



10. *Butia marmorii*. A Habit; B Leaf; C Underground stem; D Inflorescence; E Infructescence; F & G Pistillate (female) flower; H–J Staminate (male) showing various male flower shapes and one male flower with sepals removed; K Fruit; L Endocarp. Habit and fruits drawn from colored photos, stem drawn from prints of *Marmorii* 3138; leaf, flowers, inflorescences and infructescences drawn from *Noblick et al.* 5122. Thin line scale is 10 cm (A & B), thick line scale on flowers is 5 mm (F & G and H–J). All other scales are in cm as marked. Drawn by Wes Jergens.



9. *Butia exospadix* leaf rachis showing congested leaflets on a short rachis (Noblick 5305).

exospadix is separated from *B. campicola* by its smaller inflorescence (6.0–7.5 cm vs. 12–21 cm), smaller and more crowded flowers (Figs. 5 & 6) and by the smaller, usually non-beaked fruit (Figs. 7 & 8). *Butia exospadix* is vegetatively separated by its congested leaf rachis (Fig. 9).

***Butia marmorii* Noblick sp. nov.**, palma solitaria trunco acaulis et subterreano. Folium reduplicato-pinnatum foliolis 9–18, regulariter dispositis. Inflorescentia ad 7–17 cm longa, rachillis (1) 2–4, floribus femineis ca. 5.0–6.5 × 2.5–3.0 mm. Typus: Paraguay, Alto Parana, Cia. Laguna. L.R. Noblick et al. 5122 (Holotypus PY; isotypes FTG, K, NY) Figs. 10 & 11.

Stem solitary acaulescent, subterranean 10–20 cm in diam. with persistent leaf bases (Fig. 12). Leaves 3–5 in the crown, spirally arranged and

spreading; leaf sheath plus petiole ca. 2–15 cm long, adaxially channeled and abaxially rounded, and glabrous; petiole not including the leaf sheath less than 1 cm (0.4–0.5) cm long and 0.5–0.7 wide and 0.1–0.2 cm thick at the base of the leaf blade; leaf rachis 23–51 cm long with ca. 9–18 pairs of leaflets distributed evenly along the rachis; basal leaflets ca. 11–31 cm long × 0.1–0.3 cm wide, middle leaflets ca. 24–44 cm long × 0.4–0.7 cm wide, apical leaflets ca. 17–31 cm long × 0.1–0.3 cm wide. Inflorescence interfoliar, unbranched or branched to 1 order, peduncle 4.5–9.0 cm long × 0.3–0.5 cm wide × 0.1–0.5 cm thick; peduncular bract with a total length of ca. 8–19(–40) cm with no apparent beak and the expanded or inflated part of the bract measuring ca. 4.0–12.5(–18) cm long × 0.3–1.1



11 (top). *Butia marmorii* plant in habitat among grasses. 12 (bottom). *Butia marmorii* plant dug up by road construction crews exposing the grapefruit-sized underground stem.

(–2.5) cm in width and with a 1.2–3.0 cm perimeter and a 0.5 mm thickness, very thin or thicker, but not as thin as onion skin and never translucent; rachis 0–1 cm long; rachillae

1–8, apical ones ca. 2.8–7.0 cm long and basal ones ca. 3–7 cm. Flowers dark purple to pale yellow with purplish tinge; staminate flowers near the base ca. 4.5–5.5 mm long × 2 mm

wide, sessile, basal ones frequently short pedicellate with pseudopedicels ca. 1–1.5 mm long; sepals 3, distinct, linear triangular, connate at base forming a pseudo-pedicel, acute, sclerenchymous at the base but membranous near the tip, glabrous; petals 3 distinct, unequal, obovate, valvate, membranous, glabrous, with distinct venation, ca. 3.5–3.8 × 2.0–2.5 mm, acute; stamens 6, pale yellow, distinct, 2.5 mm long, with filaments 1.5 mm long, pistillode trifid, less than 0.5 mm long. Pistillate flowers, conical, sessile; sepals, glabrous, with no visible venation except at the margins and tip, sclerenchymous, imbricate, ca. 5.0–6.5 × 2.5–3.0 mm, unequal, acute, faintly keeled at tip; petals 3, distinct, imbricate at base, valvate at apex, triangular, obscurely nerved, glabrous, 3.2–5.5 × ca. 2.3–3.0 mm, acute; gynoecium 2.5–3.0 mm long × 1.0 mm wide, glabrous. Fruits purple when mature, 1.2–2 cm long × 1.2–1.5 cm in diam., ovoid; cupule (persistent perianth) greenish brown, ca. 0.6–0.8 cm in diam. × ca. 0.4 cm high; petals slightly longer than sepals, staminodial ring truncate, 0.5 mm high × 2.5 mm diam.; epicarp dark purple when mature (Fig. 13), smooth and glabrous; mesocarp pale yellow, fleshy, non-fibrous ca. 1–2 mm thick; endocarp nearly spherical to elliptical, ca. 1.0–1.8 × ca. 1.0–1.3 cm., ca. 1 mm or less thick (ca. 0.5 mm thick), hard,

bony, dark brown to nearly black, apex with no distinctive protuberance or beak, interior smooth, monovittate, round in cross-section, outer surface nearly smooth, pores subequatorial, 3 nearly even with surface, sutures visible; seed 1, spherical to elliptical, 8–9 mm long × 5–6 mm diam., endosperm white, homogeneous. Germination remote tubular, eophyll simple, narrowly lanceolate.

Common name: *yatay poñy*.

Habitat and conservation: Cerrado scrub, in open grassy areas between the taller cerrado plants, restricted to the medium to tall grasses rather than in the adjacent low weedy scrub. Plants in full sun were more productive than those in shade. The terrain is nearly flat with gentle slopes and with a red sandy, lateritic soil. The site has been excavated for road work and threatened by pasture land. By 2004 soybean fields were encroaching on the site; the area is not expected to survive. Luckily, Marmori discovered another site within 2 km of Cia Laguna, but none of the areas is legally protected, and the palms remain threatened.

Etymology: The specific epithet honors its discoverer, Itaipu botanist, Guillermo Caballero Marmori.

Distribution: Known from a small area in Alto Parana, Paraguay in the vicinity of the village

13. *Butia marmorii* infructescence showing the purple fruit and thicker bract.



14. *Butia marmorii*
inflorescence with purplish
flowers and smooth, opaque,
peduncular bract (Noblick
5332).



of Cia Laguna. A collection from Instituto de Botánica Darwinion (SI) confirms a population of more robust plants as far south as San Ignacio, Misiones, Argentina and digital images taken in the field corroborate its presence as far north as Três Lagoas, Mato Grosso do Sul, Brazil (Emerson Salviani, pers. comm.).

Phenology: Palms had developing and mature fruit in February, and several were continuing to flower.

Specimens Examined: ARGENTINA: Misiones, San Ignacio, near the house of H. Qulroga, 27° 16'S 55° 33'W, 270 m, 9 Dec 1997, M.E. Múlgura de Romero et al. 1657 (SI); PARAGUAY: Alto Parana, before Cia Laguna and Itaquyry, ca. 69–70 km N of Hernandarias, ca. 10 km after the turn off for Itaquyry, 25° 2' 3''S 54° 59' 41.8''W, 180 m, 15 Feb 1996, L.R. Noblick, H. Cropper, T. Rios Otero, M. Quintana, & G. Marmorii 5122 (Holotype PY, isotypes FCQ, FTG, NY); Laguna, 70 km N de Hernandarias, 27 Mar 1993, G. Cabellero Marmorii 3138 (Herbarium at Itaipu, CTES, FCQ, MBM); Cñia Laguna, approx 55°W, 25°S camino a Itakiri, ca.

64 km NE de Hernandarias, 28 Mar 1993, A. Schinini, R. Vanni & S. Cáceres 28229 (CTES); 10 km NW de ruta Ciudad del E-Salto de Guairá, camino a Itaquyry, 25° 01'S 54° 59'W, 28 Oct 1994, A. Krapovickas, R.M. Harley, C.L. Cristobal, & A. Schinini 46129 (CTES, K); Cia Laguna, about 1–2 km E of Laguna along a dirt side road, ca. 276 m, 25° 0.075'S 55° 2.516'W, 26 Nov 2002, L.R. Noblick, T. Rios Otero & G. Marmorii 5281 (PY, FCQ, K, NY).

Discussion: *Butia marmorii* is distinct from *B. leptospatha* in having branched vs. spicate inflorescences, thicker opaque bracts vs. translucent onion skin-like bracts, smaller pistillate flowers (4.5–6.0 mm vs. 7–8 mm long) and shorter peduncles (4.5–9.0 cm vs. 8.5–24 cm long). *Butia marmorii* is easily separated from *B. microspadix* by its glabrous to lepidote vs. tomentose bracts and 2–4(–8) vs. 12–17 inflorescence branches (Figs. 14 & 15).

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