Peña & Arroyo, 2013). The species of *Magnolia* described here was discovered as part of floristic inventories in the district of Utcubamba between October 2012 and July 2013.

For the description, measurements of branchlets and leaves were taken from dried material. Information on colours of vegetative and reproductive structures was obtained from living individuals (outer and inner bark) and freshly collected branchlets. Reproductive structures were described from preserved (in alcohol, flowers) and fresh (fruits) material.

Magnolia sanchez-vegae Marcelo-Peña, *sp. nov.* (Figs. 1, 2)

Magnolia sanchez-vegae is similar to *M. venezuelensis* in leaf and petiole shape; however, they differ in internode length (10.0–12.0 mm vs. 3.5–5.5 mm, respectively), leaf base shape (cordate, asymmetric, truncate vs. rounded), peduncle apex (pubescent vs. glabrous), shape of sepals (obovate vs. ovate), number of stamens (59 vs. 32) and number of carpels (19–23 vs. 11).

Type:—PERU. Amazonas: Bagua Grande, San Antonio, Bello Horizonte. 72°20'27.37" W, 5°59'21.03" S, 2250 m, 10 July 2013, *Marcelo-Peña & Yrigoin* 9824, (holotype: MOL; isotypes: CPUN, USM).

Trees 12–25 m high, 50–70 cm dbh; outer bark lenticellate in young trees, slightly fissured in mature trees; inner bark creamy white, with pleasant odour; branchlets terete, 5–10 mm in diameter, glabrous, with elliptic or elliptic-oblong lenticells; internodes 10.0–12.0(–25) mm long. Leaves alternate, petiolate, olive green, with pleasant smell, (21.0)13.5–9.5 × (–16.8)11.0–7.3 cm, ovate to oblong-elliptic, coriaceous, apex obtuse to rounded, base cordate to asymmetrically truncate, margin entire to sinuate, midrib canaliculate above, prominent beneath, leaf blade pinnately veined, with 5–11 pairs of secondary veins, tertiary venation finely reticulate, glabrous on both surfaces, except on the glabrescent insertion of the petiole with the lamina; petioles abaxially convex, adaxially concave, covered with an

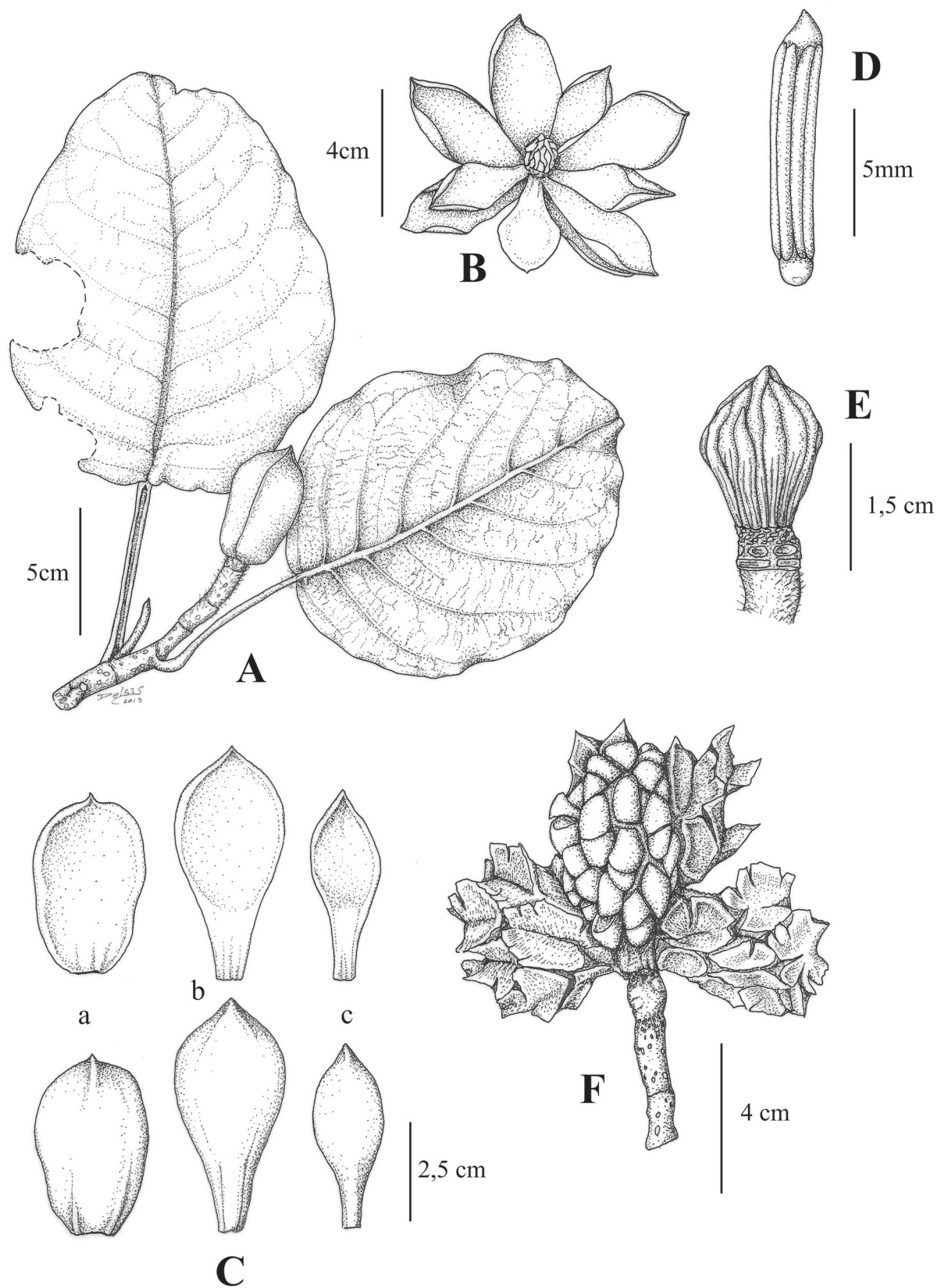


FIGURE 1. *Magnolia sanchez-vegae*. A. Branchlet with floral bud. B. Flower. C. Perianth. a. sepals, b. outermost petal, c. innermost petal. D. Stamen. E. Detail of gynoecium. F. Fruit and follicles. (A–E drawn from the holotype, F drawn from *Marcelo-Peña & Yrigoin 9828*; drawing by D. Trujillo.)



FIGURE 2. *Magnolia sanchez-vegae*, A. Detail of leaf base, B. Flower at anthesis. C. Obovate fruit with abundant lenticels. D. Aril (Photos a, b, c, by D. Yrigoin, and d. by J.L. Marcelo-Pena.)

adaxial scar, (11.0–)5.7–4.0 cm long, 4 mm in diameter, glabrous, except for the apex, sometimes with hirsute hairs. Flowers terminal, solitary, floral buds oblong to obovate, 3.8–4.0 × 2.0–2.5 cm, hypsophylls 2–4, glabrous, peduncle 3.8–4.7 cm long, 6–8 mm in diameter, with sparse dark brown indumentum; sepals 3, 5.0–5.2 × 2.4–3.2 cm, navicular,

obovate, greenish white, base truncate, apex obtuse, slightly mucronate; petals 7–8, navicular, spatulate, 4.7–5.7 × 1.5–2.7 cm, fragrant, with numerous brown dots externally, inner petals shorter, creamy-white, apex obtuse, slightly mucronate, base truncate; stamens 59, spirally arranged in 4 series, linear to slightly falcate, apex obtuse, whitish, 10.0–12.0 mm × 1.5–2 mm, thecae 2, introrse, with longitudinal dehiscence; gynoecium strobiliform, ellipsoid, cream coloured, 17–18 × 11–12 mm, carpels 19–23. Fruit obovoid, creamy-green basally, dark green distally, lenticellate, glabrous, 4.5–6.5 cm long, 5.0 cm in diameter, dehiscence circumscissile; seeds 2, sometimes 1 per carpel, angular-obovoid, 8–12 mm per side, 5 mm thick (widest side), dark red sarcotesta with pleasant smell.

Additional specimens examined:—PERU. Amazonas: Prov. Bagua Grande, San Antonio, Bello Horizonte, 72°20' 27,37" W, 5°59' 21,03" S, 2248 m, 4 Oct 2012, *Marcelo-Peña, Tagle, Yrigoin, Guerra 8072* (MOL); 78°20'29.56"W, 5°59'19.24"S, 2256 m; 78°20'28.91"W, 5°59'19.29"S, 2250 m; 78°20'33.01"W, 5°59'13.84"S, 2250 m, 18 Jul 2013, *Marcelo-Peña & Yrigoin 9826, 9827, 9828* (MOL).

Phenology:—Flowers and fruits in June and July.

Distribution and habitat:—This species is known from a single locality, covered by wet forests, between 2200–2250 m, with a few scattered individuals. Other species growing in association with *M. sanchez-vegae* are *Weinmannia lentiscifolia* Presl (1831, 52), *Ilex* sp., *Alchornea* sp., *Hyeronima* sp., *Symplocos* sp., *Miconia* spp., *Ficus* sp., *Cecropia* sp. and species of Lauraceae.

Etymology:—This species is dedicated to Isidoro Sánchez Vega because of his notable contributions to the knowledge of taxonomy and floristics on the Andean ecosystems of northern Peru.

Conservation status:—The habitat of *M. sanchez-vegae* is seriously threatened by migratory agriculture, these forest are often cleared to prepare fields as pastures and for subsistence agriculture. Because of this threat and its narrow range, it is suggested that the UICN conservation category of Endangered (EN) should be applied.

Discussion:—*Magnolia sanchez-vegae* is similar to *M. venezuelensis* (Lozano 1990: 78) Govaerts (1996: 72) in both leaf and petiole shape, but it differs from it in length of internodes, shape of leaf base, size of peduncle, shape of sepals and number of stamens and carpels (Table 1). *Magnolia sanchez-vegae* belongs to subsection *Talauma* of section *Talauma* based on presence of stipules adnate to the petiole and carpels with circumscissile dehiscence (Figlar & Nooteboom, 2004). Moreover, carpels remain fused at the base of the mature fruit as in the rest of species of subsection *Talauma*.

TABLE 1. Differences between *M. sanchez-vegae* and *M. venezuelensis*

| Species | LI | LB | PA | SS | NS | NC |
|-------------------------|---------------|-------------------------|-----------|---------|----|-------|
| <i>M. sanchez-vegae</i> | 10–12 (25) mm | cordate, asym. truncate | pubescent | obovate | 59 | 19–23 |
| <i>M. venezuelensis</i> | 3,5–5,5 mm | rounded | glabrous | ovate | 32 | 11 |

LI= Length of the internodes, LB=leaf base, PA= peduncle apex, SS= shape of sepals, NS= number of stamens, NC= number of carpels, asym.= asymmetrically

Acknowledgements

We thank D. Yrigoin-Vásquez for his collaboration in the collection of specimens; D. Trujillo for the excellent drawings; Gerencia Regional de Recursos Naturales y Gestión del Medio Ambiente (RENAMA) and Fondo de Promoción de las Áreas Naturales Protegidas del Perú (PROFONANPE) for the logistic support in the rapid botanical inventory in the forests of Vilaya-Condorpuna-Shipango, Amazonas Region.

References

- Arroyo, F. & Pérez, A.J. (2013) Three new species of *Magnolia* (Magnoliaceae) from Ecuador. *Phytoneuron* 55: 1–6.
- Dillon, M.O. & Sánchez-Vega, I. (2009) A new species of *Magnolia* (Magnoliaceae) from the Alto Mayo, San Martín, Peru. *Arnaldia* 16: 7–12
- Figlar, R. & Nooteboom, H.O. (2004) Notes on Magnoliaceae IV. *Blumea* 49: 87–100.
<http://dx.doi.org/10.3767/000651904X486214>
- Frodin, D.G. & Govaerts, R. (1996) *World checklist and bibliography of Magnoliaceae*. Royal Botanic Gardens, Kew, 79 pp.
- Jussieu, A.L. (1789) *Genera plantarum*. Herissant, Paris, 498 pp.

- Lozano-Contreras, G. (1975) Contribucion a las Magnoliaceae de Colombia. *Caldasia* 11: 27–50
- Lozano, G. (1994) *Talauma* y *Dugandiodendron* (Magnoliaceae) en el Neotrópico. Academia Colombiana de Ciencias Exactas, Bogota, 147 pp.
- Marcelo-Peña, J.L. & Arroyo, F. (2013) *Magnolia jaenensis* y *M. manguillo*, nuevas especies de Magnoliaceae del norte de Perú. *Brittonia* 65: 106–112.
<http://dx.doi.org/10.1007/s12228-012-9280-y>
- Nee, M. (1994) A new species of *Talauma* (Magnoliaceae) from Bolivia. *Brittonia* 46: 265–269.
<http://dx.doi.org/10.2307/2806907>
- Presl, J.S. (1830–1831) *Weinmannia*. In: Presl, K.B. (Ed.) *Reliquiae Haenkeanae, Vol. 1*. Calve, Prague, pp. 50–53.
- Vázquez-García, J.A., Muñoz-Castro, M.A., De Castro-Arce, E., Murguía, R., Nuño, A. & Cházaro-Basáñez, M. (2012) Twenty new Neotropical tree species of *Magnolia*. In: Salcedo-Pérez, E., Hernández-Álvarez, E., Vázquez-García, J.A., Escoto-García, T. & Díaz-Echavarría, N. (Eds.) *Recursos forestales en el occidente de México, Vol. 4*. Tomo I. Universidad de Guadalajara, Guadalajara, pp. 91–130.