

ON THE GENUS *ROSA* (ROSACEAE) IN THE CANARY ISLANDS: PROPOSAL OF THREE NEW SPECIES

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ABSTRACT: The genus *Rosa* has been cursory studied in the Canary Islands in such a way that there are multiple records for different islands since early 20th century, but no taxonomic review. Historically, five taxa have been cited: *Rosa tomentella* Léman (also *R. tomentella* Bak.), *R. canina* L., *R. rubiginosa* L., *R. micrantha* Borrer ex Sm. and *Rosa dumalis* Besch. subsp. *teydenensis* Weller & H. Reichert. This note intends to review the occurrence of those taxa and to circumscribe Canarian populations into species. Considering the current taxonomic treatment adopted for European roses in the last six decades, we propose a minimum of five different species of sect. *Caninae* for the archipelago, of which two have already been cited: *R. micrantha* and *R. rubiginosa*. Some key characters found in other populations distributed in Gran Canaria and La Gomera better fit into the concept of *R. nitidula* Besser. Additionally, we consider three new species on ancient high volcanoes of La Palma (*R. roque-muchachensis*, sp. nov.), El Teide (*R. cannadas-teydenensis*, sp. nov.) and (*R. gran-canariae*, sp. nov.) showing a combination of characters found neither in Europe nor in the other populations of the Canary Islands. In any case, phylogenetic studies already in progress will shed light to propose evolutionary relationships and a more natural classification of *Rosa* in the Canary Islands. **Keywords:** Angiosperms; Canary Islands; new species, *Rosa*; taxonomy; Spain.

RESUMEN: Acerca del género *Rosa* (Rosaceae) en las Islas Canarias: propuesta tres especies nuevas. El género *Rosa* ha sido estudiado someramente en las Islas Canarias, de tal manera que hay numerosos registros para diferentes islas desde principios del siglo XX, pero ninguna revisión taxonómica. Históricamente se han citado cinco táxones: *Rosa tomentella* Léman (también *R. tomentella* Bak.), *R. canina* L., *R. rubiginosa* L., *R. micrantha* Borrer ex Sm. y *R. dumalis* Besch. subsp. *teydenensis* Weller & H. Reichert. Esta nota pretende revisar la presencia de estos táxones y circunscribir las poblaciones canarias en especies. Sobre la base del tratamiento taxonómico actual adoptado para las rosas europeas en las últimas seis décadas, proponemos un mínimo de cinco especies de la sección *Caninae* para el archipiélago, de las cuales solo dos ya han sido citadas: *R. micrantha* y *R. rubiginosa*. Algunos caracteres clave encontrados en otras poblaciones distribuidas en Gran Canaria y La Gomera encajan en el concepto de *R. nitidula* Besser. Además, consideramos tres nuevas especies en los volcanes más altos y antiguos de las Islas Canarias: La Palma (*R. roque-muchachensis*, sp. nov.), El Teide (*R. cannadas-teydenensis*, sp. nov.) y Gran Canaria (*R. gran-canariae*, sp. nov.). Las tres muestran una combinación de caracteres que no se encuentran ni en Europa ni en el resto de las poblaciones de Canarias. En cualquier caso, los estudios filogenéticos ya en marcha arrojarán luz para proponer relaciones evolutivas y una clasificación más natural de *Rosa* en Canarias. **Palabras clave:** angiospermas; Canarias; nuevas especies; *Rosa*; taxonomía; España.

INTRODUCTION

The genus *Rosa* was first cited for the Canary Islands from a population in Cumbre Nueva (central La Palma), which was identified as *Rosa tomentella* Léman (BORNMÜLLER 1904). Short after, PITARD & PROUST (1909) considered the roses from northern La Palma (Garafía) as *R. canina* L. var. *biserrata* Chevall., from Cumbre Nueva as *Rosa tomentella* Bak. and from south-eastern Tenerife (Güímar) as *R. canina* var. *Armidae*. ENGLER (1910) also considered *Rosa tomentella* Bak. for SE La Palma (Buenavista and barranco de los Mimbres). CEBALLOS & ORTUÑO (1951) cited *R. canina* var. *biserrata* from La Palma (monte El Canal) and Tenerife (Filo de las Cañadas, between Topo de la Grieta and El Sombrerito), while *R. canina* subsp. *vulgaris* (M.K.) Gams. from the summits of La Gomera. All those wild roses belong to sect. *Caninae*. Given the complex taxonomy of the taxa within this section, most authors simply gave the name of *R. canina* L. to all the populations from the Canary Islands in floristic accounts since the end of the 20th century (SANTOS, 1983; HANSEN & SUNDIG, 1985; HOHENESTER, 1992; ACEBES & al., 2010; SANTOS & al., 2013; see also www.biodiversidadcanarias.es/biota/). This

may explain why most botanists currently consider *R. canina* as a widespread species across the Canary Islands.

In the last two decades, new records have been proposed to name some populations of Canarian dog-roses. *Rosa rubiginosa* L. aggr. was cited from La Palma (WELLER 2011) and *R. rubiginosa* L. from Gran Canaria (WELLER 2016), although the author indicated that the last record could be the result of naturalization. For the checklist of the Canarian flora, BEIERKUHNLEIN & al. (2021) considered three species: *Rosa canina* L. (La Palma, La Gomera, Tenerife, Gran Canaria), *Rosa rubiginosa* L. (Gran Canaria) and *R. micrantha* Borrer ex Sm. (El Hierro). One more example of this confusing taxonomic situation is illustrated by the last flora of the Canary Islands, where SAUERBIER & al. (2023) considered only two species of *Rosa*: *R. micrantha* Borrer ex Sm. (La Palma) and *R. canina* L. aggr. (La Palma, La Gomera, Tenerife, Gran Canaria).

Interestingly, KLÁŠTERSKÝ (1968) published an account of *Rosa* for Flora Europaea, which have been widely followed by most European botanists. Unfortunately, this taxonomic account did not include Canarian plants. A recent publication (BAKKER & al., 2019) studied the wild roses of sect. *Canine* considered for the British Isles

and Western Europe, which included historical taxa and focused on the hybrid origin of numerous taxa. Their main goal was to find nomenclatural and systematic consensus between previous treatments published by British and Dutch schools. Both studies, together with the review of the genus *Rosa* for *Flora iberica* (MONTSERRAT & SILVESTRE, 1998), offer the opportunity to have a considerable number of key characters to help circumscribe Canarian populations into current species.

As a result, a taxonomic review of *Rosa* across the Canary Islands is needed. The objective of this taxonomic note is not to perform a deep taxonomic revision of the Canarian roses. In turn, this note simply intends to address some taxonomic issues and consider candidate species names for the genus *Rosa* in the Canary Islands. Our starting point is all the species names cited by different European botanists, who visited the archipelago and cited a total of five species and a few infraspecific taxa.

MATERIALS AND METHODS

We have studied a total of 75 specimens obtained from three herbaria (TFC, ORT, MA) and collected by us and collaborators in the field (La Palma, Tenerife, La Gomera, Gran Canaria). Type material was also studied, even though a few original specimens were found in the Linnean Society of London Herbarium (LINN) and Universidad de La Laguna Herbarium, Tenerife (TFC). Our approach used key characters for sect. *Caninae* obtained from European taxonomic accounts, including descriptions and synonyms from *Flora Europaea* (cf. KLASTERSKY 1966) and BAKKER & al. (2019). We consider that there is a great deal of confusion about correct names because of: (i) lack of type specimens for many European species; (ii) brief original descriptions; (iii) pervasive hybridization making difficult to tell apart between recent or stabilize hybrids; and (iv) the study of a genus with a higher number of synonyms validly proposed. For this reason, we followed KLASTERSKY (1966), MONTSERRAT & SILVESTRE (1998) and BAKKER & al. (2019) to describe main morphotypes found across the Canary Islands and then to circumscribe individuals and populations within currently considered species. To this aim, the following 19 key characters were used: prickles on old and young stems (stout/slender, hooked/straight); leaf texture (leathery/soft); leaflet teeth (serratae/biserratae), hairs (above/beneath parts); glands (above, beneath, midrib, teeth); number of flowers; fruit disc (flat to slightly concave vs. convex; wide/narrow) and orifice (diameter wide/narrow); style indumentum (glabrous/slightly hairy/villous/wooly); sepals (glandular/eglandular on the back, erect/patent/deflexed, deciduous/persistent); pedicels (hairy/glabrous; eglandular/stipitate-glandular).

RESULTS AND DISCUSSION

The vast majority of roses found in the Canary Islands develop the following key characters: prickles few on old stems, both straight and hooked; leaves soft (few populations leathery); leaflet teeth biserratae (few populations simple); stipitate-glandular beneath (few populations without glands); number of flowers (1-4); flower style slightly hairy to villous (few wooly); fruit disc wide (4-5 mm);

orifice narrow (<1 mm) but a few wide (> 1.4 mm); sepals deflexed to deciduous (few patent); pedicels stipitate-glandular (few hairy or glabrous). The plants herein studied belong to sect. *Caninae*, except for herbarium materials likely collected from feral plants.

HISTORICAL RECORDS

Considering *Rosa* sect. *Canina* taxonomic treatments for Europe (KLASTERSKY, 1968; 33 species), Iberian Peninsula (MONTSERRAT & SILVESTRE, 1998; 19 species) and NW Europe (BAKKER & al., 2019; 17 species), and the key characters used to differentiate species, we propose some new names and discuss morphological characters for taxa reported or collected in the Canary Islands as follows.

Rosa tomentella Léman ex Cass.

In the early 20th century, the first *Rosa* species recorded for the Canary Islands was found in central La Palma (“volcán Cumbre Nueva”) and called *R. tomentella*. In particular, BORNMÜLLER (1904) named the dog-roses from La Palma as *R. tomentella* Léman, while PITARD & PROUST (1909) and ENGLER (1910) as *Rosa tomentella* Bak. We collected a transect along the same area (Breña Baja-Cumbre Nueva) and observed that the plants shared the following characters: leaflets teeth biserratae, hairless, densely stipitate-glandular beneath; styles with a few hairs, orifice narrow (<1 mm); fruit with deflexed to deciduous sepals; pedicels stipitate-glandular or glabrous. The relationship of those characters and the species name (*R. tomentella*) used by early botanists is not supported by our fieldwork study (fig. 1A).

KLÁŠTERSKÝ (1968) considered *R. tomentella* Léman under two synonyms: *R. deseglisei* Boreau and *R. obtusifolia* Desv. However, the plants from SE La Palma have leaflets densely stipitate-glandular beneath (differing from *R. deseglisei* Boreau) without hairs (differing from *R. obtusifolia* Desv.). POWO (2024) considers *R. tomentella* Léman ex Cass. as a synonym of *R. balsamica* Besser, which is a plant densely hairy dissimilar to the plant from SE La Palma. In contrast, MASKEW (2015) interpreted that *R. balsamica* Besser represents hybrid entities and the correct name for this taxon should be *R. tomentella* Léman (see BAKKER & al. 2019). In any case, a search for botanical publications from the 20th century reveals that the former concept *R. tomentella* may include the current concept of *R. micrantha* and *R. rubiginosa*. Indeed, the plants most common in SE of La Palma show characters found in the *R. rubiginosa* group (sect. *Canina*), particularly leaflets densely glandular-viscid beneath.

Rosa rubiginosa L. vs. *R. micrantha* Borrer ex Sm.

Within the *R. rubiginosa* group, there is a species already cited in the Canary Islands: *R. rubiginosa* L. WELLER (2011) cited *R. rubiginosa* L. agg. from SE of La Palma, and *R. rubiginosa* L. from Gran Canaria (WELLER, 2016), based on “leaves wedge-shaped, glandular and not as leathery as in *R. canina* producing a light smell of wine or ripe apples in freshly collected specimens”. However, the plants from SE La Palma (200PV23) show key characters such as styles glabrous or subglabrous, leaflets rounded at base and prickles not mixed with stipitate

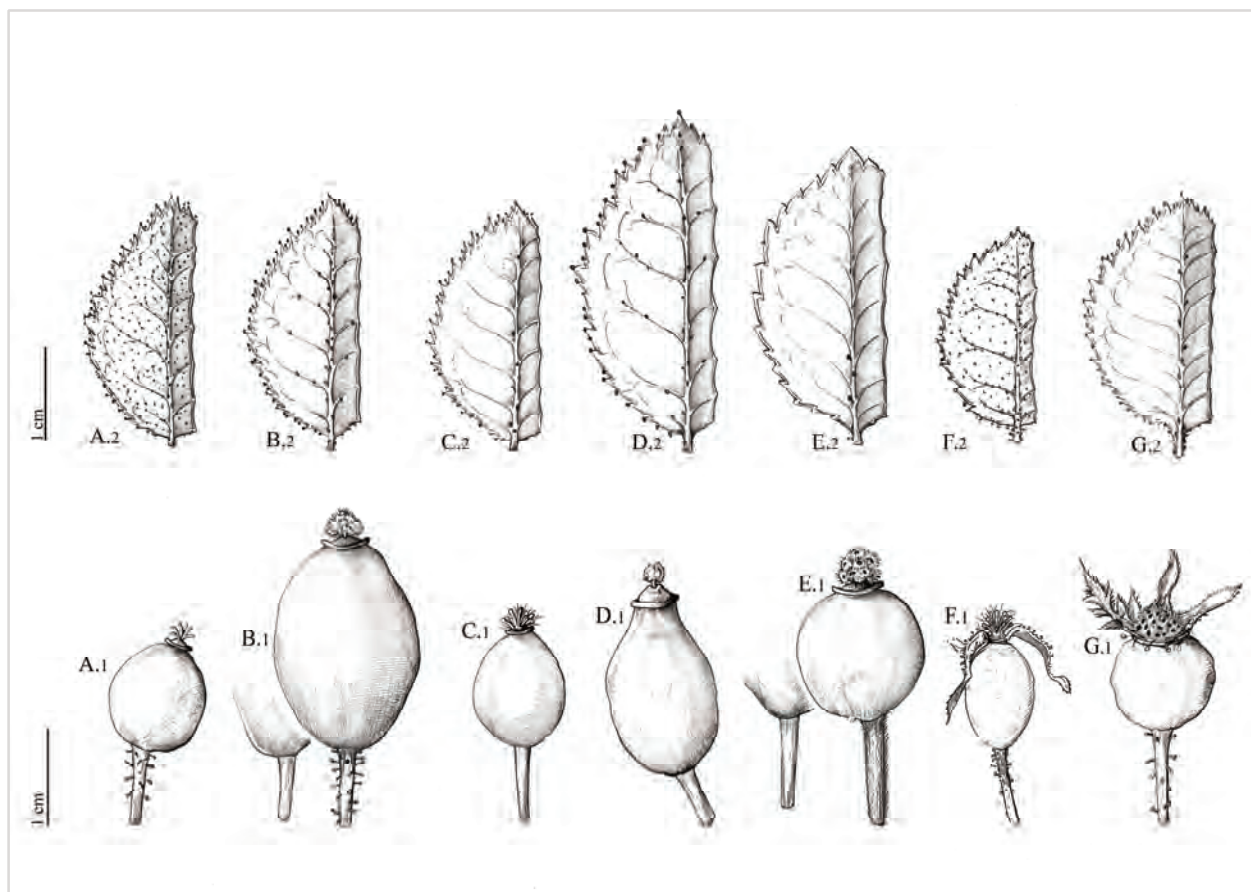


Figure 1. Leaflets (beneath) and fruits (at maturity) of the main dog-rose morphotypes found in the Canary Islands. **A)** *R. micrantha* from Breña Baja (SE of La Palma). **B)** Marcos y Cordero (NE of La Palma, 196PV23). **C)** *R. nitidula* from Tamadaba (Gran Canaria, 198PV23). **D)** Garajonay (La Gomera, 167PV23). **E)** *R. cannadas-teydensis* from Cañas del Teide (holotype, Tenerife, 199PV23). **F)** *R. gran-canariae* from La Culata [holotype, Gran Canaria, 22PV24(1)]. **G)** *R. roque-muchachensis* from el Roque de los Muchachos (holotype, La Palma, 202PV23). Drawings by Manuel Sánchez Villegas.

glands, which resemble those of *R. micrantha* Borrer ex Sm. (fig. 1A) (see KLÁŠTERSKÝ 1968). The same is true when using the key to species by SILVESTRE & TALAVERA (1998), which is based on deflexed sepals, styles with some long hairs, fruit disc not covered by style hairs. Besides, the examination of the type material of *R. rubiginosa* L. (LINN-HL652-6) and the characters discussed in TURLAND (1966) do not support occurrence of *R. rubiginosa* in SE La Palma.

Nevertheless, morphological variation observed on La Palma island is too high to easily circumscribe all the plants within *R. micrantha*. The single plant found at 1800 m a.s.l. (Fuente Vizcaína, 201PV23) in Caldera de Taburiente National Park is even more distinct because styles are densely hairy covering most of the disc. In NE La Palma (Marcos y Cordero), M. Nogales and F. Medina collected nine herbarium specimens (196PV23, 197PV23), which differ from *R. micrantha* in the presence of leaflets with few glands beneath (fig. 1B).

The occurrence of *R. rubiginosa* L. is better supported by a herbarium specimen (MA 655590) from Tenerife island (Barranco Vargas), which shows typical characters to be named *R. rubiginosa* L. Indeed, this specimen was already identified as *R. rubiginosa* L. by I. Buzunova in 2007 (indentation label). The following key characters

were found in that specimen: pedicel and hypanthium stipitate-glandular; styles densely villous; leaflets villous on both surfaces, stipitate-glandular beneath (KLÁŠTERSKÝ 1968).

Rosa nitidula Besser

Despite geographic distance, two populations from NW of Gran Canaria (Tamadaba, 198PV23, leg. M. Nogales) and La Gomera island (Garajonay, 167PV23, leg. A. Fernández) resemble each other due to the following key characters: leaflets compound-serrate with every tooth ending on a gland, glabrous, with stipitate glands beneath only on the midrib (Gran Canaria, fig. 1C) or on midrib and secondary veins (La Gomera, fig. 1D); styles laxly hairy (Gran Canaria, fig. 1C) or glabrous (La Gomera, fig. 1D); disc wide (4.2–4.8 mm diameter), convex to conical; orifice 0.6–0.8 mm in diameter; sepals deflexed; pedicels glabrous, eglandular (fig. 1C, D). These characters fit quite well into the key to *Rosa nitidula* Besser in KLÁŠTERSKÝ (1968). WELLER (2016) cited *R. rubiginosa* “on trail to Casas de Tamadaba”, where all plants studied from our campaigns (2023–2024) at that location and herbarium specimens fit better into the concept of *R. nitidula* (KLÁŠTERSKÝ, 1968). In terms of nomenclature, BAKKER & al. (2019)

considered this name as a hybrid (*R. canina* x *R. rubiginosa*). As hybrid forms between European species are not expected on the Canary Islands, further investigation is needed for these plants.

***Rosa canina* L.**

This is by no means the name most used for wild roses from the Canary Islands, both in literature and herbarium specimens. Indeed, most authors (PITARD & PROUST, 1909; CEBALLOS & ORTUÑO, 1951; SANTOS, 1983; HANSEN & SUNDIG 1985; HOHENESTER 1992; ACEBES & al., 2010; SANTOS & al., 2013; BEIERKUHNEIN & al., 2021) accepted *R. canina* for the Canary Islands. However, all materials that we studied in the field and herbaria do not show the combination of characters characterizing *R. canina* s.s.: leaflets glabrous, eglandular, uniserrate; sepals eglandular, deflexed, deciduous; pedicels eglandular; fruit disc wide, small orifice (see KLÁŠTERSKÝ, 1968; SILVESTRE & MONTSERRAT, 1998). These characters can be observed in the type specimen deposited in the Linnean Society of London Herbarium (LINN-HL652-31). However, we failed to find the combination of those characters in Canarian specimens (TFC, ORT, MA) and numerous plants observed in the field from four islands (Gran Canaria, La Gomera, La Palma, Tenerife). Although all the plants studied belong to *Rosa* sect. *Caninae*, we conclude that *R. canina* s.s. does not form part of the flora of the Canary Islands based on available materials.

***Rosa dumalis* Bescht.**

Rosa dumalis Bescht. subsp. *teydensis* Weller & Reichert was described from Cañadas del Teide (Tenerife) last year (WELLER & REICHERT, 2023). To obtain additional taxonomic data from this new taxon, Manuel Nogales nicely collected material from five individuals from this narrow area at c. 2200 m a.s.l., where the population is clearly scarce and endangered (WELLER & REICHERT, 2023). Despite we agree with Weller and Reichert that individuals of this population do not have the characters found in European dog-roses, we disagree in the following points:

1) Using KLÁŠTERSKÝ (1968) key to species, the population fits into *R. subcanina* better than into *R. dumalis* Bescht. (*R. vosagiaca* Desportes sensu Klášterský) mostly because sepals are deflexed and deciduous at maturity. In any case, the use of *R. dumalis* is still debated (see BAKKER & al. 2019; REICHERT 2021).

2) There is not a single morphotype in Cañadas del Teide as revealed by a high level of morphological variation mostly in two key characters: leaflet hairiness, stipitate-glandular or glabrous beneath; and pedicels hairiness, stipitate-glandular or glabrous.

3) Although the original description includes new combination of key characters that coincide with some individuals of Cañadas del Teide, the specimen selected as the holotype (TFC 53.627) by WELLER & REICHERT (2023) is closely related to *R. rubiginosa* group because it holds two important key characters for dog-roses: leaflets densely stipitate-glandular beneath and hairy beneath (KLÁŠTERSKÝ, 1968). These characters are found in

some other populations at lower altitudes on the island of Tenerife. Indeed, the holotype is quite similar to the herbarium specimen from Barranco Vargas (MA 655590, see above).

4) In contrast, the population has two individuals not used as type material by WELLER & REICHERT (2023) despite they display extreme forms with two key characters: leaflets eglandular except for a few glands along midribs; and pedicels hairy (sometimes glabrous), with no glands. These two characters are found neither in the holotype specimen of *Rosa dumalis* subsp. *teydensis* nor the other populations of Tenerife island.

All this leads us to conclude that on the one hand, some specimens display different key characters as a result of some hybridization or uncertain origin. Unfortunately, we were told that some dog-rose plantations in Cañada del Teide are sometimes performed to reinforce the population, but an unknown origin could be eroding the purity of a unique dog-rose morphotype. On the other hand, we consider that some individuals from the population displaying two extreme key characters cannot be assigned to any known species. In addition, the current taxonomy of *Rosa* does not consider subspecies (BAKKER & al., 2019; KLÁŠTERSKÝ 1968; SILVESTRE & MONTSERRAT, 1998). To reflect the occurrence of the most singular morphotype occurring in the Teide valley (Cañadas del Teide, Tenerife), a new species needs to be described.

NEW TAXA

***Rosa cannadas-teydensis* P. Vargas, M. Nogales & M. Luceño, sp. nov.**

Holotype: Spain, Canary Islands, **Santa Cruz de Tenerife**, Tenerife island: 28° 13' 30.63" N 16° 36' 46.76" W, Cañadas del Teide National Park, Corral del Guanche, 2212 m, sandy soils, 29-X-2023, Manuel Nogales 199PV23(2) (MA 962620). **Isotype:** TFC.

Diagnosis: Although numerous Canarian dog-roses usually show leaflets stipitate-glandular beneath, this plant has leaflets eglandular, except for a few glands along midribs. Besides, a unique combination of two more key characters is found: fruit orifice wide (> 1.2 mm); and pedicels with hairs (fig. 1E).

Description (only key characters): Shrub with strong straight or slightly curved prickles on the young branches but few, smaller prickles on older branches; leaf rachis hairy, stipitate-glandular; leaflets with uniserrate denticulation (sometimes irregular), with no glands on the tooth tips but sometimes on the lowest teeth; leaflets more or less stipitate-glandular on the midrib; flowers numerous (3-8); petals whitish; fruit disc flat (3.5-4 mm) and orifice wide (1.2-1.7 mm); styles lanate covering most of the disc; pedicels hairy, sometimes glabrous with no stipitate glands; sepals with no glands on the back, deflexed and deciduous at maturity.

Etymology: This species is named after its distribution area (Cañadas del Teide).

Note: Some dog-roses across "Cañadas del Teide" do not have all the above characters. We learnt from local

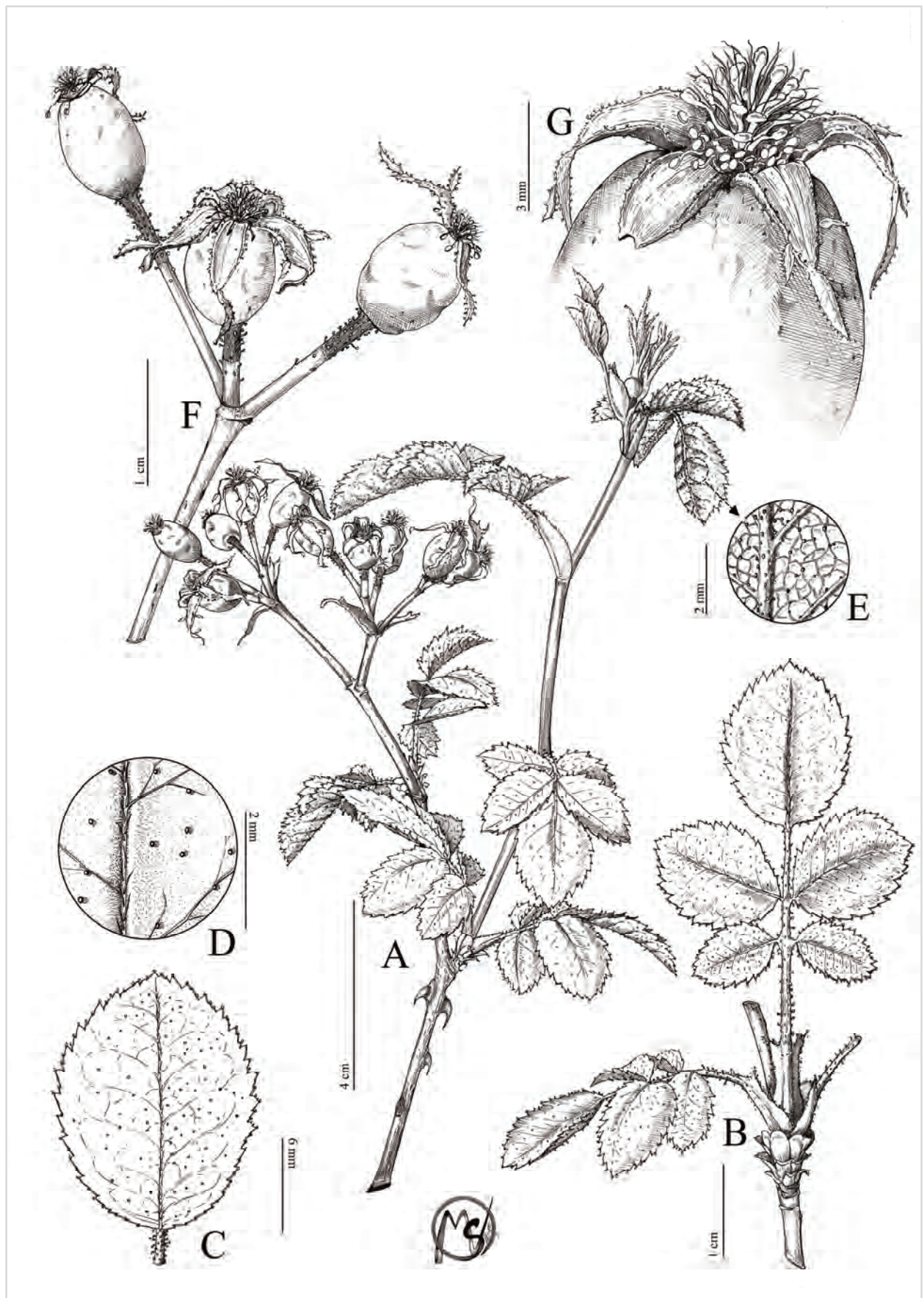


Figure 2. Plate of *Rosa gran-canariae* P. Vargas & M. Nogales, sp. nov. from el Ancón de la Culata (holotype, Gran Canaria). **A)** Branch with leaves and infructescences. **B)** Twig showing five-leaflet leaves (above). **C)** Leaflet (above). **D)** Detail of a leaflet (above) showing stipitate glands. **E)** Detail of a leaflet (below) showing stipitate glands. **F)** Flowering stem with three fruits. **G)** Detail of fruit (upper part). Drawings by Manuel Sánchez Villegas.

field workers that there is an uncertain origin of some reintroduced plants around 2000 m a.s.l., which may explain why they show a different pattern of gland distribution on leaflets and presence of stipitate-glandular pedicels (199PV23(5)).

***Rosa gran-canariae* P. Vargas & M. Nogales, sp. nov.**

Holotype: Spain, Canary Islands, **Las Palmas**, Gran Canaria island: 27° 58' 4" N, 15° 35' 37" W, Tejeda, La Culata, el Ancón de la Culata, 16000 m, seasonal creeks, 15-IV-2024, *Manuel Nogales, Isabel Nogales & Pablo Vargas* 22PV24 (MA 962970). **Isotype:** ORT.

Diagnosis: Similarly to many Canarian dog-roses, *R. gran-canariae* has leaflets stipitate-glandular beneath. In addition, this plant shows a unique character for the Canary Islands: leaflets distinctly stipitate-glandular above. Besides, dark green young leaves, pedicels densely stipitate-glandular right under the fruit, sepals patent-deflexed and few short prickles on branches characterize this big dog-rose (over 2 m tall) (fig. 1F).

Description (only key characters): Tall shrub (2-4 m), with few curved prickles on old branches and usually armless on young branches; leaf rachis with short hairs, stipitate glands and acicles; leaflets with multiple denticulation with primary and secondary teeth, with glands on tooth tips; leaflets distinctly stipitate-glandular on both sides, and sometimes scattered hairs mainly on the midrib (above); flowers numerous (3-6); petals pink; fruit disc prominent (3-4 mm) with orifice of medium size (1.0-1.1 mm); styles villous (not wooly); pedicels densely stipitate-glandular right under the fruit (and its insertion); sepals sometimes with glands on the back, patent to deflexed, and some deciduous at maturity (fig. 2).

Similar species: This species is better included in the *Rosa rubiginosa* group. In particular, *R. gran-canariae* resembles the few species of a subgroup with branch prickles stout, few, not mixed with acicles; leaflets sometimes scarcely hairy and densely stipitate-glandular on both sides; pedicels and hypanthium stipitate-glandular; styles villous (see KLÁŠTERSKÝ, 1968). *R. gran-canariae* differs from the four most similar species of the subgroup in the following characters. *R. rubiginosa* L. has prickles mixed with glandular setae and acicles on the flowering stem; leaflets usually hairy beneath; and sepals erect. *R. sicula* Tratt. is a short shrub (< 0.5 m) with slender prickles; and styles patent or erect. *R. glutinosa* Sibth. & Sm. is also short (< 0.5 m); and leaflets small (< 15 mm). *R. turcica* Rouy has short habit (< 0.5 m); prickles abundant; and styles glabrous (or somewhat villous).

Etymology: This species is named after the island where it occurs (Gran Canaria).

Note: The closest dog-rose in terms of morphological similarity and distance is *R. rubiginosa* from Tenerife (see MA 655590 earlier), but this herbarium specimen has wooly styles and no glands on leaflets. The type material of *R. rubiginosa* L. (LINN-HL652-6) shows significant differences: numerous stout prickles mixed with glandular setae and acicles; leaflets densely hairy above, but not stipitate-glandular above; and wooly styles. In the continent, *R. rubiginosa* is found both in the

Iberian Peninsula and Morocco, but far from the Canary Islands (BUZUNOVA & al., 2011).

***Rosa roque-muchachensis* P. Vargas & M. Luceño, sp. nov.**

Holotype: Spain, Canary Islands, **Santa Cruz de Tenerife**, La Palma island: 28° 45' 20" N, 17° 52' 55" W, Parque Nacional de la Caldera de Taburiente, El Paso, Roque de los Muchachos, 2260 m, sandy soils on slopes facing East, 21-XI-2023, *Toño Lerín, Manuel Nogales, Félix M. Medina & Pablo Vargas* 207PV23 (MA 962619).

Diagnosis: Although numerous Canarian dog-roses show fruits with styles hairy to villous, this one has striking wooly styles forming a hemispherical dome (disc covered); style orifice over 1 mm in diameter (typically 1.5 mm); and sepals erect rather than patent or deflexed (fig. 1G).

Description (only key characters): Shrub with strong straight and curved prickles on the young branches but no prickles on older branches; leaflets with double, regular or irregular denticulation and glands only on the midrib (beneath) and teeth tips; flowers 1-4; petals pale pink; fruit disc (c. 4 mm) flat to slightly concave, wooly styles forming a hemispherical dome covering the disc; fruit orifice wide (1.5 mm); pedicels stipitate-glandular; sepals usually erect (fig. 3).

Etymology: This species is named after the peak where it occurs (Roque de los Muchachos).

Similar species: This species is better included in the *Rosa canina* group. In particular, *R. roque-muchachensis* resembles the few species of a subgroup with sepals erect (or patent) in fruit, persistent; styles wooly. In this subgroup, *R. rhaetica* Greml. additionally has acicles; *R. vosagiaca* Desportes does not show stipitate-glandular pedicels; *R. caesia* Sm. leaflets are hairy (see KLÁŠTERSKÝ, 1968). When fruits are old and then some sepals gone, *R. roque-muchachensis* resembles *R. pouzinii* Tratt. but this species has the fruit orifice less than 1 mm in diameter and styles glabrous.

ADDITIONAL SPECIES

In the herbarium TFC we found some specimens related to *R. multiflora* (large panicle with c. 15 flowers, ciliate stipules, multipetaled flowers) apparently from locations nearby farms (Tenerife, Los Silos, Fuentefinela) and from town surroundings (Tenerife, El Coromoto). They are probably escaped from cultivation.

CONCLUSIONS

A total of six wild species of the genus *Rosa* are herein considered for the Canary Islands: *R. micrantha* Borrer ex Sm., *R. nitidula* Besser, *R. rubiginosa* L., *Rosa cannadas-teydensis* P. Vargas, M. Nogales & M. Luceño, *R. roque-muchachensis* P. Vargas & M. Luceño and *R. gran-canariae* P. Vargas & M. Nogales. However, the occurrence of *Rosa canina* L. is not considered for the flora of the Canary Islands based on the study of over 75 herbarium specimens and plants in the field, despite this dog-rose is the species most cited by historical and contemporary botanists.

An unexpected high morphological variation found across the Canary Islands, together with an old emergence of this oceanic archipelago (c. 21 million years),



Figure 3. Plate of *Rosa roque-muchachensis* P. Vargas & M. Luceño **sp. nov.** from el Roque de los Muchachos (holotype, La Palma, 207PV23). **A)** Two branches with one flower and one fruit at maturity. **B)** Detail of leaf, stipule and axillary bud. **C)** Leaflet (beneath) with stipitate glandulas only on midrid and teeth tips. **D)** Flower. **E)** Fruit with erect sepals at maturity. **F)** Styles wooly covering the fruit disc. **G)** fruit orifice (wide) after removing stamens and styles. Drawings by Manuel Sánchez Villegas.

offers a unique opportunity to test taxonomic (BAKKER & al., 2019) and evolutionary (RITZ & al., 2005) hypotheses. As three species (*R. micrantha*, *R. nitidula*, *R. rubiginosa*) are also distributed in the mainland, at least three long distance colonization events are contemplated. Speciation within the archipelago is also manifested by the combination of morphological characters found in three endemic dog-roses (*R. cannadas-teydenensis*, *R. roque-muchachensis*, *R. gran-canariae*), whose origins need further investigation. All this variation leads us to conclude that the genus *Rosa* appears to have been existing in the archipelago for a long time. Alternatively to more than three colonization events, we hypothesize that part of the high morphological diversity analysed is due to few number colonization events followed by differential expression of genes contained in dog-rose polyploid ancestors (tetra-, penta- and hexaploids). These two non-mutually exclusive hypotheses (multiple colonization events and differential gene expression) need to be tested in the near future.

This study of *Rosa* morphotypes analysed from field and herbarium specimens is helping us to lay the groundwork for further systematic studies. Currently, we are performing phylogenetic analyses using genomic data to have evolutionary support for a more natural taxonomy of this complex genus and to infer an accurate number of colonization events.

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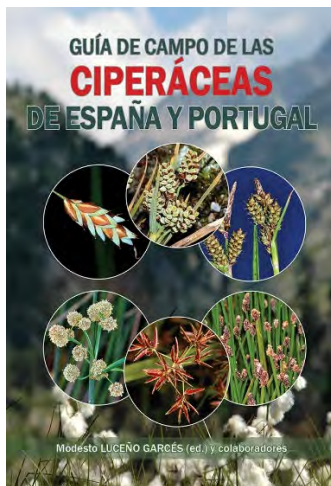
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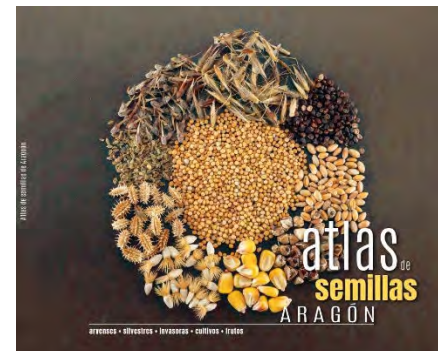
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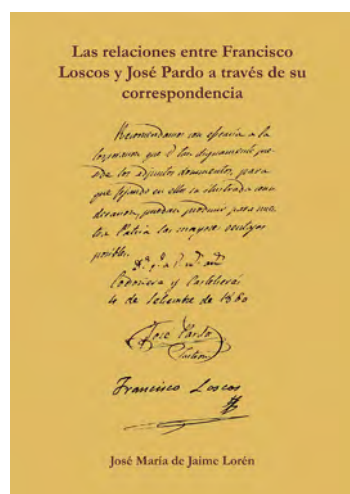
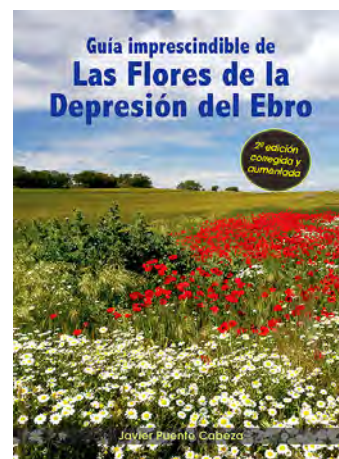
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