

New xenophytes from the Canary Islands (Gran Canaria and Tenerife; Spain)

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Abstract. – Recent fieldwork in Gran Canaria and Tenerife (Canary Islands, Spain), mostly between 2012 and 2016, yielded new chorological data for several non-native vascular plant species. The following are considered naturalized and/or potentially invasive: *Callistemon viminalis*, *Casuarina glauca*, *Chloris barbata*, *Cyperus difformis*, *Eucalyptus gomphocephala*, *E. sideroxylon*, *Nephrolepis cordifolia*, *Rumex palustris*, *Senecio × artemisioides* (s.l.) and *S. × floribunda* and are reported for the first time from the Canary Islands. Other first records include: *Cascabela thevetia* (Tenerife), *Cyclospermum leptophyllum* (Gran Canaria), *Digitaria radicata* (Gran Canaria, Tenerife), *Dysphania anthelmintica* (Tenerife), *Erythrostemon gilliesii* (Tenerife), *Heliotropium supinum* (Tenerife), *Limoniastrum monopetalum* (Tenerife), *Nerium oleander* (Tenerife), *Pascalica glauca* (Tenerife), *Phytolacca americana* (Tenerife), *Podranea ricasoliana* (Gran Canaria), *Psidium guajava* (Gran Canaria), *Rumex cristatus* (Tenerife), *Schinus terebinthifolia* (Tenerife), *Solandra maxima* (Tenerife), *Tipuana tipu* (Tenerife) and *Youngia japonica* (Gran Canaria). More than 20 additional taxa also represent chorological novelties but are considered ephemerals. Finally, miscellaneous notes are added for *Diplachne fusca* subsp. *uninervia*, *Eclipta prostrata*, *Pluchea carolinensis*, *Prosopis juliflora* and *Sida rhombifolia* from Gran Canaria.

Keywords: Canary Islands, chorology, invasion, naturalization, new records, vascular plants, xenophytes

Introduction

Despite being well-documented (Hohenester and Welsch 1993, Acebes Ginovés et al. 2009), the flora of the Canary Islands (Spain) requires permanent updates. An increase of taxonomic knowledge allows the recognition of poorly known or neglected native species or even the description of new taxa. Also, in our globalized world, geographical boundaries have become obsolete, which has enhanced the almost unlimited exchange of goods and their stowaways (diaspores, etc.). In addition to these inadvertently introduced alien species, humans are also responsible for the introduction of economically or otherwise important species to new areas, for instance garden ornamentals. In the past centuries the Canary Islands, with their subtropical climate, became home for hundreds of ornamental, subtropical plant species. An increasing number of these are not only well-adapted to the local climate but started to reproduce locally, in some cases eventually naturalizing, spreading or even becoming invasive. This is a well-known phenomenon that has been widely studied in recent times (Foxcroft et al. 2008). Moreover, islands are particularly vulnerable, inva-

sive alien species being among the primary threats to biodiversity on islands (Vitousek 2002). The early taxonomic recognition of newly detected aliens is of the utmost importance, enabling, if appropriate, the immediate implementation of management practices. Even the first, seemingly anecdotic, reproduction of an ornamental is worth reporting, since it may constitute the first (but essential) step in a future naturalization process (Böcker et al. 1995).

In the past years, mainly between 2012 and 2016, the author documented the presence of numerous non-native species that had not been recorded before from the Canary Islands or that appear to be acquisitions for the islands of Gran Canaria and/or Tenerife (see also Verloove and Reyes-Betancort 2011 and Verloove 2013 for previous reports). Some of these probably were introduced unintentionally (as weeds) although most are obviously escapes from cultivation. Their degree of naturalization varies from ephemerals to (locally or potentially) invasive aliens. In this paper proportionately more attention is paid to the latter group, which should be included in future editions of the ‘Lista de especies silvestres de Canarias’ (Acebes Ginovés et al. 2009).

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Materials and methods

Voucher specimens of all taxa are preserved in the public herbaria of the Jardín de Aclimatación de la Orotava, Tenerife (ORT), the Jardín Botánico Canario Viera y Clavijo, Gran Canaria (LPA), the Botanic Garden of Meise, Belgium (BR) and/or the United States National Herbarium, Washington, U.S.A. (US).

The presence or absence on the islands of Gran Canaria or Tenerife of the non-native taxa here presented was each time compared with data provided by Acebes Ginovés et al. (2009). For some recently introduced species several additional papers were checked as well. The present paper is divided into three main parts: the first part deals with apparently naturalized and/or (potentially) invasive species, the second one with (presumably) ephemeral aliens and in a third part some miscellaneous notes are presented for *Diplachne fusca* subsp. *uninervia*, *Eclipta prostrata*, *Pluchea carolinensis*, *Prosopis juliflora* and *Sida rhombifolia*, five taxa of interest from Gran Canaria. In each part taxa are presented in alphabetical order. For naturalized taxa, each entry includes the scientific name of the taxon, the family to which the taxon belongs (see below), the kind of chorological novelty and the estimated degree of naturalization, enumeration of herbarium collections, origin of the taxon and details about its secondary distribution. For ephemeral records in the second part, in most cases only herbarium data are referred to.

The degree of naturalization for each taxon was assessed according to Richardson et al. (2000). In some cases, however, the research period was too short for an accurate estimation of invasion status. This particularly holds true for trees and shrubs with long life cycles. In such cases, the degree of naturalization should be considered indicative rather than decisive and takes into account behavior of the species in similar conditions outside of its native range.

Familial and generic circumscriptions are in accordance with APG III (2009). Authorities of plant names follow Tropicos (www.tropicos.org).

Results

Naturalized and/or (potentially) invasive species

Callistemon viminalis (Sol. ex Gaertn.) G. Don (Myrtaceae) (Pl. 1A)

New to the flora of the Canary Islands.

TENERIFE: Los Realejos, between Calle Puerto Franco and barranco de Palo Blanco, foot of wall, 5–10 self-sown individuals, young bushes (under plantation), 12.11.2014, F. Verloove 11186 (BR);

GRAN CANARIA: Ayagaures, barranco de Ayagaures, GC-504 (km 6–7), dry riverbed, few individuals, up to 4 m tall, abundantly seeding, 27.11.2015, F. Verloove 12013 (BR, LPA).

A native of eastern Australia, *C. viminalis* is widely cultivated as an ornamental in warm-temperate and subtropical regions of the world (Cullen and Knees 2011), also in the

Canary Islands. It is here reported for the first time as an escape. Although at present it cannot be considered genuinely naturalized, future naturalization is likely, especially in Ayagaures in Gran Canaria where mature, abundantly seeding specimens were found growing spontaneously in a *barranco*, in a habitat similar to that in its area of origin. It is considered an invasive species in areas where it was initially introduced as an ornamental, for instance in the southern United States (FLEPPC 2015).

Cascabela thevetia (L.) Lippold (Apocynaceae)

New to the flora of Tenerife.

TENERIFE: Armeñime, barranco de Las Salinas at TF-47, gravelly riverbed, a single shrub (self-sown), 31.10.2014, F. Verloove 11183 (BR).

This species is originally native in tropical America but it is widely cultivated as a garden ornamental in the (sub-) tropical regions of the world (Cullen and Knees 2011), also in the Canary Islands. Since 2012 it has been recorded as an escape from cultivation in Gran Canaria and La Palma (Verloove 2013, Otto and Verloove 2016), initially as a mere ephemeral species. However, in the past years it is increasingly seen, also in Tenerife, from where it is here reported for the first time. In addition to the locality cited above, it was also observed in several other localities since 2014: Santa Cruz de Tenerife (barranco Ifara), Playa Paraiso (barranco El Pinque; several individuals), Puerto de la Cruz (barranco de Martiánez), La Estrella (Las Galletas), Palm-Mar, etc. Also in Gran Canaria it has been recorded on several instances since its discovery in 2012, e.g. in El Pedrazo (barranco del Negro) and in Arguineguín. In some of these localities this species seems to be established in small populations and a future naturalization is very likely. Similar behavior has been observed in, for instance, the Pacific Islands, Australia, South Africa, etc. (Starr et al. 2002, <http://www.invasives.org.za/>). In some areas it is considered a high risk invasive weed.

Casuarina glauca Sieber ex Spreng. (Casuarinaceae) (Pl. 1B)

New to the flora of the Canary Islands.

GRAN CANARIA: San Agustín, barranco Los Guinchos, close to the sea, dry riverbed, very invasive, 17.11.2015, F. Verloove 11979 (BR, LPA).

Originally native in a narrow belt along the southeastern coast of Australia, *C. glauca* is more or less widely cultivated elsewhere in warm-temperate and subtropical regions of the world (Cullen and Knees 2011), either as an ornamental tree or for timber, windbreaks, etc. Outside of its area of origin, it probably is the most widespread species of the genus, along with *C. cunninghamiana* and *C. equisetifolia*, both already known as escapes from the Canary Islands (Acebes Ginovés et al. 2009). All these species are very similar in general appearance and may have been confused so far. *C. glauca* is readily distinguished from both other species by the higher number of leaf teeth (at least 10, usually 12–14; vs. less than 10). It regenerates copiously through vigorous root suckers and often forms dense stands. In areas where it was once introduced vegetative reproduc-

tion is much more important than sexual reproduction. In fact, the species being dioecious, cones are rarely produced outside of Australia and most reports of seed-producing *C. glauca* in the southern U.S.A. probably refer to hybrids (Woodall and Geary 1985; see also Gaskin et al. 2009). However, in a single *barranco* in San Agustín in Gran Canaria (*barranco* Los Guinchos), where apparently both sexes have been planted nearby in the past, plants of this species produce high amounts of samaras and also regenerate vegetatively. The species competes with other invasive escapes such as *Arundo donax*, *Eucalyptus camaldulensis*, *Schinus terebinthifolia* and *Washingtonia robusta*. Similar occurrences are known from e.g. Hawaii, New Zealand and South Africa (Wilmot-Deer 2000, Starr et al. 2002, etc.).

Chloris barbata Swartz (Poaceae) (Pl. 1C)

New to the flora of the Canary Islands.

TENERIFE: Callao Salvaje, Playa Ajabo, beach and adjacent rough ground, very common, 24.06.2014, F. Verloove 10838 (BR, ORT); Callao Salvaje, *barranco* de las Barandas, gravelly riverbed, wasteland, etc., very common, 24.06.2014, F. Verloove 10842 (BR); Callao Salvaje, *barranco* de las Barandas, gravelly area, close to the sea, locally very common, 31.10.2014, F. Verloove 11195 (BR).

Chloris barbata is widespread in warm temperate, subtropical and tropical regions of the world (Anderson 1974) and occurs in a wide variety of habitats: waste areas, cultivated fields, along beaches, etc. In the Mediterranean area it is known, as a native species, from Algeria, Israel and Morocco (Euro+Med Plantbase 2006+). In 2014 *C. barbata* was discovered in Callao Salvaje in southern Tenerife where it was confirmed subsequently. It is very common and obviously established since some time close to the beach and in the dry, gravelly riverbed (*barranco*), as well as in adjacent waste land. It can be considered invasive and a future expansion to nearby suitable habitats seems likely, the species being reputed to be a noxious weed in many areas worldwide (Holm et al. 1979).

Four species of *Chloris* are known to occur in the Canary Islands (in addition to *C. barbata*: *C. gayana*, *C. pycnothrix* and *C. truncata*). For convenience, they are distinguished in the following key:

1. Sterile florets 2–4 2
 Sterile floret 1 3
2. All sterile florets awned.
 The uppermost sterile floret strongly inflated.
 Annual. ***Chloris barbata***
 Only the lowermost sterile floret awned, the others
 awnless.
 Sterile florets not inflated. Perennial. ***C. gayana***
3. Sterile floret 0.5–0.9 mm wide. Spikelets black at
 maturity. ***C. truncata***
 Sterile floret at most 0.2 mm wide. Spikelets not black
 at maturity. ***C. pycnothrix***

Cyclospermum leptophyllum (Pers.) Sprague ex Britton (Apiaceae)

New to the flora of Gran Canaria.

GRAN CANARIA: San Agustín, GC-500, lawn, locally, 24.03.2013, F. Verloove 10037 (BR, LPA).

A weed from South America (Ronse et al. 2010) but naturalized in many warm-temperate and (sub-) tropical regions of the world, this species was known so far in the Canary Islands from La Palma, Tenerife and Fuerteventura (Acebes Ginovés et al. 2009). In San Agustín in Gran Canaria it was observed as a weed in irrigated lawns, along with other lawn weeds such as *Youngia japonica* (see there).

Cyperus difformis L. (Cyperaceae)

New to the flora of the Canary Islands.

GRAN CANARIA: Fataga, N of the village, water reservoir, scattered specimens, 14.09.2013, F. Verloove 10559 (BR, LPA).

Cyperus difformis is a widespread weed in the (sub-) tropical and warm-temperate regions of the world, its exact area of origin being unclear (Verloove 2014). Although relatively frequent in the Mediterranean area and also known to occur in Madeira and the Azores, it has not been recorded before in the Canary Islands.

Digitaria radicata (J. Presl) Miq. (Poaceae)

New to the flora of Gran Canaria and Tenerife.

GRAN CANARIA: Agaete, botanic garden in city center, weed in irrigated lawn, 13.09.2013, F. Verloove 10598 (BR); Taurito, Palmeral near entrance of TF-1 motorway, plantation weed, 24.11.2015, F. Verloove 11996 (BR, LPA); TENERIFE: Puerto de la Cruz, Calle de la Sala, flower bed, 04.11.2014, F. Verloove 11243 (BR).

Digitaria radicata is a weed from tropical Asia and the Pacific Islands (Veldkamp 1973), locally naturalized elsewhere. It is reminiscent of *D. ciliaris* and may have been overlooked so far in the Canary Islands. Characteristic features are its weak, trailing habit, few digitate racemes (usually 2–4 in number) and smooth-edged rachis (Otto and Verloove 2016). In Europe it has been recorded from Corsica (Verloove 2008), probably as an ephemeral introduction. More stable populations were recently detected in the Canary Islands, more precisely in La Palma (Otto and Scholz 2009), where it has been confirmed subsequently (comm. R. Otto). In 2013 it was recorded in Agaete in Gran Canaria where it grows as a weed in an irrigated lawn in the small botanic garden ‘Huerto de las Flores’. In similar circumstances it was also discovered in 2014 in Puerto de la Cruz in Tenerife and in 2015, again in Gran Canaria, in Taurito.

Dysphania anthelmintica (L.) Mosyakin & Clemants (Amaranthaceae)

New to the flora of Tenerife.

TENERIFE: Bufadero (N of Santa Cruz de Tenerife), *barranco* del Bufadero, dry gravelly riverbed, very common, 29.06.2014, F. Verloove 10854 (BR, ORT).

A native from the Americas (Clemants and Mosyakin 2003), this is the widely naturalized species that was previously known as ‘*Chenopodium ambrosioides*’ in the Canary Islands. It is a common species in Gran Canaria and La Palma (Verloove 2013; Otto and Verloove 2016) and is here



Plate 1. Naturalized species from the Canary Islands. **A)** *Callistemon viminalis*, Ayagaures, barranco de Ayagaures, November 2015; **B)** *Casuarina glauca*, San Agustín, barranco Los Guinchos, November 2015; **C)** *Chloris barbata*, Callao Salvaje, Playa Ajabo, October 2014; **D)** *Senna* × *artemisioides* subsp. *filifolia*, Arguineguin, November 2015; **E)** *Limoniastrum monopetalum*, Porís de Abona, June 2014; **F)** *Senna* × *artemisioides* subsp. *coriacea*, Playa Paraiso, barranco de Las Galgas, June 2014 (photo F. Verloove).

formally reported for the first time from Tenerife. Contrary to *Dysphania ambrosioides* it has an inflorescence that is ebracteate or with bracts inconspicuous and shorter than the glomerules. It seems to be a much more thermophytic species, totally absent north of the Mediterranean area.

Erythrostemon gilliesii (Wall. ex Hook.) Link (Leguminosae s.l.)

New to the flora of Tenerife.

TENERIFE: Callao Salvaje, barranco de las Barandas, rocks, a single shrub (subspontaneous), 24.06.2014, F. Verloove 10830 (ORT); Adeje, Av. Francisco Ucelay Sabina, rough ground close to barranco, several tens (well-established), 31.10.2014, F. Verloove 11170 (BR).

Erythrostemon gilliesii, is a native of South America (Argentina and possibly Uruguay; Cullen and Knees 2011) but widely introduced as an ornamental shrub in tropical, subtropical and warm-temperate countries. In the Canary Islands it was known so far – as an invasive species – from La Gomera, Gran Canaria, Fuerteventura and Lanzarote (Acebes Ginovés et al. 2009). It is here reported for the first time from Tenerife where it was observed on several occasions since 2014. In addition to the localities cited above, *E. gilliesii* was also seen, for instance, in El Fraile where it is found in abundance in natural vegetation dominated by species such as *Cenchrus ciliaris*, *Launaea arborescens*, *Plocama pendula*, *Schizogyne sericea*, etc. The latter observation seems to confirm the species' invasive behavior in the Canary Islands.

Eucalyptus gomphocephala DC. (Myrtaceae)

New to the flora of the Canary Islands.

TENERIFE: Las Galletas, TEN-BEL, Calle Diana, rough ground, several young self-sown individuals (also planted nearby), 08.06.2015, F. Verloove 12030 (BR, ORT).

Originally confined to a narrow coastal corridor in the extreme southwest of Australia (Chippendale 1988), this species is sometimes used as a windbreak in coastal areas, in forestation for wood production, as an ornamental or for stabilization of sands near the sea. It is very characteristic for its distinctly flattened, thick pedicels and mushroom-shaped flower buds. In Las Galletas this species is planted on the verge of a holiday resort and prolifically self-seeds in the adjacent rough ground. In the Mediterranean area it is known from Italy, Morocco, Spain, Malta and Sicily (Euro+Med Plantbase 2006+). At least in Malta it is considered an invasive species (<http://www.maltawildplants.com>), while in the Iberian Peninsula it is confined to the southernmost regions (Paiva 2000).

Eucalyptus sideroxylon A. Cunn. ex Woolls (Myrtaceae)

New to the flora of the Canary Islands.

GRAN CANARIA: Tauro, barranco Playa del Cura, Calle Vaticano, dry riverbed, scattered individuals, with *E. camaldulensis*, 24.11.2015, F. Verloove 12006 (BR).

Eucalyptus sideroxylon is originally native to southeastern Australia (Chippendale 1988) but is widely introduced elsewhere, e.g. in the Iberian Peninsula where it is rather frequent (Paiva 2000). It is here reported for the first time from the Canary Islands, although it may have been over-

looked so far, as a result of confusion with *E. camaldulensis*. Several self-sown individuals of both these species grow in a *barranco* near Tauro in the south of Gran Canaria. It is sometimes considered an invasive species outside its area of origin, e.g. in South Africa (Henderson 2001).

Heliotropium supinum L. (Boraginaceae)

New to the flora of Tenerife.

TENERIFE: La Estrella (Las Galetas), water reservoir, exposed bank, ca. 10 individuals, 31.10.2014, F. Verloove 11173 (BR, ORT); Guargacho, water reservoir E of Calle Olimpia, exposed bank, scattered individuals, 01.11.2014, F. Verloove 11178 (BR); Palm-Mar, on the verge of Rasca mountain, temporarily moist, sandy area, close to the sea, rather frequent but only locally, 20.02.2015, F. Verloove 11262 (BR); La Estrella (Costa del Silencio), water reservoir, exposed pond, common, 07.06.2015, F. Verloove 11552 (BR); Palm-Mar, on the verge of Rasca reserve, temporary wet open habitat, close to the sea, very numerous, 09.06.2015, F. Verloove 11445 (BR).

A native from the Mediterranean area, southwestern Europe and southwestern Asia (Brummitt 1972), *Heliotropium supinum* was known so far from Fuerteventura in the Canary Islands, as a possibly native species (Acebes Ginovés et al. 2009). Since 2014 it has been discovered repeatedly on exposed pond margins and similar habitats in several localities in southern Tenerife. In most localities it was accompanied by *Verbena supina*. Its residence status in the Canary Islands remains uncertain. However, since this species has not been recorded before in Tenerife, in habitats that are frequently visited by botanists, it most likely is a recent introduction.

Limoniastrum monopetalum (L.) Boiss. (Plumbaginaceae) (Pl. 1E)

New to the flora of Tenerife.

TENERIFE: Poris de Abona, rough ground, close to the sea cliffs, ca. 20 bushes, naturalized, 17.03.2014, F. Verloove 10639 (BR); Poris de Abona, sea cliffs and adjacent rough ground, established population, 25.06.2014, F. Verloove 10840 (BR, ORT).

Limoniastrum monopetalum is originally native in the western Mediterranean area (Pignatti 1972). It is sometimes grown as an ornamental and easily escapes. As such, it was known to occur in the Canary Islands in Gran Canaria and Fuerteventura (Barone et al. 1995; Acebes Ginovés et al. 2009) and is here reported for the first time from Tenerife. In Poris de Abona *L. monopetalum* is locally naturalized on sea cliffs, in a habitat that closely matches the species' natural biotope. It was considered to be a species with a high invasive potential in the Canary Islands by Barone et al. (1995).

Nephrolepis cordifolia (L.) C. Presl (Davalliaceae) (Online Suppl. Pl. 1A)

New to the flora of the Canary Islands.

TENERIFE: Puerto de la Cruz, barranco Tafuriaste, damp shady rocks, +/- 6 plants, 26.06.2014, F. Verloove 10847 (BR).

The congeneric *Nephrolepis exaltata* is commonly cultivated as an ornamental fern in the Canary Islands and it easily escapes, especially in the damper, shady places in the northern parts of the islands (Gran Canaria, La Palma and Tenerife, according to Acebes Ginovés et al. 2009) where it is often seen as an epiphyte on palm trunks. *N. cordifolia* apparently is less frequently cultivated and has not been recorded so far in the wild although it may have been overlooked. A small population was discovered on damp rocks of a *barranco* in Puerto de la Cruz in Tenerife in 2014. It is quite similar to *N. exaltata* but its rachis scales are distinctly bicolored (with a dark point of attachment) and its pinnae are more densely arranged (points of pinnae attachment 5–12 mm apart vs. 7–21 mm apart). Also, it often (but not always) produces tubers while these are always absent in *N. exaltata* (Nauman 1993). Both species are a known threat to native plant species (Riefner and Smith 2015).

***Nerium oleander* L.** (Apocynaceae)

New to the flora of Tenerife.

TENERIFE: Golf del Sur, barranco del Saltadero, barranco, one young bush (not planted), 20.03.2014, F. Verloove 10640 (BR); Golf del Sur, barranco del Saltadero, dry gravelly riverbed, a single individual, 02.11.2014, F. Verloove 11161 (ORT).

Nerium oleander is native in the Mediterranean area but widely cultivated elsewhere as an ornamental shrub (Cullen and Knees 2011), also in the Canary Islands. It is surprisingly rare as an escape from cultivation, probably because fruit is rarely produced (Herrera 1991). Since 2013 spontaneous occurrences are known from La Palma (Otto and Verloove 2016) and in 2014 and 2015 it was seen several times in Tenerife as well (e.g. Güímar, Playa Paraiso, Playa de Las Américas, Puerto de la Cruz).

***Pascalía glauca* Ortega** (Asteraceae)

New to the flora of Tenerife.

TENERIFE: Las Galletas, TEN-BEL, weed in abandoned resort, locally (several tens), 02.03.2015, F. Verloove 11273 (BR, ORT).

This poisonous weed species is originally native in South America (Strother 1991) and well-naturalized in warm-temperate regions elsewhere in the world, also in Spain (Carretero 1988, Robledo et al. 1996). In Las Galletas a small population was discovered in an abandoned resort in 2015 and subsequently confirmed. Up to the present it has only been recorded before in the Canary Islands in La Palma (Otto and Verloove 2016).

***Phytolacca americana* L.** (Phytolaccaceae)

New to the flora of Tenerife.

TENERIFE: La Orotava, barranco de la Arena, gravelly riverbed, shady, several tens (naturalized), 02.07.2014, F. Verloove 10898 (BR).

Phytolacca americana has been claimed before from Tenerife (Acebes Ginovés et al. 2009) but these claims were probably erroneous and referable to the much more widely cultivated (and morphologically very different) *P. dioica* (Verloove and Reyes-Betancort 2011). However, its

genuine presence in Tenerife could be demonstrated in 2014 when it was found plentifully in a shady *barranco* near to La Orotava. It was recently also detected in similar habitats in Gran Canaria (Verloove 2013).

Podranea ricasoliana (Tanfani) Sprague (Bignoniaceae)

New to the flora of Gran Canaria and Tenerife.

GRAN CANARIA: Puerto Rico (Motor Grande), barranco de Puerto Rico, riverbed, 20.11.2015, F. Verloove 12008 (BR).

A native of South Africa (Cullen and Knees 2011) this species is widely cultivated as an ornamental vine in the Canary Islands. Like *Solandra maxima* it is very vigorous, covering large surfaces and taking root wherever branches touch the soil; accordingly, planted and escaped plants are often hard to distinguish. Voucher specimens were collected in 2015 in Puerto Rico in Gran Canaria but it has also been recorded in other localities in Gran Canaria (e.g. Arucas 2015; Teror, 2015; etc.) and Tenerife (e.g. El Socorro, barranco del Mulato, 2014; Golf del Sur, barranco del Saltadero, 2014; Güímar, barranco Badajoz, 2014; La Orotava, barranco de la Arena, 2014; Playa de Las Américas, 2015; Puerto de la Cruz, barranco Tafuriaste, 2014; idem, Malpais, calle Chinyero, 2014; Santa Cruz, barranco Valle Seco, 2014; Tegueste, barranco Agua de Dios, 2014; etc.). It was previously reported from La Palma in the Canary Islands (Otto and Verloove 2016).

***Psidium guajava* L.** (Myrtaceae) (On-line Suppl. Pl. 1B)

New to the flora of Gran Canaria.

GRAN CANARIA: Carrizal, barranco de Aromeros between GC-191 and GC-1 motorway, dry riverbed, near sewer, a single individual, ca. 250 cm tall, 26.11.2015, F. Verloove 11995 (BR, LPA); Ayagaures, barranco de Ayagaures, GC-504 (km 7–8), dry riverbed, scattered individuals but only locally, 27.11.2015, F. Verloove 12012 (BR).

An evergreen shrub or small tree native to the Caribbean, Central America and South America, *P. guajava* is widely cultivated in tropical and subtropical regions of the world for its edible fruit (guava) or as an ornamental (Cullen and Knees 2011), also in the Canary Islands. It was recently reported for the first time in the wild from the island of La Palma (Santos Guerra and Reyes-Betancort 2014). In 2015 it was also observed in two *barrancos* in Gran Canaria. Although it is probably not yet genuinely naturalized (except perhaps in Ayagaures), future naturalization and subsequent invasive behavior can be expected. *P. guajava* is often considered one of the most significant invasive species in areas where it was initially introduced (Sheil 1994, Meyer 2000, Henderson 2007).

***Rumex cristatus* DC.** (Polygonaceae)

New to the flora of Tenerife.

TENERIFE: Tejina, barranco de Los Aguas de Dios, damp area, near artificial pond, five individuals, 27.06.2014, F. Verloove 10856 (BR, ORT); La Cuesta (La Laguna), barranco de Santos, dry gravelly riverbed, 28.06.2014, F. Verloove 10899 (BR); La Laguna, barranco de Santos E of TF-13, gravelly riverbed, frequent, 03.07.2014, F. Verloove

10870 (BR); La Laguna (Bronco), Camino la Rúa, roadside, very common, 06.11.2014, F. Verloove 11189 (ORT).

Rumex cristatus, originally restricted to a relatively small area in Southcentral Europe (Rechinger and Akeroyd 1993), is a fast spreading alien in parts of the Mediterranean area (Quesada et al. 2007). Until recently, it had not been recorded from the Canary Islands (Acebes Ginovés et al. 2009) but since 2012 it is known from a single locality in La Palma (Otto and Verloove 2016). In 2014 it was recorded on several occasions in Tenerife. It is in fact relatively widely distributed between Tejina and Santa Cruz de Tenerife, especially in barranco de Santos. It occurs in temporarily wet, ruderalized habitats such as (artificial) pond margins, ditches, gravelly riverbeds, roadsides, etc. Given its actual abundance and distribution *R. cristatus* either is a fast spreading recent introduction (probably easily dispersed as a result of regular flooding in the barranco) or a previously neglected or overlooked species (the latter option being less likely since confusion with other species of *Rumex* is unlikely in Tenerife). *R. cristatus* is a fairly variable species and easily hybridizes with other species (Jauzein 1990). Plants currently found in the Canary Islands, as well as in large parts of western Europe, are somewhat atypical in having fruiting valves that are slightly smaller than in its area of origin.

***Rumex palustris* Sm. (Polygonaceae)**

New to the flora of the Canary Islands.

TENERIFE: Armeñime, water reservoir alongside TF-47, muddy bank, in monospecific stands, several 100s, 31.10.2014, F. Verloove 11163 (ORT); Playa Paraiso, barranco de Las Galgas, dried out water reservoir, very common, 29.11.2016, F. Verloove 12693 (BR).

R. palustris is native in large parts of Europe and western Asia (Rechinger and Akeroyd 1993). It is here reported for the first time from the Canary Islands. In the locality cited above it is a very common and dominant species. It looks firmly established and plants were also seen in the adjacent barranco de Las Salinas, as well as in water reservoirs in Playa Paraiso. This species now occurs in many areas outside of its original distribution range but it is rarely (if ever) considered an invasive species.

***Schinus terebinthifolia* Raddi (Anacardiaceae)**

New to the flora of Tenerife.

TENERIFE: Golf del Sur, barranco del Saltadero, barranco, at least 10 bushes, old and young (naturalized), 20.03.2014, F. Verloove 10641 (BR); Guarguacho, barranco, dry riverbed, near sewage drain, 27.02.2015, F. Verloove 11276 (BR).

Originally native to South America, *S. terebinthifolia* is commonly cultivated as an ornamental shrub or tree in the warm-temperate and (sub-) tropical areas of the world (Cullen and Knees 2011). In recent years it was reported for the first time as an escape from the Canary Islands, at first from Gran Canaria and soon afterwards also from Fuerteventura (Verloove 2013, Verloove and Guiggi 2013). Although much less frequent in Tenerife, it was recorded in several different localities since 2014. In addition to those localities

listed above, it was also seen in Playa Paraiso (El Pinque), Callao Salvaje (Playa Ajabo), Santa Cruz de Tenerife (barranco Tahodio), Las Caletillas, Guargacho, Puerto de la Cruz (Parque Taoro), etc. Birds that feed on the fruits of *S. terebinthifolia* seem to play an important role in the processes of naturalization of this species in the Canary Islands (see also Panetta and McKee 2006; Williams et al. 2007; Mink et al. 2015). A future wider naturalization and subsequent invasive behavior in the Canary Islands is predictable.

***Senna × artemisioides* (Gaudich. ex DC.) Randell (Leguminosae s.l.) cf. subsp. *coriacea* (Benth.) Randell (Pl. 1D)**

TENERIFE: Playa Paraiso, barranco de Las Galgas, dry gravelly riverbed, a single shrub (subspontaneous), 23.06.2014, F. Verloove 10837 (BR, ORT); Playa Paraiso, barranco de Las Galgas, rough ground, foot of bridge, a single shrub (an additional one elsewhere in the same barranco), 31.10.2014, F. Verloove 11171 (BR); Palm-Mar, abandoned resort close to the sea, rough ground, several young, self-sown individuals, 20.02.2015, F. Verloove 11263 (BR); Palm-Mar, center of village, rough ground (vacant lot in residential area), a single young shrub, 28.02.2015, F. Verloove 11275 (BR).

subsp. *filifolia* Randell, J. Adelaide Bot. Gard. 12(2): 227–229. 1989. = *Cassia eremophila* auct. hort. non Cunn. ex J. Vogel (Sánchez de Lorenzo Cáceres 2005) (Pl. 1F)

GRAN CANARIA: Arguineguín, barranco Av. Mencey, bare, stony ground, several tens, self-sown (not seen planted nearby), 20.11.2015, F. Verloove 12032 (BR, LPA).

Endemic to much of mainland arid Australia, *Senna × artemisioides* is widely grown as landscape plant in desert areas across the world (Cullen and Knees 2011). Several (notho-) subspecies with quite variable foliage are considered to be a group of complex hybrids. Single populations often contain three or more of these taxa and are interpreted as hybrid swarms (Randell 1989). In the Canary Islands two very distinct representatives of this complex were recently recorded as escapes from cultivation, subsp. × *filifolia* in Gran Canaria and cf. subsp. × *coriacea* in Tenerife (see above). The former has filiform, terete leaflets (usually two pairs) and is slightly glaucous-greyish in appearance; the latter, in contrast, has usually more numerous and wider, elliptic to obovate leaflets and a dull greenish foliage. Both abundantly reproduce from seed and will probably naturalize in suitable habitats in the southernmost parts of these islands. While subsp. × *coriacea* was only seen in the vicinity of plantations, × *filifolia* was found growing in relative abundance in the absence of parent plants.

Senna × artemisioides apparently is a recent escape from cultivation in Europe. It was probably first recorded in Cyprus, subsequently also in Spain (Laguna et al. 2010). In other climatologically favorable areas, e.g. the southern United States (DiTomaso and Healy 2007), it is sometimes considered a troublesome invasive species.

***Senna × floribunda* (Cav.) H.S. Irwin & Barneby. (Leguminosae s.l.) (On-line Suppl. Pl. 1C)**

New to the flora of the Canary Islands.

TENERIFE: Puerto de la Cruz, barranco de Martiánez, dry, gravelly riverbed, rocks, several tens, saplings as well as flowering and fruiting individuals, 25.06.2014, F. Verloove 10868 (BR, ORT).

Senna × floribunda, of putative *S. multiglandulosa* × *S. septemtrionalis* parentage, is an artificial cross that is widely grown as a garden ornamental (Cullen and Knees 2011). Like other species of *Senna* (e.g. *S. bicapsularis* and *S. corymbosa*) it easily escapes, despite being only partly fertile. In the barranco de Martiánez in Puerto de la Cruz it was locally seen with several tens of individuals in various stages of development (saplings as well as fruiting individuals). It seems more or less established there. *Senna × floribunda* belongs to sect. *Chamaefistula* ser. *Coluteoideae*. It is highly reminiscent of *S. septemtrionalis* and both have been confused, for instance in Australia and New Zealand (Webb et al. 1988). Both have leaflets that are acute to acuminate at apex, unlike the other species of *Senna* known at present from the Canary Islands (the annual and probably ephemeral *S. occidentalis*). *Senna × floribunda* is distinguished from *S. septemtrionalis* by leaflets (at least when young), pedicels and base of ovary that are finely pilosulous with weak incurved or subappressed hairs up to 0.2–0.7 mm (an influence from *S. multiglandulosa*, while *S. septemtrionalis* is completely glabrous) and its inflorescence is often corymbose-paniculate and ± exserted from foliage (Irwin and Barneby 1982). Also, it is partly sterile and its leaflets seem thinner in texture (often more or less leathery in *S. septemtrionalis*). *Senna × floribunda* is considered an invasive species in Australia (numerous references on the internet).

Solandra maxima (Sessé & Moc.) P.S. Green (Solanaceae)

New to the flora of Tenerife.

TENERIFE: San Lorenzo, barranco de Chija at TF-28, foot of bridge, escaped from cultivation, at least two individuals, 22.06.2014, F. Verloove 10876 (BR).

S. maxima is native to Mexico, Central America and northern South America but widely cultivated as an attractive liana in (sub-) tropical regions of the world (Cullen and Knees 2011). It is a very vigorous species that was recently reported for the first time in the wild from the Canary Islands (La Palma; Otto and Verloove 2016). In 2014 it was recorded on several occasions in Tenerife as well, escaping from nearby gardens (often in *barrancos*). However, in some instances it was obviously no longer directly associated with gardens, apparently growing from washed-up rhizomes or perhaps even from seed.

Tipuana tipu (Benth.) Kuntze (Leguminosae s.l.)

New to the flora of Tenerife.

TENERIFE: Santa Cruz de Tenerife, Ermita N.S. de la Candelaria, barranco de Santos, riverbed, in shallow depressions, numerous young, self-sown individuals (planted nearby), 28.06.2014, F. Verloove 10862 (BR); Santa Cruz de Tenerife, barranco Tahodio, dry, gravelly riverbed, ca. 25 young shrubs (self-sown), some fruiting, 29.06.2014, F. Verloove 10855 (BR, ORT); Güímar, barranco Badajoz, former gravel pit/dump, one shrub, 01.07.2014, F. Verloove

10885 (BR); Los Christianos, N of Montaña Chayofita, abandoned plantation, two young individuals, self-sown, 10.06.2015, F. Verloove (BR).

Native to South America, *T. tipu* is widely planted as an ornamental tree in the (sub-) tropics (Cullen and Knees 2011). It was recently recorded for the first time in the wild in the Canary Islands (in Gran Canaria; Verloove 2013). Since 2014 it was observed, obviously self-sown, in several places in Tenerife as well (usually in *barrancos*). Mostly, only saplings or single individuals were recorded. However, in the barranco Tahodio in Santa Cruz de Tenerife *T. tipu* looks more or less established, several of the young, self-sown individuals bearing fruit and thus representing a self-sustaining population. *T. tipu* reproduces abundantly and fruits are easily wind-dispersed. A future, wider naturalization is predictable. The species occurs on the 'Alien Invasive Plants List' for South Africa (<http://www.invasives.org.za/>).

Youngia japonica (L.) DC. (Asteraceae)

New to the flora of Gran Canaria.

GRAN CANARIA: San Agustín, GC-500, lawn, locally, 24.03.2013, F. Verloove 10037 (BR, LPA).

Originally native in Southeast Asia, this weed now occurs in many warm-temperate and (sub-) tropical areas of the world (Spurr 2006). In the Canary Islands it was recorded for the first time in 2010 in Tenerife (lawn weed in Puerto de la Cruz; Siverio Núñez et al. 2013). It was regularly confirmed subsequently and seems perfectly naturalized now. In 2013 *Y. japonica* was observed for the first time in Gran Canaria: it grows in disturbed irrigated lawns in San Agustín and Puerto de Mogán (see above; also <http://invasionesbiologicas.blogspot.be/2013/09/dos-nuevas-especies-introducidas-en.html>). *Y. japonica* is a rather variable species. Molecular data shed new light on its taxonomy. Plants from the Canary Islands have brownish achenes ca. 2 mm long and belong to subsp. *japonica*, the widespread weedy taxon (Nakamura et al. 2013).

Ephemeral species

New to the flora of the Canary Islands

Commelina erecta L. (Commelinaceae) (On-line Suppl. Pl. 1D)

Gran Canaria: Telde, Lomo Cementerio, GC-100 near barranco La Rocha, roadside, crack in concrete, few plants, 18.11.2015, F. Verloove 12045 (BR, US).

Cucumis metuliferus Naudin (Cucurbitaceae)

Tenerife: La Cuesta (La Laguna), barranco de Santos, dry, gravelly riverbed, one individual (flowering and fruiting), 28.06.2014, F. Verloove 10866 (BR).

Cyperus longus L. (s.str.; excl. *C. badius* Desf.) (Cyperaceae)

Tenerife: Playa de Las Américas, TF-1 motorway in front of Siam Park, weed in flowerbed, three individuals, 23.06.2014, F. Verloove (BR).

Cyperus papyrus L. (Cyperaceae)

Tenerife: La Quinta, pool, 01.01.1971, J.E. De Langhe 92 (NAM).

Hypoestes phyllostachya Baker (Acanthaceae)

Tenerife: Tejina, barranco Cuevas (centro ciudad), dry riverbed, one individual, 05.11.2014, F. Verloove 11236 (BR).

Lycium barbarum L. (Solanaceae) (On-line Suppl. Pl. 1E)

Gran Canaria: Jinámar, barranco de Telde W of GC-1 motorway, on the verge of dry riverbed, scattered shrubs in two populations, 05.11.2012, F. Verloove 11978 (BR, LPA); idem, 15.11.2015, F. Verloove 12050 (BR).

Lycium ferocissimum Miers (Solanaceae)

Tenerife: Santa Cruz de Tenerife, Taco, av. San Matias, rough ground, a single shrub, 03.11.2014, F. Verloove 11208 (BR).

Macfadyena unguis-cati (L.) Gentry (Bignoniaceae)

Gran Canaria: Fataga, GC-60 S of the village, climbing in palm tree, 18.03.2013, F. Verloove 10042 (LPA).

Mangifera indica L. (Anacardiaceae)

Tenerife: Iguete de San Andres, barranco de Iguete, dry, gravelly riverbed, one specimen (not planted), 16.03.2014, F. Verloove 10631 (BR).

Salvia hispanica L. (Lamiaceae)

Tenerife: Valle Tabares (La Laguna), barranco de Santos, dry gravelly riverbed, a single individual, 28.06.2014, F. Verloove 10937 (BR).

Also observed in various other points of barranco de Santos in La Laguna and Santa Cruz de Tenerife, usually in small number.

Schefflera arboricola (Hayata) Merr. (Araliaceae)

Tenerife: Buenavista del Norte, Golf Court (W-side), epiphyte on *Phoenix*, 30.06.2014, F. Verloove 10884 (BR); Torviscas, close to barranco Colon, epiphyte on *Phoenix*, 31.10.2014, F. Verloove s.c.; Las Galletas, TEN-BEL, epiphyte on *Phoenix*, 11.06.2015, F. Verloove s.c.; Playa de Las Américas, Fañabe, Hotel Riu, epiphyte on *Phoenix*, 15.06.2015, F. Verloove s.c.

Sphagneticola trilobata (L.) Pruski (Asteraceae) (On-line Suppl. Pl. 1F)

Gran Canaria: Maspalomas, Meloneras Golf (E-side), small barranco, escaping from nearby plantation, far creeping, 18.09.2013, F. Verloove 10560 (BR, LPA).

New to the flora of Gran Canaria and/or Tenerife

Cucumis melo L. (Cucurbitaceae)

Gran Canaria: Playa del Inglés, barranco de Los Vicentes, from sewage sludge (with *Citrullus lanatus*, *Cucurbita moschata*), 17.11.2015, F. Verloove 12000 (BR).

Cucurbita moschata Duchesne (Cucurbitaceae)

Tenerife: Güímar, barranco Fregenal at TF-28, dry, gravelly riverbed, 10.11.2014, F. Verloove 11198 (ORT).

Also seen in numerous other localities since 2014 in Tenerife and Gran Canaria. This species is by far the most frequent *Cucurbita* species in the Canary Islands (see also Otto and Verloove 2016).

Diplotaxis tenuifolia (L.) DC. (Brassicaceae)

Tenerife: Tabaiba Alta, barranco de las Higueras at TF-28, riverbed, a single plant, 01.07.2014, F. Verloove 10873 (ORT); Puerto de la Cruz, Ctra. Las Tapias, foot of tree, 04.11.2014, F. Verloove 11169 (ORT).

Ficus microcarpa L. (Moraceae)

Gran Canaria: Arguineguín, barranco in city center, close to the sea, crack in wall, young tree, self-sown, 18.09.2013, F. Verloove 10579 (LPA).

This ornamental is an increasing epiphyte on palm trees (mainly *Phoenix*) and is also found on old masonry and concrete structures in the Canary Islands, germinating from seed dispersed in figs eaten by birds or small mammals. The seedlings subsequently establish and grow without human intervention or intentional summer watering. A future naturalization and even invasive behavior is possible (Riefner 2016).

Gossypium barbadense L. (Malvaceae)

Tenerife: Palm-Mar, rough ground, close to the sea, 21.03.2014, F. Verloove 10643 (BR).

This species has been repeatedly recorded in the past years in Gran Canaria and Tenerife, usually single individuals. At least in Palm-Mar, however, where it can be found in several places, an incipient naturalization process is discernable.

Grevillea robusta Cunn. ex R. Br. (Proteaceae)

Tenerife: Santa María del Mar, Calle Atamán, water reservoir, crack in concrete, a single individual, self-sown, 08.11.2014, F. Verloove 11176 (BR).

Paspalum notatum Flügge var. *saurae* Parodi (Poaceae)

Gran Canaria: Maspalomas, centro commercial Yumbo, ruderalized lawn, locally, 23.03.2013, F. Verloove 10040 (BR, LPA).

Passiflora edulis Sims (Passifloraceae)

Tenerife: Playa de Las Américas, Fañabe, Calle Helsinki, barranco de Fañabe, 14.06.2015, F. Verloove 11529 (BR); Santa Cruz de Tenerife, barranco Santos at Calle de Diego Crosa, dry riverbed, a single individual, 13.11.2016, F. Verloove 12691 (BR).

Pteris cretica L. (Pteridaceae)

Tenerife: Puerto de la Cruz, barranco de Martiánez, damp shady rock, 25.06.2014, F. Verloove 10850 (BR).

Tecoma stans (L.) Kunth (Bignoniaceae)

Tenerife: Bufadero (NE of Santa Cruz de Tenerife), barranco del Bufadero, dry gravelly riverbed, a single shrub, self-sown, ca. 200 cm tall, 29.06.2014, F. Verloove 10875 (BR).

Also observed in several other localities in Tenerife since 2014, mostly in small number: Torviscas, barranco

Colon (old wall), Puerto de la Cruz (La Paz), San Andres (barranco Cercades de San Andres), Santa Cruz de Tenerife (port area), etc.

Miscellaneous notes

Diplachne fusca (L.) P. Beauv. ex Roem. & Schult. subsp. *uninervia* (J. Presl) P.M. Peterson & N. Snow (Poaceae)

GRAN CANARIA: Maspalomas, Palmeral close to Lagoon, pond margins and ditches, very common, 17.11.2015, F. Verloove 12016 (BR, LPA).

This weed is known from a garden center in Montaña los Vélez since 2011 (Verloove 2013). It is still present there but does not seem to spread. The very similar *Diplachne malabarica* was claimed from the La Charca lagoon in Maspalomas, also in Gran Canaria (Scholz and Böcker 1996). The latter is best distinguished by its much longer anthers (1.3–2.7 mm long vs. 0.2–0.6 mm long) and paler spikelets (greenish rather than lead-colored). In 2015 its presence was confirmed in that area: it is a prolific weed of ditches and pond margins and obviously well-naturalized. However, it corresponds in all characters with *D. fusca* subsp. *uninervia*, not with *D. malabarica*. The latter name needs to be omitted from Acebes Ginovés et al. (2009). *D. fusca* subsp. *uninervia* has also been recorded on several occasions in Fuerteventura since 2008, where it has been associated with grass seed for lawns (Scholz et al. 2013; sub *Leptochloa uninervia*).

Eclipta prostrata (L.) L. (Asteraceae)

GRAN CANARIA: Maspalomas, close to Faro (light-house), irrigated lawn, a troublesome weed but only very locally, 18.09.2013, F. Verloove 10517 (BR).

This pantropical weed was recently observed for the first time in the Canary Islands. It was found in two localities in the northern part of Gran Canaria (Verloove 2013) where its presence was confirmed in 2015. An additional record in 2013, in irrigated lawns in Maspalomas in the southern part of the island, seems to suggest a recent naturalization in Gran Canaria.

Pluchea carolinensis (Jacq.) G. Don (Asteraceae)

GRAN CANARIA: Arguineguín, barranco de Arguineguín, close to the sea, dry, gravelly riverbed (shady, under *Eucalyptus*), 18.09.2013, F. Verloove 10581 (BR, LPA); idem, 20.11.2015, F. Verloove 11980 (BR); Ayagaures, barranco de Ayagaures, GC-504 (km 3), dry riverbed, two individuals (flowering and fruiting), 27.11.2015, F. Verloove 12014 (BR).

This highly invasive xenophyte was recently reported as new for the Canary Islands. A single shrub was found growing in a *barranco* near Arguineguín in Gran Canaria in 2011 (Verloove 2013). It was expected that this species would be present elsewhere in this area. Indeed, in September 2013 several additional individuals were discovered in the same *barranco*, under *Eucalyptus* canopy, close to its estuary in Arguineguín. In 2015 some plants of *P. carolinensis* were also recorded in a *barranco* in Ayagaures. This species looks well-established in southern Gran Canaria and a future, wider naturalization is predictable, similar to that of

the congeneric, highly invasive *P. ovalis* in Tenerife (see Padrón-Mederos et al. 2009, Verloove and Reyes-Betancort 2011).

Prosopis juliflora (Sw.) DC. (Leguminosae) (On-line Suppl. Pl. 1G)

GRAN CANARIA: Arinaga, barranco del Polvo, estuary, scattered mature individuals (flowering and fruiting) and numerous saplings, naturalizing, 16.11.2015, F. Verloove 11998 (BR); Pedraza, barranco del Negro, dry riverbed, a single individual (flowering and fruiting), 17.11.2015, F. Verloove 12005 (BR); Pozo Izquierdo, Llanos de Tenefé, barranco de Tirajana, gravelly, dry riverbed, close to the sea, ca. 5 individuals (not planted), 22.11.2015, F. Verloove 12023 (BR).

This species (*mesquite*) has been known since 2011 as an escape from cultivation in the drier, southernmost parts of Gran Canaria and a future naturalization was predicted (Verloove 2013). In 2015 it was recorded in several additional localities, all in *barrancos*. In one of these, in the estuary of barranco del Polvo in Arinaga, it is present in relative abundance and in various stages of development, in a natural coastal vegetation. At least in this locality it can be considered naturalized. Scattered individuals of a similar species, *Prosopis glandulosa* (*honey mesquite*), grow on the verge of the Tirajana *barranco* near El Doctoral [El Doctoral, barranco de Tirajana E of TF 1 motorway, on the verge of dry riverbed, three individuals, 28.11.2015, F. Verloove 12004 (BR, LPA)]. Its leaflets are more widely spaced and are at least 5x as long as wide. The origin of these trees is uncertain (originally planted?) but, at least at present, it does not seem to reproduce. Like *P. juliflora*, however, it has the potential to naturalize.

Sida rhombifolia L. (Malvaceae)

GRAN CANARIA: El Hormiguero (E of Galdar), dry roadside in the village, scattered individuals, 06.11.2012, F. Verloove 10619 (BR, LPA).

Claims of this species from Gran Canaria often have been considered erroneous, being referable to the similar but much more widespread *Malvastrum coromandelianum* (comm. A. Reyes-Betancort). Its genuine presence in Gran Canaria, however, was confirmed in 2012.

Discussion

In the present paper eleven non-native taxa are reported for the first time from the Canary Islands that can be considered either (locally) naturalized and/or potentially or genuinely invasive. Several additional species, most of them also behaving as invasive species, are recorded for the first time from the islands of Gran Canaria and/or Tenerife. The paper further includes records of alien species that, at least at present, have not yet naturalized; some, however, probably will do so in the near future.

As has been shown before on numerous occasions (Dehnen-Schmutz et al. 2007), ornamental horticulture is the most important pathway for plant invasion world-wide. Among the taxa reported as naturalized or invasive in this

paper the proportion of species initially introduced for utilitarian or ornamental purposes is high. All species that have been included in the 'black list' of invasive plants on the island of Tenerife are escaped ornamentals and the same applies to almost the entire 'grey list' (Machado Carillo 2000). Despite this, the influx of new ornamentals in the Canary Islands seems unstoppable and additional legislative measurements are urgently needed to prevent further plant invasions resulting from ornamental horticulture.

Finally, this paper also stresses the need for a sufficient taxonomic expertise in understanding and managing plant

invasions. Taxonomy plays a critical role and is essential for the effective management of invasive plants since incorrect identifications can impede ecological studies (Pyšek et al. 2013). Several of the species reported in this paper may have been overlooked up to present, as a result of confusion with similar or related species.

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