

A note on the taxonomy of the Macaronesian *Euphorbia obtusifolia* complex (*Euphorbiaceae*)

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Summary

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In a taxonomic synopsis of the *Euphorbia obtusifolia* complex, new data are presented on typification and synonymy. Keys, illustrations and a distribution map help clarify this complex and correct certain errors and historical inaccuracies regarding the identity and distribution of *E. obtusifolia* and *E. regis-jubae*. A new variety, *E. obtusifolia* var. *wildpretii*, is described.

Introduction

The *Euphorbia obtusifolia* complex (*E. sect. Balsamis* Webb & Berthel.), in the strict sense, comprises a set of allopatric taxa (*E. obtusifolia* Poir., *E. regis-jubae* Webb & Berthel., *E. pedroi* Molero & Rovira, and *E. anachoreta* Svent.) which are distributed along the Atlantic coast of Portugal and Morocco, on the Canary Islands and Salvage Islands. Known popularly as “tabaibas” on the Canary Islands, they are characteristic of the thermophilous, xerophilous vegetation called “tabaibales” and “cardonales” which occupy large stretches of the coastal land of the islands, over 50 % of the surface area of Tenerife and Gran Canaria, and constitute a typical feature of the arid and sub-arid Canary landscape (Rivas-Martínez & al., 1993).

Our taxonomic revision of this group has brought to light a complex problem of nomenclature surrounding the illegitimacy of the name *Euphorbia obtusifolia*. Maintenance of the traditional use of this name in preference to other available names which fail to guarantee stability of nomenclature has required a separate, parallel conservation proposal (Molero & Rovira, 1998).

Another important concern of this revision is the confusion one finds in the literature with regard to the correct identity and precise distribution, in the Canary archipelago, of *Euphorbia obtusifolia* and *E. regis-jubae*. Errors have occurred in the identification and/or localisation of both taxa, as is shown in certain representative studies published in this century (Pitard & Proust, 1908; Ceballos & Ortuño, 1951; Jacobsen, 1974; Kunkel, 1969, 1977; Santos, 1983; Hansen & Sunding, 1993; Rivas-Martínez & al., 1993; Oudejans, 1990, 1993). The chorological inaccuracies of Webb & Berthelot (1844-1850), who indicate a sympatric distribution in the archipelago for these two species, may well have been partly responsible for these mistakes. Another possible source of confusion relates to the geographical origin of the nomenclatural type of *E. obtusifolia*, a name that is based on *E. mauritanica* L. in the sense of Lamarck, who so designated material in his herbarium that in fact came from the island of Tenerife, not from Mauritania or, in the broader sense, western Africa, as the Linnaean epithet suggests.

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The subordination of *Euphorbia regis-jubae* to *E. obtusifolia* with the rank of subspecies or variety has been widely accepted by authors who were influenced to a great extent by incomplete comparative morphological observations (Maire, 1928) and/or by the subjective impression that the distribution of the two taxa would be sympatric. However there is clear divergence in a set of correlated characters between these two taxa, which are in fact two closely related, allopatric species that have diverged in their respective areas as a result of adaptive radiation in geographical isolation. *E. pedroi* from Portugal is very closely related to *E. regis-jubae*, from which it basically differs by its seminal characteristic. Similarly, *E. anachoreta* corresponds fully to the morphological pattern of *E. obtusifolia*; the differential characteristics of the populations which inhabit the small islets of the Salvages, halfway between the western Canary Islands and Madeira, are numerous but not clearly discontinuous. They may be due to adaptation to the extreme environmental conditions on these islands (salinity, aridity, very strong winds), and may or may not be genetically stabilised.

Taxonomic treatment

In preparing the taxonomic synopsis presented below we have examined herbarium material borrowed from the following institutions (Holmgren & al., 1990): B, BC, BCF, BM, COI, LISB, LISU, COI, K, MA, MAJD, MPU, MUN, P, ORT, S, and W, in addition to abundant material collected by ourselves. For the terminology used, we refer to the introductory section of the study by Benedí & al. (1997). The measurements of seeds and caruncles should be understood to refer to height × width (ventral view) × depth (lateral view).

Key to the species

1. Subcyathial dichasial bracts 2.5-4.8(-5) mm, usually caducous before fructification; mature cyathia as long as wide or shorter; glands hornless; pleiochasial rays 0-1 times bifurcate 2
 1. Subcyathial dichasial bracts 5-10 mm, usually present until fructification; mature cyathia as long as wide or longer; glands usually horned, rarely hornless; pleiochasial rays (0-)1-2 times bifurcate 3
 2. Leaves 2.5-6 times as long as wide, elliptic-lanceolate to oblong-lanceolate; seed ovoid-subglobose, faintly tridenticulate at the base 2. *anachoreta*
 2. Leaves 7-40 times as long as wide, linear-oblong, linear-lanceolate or linear-obovate; seeds ovoid, somewhat compressed laterally, clearly tridenticulate at the base 1. *obtusifolia*
 3. Seeds with markedly convex (subgibbous) apical dorsum; caruncle 1.4-1.6 mm long in lateral view, sessile, obnavicular, ventrally briefly emarginate, sloping at 45°-55° 4. *pedroi*
 3. Seeds with non-gibbous apical dorsum; caruncle 0.7-1.2 mm long in lateral view, stipitate or sessile, subconic-truncate, asymmetrical, ventrally broadly emarginate, sloping at 20°-40° 3. *regis-jubae*
1. *Euphorbia obtusifolia* Poir. in Lamarck, Encycl., Suppl. 2: 609. 1812 [non Lam., Encycl. 2: 43. 1788], *nom. cons. prop.* = [by lectotype designation, effected here]

E. virgata Desf., Tabl. École Bot.: 204. 1804 [non Waldst. & Kit., Descr. Icon. Pl. Hung. 2: 176, t. 162. 1804] ≡ *E. lamarckii* Sweet, Hort. Suburb. Lond.: 107. 1818. – Lectotype (designated here): “*Euphorbia mauritanica* ...” (P-LAM) [IDC fiche 584, row B, No. 6].

A somewhat fleshy shrub 0.4-2(-3) m, glabrous, procumbent or erect and dendroid, with loose, multifurcate, ascending ramification. Apical stems somewhat fleshy, bifurcate or in pseudoverticils of 3-6, with transverse lightly marked leaf scars, greenish or reddish at the apex, more or less resinous-pruinose. Leaves 20-100 × 1.5-9 mm, 7-40 times as long as wide, sessile, linear, linear-oblong, linear-lanceolate or linear-obovate, long-attenuate at the base, slightly fleshy, green. Pleiochasial bracts shorter and wider than the nearby leaves. Pleiochasial rays 2-7, up to 40 mm, 0-1 times bifurcate; secondary rays up to 30 mm. Subcyathial dichasial bracts 2.5-4.8(-5) × 1.6-3.8 mm, ovate, elliptical, oblong or obovate-oblong, patent, caducous before fructification. Mature cyathia (2-)2.5-3(-4) mm, as long as wide or shorter, glabrous or glabrescent; glands 0.8-2 × 1.2-2.7 mm, hornless, transversally elliptical, oblong, semicircular or suborbicular, with a rounded outer edge, truncate, emarginate or lobulate. Capsules 3.8-6 × 5.5-8.2 mm, subglobose-depressed, with deep furrows (130°-160°); coccae rounded, smooth, punctulate-papillose or rugulate, yellowish-green or reddish. Styles 1.4-2.6 mm, divided down to the basal third or half-way. Seeds 2.4-3.3 × 1.8-2.6 × 1.9-3.1 mm, ovoid, with convex dorsum and very sloping, tridenticulate base, smooth or rugulate, yellowish or blackish; caruncle 0.5-1.7 × 0.3-0.9 × 0.6-1.3 mm, sessile, lateral, sloping at 20°-40°, obnavicular-truncate, ventrally deeply emarginate. – Fig. 1.

Note. – The type sheet of *Euphorbia obtusifolia* in the Lamarck herbarium bears three fragments of the same collection, the middle one without flowers. The material presents linear-lanceolate, subacute leaves; a pleiochasium with three non-bifurcate rays, with a terminal cyathium; last-order acuminate bracts measuring 3.5-4 × 2-2.5 mm, situated at the base of the cyathium, which possesses semicircular, truncate, hornless glands. These characteristic coincide with those found in populations of *E. obtusifolia* from the southern half of the island of Tenerife (which therefore represent var. *obtusifolia*), but are slightly different from those displayed by conspecific populations in the northern half of the island and the remaining western islands of the Canary archipelago (our var. *wildpretii*). The unquestionable origin of the type material conflicts with the locality indicated by Lamarck for his “*E. mauritanica* L.”: Cette plante croît dans les lieux maritimes de l’Afrique & est cultivée au Jardin du Roi. The description and locality alone, without due attention to the material in the herbarium, might lead to the erroneous conclusion that Lamarck had *E. regis-jubae* in mind, which is the only species present on the African coast. Inaccuracies of this kind are not uncommon in the work of Lamarck (see, for example, within the same genus *Euphorbia*, the imprecise or erroneous indications regarding the geographical origin of *E. canaliculata* Lam. or *E. longifolia* Lam. (1812: 417).

Overall distribution. – A geographical vicariant of *Euphorbia regis-jubae*, *E. obtusifolia* is distributed throughout the western Canary Islands (Tenerife, Gomera, La Palma, and Hierro), at altitudes between 50 and 1700 m, and can be subdivided into two varieties.

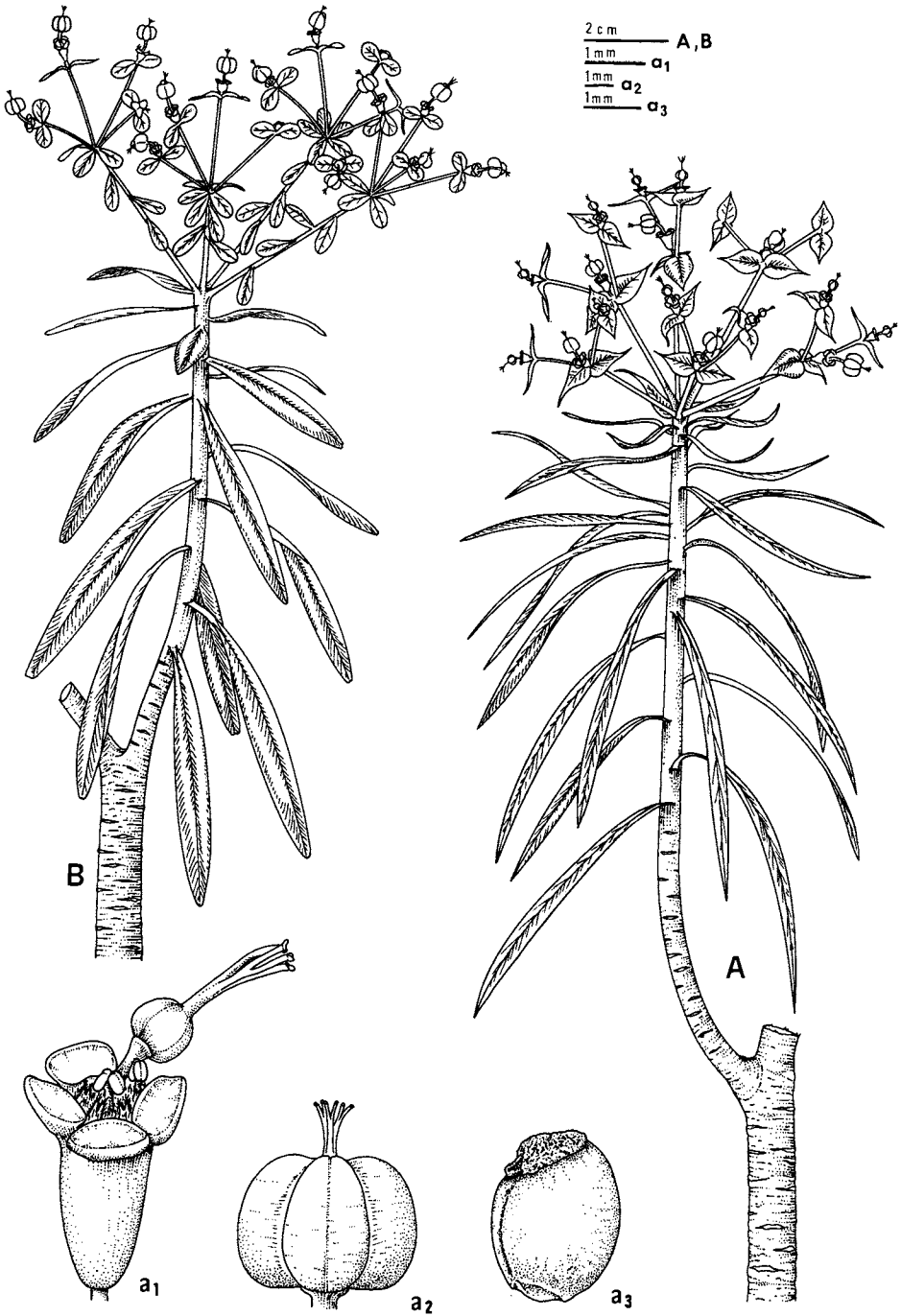


Fig. 1. *Euphorbia obtusifolia* var. *obtusifolia* (Tenerife, Adeje, BCF No. 37691): A, flowering stem; a₁, cyathium; a₂, capsule; a₃, seed. – *E. obtusifolia* var. *wildpretii* (Gomera, Hermiguas, BCF No. 37962): B, flowering stem.

Key to the varieties

- Leaves 13-40 times as long as wide, linear or linear-lanceolate, acute or subacute; bracts ovate, elliptical or oblong, narrowed to the acuminate or apiculate apex, with an acumen of 0.4-0.8 mm 1a. var. *obtusifolia*
 Leaves 7-12 times as long as wide, their apex obtuse to emarginate; bracts broadly elliptical or suborbicular, rounded or subtruncate at the apex, with a mucro of 0.1-0.3 mm 1b. var. *wildpretii*

1a. *Euphorbia obtusifolia* Poir. var. *obtusifolia*

= *E. broussonetii* Willd. ex Link in Buch, Phys. Besch. Canar. Ins.: 158. 1828. – Type: “Teneriffa” (B-W No. 9252).

Loosely branched, with short stems, soon defoliated. Leaves 30-90 × 1.5-5 mm, 12-40 times as long as wide, linear or linear-lanceolate, gradually narrowed towards the apex, acute, rarely subobtuse, minutely apiculate or not. Final order subcyathial bracts 3-5 × 1.8-3.6 mm, narrowly ovate, elliptical or oblong-elliptical; apex narrowed, with an acumen of 0.4-0.7(-1) mm. – Fig. 1A, a_{1,3}.

Distribution and ecology. – Distributed in the southern half of the island of Tenerife, from the south of Anaga to southern Teno, following the coast at altitudes between 100 and 700(-1600) m (Fig. 4). It colonises “malpaisés” (steeply sloping non-arable lava terrain) and other places with severely degraded vegetation that are exposed to strong winds and intense sunlight. It is a constituent part of the “tabaibales” and “cardonales” of the infracanarian arid bioclimatic belt (Rivas-Martínez & al., 1993)

1b. *Euphorbia obtusifolia* var. *wildpretii* Molero & Rovira, var. nov. – Type: Tenerife, Valle de la Orotava, los Canales, 28°25'N, 16°34'W, 320 m, 11 Jun 1990, Molero 288/90 (BCF No. 37959).

A varietate typica differt foliis lineari-oblongis vel lineari-obovatis, latitudine 6-13-plo longioribus, apice obtusis, rotundatis, truncatis vel emarginatis; bracteis late ellipticis vel suborbicularibus, apice rotundatis vel subtruncatis, mucrone 0.1-0.3 mm longo praeditis. – Fig. 1B.

Dendroid, robust, usually densely ramified, with densely leafy stems. Leaves 20-90 × 5-9 mm, 6 to 12(-14) times as long as wide, linear-oblong, lanceolate or linear-obovate, with obtuse, rounded, truncate or emarginate apex, mucronulate or not. Apical bracts varying in shape from broadly elliptical to suborbicular; their apex rounded or subtruncate, with a mucro or minute apiculum of 0.1-0.3 mm. – Fig. 1B.

Distribution and ecology. – Distributed on the western Canaries (Tenerife, Gomera, La Palma, and Hierro; Fig. 4). On Tenerife it occurs in the northern part of the island, from Anaga to the Teno, at altitudes between 50 and 600(-1200) m in the infracanarian semiarid bioclimatic belt, occupying the relatively rainy coastal zone which is nevertheless exposed to strong sunlight and dry winds. On Gomera it cohabits allopatrically with *E. berthelotii* Bolle ex Boiss., chiefly occupying the north-western part of the island, from Vallehermoso to Agulo, at altitudes of 100-900 m. On La Palma it is relatively common all around the island, at altitudes between 100 and 800 m, being characteristic of “tabaibales” and “cardonales”; on Tijarafe it is

found at elevations as high as 1700 m. On Hierro it is also distributed throughout the island (though it is rarer in the north) at altitudes between 100 and 600 m, reaching 1100 m in El Pinar.

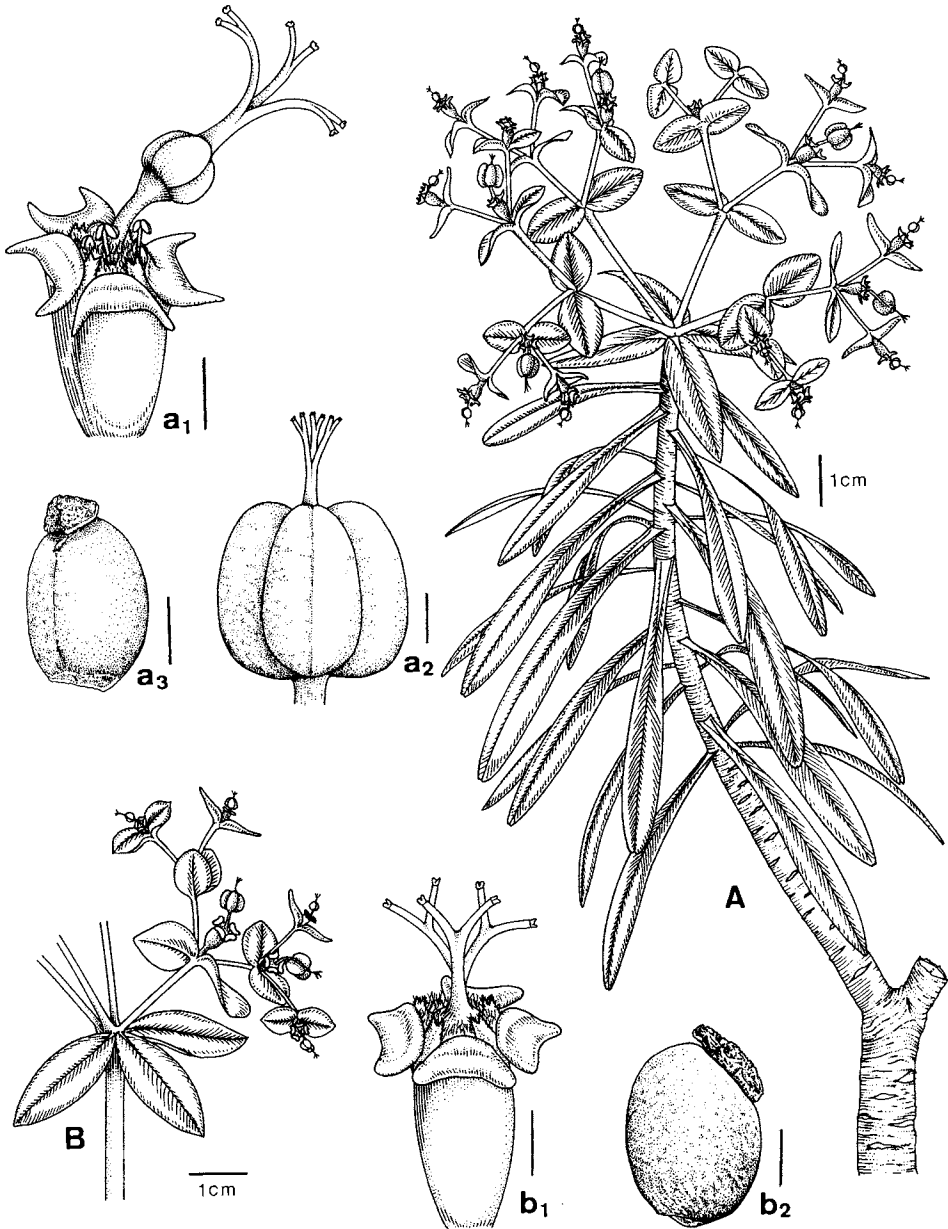


Fig. 2. *Euphorbia regis-jubae* (Gran Canaria, Agaete, BCF No. 37880): A, flowering stem; a₁, cyathium; a₂, capsule; a₃, seed. – *E. pedroi* (Portugal, Sesimbra, BCF No. 43677): B, pleiochasial and dichasial fragment of the synflorescence; b₁, cyathium; b₂, seed. – Bar = 1mm.

2. *Euphorbia anachoreta* Svent., Index Sem. Agron. Invest. Nat. Hisp. Inst. 1968: 58. 1969. – Holotype (Bramwell, 1995): “Habitat inter saxa solo arido-lapidoso et in fissuris rupium basalticarum parvae insulae Salvajita dictae a ventibus maris valde agitatae, 11 May 1953” (LPA No. 11602).
 = *E. obtusifolia* var. *despoliata* Menezes in J. Sci. Math. Phys. Nat., ser. 3, 16: 193. 1924 ≡ *E. despoliata* (Menezes) T. Monod in Bol. Mus. Municip. Funchal, Supl. 1: 34. 1990 ≡ *E. lamarckii* var. *despoliata* (Menezes) Oudejans, World Cat. Euphorbiae, Cumul Suppl. 1: 112. 1993. – Type: “È fréquente no Ilheu de Fora”, May 1922, A. C. de Novonha (not located; in either BM, MAJD, LISU, COI, or LISB).

Somewhat fleshy shrub 20-80 cm, glabrous, pulvinate, densely ramified from the base. Stems much thickened towards the apex, somewhat fleshy, with longitudinal striae and clearly marked leaf scars, greenish or reddish, covered with a dense whitish, resinous pruina. Leaves 20-55 × 4-11 mm, 2.5-6(-7) times as long as wide, subsessile, somewhat fleshy, glaucous-green, elliptical, elliptical-lanceolate, lanceolate or oblong-lanceolate, narrowed at the base, with obtuse, subtruncate or emarginate apex. Pleiochasial bracts as narrow and as short as the nearby leaves. Pleiochasial rays from 4-10 to as much as 20 mm, considerably thickened, (0-)1 times bifurcate; secondary rays 6-12 mm. Subcyathial dichasial bracts 2-4 × 1.6-2.8 mm, patent or erecto patent, ovate, obovate-oblong or suborbicular, with obtuse or rounded, rarely acuminate apex, mucronulate or not, persistent until the beginning of fructification. Mature cyathium 2.3-3.0 × 1.7-2.4 mm, pubescent-hirsute or glabrescent; glands hornless 1-1.5 × 0.7-1.2 mm, transversely elliptical, subcircular, subreniform, with entire or emarginate outer edge. Capsule 3.8-4.2 × 4.4-6 mm, globose-depressed, with shallow furrows (150°-160°); coccae rounded, reddish, punctulate-papillose, smooth or rugulate; style 1.4-1.6 mm, divided almost to the base, with deeply bifid branches. Seeds 2.5-2.8 × 2-2.4 × 2-2.4 mm, ovoid-subglobose, with a faintly tridentate base, smooth or rugulate, greyish or blackish; caruncle 1.1-1.2 × 0.2-0.3 × 0.9-1 mm, sessile, lateral, sloping at 20°-40°, ventrally broadly obnavicular-truncate or subpatelliform, deeply emarginate. – Fig. 2.

Distribution and ecology. – Very local endemic taxon of the Salvage archipelago (Portugal), found exclusively on to the islet of Fora (in Spanish, Salvajita or Pitón Pequeño; Fig. 4). Uncommon, found on basalt crags and escarpments sheltered from the strong salty winds, in highly arid conditions.

3. *Euphorbia regis-jubae* Webb & Berthel., Hist. Nat. Iles Canaries 3(2,3): 250. 1847 ≡ *Tithymalus regis-jubae* (Webb & Berthel.) Klotzsch & Garcke in Abh. Königl. Akad. Wiss. Berlin 1859(1): 93. 1860 ≡ *E. obtusifolia* subsp. *regis-jubae* (Webb & Berthel.) Maire in Jahandiez & Maire, Cat. Pl. Maroc 2: 462. 1932 ≡ *E. lamarckii* subsp. *regis-jubae* (Webb & Berthel.) Oudejans, World Cat. Euphorbiae, Cumul. Suppl. 1: 11. 1993 ≡ *E. virgata* subsp. *regis-jubae* (Webb & Berthel.) A. Soldano in Nat. Bresciana 29: 145. 1994. – Lectotype (designated here): “*E. jubae-regis*, Gde. Canarie” (FI-W No 103).
 = *E. pseudodendroides* H. Lindb. in Acta Soc. Sci. Fenn., Ser. B, Opera Biol. 1(2): 98. 1932 ≡ *E. obtusifolia* var. *pseudodendroides* (H. Lindb.) Maire in Bull. Soc. Hist. Nat. Afrique N. 27: 258. 1936 ≡ *E. lamarckii* var. *pseudodendroides* (H. Lindb.)

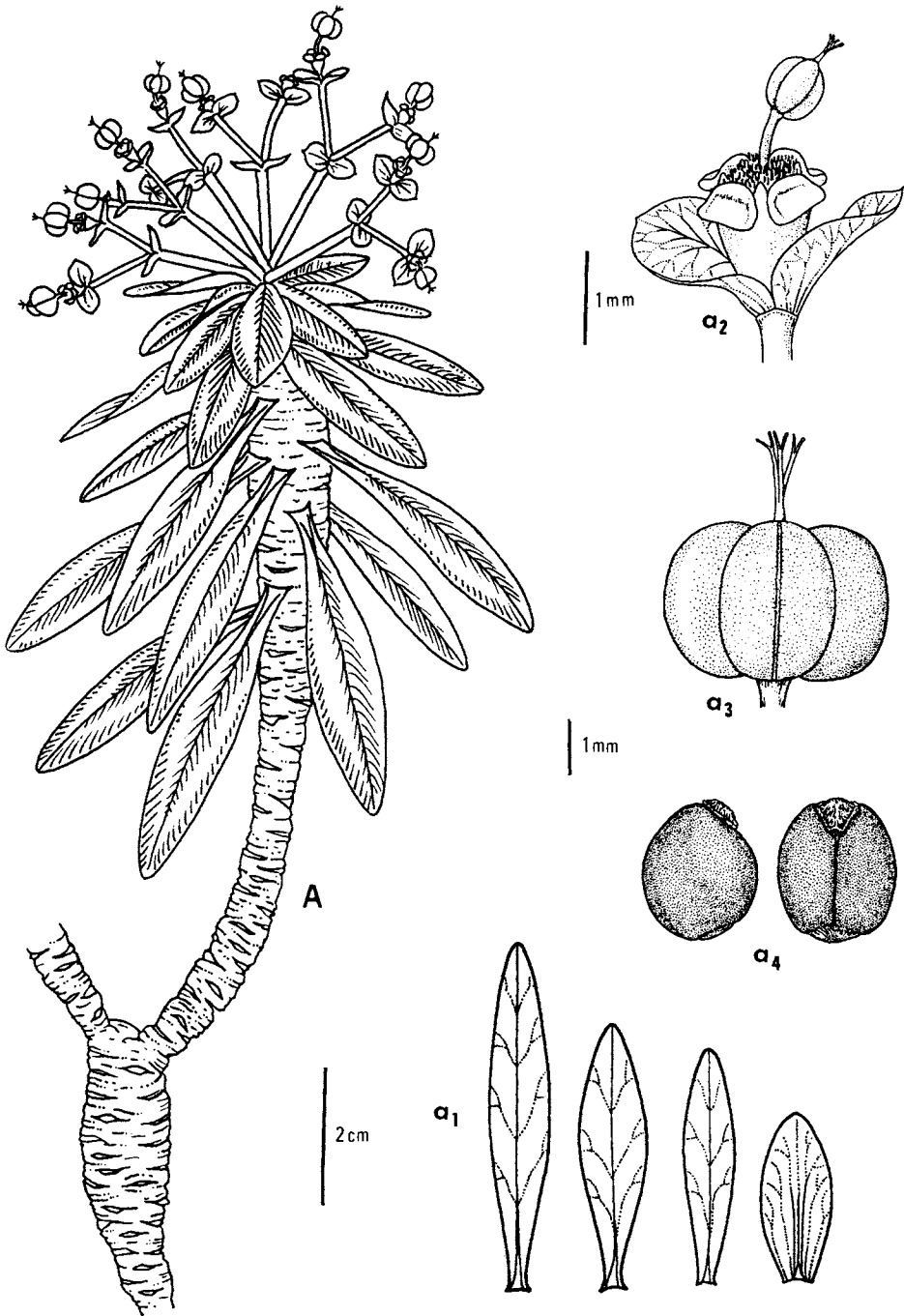


Fig. 3. *Euphorbia anachoreta* (Salvage Islands, Fora, BCF No. 39349): A, flowering stem; a₁, leaves and pleiochasial bracts; a₂, cyathium and subcyathial dichasial bracts; a₃, capsule; a₄, seed.

Oudejans, World Cat. Euphorbiae, Cumul. Suppl. 1: 11. 1993. – Type: “Cap Safi prope oppidulum Safi, in glareosis aridissimis infra montem abruptum juxta mare”, *Lindberg* (H, not seen).

= *E. obtusifolia* f. *latebracteata* Kunkel in *Naturalia Hisp.* 15: 54. 1978 = *E. lamarckii* f. *latebracteata* (Kunkel) Oudejans, World Cat. Euphorbiae, Cumul. Suppl. 1: 11. 1993. – Type: “Lanzarote, Famara”, *Kunkel 1814* (G).

– *E. dendroides* var. *hesperia* Jahandiez & Maire in *Cavanillesia* 5: 14. 1932, *nom. nud.* Iconogr.: Vindt in *Trav. Inst. Sci. Chérifiën, Ser. Bot.*, 6: 43, f. 14 (1928 A, B). 1953; Kunkel in *Nat. Hisp.* 15: 52, fig. 171 (f. *latebracteata*).

Somewhat fleshy shrub 0.2-2.5 m, glabrous, procumbent or erect and dendroid, with multifurcate, ascending, loose ramification. Stems apical, bifurcate or in pseudovercils of 3-6, somewhat fleshy, greyish-white, reddish or greenish, resinous-pruinose, with barely visible leaf scars. Leaves 11-100 × 2-11 mm, sessile or subsessile, linear, linear-oblong or linear-obovate, gradually narrowed at the base, with acute, obtuse, truncate or emarginate apex, mucronate or not. Pleiochasial bracts somewhat shorter and wider than the nearby leaves. Pleiochasial rays 3-7(-14), up to 45 mm, (0-)1-2 times bifurcate; secondary rays up to 30 mm. Dichasial subcyathial bracts 5-10 × 3.5-7 mm, elliptical-oblong, oblong, obovate-oblong, rarely suborbicular, with obtuse, subtruncate or rounded apex, mucronulate, patent or erecto patent, persistent when the fruit is ripe. Mature cyathium 2.8-4.5 mm, longer than wide, glabrous or glabrescent. Glands 0.3-0.9 × 0.9-1.7 mm, semicircular or subtrapezoid, two-horned, with acute or obtuse appendices of up to 0.9 mm (rarely without horns, subtruncate, with straight, concave or lobulate outer edge). Capsule 4-5.2 × 5.2-7.3 mm, subglobose-depressed, with deep furrows (130°-150°); coccae with rounded or subangular back, rugulate or finely punctulate-papillose. Styles 1.8-3.2 mm, divided down to the basal third or halfway, with or without deeply bifid branches. Seeds 2.5-3.5 × 1.7-2.6 × 1.8-3.1 mm, ovoid to ovoid-oblong, somewhat compressed laterally, with somewhat convex dorsal surface, not very sloping base, smooth or rugulate, greyish or blackish; caruncle 0.4-1 × 0.5-1.1 × 0.7-1.2 mm, stipitate (with a stipe of up to 1 mm), rarely subsessile, subapical, subconical-truncate, asymmetrical, ventrally markedly emarginate. – Fig. 3A, a_{1,3}.

Distribution and ecology. – Distributed along the Atlantic coast of Morocco and on the eastern islands of the Canary archipelago (Gran Canaria, Lanzarote, and Fuerteventura; Fig. 4). In Morocco it occurs along the coastal strip between Safi and Tarfaya, on sea cliffs, stony hills, or on sandy soil at the bottom of gulleys, and also in some scattered localities in inland ravines in the Anti-Atlas and Zaër, at altitudes of 50-600 m. In the eastern Canary Islands it is a very common constituent of the coastal belt vegetation, at altitudes of 100-600 m, in the arid and semi-arid infracanarian bioclimatic belt, colonising “malpaises” and other disturbed places subject to intense grazing; on Gran Canaria it spreads upward, over the sunlit slopes of gulleys, virtually to the summit at 1800 m. It is a xerophilous, thermophilous species with marked invasive capacity, which along the lower edge of its domain can spread into the “tabaibales” and “cardonales” of *Euphorbia balsamifera* Aiton and *E. canariensis* L., and along the upper edge into juniper formations, pine groves, and their replacement communities.

Note. – *Euphorbia pseudodendroides* was described from Morocco, but the African populations cannot be distinguished from the variable Canary populations except for a tendency of the cyathium glands to be truncate or present shorter horns. *E. obtusifolia* f. *latebracteata*, from Lanzarote, has larger, subquadrate final-order bracts that can reach 10 mm. It was already known to Webb & Berthelot (l.c.: “*E. mauritanica* sensu Webb e loco Lanzarote, var. est foliis floralibus valde dilatatis”). The same form occurs on Fuerteventura and in the south-eastern and central parts of Gran Canaria, being linked to the typical form by a full range of transitions.

4. *Euphorbia pedroi* Molero & Rovira in *Anales Jard. Bot. Madrid* 55: 198. 1997. – Type: “Portugal, Sesimbra, Cabo Espichel, entre Semáforo y Cha dos Navegantes, espolón del acantilado sometido a fuerte maresía, 80 m” (BCF No 41660).

– *E. obtusifolia* “forma *barbaricensis*”, Pedro in *Revista Biol. (Lisbon)* 12: 428. 1983, *nom. inval.*

– *E. obtusifolia* “forma *sesimbrensis*” Pedro in *Revista Biol. (Lisbon)* 12: 427, 428. 1983, *nom. inval.*

Iconogr.: Benedí & al. in *Fl. Iber.* 8: 220. 1997.

Somewhat fleshy shrub 0.2-2 m, glabrous, of prostrate, procumbent or erect and dendroid habit, with multifurcate, ascending, loose or intricate ramification. Apical stems somewhat fleshy, with lightly marked leaf scars, greyish-white, greenish or reddish, resinous-pruinose. Leaves 25-60 × 4-10 mm, linear-lanceolate or linear-obovate, narrowed at the base, with rounded or emarginate apex, green or glaucous-green. Pleiochasial bracts shorter and wider than the nearby leaves, rarely narrower.

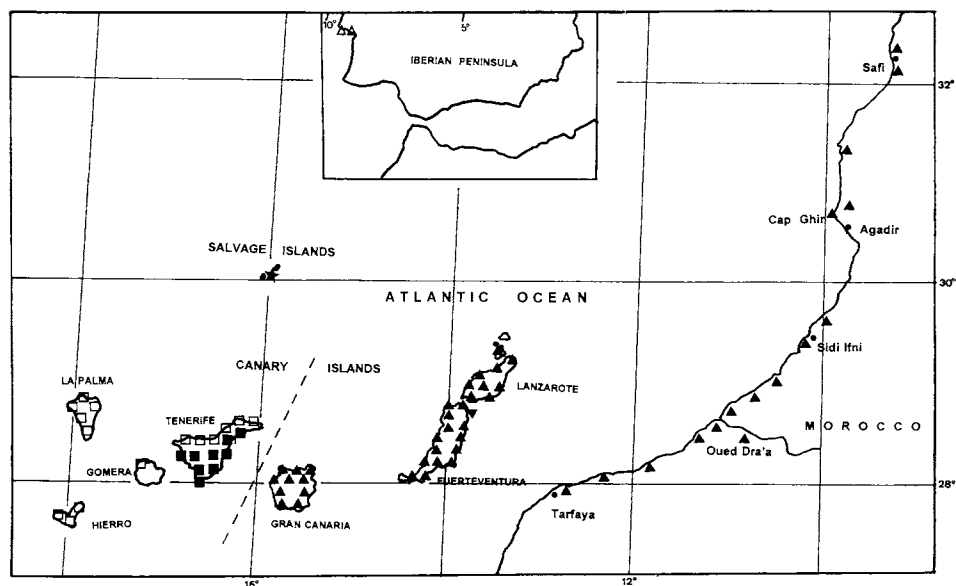


Fig. 4. Distribution of the *Euphorbia obtusifolia* complex: ■, *E. obtusifolia* var. *obtusifolia*; □, *E. obtusifolia* var. *wildpretii*; ▲, *E. regis-jubae*; △, *E. pedroi*; ★, *E. anachoreta*.

Pleiochasial rays 3-8, up to 30 mm, (0-)1-2 times bifurcate; secondary rays of up to 20 mm. Dichasial, subcyathial bracts (5-)6-7 × 4.5-6 mm, ovate, ovate-oblong, oblong or suborbicular, caducous at advanced fructification. Mature cyathium 3-4 mm, glabrous or glabrescent; glands 0.4-0.8 × 1-1.8 mm, with or without horns, transversely oblong or semicircular, with truncate or emarginate outer edge, more rarely with two short appendages not longer than 0.4 mm. Capsules 4.2-5 × 5.8-7.2 mm, with deep furrows (130°-160°). Styles 1.8-2.5 mm, divided in the upper third. Seeds 2.8-3.2 × 2-2.3 × 2.1-2.5 mm, ovoid, with a back that is apically highly convex (subgibbous), smooth or rugulate, greyish or blackish; caruncle 0.4-0.6 × 0.8-1 × 1.3-1.6 mm, sessile, lateral, sloping at 45°-55°, elongate-obnavicular, shallowly emarginate ventrally. – Fig. 3B, b_{1,2}.

Distribution and ecology. – Endemic to Portugal, confined to the coastlands of Sesimbra, between Cabo de Ares and Cabo Espichel, including the Pinherinhos range (Fig. 4), where it forms large colonies on marly to stony limestone alluvium of Liassic age, at altitudes of 10-120 m. It can live in places sheltered from the maritime wind, in sunny, thermophilous enclaves, developing an erect, dendroid habit of up to 2 m (“f. *sesimbrensis*”); or on escarpments of sea cliffs exposed to strong saline winds, which cause it to develop a prostrate or procumbent habit (“f. *barbaricensis*”).

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