

PREPRINT

Posted on 07/01/2021

DOI: <https://doi.org/10.3897/arphapreprints.e62882>

New records in vascular plants alien to Tenerife (Spain, Canary Islands)

 Filip Verloove

Not peer-reviewed, not copy-edited manuscript.

Disclaimer on biological nomenclature and use of preprints

The preprints are preliminary versions of works accessible electronically in advance of publication of the final version. They are not issued for purposes of botanical, mycological or zoological nomenclature and **are not effectively/validly published in the meaning of the Codes**. Therefore, nomenclatural novelties (new names) or other nomenclatural acts (designations of type, choices of priority between names, choices between orthographic variants, or choices of gender of names) **should NOT be posted in preprints**. The following provisions in the Codes of Nomenclature define their status:

International Code of Nomenclature for algae, fungi, and plants (ICNafp)

Article 30.2: "An electronic publication is not effectively published if there is evidence within or associated with the publication that its content is merely preliminary and was, or is to be, replaced by content that the publisher considers final, in which case only the version with that final content is effectively published." In order to be validly published, a nomenclatural novelty must be effectively published (Art. 32.1(a)); in order to take effect, other nomenclatural acts must be effectively published (Art. 7.10, 11.5, 53.5, 61.3, and 62.3).

International Code of Zoological Nomenclature (ICZN)

Article: 21.8.3: "Some works are accessible online in preliminary versions before the publication date of the final version. Such advance electronic access does not advance the date of publication of a work, as preliminary versions are not published (Article 9.9)".

New records in vascular plants alien to Tenerife (Spain, Canary Islands)

Filip Verloove ‡

‡ Meise Botanic Garden, Meise, Belgium

Corresponding author: Filip Verloove (filip.verloove@plantentuinmeise.be)

Abstract

Background

Recent fieldwork by the author in Tenerife, mostly between 2014 and 2019, yielded new records of alien vascular plants.

New information

Seventeen taxa (*Acacia decurrens*, *A. mearnsii*, *Brachychiton diversifolius*, *Caesalpinia pulcherrima*, *Ensete ventricosum*, *Eucalyptus camaldulensis* subsp. *arida*, *E. cladocalyx*, *Euryops chrysanthemoides*, *Ficus elastica*, *Lippia alba*, *Pavonia sepioides*, *Pittosporum tobira*, *Populus × canadensis*, *Pyrostegia venusta*, *Ruellia dipteracanthus*, *Soleirolia soleirolii* and *Wigandia kunthii*) are reported for the first time from the Canary Islands. All were initially introduced on purpose, mostly as ornamentals, and recently started to escape from cultivation. Most of them are ephemerals or only locally established but nearly all have the potential to naturalize in the future. Thirteen additional species are reported for the first time from Tenerife: *Atriplex nummularia*, *Bellis perennis*, *Chenopodium probstii*, *Coccoloba uvifera*, *Commelina benghalensis*, *Cuphea hyssopifolia*, *Eragrostis virescens*, *Lemna minuta*, *Malvastrum corchorifolium*, *Plerandra elegantissima*, *Psidium guajava*, *Thunbergia alata* and *Urochloa subquadriflora*. Finally, some miscellaneous notes are provided on the presence of *Balanites aegyptiaca*, *Callistemon viminalis*, *Grevillea robusta* and *Passiflora caerulea* in Tenerife.

Keywords

aliens, Canary Islands, ephemerophytes, naturalization, range expansion, secondary distribution area, Spain, Tenerife

Introduction

Despite the long tradition of studies on the flora of the Canary Islands, native as well as introduced, there is a constant and almost uninterrupted amount of new taxonomic and distributional data. Particularly the non-native flora is still imperfectly known and the number of new introductions, deliberate as well as accidental, still seems to increase, also in Tenerife.

This paper is a sequel to [Verloove and Reyes-Betancort \(2011\)](#) and Verloove (2017) and reports about newly detected alien vascular plants found in Tenerife, mostly between 2014 and 2019. Recent new records dealing with particular taxonomic groups (mostly succulents from the Agavaceae and Cactaceae families) were already published elsewhere (Verloove et al. 2017, Verloove et al. 2019). We here present new records for 34 taxa that are either new to the Canary Islands (or even Macaronesia as a whole), to the island of Tenerife or that are otherwise of interest.

Assessing the actual invasion status of these taxa is not straightforward and the eventual degree of naturalization will only become clear over time. Many of the species presented in this account are currently considered ephemerals or are only locally more or less established. However, nearly all of them have the potential to naturalize or even become invasive. The reproduction from seed or clonal reproduction of introduced species are a first but essential step towards an incipient naturalization process. The early detection of such events is crucial in invasion biology.

Materials and methods

Records here presented are the result of several months of fieldwork in Tenerife conducted by the author, mainly between 2014 and 2019. Herbarium specimens were collected for most of the records and these are deposited in the herbaria BR (Meise Botanic garden, Belgium) and/or ORT (Instituto Canario de Investigaciones Agrarias, Puerto de la Cruz, Tenerife) (herbarium acronyms according to Thiers 2020).

The actual presence or absence on the island of Tenerife of the non-native taxa here presented was each time compared with data provided by Hohenester and Welss (1993), Acebes Ginovés et al. (2010), the Euro+Med PlantBase (2020) and the Banco de Datos de Biodiversidad de Canarias (2020). For some recently introduced species several additional papers were checked as well.

The paper is divided in two parts. The first and major part deals with taxa that are either first reported from the Canary Islands as a whole or from Tenerife. Each entry includes the scientific name of the taxon (if useful accompanied by one or more homo- or heterotypic synonyms), the family to which the taxon belongs (see below), kind of chorological novelty, enumeration of selected herbarium collections and/or personal observations, origin

(primary as well as secondary distribution range) and its estimated degree of naturalization in Tenerife.

If relevant, some additional information is also provided (nomenclatural or taxonomic comments, etc.). In the second part miscellaneous notes are presented on some other alien species that are of interest. For convenience, within each of these parts, all taxa are presented in alphabetical order.

Familial and generic classifications are in accordance with APG IV (Angiosperm Phylogeny Group - APG 2016). For the taxa treated herein this means, for instance, that Chenopodiaceae are included in Amaranthaceae and Lemnaceae in Araceae.

Data resources

Specimen information is deposited in the observation.org (<https://observation.org/>) online database that is also published through the Global Biodiversity Information Facility (GBIF; <https://www.gbif.org/>).

New chorological data for the Canary Islands and Tenerife

Acacia decurrens Willd., 1806

Nomenclature:

Sp. Pl. 4(2): 1072. 1806.

Distribution: TENERIFE: Tegueste, Camino Urb. Las Rosetas close to TF-154 road, shrubland, a single (?) shrub among numerous *A. mearnsii*, 18.01.2019, *F. Verloove* 13446 (BR).

<https://observation.org/observation/204629654/>

Notes: *Acacia decurrens* is endemic to New South Wales in Australia. However, its natural distribution is uncertain as a result of frequent naturalization, caused by widespread plantings as an ornamental and in forestry plantations. It is now commonly naturalized in other parts of Australia but also in e.g. South Africa and California. In some areas it is considered to be a very troublesome weed (Miller et al. 2011, Sunardi and Titiek 2017).

From the Canary Islands it had not been reported yet (Acebes Ginovés et al. 2010). A single shrub was found amidst a shrubland that mostly consisted of *Acacia mearnsii* in Tegueste, Tenerife. It may have been deliberately introduced there a long time ago.

This species is most readily distinguished from the other two Australian bipinnate-leaved acacias that are commonly grown in the Canary Islands (i.e. *A. dealbata* and *A.*

mearnsii) by its branchlets that are acutely angled by obvious winged ridges and its longer, narrowly linear leaflets (Maslin et al. 2019).

***Acacia mearnsii* De Wild., 1925**

Nomenclature:

Pl. Bequaert. 3(1): 62–63. 1925.

Distribution: TENERIFE: Tegueste, Camino Urb. Las Rosetas close to TF-154 road, shrubland, 18.01.2017, *F. Verloove* 13419 (BR). <https://observation.org/observation/204629675/>

Notes: This species is a native of southeastern Australia but introduced into many countries for utilization purposes (mostly as an ornamental shrub). It easily reproduces and, like other acacias, is often considered to be an invasive species (Miller et al. 2011, Luque et al. 2014).

In Tenerife, *Acacia dealbata* is a naturalized shrub, although some records doubtlessly refer to *A. mearnsii* instead. The latter superficially resembles *A. dealbata*. It is recognized by its green and shiny foliage (vs. foliage bluish grey with lustrous leaflets), cream flowers (vs. bright yellow) (Fig. 1) and pods softly appressed grey-pubescent to velutinous (vs. pods glabrous). Furthermore, in *A. dealbata* there is only a single gland at the base of the pinnae whereas in *A. mearnsii* on at least some leaves multiple glands are present between the pinnae (Maslin et al. 2019).

In Tegueste *Acacia mearnsii* was probably initially planted a long time ago and now survives. In the same place a single individual was also observed of *A. decurrens* (see before).

***Atriplex nummularia* Lindl., 1848**

Nomenclature:

J. Exped. Trop. Australia 64. 1848.

Distribution: TENERIFE: San Cristóbal de La Laguna, Bajamar, TF-13 road N of the village, roadside, +/- 10 individuals, 07.11.2014, *F. Verloove* 11242 (BR). <https://observation.org/observation/204634934/>

Notes: This Australian shrub is sometimes introduced in arid, harsh areas (e.g. Middle East, North Africa), mostly as an ornamental or as a windbreak, for erosion control, forage, etc. It occasionally reproduces from seed, naturalizes and is sometimes considered to be an undesirable weed. For example, it is a top ten prominent invader in the Nama-Karoo and Succulent Karoo biomes in South Africa (Henderson 2007). In the Canary Islands it was recently reported from Fuerteventura and Gran Canaria (Verloove 2013, Verloove and Guiggi 2013). A small naturalized population has been known to us from Bajamar in Tenerife since many years.

Atriplex nummularia is much reminiscent of *A. halimus* L., a species that naturally occurs in the Canary Islands. However, at least part of these populations undoubtedly refers to introduced races. For instance, a well-known expansive population from Las Chafiras (Barone 2003), also in Tenerife, consists of diploids whereas native populations are tetraploids. The latter possibly correspond with var. *schweinfurthii* Boiss. (compare with Walker et al. 2005), a variety that occurs in arid zones with milder winters. *A. nummularia*, in turn, is an octoploid (Sampson and Byrne 2012). It usually is dioecious and *A. halimus* monoecious, although exceptions to this rule occur.

***Bellis perennis* L., 1753**

Nomenclature:

Sp. Pl. 2: 886. 1753.

Distribution: TENERIFE: San Cristóbal de La Laguna, Cruz del Carmen, Anaga Mountains, parking *mirador*, bare, trodden soil, in several small subpopulations, 10.01.2017, F. Verloove 12708 (BR). <https://observation.org/observation/204635431/>

Notes: This Eurasian weed is widely naturalized in temperate areas across the world, see for instance Brouillet (2006). According to Acebes Ginovés et al. (2010) only *B. annua* L. has been recorded so far in the Canary Islands (solely from Tenerife). However, these records may at least partly refer to *B. perennis*. For instance, from the natural protected area 'Anaga Rural Park' – where we have found *B. perennis* – *B. annua* was cited by Expósito et al. (2018). *B. perennis* is a perennial, stoloniferous species with thick fleshy roots and all leaves in a basal rosette. *B. annua*, in turn, is annual and has leafy stems.

Bellis perennis was recently recorded for the first time in the Canary Islands by Otto and Verloove (2016). The species was found as a weed in irrigated lawns in La Palma. In identical circumstances it was also observed for the first time in Gran Canaria (Verloove et al. 2020).

***Brachychiton diversifolius* R.Br., 1844**

Nomenclature:

Pterocymbium 234. 1844.

Distribution: TENERIFE: Adeje, Fañabe, Av. Jardines del Duque, epiphytic on *Phoenix*, foot of trees, ca. five saplings, not seen cultivated nearby, 17.11.2016, F. Verloove 12682 (BR). <https://observation.org/observation/204635482/>

Notes: This northern Australian ornamental tree is widely planted in warm-temperate areas across the world. It produces dry capsules with lots of seeds that are easily dispersed. As a result, it frequently reproduces from seed wherever planted. Its escape and incipient naturalization in Europe, however, is poorly documented, also because assessing the identity of *Brachychiton* is rarely straightforward. The escape of *B.*

diversifolius was recently reported from Sicily (Scafidi et al. 2016). A further species, *B. populneum* (Schott & Endl.) R.Br., is probably more widely planted and more often reported as escaping, for instance in France (Tison and de Foucault 2014), Greece (Galanos 2015), Spain (Vázquez Pardo et al. 2016) and Turkey (Uludağ et al. 2017) (see also Strother 2015 for North America). In *B. diversifolius* the base of the limb is cordate (Fig. 2) not acute as in *B. populneum*.

***Caesalpinia pulcherrima* (L.) Sw., 1791**

Nomenclature:

Observ. Bot. 166. 1791.

Distribution: TENERIFE: Adeje, Playa de Las Américas, barranco at Av. Eugenio Domínguez Alfonso, dry riverbed close to the sea, a single individual, self-sown, ca. 150 cm tall (cultivated nearby), 09.01.2017, F. Verloove 12714 (BR). <https://observation.org/observation/204635636/>

Notes: This species is widely grown as an ornamental shrub. In fact, its exact origin is unknown due to widespread cultivation. It is a prickly shrub or small tree with bipinnate, showy red and yellow flowers with very long stamens (60 mm or more long) with yellow or bright red filaments and relatively large petals (more than 25 mm long).

Caesalpinia pulcherrima is fast-growing and easily reproduces from seed. Therefore, it is naturalized in many regions where it was introduced in the past and it is increasingly considered an invasive weed (for instance in parts of Australia, Ecuador, the Philippines and Cuba).

In January 2017 a self-sown individual was observed in a dried-out water channel close to the sea in Playa de Las Américas in Tenerife (Fig. 3).

***Chenopodium probstii* Aellen, 1928**

Nomenclature:

Mitt. Naturf. Ges. Solothurn 20(8): 56. 1928.

Distribution: TENERIFE: Los Silos, Erjos, charcas de Erjos, dried out pond, very common but only locally, 18.11.2016, F. Verloove 12679 (BR). <https://observation.org/observation/205254266/>

Notes: This weed of uncertain origin (possibly North America) doubtlessly has been overlooked. It was recently reported from several localities in La Palma, for the first time in the Canary Islands, where it is considered to be naturalized and in expansion (Otto and Verloove 2016). It differs from *C. album* by leaves that are large and leathery and with a distinct purple or orange pigmentation.

It is here reported for the first time from Tenerife. In and near some dried out ponds in Erjos it was seen in abundance in 2016. It probably also occurs elsewhere.

***Coccoloba uvifera* (L.) L., 1759**

Nomenclature:

Syst. Nat. (ed. 10)2: 1007. 1759.

Distribution: TENERIFE: Santiago del Teide, Puerto de Santiago (Los Gigantes), Paseo Marítimo, sea cliff below coastal path, a single, self-sown shrub, mass-planted nearby, 10.12.2019, F. Verloove 13722 (BR). <https://observation.org/observation/205254392/>

Notes: *Coccoloba uvifera* is native to coastal beaches throughout tropical America and the Caribbean. It is wind- and salt tolerant and very often planted in ornamental plantations in warm-temperate and subtropical areas across the world, especially near the coast. It is very commonly grown in the Canary Islands as well. Fruits (sea grapes) are produced abundantly and relatively easily germinate. However, since ornamental plantings usually are found in urban habitats, regeneration is rarely observed. When planted in more natural suitable habitats, *C. uvifera* readily naturalizes and is sometimes considered an environmental weed.

Despite being very commonly planted, the species had not been recorded so far as an escape in the Canary Islands until recently, when it was observed to copiously regenerate in two localities in La Palma (Otto and Verloove 2016). In December 2019 a single self-sown shrub (flowering and fruiting) was observed growing on a sea cliff below a coastal path in Puerto de Santiago (Fig. 4). It obviously escaped from a nearby plantation. For a number of reasons a future local naturalization in the Canary Islands is not unlikely: there is a climatic match, numerous suitable habitats and plenty of seed sources.

***Commelina benghalensis* L., 1753**

Nomenclature:

Sp. Pl. 1: 41. 1753.

Distribution: TENERIFE: Arona, Palm-Mar, Paseo Avutarda, wall of manhole, persistent since 2015, 18.12.2018, F. Verloove 13426 (BR). <https://observation.org/observation/205254429/>

Notes: *Commelina benghalensis* is a weed from the Old World subtropics. In the Canary Islands it is only known from Gran Canaria (Acebes Ginovés et al. 2010), although most (if not all) records probably date back to the 19th century (e.g. Buch 1833).

Since 2015 it has been known from a single locality in Tenerife. In Palm-Mar it persists on the wall of a manhole. Its presence was regularly confirmed since then.

This species differs from the common and invasive *Commelina* species in the Canary Islands (*C. diffusa*) by the spathe margins that are fused near base. This characteristic is shared with *C. latifolia* Hochst. ex A. Rich., an African species that recently naturalized in La Palma (Otto and Verloove 2016). It can be distinguished from the latter by the typical pubescence that consists of reddish hairs and all petals, including the minute lower one, being blue.

***Cuphea hyssopifolia* Kunth, 1823 [1824]**

Nomenclature:

Nov. Gen. Sp. (quarto ed.) 6: 199–200. 1823 [1824]

Distribution: TENERIFE: Santa Úrsula, La Quinta, Calle El Escoban, cracks in pavement, three escaped individuals (not seen planted nearby), 10.12.2018, F. Verloove 13416 (BR). <https://observation.org/observation/205254459/>

Notes: This tiny ornamental shrub is native to Mexico, Guatemala and Honduras but widely cultivated elsewhere in the subtropics. It easily self-seeds and sometimes naturalizes where introduced, for instance in Hawaii and New Zealand (Gardner and de Lange 1996, Gardner 1998). In the Canary Islands it was previously reported from La Palma (Otto and Verloove 2016).

In December 2018 few plants were noticed in cracks of concrete in a residential area in La Quinta.

***Ensete ventricosum* (Welw.) Cheesman, 1947 [1948]**

Nomenclature:

Kew Bulletin 1947(2): 101. 1947 [1948]

Distribution: TENERIFE: Santa Cruz de Tenerife, Las Casas de la Cumbre, 10.01.2017, F. Verloove s.c. <https://observation.org/observation/205254987/>

Notes: This species, known as Ethiopian banana, is cultivated as staple food in parts of East Africa. In addition, it is grown as an ornamental, also in the Canary Islands. In the Anaga mountains in Tenerife it is locally planted in roadsides near urbanizations. In 2017 a single individual was observed in an impenetrable thicket, composed of native low shrubs (Fig. 5). It is unknown whether this plant refers to a former plantation or germinated from seed.

In New Zealand *Ensete ventricosum* is known to have naturalized in comparable climatological circumstances (Gardner and de Lange 1996).

***Eragrostis virescens* J. Presl, 1830**

Nomenclature:

Reliq. Haenk. 1(4–5): 276. 1830.

Syn.: *Eragrostis mexicana* (Hornem.) Link subsp. *virescens* (J. Presl) S.D. Koch & Sánchez Vega, Phytologia 58(6): 380. 1985.

Distribution: TENERIFE: Santa Úrsula, La Quinta, alongside dirt tracks, rather numerous in two localities, 11.12.2018, F. Verloove 13410 (BR, ORT). <https://observation.org/observation/205255016/>

Notes: This New World weed is increasingly naturalized in Europe (Martini and Scholz 1998). In the Canary Islands it was first reported from La Palma (Otto et al. 2008). Since 2012 it is also known from two localities in Gran Canaria (Marrero Rodríguez 2019). In December 2018 *Eragrostis virescens* was observed in relative abundance along dirt tracks in Santa Úrsula, for the first time in Tenerife.

This species looks fully naturalized. A further spread in similar habitats in the area can be expected.

***Eucalyptus camaldulensis* subsp. *arida* Brooker & McDonald, 2009**

Nomenclature:

Austral. Syst. Bot. 22(4): 273. 2009.

Distribution: TENERIFE: Santiago del Teide, center of the village, steep slope of abandoned quarry, planted and freely escaping, 14.01.2019, F. Verloove 13447 (BR). <https://observation.org/observation/205256471/>

Notes: *Eucalyptus camaldulensis* is commonly planted in the Canary Islands and relatively easily self-seeds. The plants that are usually seen have opercula which are strongly beaked; they belong to subsp. *camaldulensis*. In Gran Canaria subsp. *arida* has also been recorded, although only as a planted tree. It is often found in mixed plantations with subsp. *camaldulensis* (Marrero Rodríguez 2016). It is distinguished by the mature buds that have an obtuse to rounded, not beaked operculum.

In Santiago del Teide in Tenerife these two subspecies are mass-planted in and on the verge of an abandoned quarry. Both are reproducing from seed.

***Eucalyptus cladocalyx* F. Muell., 1852 [1853]**

Nomenclature:

F. Muell., Linnaea 25(4): 388–389. 1852 [1853].

Distribution: TENERIFE: Santa Úrsula, La Quinta, rough ground, mass-planted and escaping, 15.01.2017, *F. Verloove* 12753 (BR); Santa Úrsula, La Quinta, Eucalyptus woodland, planted and escaping, 08.12.2018, *F. Verloove* 13413 (BR). <https://observation.org/observation/205256523/>; <https://observation.org/observation/205256567/>

Notes: This species is native to parts of southeastern South Australia. It is frequently introduced elsewhere, either as an ornamental tree, a windbreak or for timber plantations. It easily escapes from many of these plantings and is now regarded as an environmental weed in other parts of Australia. It has also naturalized overseas in southern Africa, California (U.S.A.) and Hawaii.

In the Canary Islands this tree is known to be cultivated as was shown in an extensive overview of the genus for Gran Canaria (Marrero Rodríguez 2016). However, sexual reproduction was not yet observed for that species. In Santa Úrsula (La Quinta) in Tenerife *Eucalyptus cladocalyx* is mass-planted in several localities. Saplings have been recorded on several occasions.

***Euryops chrysanthemoides* (DC.) Nordenstam, 1968.**

Nomenclature:

(DC.) Nordenstam, Opera Bot. 20: 365–370, f. 62C–G, 63C. 1968.

Distribution: TENERIFE: Icod de los Vinos, La Vega, TF-373 road near km 4, on top of stone (rock) wall along the road, four clumps, possibly a relic of former cultivation (?), 14.12.2019, *F. Verloove* 13724 (BR). <https://observation.org/observation/205285538/>

Notes: *Euryops chrysanthemoides* is native to the Cape Province of South Africa. It is frequently cultivated as an ornamental and easily escapes; as result it also found as a weed of roadsides, disturbed areas and urban open spaces. It is sometimes considered to be an invasive species, especially in parts of Africa where it is not native (Henderson 2002, Witt and Luke 2017). It is also weedy in for instance Australia, New Zealand and Hawaii.

In La Vega in Tenerife, scattered bushes are growing alongside the road, on top of a rock wall. This species had not been recorded before in the Canary Islands.

***Ficus elastica* Roxb. ex Hornem., 1819.**

Nomenclature:

Suppl. Hort. bot. hafn. 7. 1819.

Distribution: TENERIFE: Arona, Chayofa, barranco de la Arena S of the village, dry riverbed, a single large clone, 16.03.2016, *F. Verloove* 12457 (BR). <https://observation.org/observation/205285557/>

Notes: *Ficus elastica* is native in southeastern Asia but one of the most frequently cultivated species of the genus. It has large, glabrous and leathery leaves and reddish stipules, 10-15 cm long that cover the terminal buds. In Chayofa a single large clone grows in a dried-out ravine (Fig. 6), probably from washed-up rhizomes or garden debris.

Several species of *Ficus* have been recorded in the wild in the Canary Islands, especially *F. microcarpa* and (to a lesser extent) *F. lyrata* and *F. rubiginosa*, and these are increasing lately. *F. elastica* is reported here for the first time. Despite being commonly grown, it is only rarely observed as an escape, for instance in Florida in the United States (Wunderlin 1997). In some areas it has naturalized or even became invasive although this entirely depends on whether its specialist pollinator wasp has also been introduced to the area (Starr et al. 2003).

***Lemna minuta* Kunth, 1815 [1816].**

Nomenclature:

Nov. Gen. Spec. (quarto ed.) 1: 372. 1815 [1816].

Distribution: TENERIFE: Santa Úrsula, La Quinta, seepage area, 11.12.2018, *F. Verloove* s.c. <https://observation.org/observation/205285824/>

Notes: This American duckweed is a recent newcomer in the flora of the Canary Islands. It was first reported from several localities in Gran Canaria (Verloove 2013, Salas-Pascual and Quintana Vega 2016), subsequently also from La Palma (Otto and Verloove 2020). It is a naturalized weed that also occurs in natural habitats. Because it strongly resembles *L. minor* L. it is undoubtedly overlooked. *L. minuta* is differentiated from the latter based on the smaller fronds (even the biggest are less than 3 mm long) with a single, slightly raised vein.

In La Quinta a small population was discovered in a seepage zone in 2018. It should be looked for elsewhere in the northern part of the island.

Lemna minuta is a well-known transformer species throughout the invaded range (Paolacci et al. 2018).

***Lippia alba* (Mill.) N.E. Br. ex Britton & P. Wilson, 1925.**

Nomenclature:

Bot. Porto Rico 6(1): 141. 1925.

Distribution: TENERIFE: Guía de Isora, Playa de San Juan, SE of the village, shallow, dry barranco, a single shrub, relic of former plantation (?), 14.01.2019, *F. Verloove* 13438 (BR); Santa Cruz de Tenerife, San Andrés, Barranco de San Andrés, dry gravelly riverbed, two young shrubs, self-sown, 22.12.2019, *F. Verloove* 13738 (BR).

<https://observation.org/observation/205285935/>; <https://observation.org/observation/205286074/>

Notes: *Lippia alba* is native to southern Texas (U.S.A.), Mexico, the Caribbean, Central America, and South America. It is widely cultivated as an ornamental or for its aromatic foliage. In places where it was formerly introduced it relatively easily naturalizes, for instance in Australia (Munir 1993). In Europe it was recently reported for the first time from a single locality in Portugal (Verloove and Alves 2016).

In 2019 this species was recorded in two localities in Tenerife. In Playa de San Juan a single shrub grows in a very shallow, dried-out ravine. It may be a mere relic of former cultivation there. In a second locality, in San Andrés, however, two young, obviously self-sown shrubs were found growing on the gravel of the dry riverbed (Fig. 7).

***Malvastrum corchorifolium* (Desr.) Britton ex Small, 1913.**

Nomenclature:

Fl. Miami 119. 1913.

Distribution: TENERIFE: Granadilla de Abona, El Médano, beach, barranco de los Calderones, from sewage sludge, a single individual, 14.11.2016, *F. Verloove* 12680 (BR, LPA).

<https://observation.org/observation/205286307/>

Notes: This species is native to Mexico, the West Indies, Central America and Florida in the U.S.A. It is weedy and often encountered elsewhere in the subtropics, for instance in Africa (Ghana) but also in the Canary Islands. In La Palma, it was reported for the first time by Santos Guerra et al. (2013) whereas Kunkel (1968) already reported it from San Lorenzo in Gran Canaria a long time ago. The latter occurrence was apparently overlooked by Acebes Ginovés et al. (2010).

The *Malvastrum* weed usually seen in the Canary Islands, for instance in Gran Canaria where it is relatively frequent and much increasing lately, is *M. coromandelianum* (L.) Garcke. None of these two species have been reported before from Tenerife. In El Médano a single individual of *M. corchorifolium* was observed in November 2016. The plant grew on the beach in a cumulation area of sewage sludge, along with tomatoes and other plants that germinated from the sewage water. It was no longer seen in the intervening years.

In general appearance *Malvastrum corchorifolium* resembles *M. coromandelianum* a lot (it probably is a hybrid of it). However, its mature carpels are muticous or have at most a blunt apical protuberance less than 0.2 mm long, whereas in the latter mericarps are clearly aristate.

Pavonia sepioides* Fryxell & Krapov., 1999.*Nomenclature:**

Fl. Neotrop., Monogr. 76: 221–222, f. 73. 1999.

Distribution: TENERIFE: Puerto de la Cruz, Calle Camelia, foot of fence of Hotel Botanico, ca. 10-15 individuals, 15.12.2019, F. Verloove 13733 (BR). <https://observation.org/observation/205286366/>

Notes: *Pavonia sepioides* naturally occurs in Bolivia, Colombia, Ecuador and Venezuela. It was only recently described (Fryxell 1999), as a segregate of *P. sepium* A. St.-Hil., a more southern species with main distribution in Brazil and neighboring territories. These two species as well as *P. spinifex* (L.) Cav. belong to *Pavonia* sect. *Urenoideae* A. St.-Hil. and are not easily distinguished. They are sometimes grown as ornamentals, especially in the subtropics and tropics, although probably not frequently so (none is mentioned, for instance, by Bird 2011 but see Huxley (1999)). Some are also found as weeds (Holm et al. 1979, Randall 2017). *P. spinifex* is probably most widely grown (e.g. Sánchez de Lorenzo Cáceres 2000). It has large flowers 40-70 mm across and ovate leaves with cordate bases (Fryxell 1999), unlike the plants recently found in Tenerife. These have narrowly lanceolate leaves and much smaller flowers. They correspond with the species formerly named *P. sepium*. Fryxell (1999) segregated plants from northern South America as *P. sepioides*. With the exception of the presence of a few hair tufts in the axils of the nerves of the lower leaf surface in *P. sepium*, these two species largely overlap in all further character states. These hair tufts are not seen in the Tenerife plant material and for this reason they are here ascribed to *P. sepioides*. It probably is not a coincidence that escaped and locally naturalized plants in tropical East Africa (Uganda) were also attributed to that species (Verdcourt and Mwachala 2009). From Portugal '*P. sepium*' was recently reported by Almeida de and Freitas (2012). The species escaped from a Botanic Garden in Lisbon and exhibits invasive behavior (Forte et al. 2011).

The provenance of the plants observed in Tenerife is unknown. They grow relatively near to the Botanic Garden and on the verge of a hotel garden (foot of fence, covered in *Pyrostegia venusta*) and may have escaped from one of these (Fig. 8). On the other hand, the fruits are long-spined and retrorsely barbed and therefore easily attach to clothing and fur. As a result, species of section *Urenoideae* have been introduced widely to foreign regions (see also Fryxell and Hill 2015 for *P. spinifex*).

Pittosporum tobira* (Thunb.) W.T. Aiton, 1811.*Nomenclature:**

Hortus Kew. (2nd ed.) 2: 27. 1811.

Distribution: TENERIFE: Tegueste, El Socorro, TF-154 road, as epiphyte on *Phoenix*, rather numerous individuals in several trees on both sides of the road, 18.01.2019, *F. Verloove* 13445 (BR). <https://observation.org/observation/205286418/>

Notes: A native of East Asia, this shrub is frequently cultivated as an ornamental in warm-temperate areas across the world. Its seeds are embedded in a resinous pulp which probably explains why the species is frequently dispersed by berry-eating birds. As a result, *Pittosporum tobira* is regularly found as an epiphyte on palm trees, just like species of the genera *Ficus* or *Schefflera*.

In El Socorro in Tenerife bird-sown shrubs of this species have been observed since several years on *Phoenix* trunks.

From the same genus, the Australian shrub *Pittosporum undulatum* Vent. is an invasive species in Gran Canaria and Tenerife (Acebes Ginovés et al. 2010), especially in the evergreen laurel forest. However, it is also sometimes observed as an epiphyte on *Phoenix*, for instance in Puerto de la Cruz.

***Plerandra elegantissima* (Veitch ex Mast.) Lowry, G.M. Plunkett & Frodin, 2013.**

Nomenclature:

Brittonia 65: 49. 2013.

Syn.: *Schefflera elegantissima* (Veitch ex Mast.) Lowry & Frodin, Baileya 23: 9. 1989; *Dizygotheca elegantissima* (Veitch ex Mast.) R. Vig. & Guillaumin, Notul. Syst. (Paris) 2: 258. 1912; *Aralia elegantissima* Veitch ex Mast., Gard. Chron. 1873: 782. 1873.

Distribution: TENERIFE: Puerto de la Cruz, in front of Hotel Masaru, in planter, a sapling ca. 150 cm tall, self-sown, 14.12.2019, *F. Verloove* 13727 (BR). <https://observation.org/observation/205286440/>

Notes: This species was initially described as a species of *Aralia* L., then transferred to *Schefflera* J.R. Forst. & G. Forst. However, molecular studies (Lowry II et al. 2013) have demonstrated that *Schefflera*, the largest genus of the Araliaceae family, is grossly polyphyletic. The species belonging to the Melanesian clade are preferably accommodated in a single genus, *Plerandra* A. Gray. It counts 32 species that are restricted to Melanesia (Fiji, New Caledonia, New Guinea, the Solomon Islands and Vanuatu). A few species are commonly cultivated as ornamentals, especially *P. elegantissima*.

Plerandra elegantissima is endemic to New Caledonia but widely cultivated for its decorative juvenile foliage that is palmately divided, formed by 7-12 almost linear leaflets with grossly and irregularly dentate margins. Like other species of *Schefflera* s.l. fruits are drupaceous and thus consumed by berry-eating birds. As a result, ornamental species of this genus are easily dispersed; they are particularly frequent as epiphytes on palm trees, also in the Canary Islands, where *S. actinophylla* (Endl.)

Harms and *S. arboricola* (Hayata) Merr. are increasingly recorded (e.g. Verloove and Reyes-Betancort 2011, Verloove 2017, Otto and Verloove 2018). Up to now, *P. elegantissima* had only been recorded from La Palma in the Canary Islands (Otto and Verloove 2016). It was observed to freely reproduce from seed in ornamental gardens and public green. In Tenerife it was seen in comparable circumstances in December 2019.

Plerandra elegantissima is an emerging invasive weed in some parts of the world, for instance in South Africa (several online references).

***Populus ×canadensis* Moench, 1785**

Nomenclature:

Verz. Ausländ. Bäume 81. 1785.

Distribution: TENERIFE: Puerto de la Cruz, barranco San Felipe, dry riverbed, a single individual (self-sown), 16.01.2017, *F. Verloove* 12752 (BR); Puerto de la Cruz, barranco San Felipe, dry gravelly riverbed, a single self-sown tree ca. 400 cm tall (also planted nearby), 17.12.2019, *F. Verloove* 12752 (BR). <https://observation.org/observation/205286560/>

Notes: *Populus ×canadensis* is a hybrid of *P. nigra* L. and *P. deltoides* Marshall. It occurs naturally in areas where both species grow sympatrically but is also very widely grown as an ornamental tree. It rather grows in temperate climates and is thus less frequently seen in the Canary Islands.

In Puerto de la Cruz in Tenerife trees planted on the verge of a ravine in an urban environment have reproduced from seed. This hybrid had not been reported before from the Canary Islands (Acebes Ginovés et al. 2010).

***Psidium guajava* L., 1753**

Nomenclature:

Sp. Pl. 1: 470. 1753.

Distribution: TENERIFE: Santa Cruz de Tenerife, barranco Santos at Calle de Diego Crosa, dry riverbed, scattered individuals, 13.11.2016, *F. Verloove* 12684 (BR). <https://observation.org/observation/205286613/>

Notes: *Psidium guajava*, a native of Central and South America, is widely cultivated in tropical and subtropical regions around the world for its edible fruits (guava). It easily escapes wherever introduced. In the Canary Islands it was first reported from various localities in La Palma (Santos Guerra and Reyes-Betancort 2014), shortly afterwards also from Gran Canaria (Verloove 2017). It is mostly found in dried-out riverbeds where it germinates from waste water. In such circumstances it was also recently found for the first time in Tenerife.

***Pyrostegia venusta* (Ker Gawler) Miers, 1863.**

Nomenclature:

Proc. Roy. Hort. Soc. London 3: 188. 1863.

Distribution: TENERIFE: Santa Úrsula, La Quinta, barranco de la Plaza, shrubland adjacent to barranco, at Hotel La Quinta, escape (also elsewhere in the area), 15.01.2017, F. Verloove 12729 (BR). <https://observation.org/observation/205286641/>

Notes: *Pyrostegia venusta* is native to Brazil but widely cultivated in the tropics and subtropics as an ornamental vine. It is very expansive and readily colonizes vast surfaces. Although seed-set is rarely observed outside the native range, the species is increasingly considered an unwanted, invasive environmental weed that quickly spreads as a result of clonal growth. It is now classified as an invasive weed in many areas, for instance in Florida in the U.S.A. (Hutchinson 2005).

Pyrostegia venusta grows in several places in La Quinta in Tenerife (Fig. 9). It is found in vacant lots in residential areas and on the verge of a ravine. It probably arose from discarded garden waste. It had not been recorded before in the Canary Islands. Since it is very commonly grown as an ornamental there, it will doubtlessly increase in the near future and may well establish permanent colonies.

***Ruellia dipteracanthus* (Nees) Hemsl., 1882.**

Nomenclature:

Biol. Cent.-Amer., Bot. 2(12): 504. 1882.

Syn.: *R. squarrosa* (Fenzl) Cufod., Bailey 17: 40 1970.

Distribution: TENERIFE: Santa Cruz de Tenerife, Igueste de San Andrés, Carretera de Igueste de San Andrés N of the Barranco de San Andrés, foot of steep rocks, small population, 23.12.2019, F. Verloove 13742 (BR). <https://observation.org/observation/205286653/>

Notes: *Ruellia dipteracanthus* is a native of Mexico but regularly grown as a garden ornamental in warm-temperate and subtropical regions in the world, often under several other names, including *R. squarrosa* and *R. bremeri*. It differs from similar species based largely on its low, sprawling stature and smaller leaves. This species is increasingly naturalized outside its native range, for instance in the southern U.S.A. (Keith et al. 2017) or in Australia where it is a minor or emerging environmental weed in southeastern Queensland and a potential environmental weed or "sleeper weed" in other parts of Australia. It is also considered an invasive species in Japan (Mito and Uesugi 2004).

In December 2019 a small population of this species was found sprawling at the foot of a damp, steep rock alongside the road (Fig. 10). The plants most likely escaped from a nearby garden although it was not seen as such in the surroundings.

Its identification was not straightforward, also because it is not included in garden flora accounts such as Percy (2011) and Huxley (1999). *Ruellia dipteracanthus* is a low, creeping plant with ovate to narrowly-ovate leaves that are hairy. Its lavender tubular flowers have five small narrow sepals (10-16 mm long) and fruits are glabrous.

This and several other species of *Ruellia* are often invasive environmental weeds in the subtropics. These species seed profusely and also reproduce vegetatively via creeping underground stems and stem segments.

***Soleirolia soleirolii* (Req.) Dandy, 1965.**

Nomenclature:

Feddes Repert. 70: 4. 1965.

Distribution: TENERIFE: Puerto de la Cruz, in front of Hotel Botánico, irrigated lawn, in dense patches but only locally (not seen elsewhere in the area), 15.12.2019, F. Verloove 13728 (BR). <https://observation.org/observation/205286667/>

Notes: *Soleirolia soleirolii* is native to islands in the western Mediterranean region, but it has been introduced and cultivated nearly worldwide as an ornamental plant. It is a troublesome perennial lawn weed, especially in damp places, and can form large patches.

In Macaronesia it is naturalized in the Azores and Madeira but it had not been recorded before from the Canary Islands (Acebes Ginovés et al. 2010).

A naturalized population was found in an irrigated lawn in Puerto de la Cruz in Tenerife in December 2019. This is a very discrete species that is easily overlooked. It may be present in similar habitats elsewhere in the Canary Islands.

***Thunbergia alata* Bojer ex Sims, 1825.**

Nomenclature:

Bot. Mag. 52: pl. 2591. 1825.

Distribution: TENERIFE: San Cristóbal de La Laguna, Tejina, Barranco de Las Cuevas at Calle Jose Rodríguez Amador, slope of ravine, a dense stand but only very locally, 09.01.2017, F. Verloove 12712 (BR). <https://observation.org/observation/205286762/>

Notes: This East African species is commonly grown as an ornamental vine and easily escapes from cultivation. It is widely naturalized in warm-temperate and subtropical areas across the world, to such an extent that it is often considered to be an

environmental weed. It was recently reported for the first time in the Canary Islands from several localities in La Palma, where it is naturalized now (Otto and Verloove 2018).

In January 2017 it was also observed for the first time in Tenerife, in a ravine in an urban environment in Tejina (Fig. 11).

***Urochloa subquadripara* (Trin.) R.D. Webster, 1987.**

Nomenclature:

Austral. Paniceae 252. 1987.

Distribution: TENERIFE: Arona, Palm-Mar, Calle Estornino, plantation weed, scattered individuals, 18.12.2018, *F. Verloove* 13428 (BR). <https://observation.org/observation/205286784/>

Notes: *Urochloa subquadripara* is probable native to tropical Asia and Australia. It is introduced into the tropics worldwide and naturalized in many parts of them, often as an undesirable weed. It was recently reported for the first time from the Canary Islands. In La Palma the species is naturalized very locally in an irrigated lawn (Otto and Verloove 2020). In December 2018 it was found as a weed in an ornamental plantation in Palm-Mar in Tenerife.

***Wigandia kunthii* Choisy, 1833.**

Nomenclature:

Mém. Soc. Phys. Genève 6: 116. 1833.

Syn. (?): *W. urens* (Ruiz & Pav.) Kunth, Nov. Gen. Sp. (quarto ed.) 3: 127. 1818 [1819].

Distribution: TENERIFE: Los Silos, Barranco de Las Guardias, close to TF 42, roadside, 18.11.2016, *F. Verloove* 12689 (BR). <https://observation.org/observation/205287066/>

Notes: This species, a native of the Caribbean and Central America, is sometimes grown as an ornamental, just like *Wigandia caracasana* Kunth. The latter is locally naturalized in the northern parts of Tenerife, especially near Puerto de la Cruz. It is increasing lately. *W. kunthii* was also recorded in Tenerife in 2016, apparently for the first time in the Canary Islands. A small colony is naturalized in the valley of Barranco de Las Guardias, in Los Silos.

Wigandia kunthii is much reminiscent of *W. caracasana*. Both mostly differ in the type of indumentum: the former is a shaggy-strigous plant, with pungent stinging long bristles up to 4 mm long and green lower leaf surfaces, whereas the latter has a shorter, glandular-viscid pubescence and paler lower leaf surfaces (Anonymous 2015). Although strikingly different in leaf indumentum, plants with more or less intermediate

characters have been observed in Puerto de la Cruz. It is unclear whether these represent hybrids or rather indicate a weak separation between these two species.

Wigandia kunthii is sometimes considered conspecific with the Peruvian species *W. urens* (Ruiz & Pav.) Kunth. These two species have the characteristic stinging hairs in common, hence the specific epithet of the latter ('urens').

According to Anonymous (2015) *Wigandia kunthii* is the most widely naturalized species of the genus. In Italy both are locally naturalized, like in Tenerife.

Miscellaneous records on selected species

Balanites aegyptiaca Delile, 1813

Nomenclature:

Descr. Egypte, Hist. Nat. 2: 221. 1813.

Distribution: TENERIFE: Arona (Guargacho), Calle Guayadeque, vacant lot in village, bare open ground, a single self-sown individual (not seen planted in the area), 24 June 2016, F. Verloove 12504 (BR). <https://observation.org/observation/204907350/>

Notes: *Balanites aegyptiaca* is a small tree native to much of Africa and parts of the Middle East. It naturally occurs in Morocco, relatively near to the Canary Islands. It is sometimes grown for its edible fruit or, less often, as a medicinal plant.

In 2011 a single young individual of this species was found near to the port area in Los Cristianos in Tenerife (Sánchez de Lorenzo Cáceres 2012). The species was most likely introduced by African illegal immigrants. In the intervening years the same individual was also repeatedly seen by the author.

In 2016 a further young individual of *Balanites aegyptiaca* was observed on rough ground in another village in the southern part of Tenerife, Guargacho. The introduction vector in this locality is unknown.

Callistemon viminalis (Gaertn.) Cheel, 1830.

Nomenclature:

Hort. Brit. 197. 1830.

Distribution: TENERIFE: Arona, Cho, TF-655 between Guaza and Las Chafiras, roadside, crack in concrete, a single self-sown shrub, 19.01.2019, F. Verloove 13436 (BR); Santa Cruz de Tenerife, Tabaiba Baja, Av. Maritima, foot of steep rock, at least five individuals, self-sown, 20.12.2019, F. Verloove 13737 (BR). <https://observation.org/observation/205287115/>; <https://observation.org/observation/205287128/>

Notes: This Australian ornamental shrub was recently reported for the first time in the wild from the Canary Islands (Gran Canaria and Tenerife) (Verloove 2017). Since then it was repeatedly observed again, especially in Gran Canaria, and a future, local naturalization seems inevitable. *Callistemon viminalis* produces large quantities of very tiny seeds that are easily wind-dispersed. Wherever germination conditions are suitable the species can reproduce from seed, for instance in barrancos close to urbanizations.

In recent years it was recorded again in two new localities in Tenerife.

***Grevillea robusta* A. Cunn. ex R.Br., 1830**

Nomenclature:

Suppl. Prodr. Fl. Nov. Holl.: 24. 1830.

Distribution: TENERIFE: Puerto de la Cruz, Barranco Martiánez, in the depth of the ravine, at least five self-sown, up to 300 cm tall saplings, 15.12.2019, *F. Verloove* 13734 (BR). <https://observation.org/observation/205287159/>

Notes: This Australian tree is much planted in the Canary Islands and sometimes seen self-sown in the immediate vicinity of planted individuals. It has been reported as such from Gran Canaria, La Palma and Tenerife (Kunkel 1976, Otto and Verloove 2016, Verloove 2017, Verloove et al. 2018). All these records were considered to be ephemeral.

However, in the Barranco Martiánez ravine in Puerto de la Cruz an incipient naturalization process was recently observed.

***Passiflora caerulea* L., 1753**

Nomenclature:

Sp. Pl. 2: 959–960. 1753.

Distribution: TENERIFE: Santa Cruz de Tenerife, Barranco Santos close to La Ermita, dry riverbed, a single individual, 13.11.2016, *F. Verloove* 12690 (BR). <https://observation.org/observation/205287176/>

Notes: This South American species (Argentina, Brazil, Paraguay and Uruguay) is one of the most widely grown passion fruits. It easily escapes and subsequently naturalizes. Although several species of this genus have been reported from the Canary Islands, *Passiflora caerulea* apparently is lacking in contemporary flora lists and databases (e.g. Acebes Ginovés et al. 2010). Its local escape, however, already was reported at the beginning of the 20th century. Lindinger (1926) found it in La Laguna where it was reproducing clonally and considered to be harmful. In recent times, its presence in this area was confirmed: the species was found in the dry river bed of the Santos ravine in Santa Cruz de Tenerife in November 2016.

Passiflora caerulea is easily separated from the other species found as escapes in the Canary Islands, even at the vegetative stage, by its large, almost reniform stipules.

Acknowledgements

Tom Daniels (California, U.S.A.) is thanked for confirming the identity of *Ruellia*. Águedo Marrero (Las Palmas de Gran Canaria) helped with the identification of *Eucalyptus* and Francisco María Vázquez Pardo (Badajoz, Spain) with the identification of *Brachychiton*.

References

- Acebes Ginovés JR, León Arencibia MC, Rodríguez Navarro ML, et al. (2010) Pteridophyta, Spermatophyta. In: Arechavaleta M, Rodríguez S, Zurita N, García A (Eds) Lista de especies silvestres de Canarias. Hongos, plantas y animales terrestres. Gobierno de Canarias, La Laguna, 119-172 pp.
- Almeida de J, Freitas H (2012) Exotic flora of continental Portugal – a new assessment. *Boccone* 24: 231-237. URL: <https://revistas.ucm.es/index.php/BOCM/article/view/BOCM0606110117A>
- Angiosperm Phylogeny Group - APG (2016) An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants. *Botanical Journal of the Linnean Society* 181: 1-20. <https://doi.org/10.1111/boj.12385>
- Banco de Datos de Biodiversidad de Canarias (2020) <https://www.biodiversidadcanarias.es/>. Accessed on: 2020-12-31.
- Barone R (2003) Notas corológicas sobre dos especies de *Atriplex* L. (Chenopodiaceae) en Tenerife, Islas Canarias. *Botánica Macaronésica* 24: 161-164. URL: http://www.jardincanario.org/documents/4788378/4795571/Barone_2003.pdf/26ee2dc7-1c43-4cc9-abbf-10ef2ce86355
- Bird S (2011) *Pavonia*. In: Cullen J, Knees SG, Cubey HS, Shaw JMH (Eds) *The European garden flora*. 2nd Edition, Vol. 4. Cambridge University Press, Cambridge, 74-75 pp.
- Brouillet L (2006) *Bellis*. In: *Flora of North America Editorial Committee (Ed.) Flora of North America North of Mexico*. 20. Oxford University Press, New York, 22-23 pp.
- Buch C (1833) Catalogue des Plantes spontanées qui ont été jusqu'ici trouvées dans les îles Canaries. *Archives de botanique* 1: 481-508.
- Cecchi L, Selvi F (2015) *Hydrophyllaceae*. *Flora Critica d'Italia*. Fondazione per la Flora Italiana, Firenze, 20 pp. URL: <http://floraitaliana.it/Media?c=f88bb76b-e545-49e2-9b69-b4bc938a6599>
- Euro+Med PlantBase (2020) Euro+Med PlantBase - the information resource for Euro-Mediterranean plant diversity. <http://ww2.bgbm.org/Euro-PlusMed>. Accessed on: 2020-12-31.
- Expósito AB, Siverio A, Bermejo LA, Sobrino-Vesperinas E (2018) Checklist of alien plant species in a natural protected area: Anaga Rural Park (Tenerife, Canary Islands); effect of human infrastructures on their abundance. *Plant Ecology and Evolution* 151: 142-152. <https://doi.org/10.5091/plecevo.2018.1330>

- Forte P, Matos A, Vasconcelos T (2011) Gestão das plantas invasoras – planos de prevenção, controle, condicionamento. XI Simpósio da Associação Ibero-Macaronésica de Jardins Botânicos, Horta (Faial, Açores), 15-19 June 2011.
- Fryxell P (1999) *Pavonia* Cavanilles (Malvaceae). In: Zanoni T (Ed.) Flora Neotropica. 76. New York Botanical Garden Press, New York.
- Fryxell P, Hill S (2015) *Pavonia*. In: Flora of North America Editorial Committee (Ed.) Flora of North America North of Mexico. 6. Oxford University Press, New York, 305-307 pp.
- Galanos J (2015) The alien flora of terrestrial and marine ecosystems of Rodos island (SE Aegean), Greece. Willdenowia 45 (2): 261-278. <https://doi.org/10.3372/wi.45.45211>
- Gardner R, de Lange P (1996) Naturalized plants in New Zealand: new or noteworthy records. Auckland Botanical Society Journal 51 (2): 74-78. URL: https://bts.nzpcn.org.nz/site/assets/files/20315/auck_1996_51_2_74-78.pdf
- Gardner R (1998) Streamsides of false heather (*Cuphea hyssopifolia*, Lythraceae). Auckland Botanical Society Journal 53 (2): 65-65. URL: https://bts.nzpcn.org.nz/site/assets/files/20379/auck_1998_53_2_65.pdf
- Henderson L (2002) Problem plants in Ngorongoro Conservation Area. Final Report to the NCAA.
- Henderson L (2007) Invasive, naturalized and casual alien plants in southern Africa: a summary based on the Southern African Plant Invaders Atlas (SAPIA). Bothalia 37 (2): 215-248. <https://doi.org/10.4102/abc.v37i2.322>
- Hohenester A, Welss W (1993) Exkursionsflora für die Kanarischen Inseln. Verlag Eugen Ulmer, Stuttgart.
- Holm L, Pancho J, Herberger J, Plucknett D (1979) A geographical atlas of world weeds. John Wiley & Sons, New York.
- Hutchinson J (2005) Flame Vine (*Pyrostegia venusta*): An invasive plant of mature scrub and potentially other natural habitats in Florida. Wildland Weeds 8: 7-11. URL: <https://www.se-epcc.org/wildlandweeds/pdf/Fall2005-Hutchinson-pp7-11.pdf>
- Huxley A (1999) The new Royal Horticultural Society dictionary of gardening. Macmillan, London.
- Keith E, Wright J, Godwin W (2017) Naturalized occurrence of *Ruellia dipteracanthus* (Acanthaceae) in the USA. Phytoneuron 2017 (57): 1-3. URL: <http://www.phytoneuron.net/2017Phytoneuron/57PhytoN-RuelliaDipteracanthus.pdf>
- Kunkel G (1968) Nuevas plantas para la flora Canaria. Cuadernos de Botánica Canaria 3: 57-58. URL: <https://mdc.ulpgc.es/cdm/singleitem/collection/cbotanica/id/87/rec/8>
- Kunkel G (1976) Excursions botaniques sur Ténériffe (Iles Canaries). Commentaire floristique. Saussurea 7: 21-31.
- Lindinger K (1926) Beiträge zur Kenntnis von Vegetation und Flora der kanarischen Inseln. Abhandlungen aus dem Gebiet der Auslandskunde 21: 142-350. URL: <https://bibdigital.rjb.csic.es/records/item/15616-beitrag-zur-kenntnis-von-vegetation-und-flora-der-kanarischen-inseln?offset=8>
- Lowry II P, Plunkett G, Frodin D (2013) Revision of *Plerandra* A. Gray (Araliaceae). I. A synopsis of the genus with an expanded circumscription and a new infrageneric classification. Brittonia 65: 42-61. <https://doi.org/10.1007/s12228-012-9260-2>
- Luque G, Bellard C, Bertelsmeier C, Bonnaud E, Genovesi P, Simberloff D, Courchamp F (2014) The 100th of the world's worst invasive alien species. Biological Invasions 16 (5): 981-985. <https://doi.org/10.1007/s10530-013-0561-5>

- Marrero Rodríguez Á (2016) Eucaliptos en Gran Canaria, identificación y corología. Hacia una reseña histórica. Botánica Macaronésica 29: 91-137. URL: <https://mdc.ulpgc.es/utills/getfile/collection/botmaca/id/279/filename/281.pdf>
- Marrero Rodríguez Á (2019) Adiciones corológicas a la flora vascular de gran canaria, especies xenófitas, ocasionales o potenciales invasoras. Botánica Macaronésica 30: 121-142. URL: <https://mdc.ulpgc.es/cdm/singleitem/collection/botmaca/id/293/rec/98>
- Martini F, Scholz H (1998) *Eragrostis virescens* J. Presl (Poaceae), a new alien species for the Italian flora. Willdenowia 28: 59-63. <https://doi.org/10.3372/wi.28.2805>
- Maslin B, Ho B, Sun H, Bai L (2019) Revision of *Senegalia* in China, and notes on introduced species of *Acacia*, *Acaciella*, *Senegalia* and *Vachellia* (Leguminosae: Mimosoideae). Plant Diversity 41 (6): 353-480. <https://doi.org/10.1016/j.pld.2019.09.001>
- Miller JT, Murphy DJ, Brown GK, Richardson DM, González-Orozco C (2011) The evolution and phylogenetic placement of invasive Australian *Acacia* species. Diversity and Distributions 17 (5): 848-860. <https://doi.org/10.1111/j.1472-4642.2011.00780.x>
- Mito T, Uesugi T (2004) Invasive alien species in Japan: The Status Quo and the new regulation for prevention of their adverse effects. Global Environmental Research 8 (2): 171-191. URL: https://www.researchgate.net/publication/228845223_Invasive_alien_species_in_Japan_The_status_quo_and_the_new_regulation_for_prevention_of_their_adverse_effects
- Munir A (1993) A taxonomic revision of the genus *Lippia* [Houst. ex] Linn. (Verbenaceae) in Australia. Journal of the Adelaide Botanic Gardens 15 (2): 129-145.
- Otto R, Scholz H, Scholz S (2008) Supplements to the flora of the Canary Islands, Spain: Poaceae. Willdenowia 38: 491-496. <https://doi.org/10.3372/wi.38.38209>
- Otto R, Verloove F (2016) New xenophytes from La Palma (Canary Islands, Spain), with emphasis on naturalized and (potentially) invasive species. Collectanea Botanica 35 <https://doi.org/10.3989/collectbot.2016.v35.001>
- Otto R, Verloove F (2018) New xenophytes from La Palma (Canary Islands, Spain), with emphasis on naturalized and (potentially) invasive species – Part 2. Collectanea Botanica 37 <https://doi.org/10.3989/collectbot.2018.v37.005>
- Otto R, Verloove F (2020) New xenophytes from La Palma (Canary Islands, Spain), with emphasis on naturalized and (potentially) invasive species – Part 3. Collectanea Botanica 39 <https://doi.org/10.3989/collectbot.2020.v39.002>
- Paolacci S, Harrison S, Jansen MAK (2018) The invasive duckweed *Lemna minuta* Kunth displays a different light utilisation strategy than native *Lemna minor* Linnaeus. Aquatic Botany 146: 8-14. <https://doi.org/10.1016/j.aquabot.2018.01.002>
- Percy D (2011) *Ruellia*. In: Cullen J, Knees SG, Cubey HS, Shaw JMH (Eds) The European garden flora. 2nd Editio, Vol. 5. Cambridge University Press, Cambridge, 254-255 pp.
- Randall R (2017) A global compendium of weeds. 3th Edition. Department of Agriculture and Food, Western Australia, Perth.
- Salas-Pascual M, Quintana Vega G (2016) *Salvinia molesta* D. S. Mitch. (Salvinaceae), nueva cita para Canarias y España. Botánica Macaronésica 29: 73-81. URL: <https://dialnet.unirioja.es/servlet/articulo?codigo=5781294>
- Sampson JF, Byrne M (2012) Genetic diversity and multiple origins of polyploid *Atriplex nummularia* Lindl. (Chenopodiaceae). Biological Journal of the Linnean Society 105 (1): 218-230. <https://doi.org/10.1111/j.1095-8312.2011.01787.x>
- Sánchez de Lorenzo Cáceres J (2000) Malvaceae. In: Sánchez de Lorenzo Cáceres J (Ed.) Flora ornamental Española, Cactaceae-Cucurbitaceae. 2. Mundi-Prensa, Madrid.

- Sánchez de Lorenzo Cáceres J (2012) Sobre la presencia de *Balanites aegyptiaca* (L.) Del. (Zygophyllaceae) en Tenerife, Islas Canarias. *Bouteloua* 10: 82-84.
- Santos Guerra A, Reyes Betancort JA, Padrón Mederos MA, Mesa Coello R (2013) Plantas poco o nada conocidas de la flora vascular silvestre de las Islas Canarias. *Botanica Complutensis* 37: 99-108. https://doi.org/10.5209/rev_BOCM.2013.v37.42274
- Santos Guerra A, Reyes-Betancort J (2014) Nuevas adiciones y citas de interés para la flora autóctona de las islas Canarias. *Vieraea* 42: 249-258. URL: <https://dialnet.unirioja.es/servlet/articulo?codigo=4985475>
- Scafidi F, Di Gristina E, Domina G (2016) Euro+Med-Checklist Notulae, 6: *Brachychiton discolor* F. Muell., *Brachychiton diversifolius* R. Br. *Willdenowia* 46 (3): 423-442. <https://doi.org/10.3372/wi.46.46310>
- Starr F, Starr K, Loope L (2003) *Ficus elastica*: Indian rubber tree. http://www.hear.org/starr/hiplants/reports/pdf/ficus_elastica.pdf. Accessed on: 2020-12-31.
- Strother J (2015) *Brachychiton*. In: Flora of North America Editorial Committee (Ed.) Flora of North America North of Mexico. 6. Oxford University Press, New York, 189-190 pp.
- Sunardi S, Titiek S (2017) Invasion of *Acacia decurrens* Willd. after eruption of Mount Merapi, Indonesia. *Biotropia* 24 (1): 35-46. <https://doi.org/10.11598/btb.2017.24.1.524>
- Thiers B (2020) Index Herbariorum. <http://sweetgum.nybg.org/ih>. Accessed on: 2020-12-31.
- Tison J, de Foucault B (2014) Flora Gallica, Flore de France. Editions Biotope, Mèze.
- Uludağ A, Aksoy N, Yazlık A, Arslan ZF, Yazmış E, Üremiş I, Cossu T, Groom Q, Pergl J, Pyšek P, Brundu G (2017) Alien flora of Turkey: checklist, taxonomic composition and ecological attributes. *Neobiota* 35: 61-85. <https://doi.org/10.3897/neobiota.35.12460>
- Vázquez Pardo F, García Alonso D, Guerra Barrena M, Blanco Salas J, Márquez García F (2016) Aportaciones a la xenoflora de Extremadura. *Folia Botanica Extremadurensis* 10: 137-147.
- Verdcourt B, Mwachala G (2009) Malvaceae. In: Beentje H, Ghazanfar S (Eds) Flora of Tropical East Africa. Royal Botanic Gardens, Kew, 170 pp.
- Verloove F, Reyes-Betancort J (2011) Additions to the flora of Tenerife (Canary Islands, Spain). *Collectanea Botanica* 30: 63-78. <https://doi.org/10.3989/collectbot.2011.v30.007>
- Verloove F (2013) New xenophytes from Gran Canaria (Canary Islands, Spain), with emphasis on naturalized and (potentially) invasive species. *Collectanea Botanica* 32: 59-82. URL: <https://dialnet.unirioja.es/servlet/articulo?codigo=4981289>
- Verloove F, Guiggi A (2013) Some new xenophytes from Fuerteventura (Canary Islands, Spain). *Bouteloua* 13: 38-42. URL: <https://dialnet.unirioja.es/servlet/articulo?codigo=4128121>
- Verloove F, Alves P (2016) New vascular plant records for the western part of the Iberian Peninsula (Portugal and Spain). *Folia Botanica Extremadurensis* 10: 5-23.
- Verloove F (2017) New xenophytes from the Canary Islands (Gran Canaria and Tenerife; Spain). *Acta Botanica Croatica* 76 (2): 120-131. <https://doi.org/10.1515/botcro-2017-0013>
- Verloove F, Ojeda-Land E, Smith GF, Guiggi A, Reyes-Betancort JA, Samarín C, González Hernández A, Barone R (2017) New records of naturalised and invasive cacti (Cactaceae) from Gran Canaria and Tenerife, Canary Islands, Spain. *Bradleya* 35: 58-79. <https://doi.org/10.25223/brad.n35.2017.a6>

- Verloove F, Salas-Pascual M, Marrero Rodríguez Á (2018) New records of alien plants for the flora of Gran Canaria (Canary Islands, Spain). *Flora Mediterranea* 28: 119-135. <https://doi.org/10.7320/FIMedit28.119>
- Verloove F, Thiede J, Marrero Rodríguez Á, Salas-Pascual M, Reyes-Betancort J, Ojeda-Land E, Smith G (2019) A synopsis of feral *Agave* and *Furcraea* (Agavaceae, Asparagaceae s. lat.) in the Canary Islands (Spain). *Plant Ecology and Evolution* 152 (3): 470-498. <https://doi.org/10.5091/plecevo.2019.1634>
- Verloove F, Déniz Suárez E, Salas Pascual M (2020) New records of non-native vascular plants in Gran Canaria (Spain, Canary Islands). *Flora Mediterranea* 30: 121-136. <https://doi.org/10.7320/FIMedit30.121>
- Walker DJ, Moñino I, González E, Frayssinet N, Correal E (2005) Determination of ploidy and nuclear DNA content in populations of *Atriplex halimus* (Chenopodiaceae). *Botanical Journal of the Linnean Society* 147 (4): 441-448. <https://doi.org/10.1111/j.1095-8339.2004.00379.x>
- Witt A, Luke Q (2017) Guide to the naturalized and invasive plants of Eastern Africa. CABI, Wallingford. <https://doi.org/10.1079/9781786392107.0000>
- Wunderlin R (1997) Moraceae. In: *Flora of North America* Editorial Committee (Ed.) *Flora of North America North of Mexico*. 3. Oxford University Press, New York, 388-399 pp.



Figure 1.

Acacia mearnsii, Tegueste, January 2019. Compared with *A. dealbata*, this species has a green, shiny foliage and cream flowers.



Figure 2.

Brachychiton diversifolius, Adeje, epiphytic on *Phoenix*, November 2016. Leaf bases are cordate in this species.



Figure 3.

Caesalpinia pulcherrima, Adeje, January 2017.



Figure 4.

Coccoloba uvifera, flowering and fruiting in Puerto de Santiago, December 2019.



Figure 5.

Ensete ventricosum, Las Casas de la Cumbre, January 2017.



Figure 6.

Ficus elastica, Chayofa, March 2016.



Figure 7.

Lippia alba, San Andrés, December 2019.



Figure 8.

Pavonia sepioides, Puerto de la Cruz, December 2019.



Figure 9.

Pyrostegia venusta, La Quinta, January 2017.



Figure 10.

Ruellia dipteracanthus, Igueste de San Andrés, December 2019.



Figure 11.

Thunbergia alata, Tejina, January 2017.