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Tulipa gesneriana (*Liliaceae*), new casual alien species in Spain

Abstract

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Tulipa gesneriana (*Liliaceae*) has recently been found as casual alien in the Alicante province (E of Spain). It is the first locality of this species which grows wild in Spain in semi-natural, disturbed grasslands, similarly to other geophytes such as *Hyacinthus orientalis* or S*ternbergia lutea*.

Key words: *Tulipa*, xenophytes, Iberian Peninsula.

Introduction

During one of our field studies on the flora of Alicante (SE of Spain), we located a small population of *Tulipa* with large red flowers of clear artificial origin. Before this discovery, there was only one autochthonous species in Spain of *Tulipa*, with yellow flowers, called *T. sylvestris* subsp. *australis* (Link) Pamp., with North-Western Mediterranean distribution (Serra 2007).

Material and methods

For the georeferencing of this population, the GPS of a smartphone was used. The information was embedded in the ©OruxMaps program and the coordinates were contrasted with the orthophoto of the Generalitat Valenciana viewer (https://visor.gva.es) and offered in 1 km^2 UTM grid cell and coordenates x, y in the ETRS89 Datum.

The nomenclature of the mentioned taxa follows that adopted in Güemes (2013), while the biogeographic and bioclimatic data follow Rivas Martínez & al. (2007) and Serra (2007). The cited material is found in the herbaria MA (Thiers 2021+) and LSH (private herbarium of one of the authors).

Results and discussion

A bibliographic review has been carried out to find out which non-native species of the genus *Tulipa* have been mentioned previously in Spain. In Flora Iberica (Güemes 2013) mentions some ornamental species, although Güemes considers that they have always been present in gardens. Of the three species he cites, *T. clusiana* DC. has white tepals with a pink central line and linear or linear-lanceolate leaves 1-2 cm wide, while the other two (*T. gesneriana* L. and *T. agenensis* DC.) have reddish tepals (sometimes of other colors) and lanceolate or oblong-lanceolate leaves up to 8 cm (Grey-Wilson & Mathew 1980, 1982; Pignatti 2017).

This plant is a bulbous geophyte that has red tepals, the interior and exterior of similar size, 5.5 × 4–4.5 cm, obovate, with a black spot at the base bordered with yellow, and oblanceolate leaves up to 30 × 7 cm, glabrous. With these characters we must assign the Alicante population to *T. gesneriana* since all the tepals are of a similar length while in *T. agenensis* they are unequal, the internal ones shorter and narrower (Grey-Wilson & Mathew 1982).

Tulipa gesneriana L., Sp. Pl.: 306. 1753
= *T. planifolia* Jord. in Ann. Soc. Linn. Lyon sér. 2, 5: 13. 1858
= *T. didieri* Jord., Observ. Pl. Nouv. 1: 34. 1846
= *T. hortensis* Gaertn., Fruct. Sem. Pl. 1: 64. 1788
= *T. strangulata* Reboul, Nonnul. Sp. Tulip. Not.: 6. 1822

The first reference to the presence of tulips grown in Spain is probably due to Abu I-Jayr, who in his work *Umdat al-tabib*, from the 11th or 12th centuries, would reflect their use in the gardens of Al-Andalus, S from Spain (Hernández Bermejo & García Sánchez 2009). Other later authors mention them but never growing spontaneously (Clusius 1576; Willkomm & Lange 1862; Lázaro Ibiza 1920; Bolòs & Vigo 1994; Güemes 2013).

Numerous forms and cultivars of this taxon have been described in Europe as independent species but are currently considered synonymous with *T. gesneriana* (Raamsdonk & Vries 1995; Zonneveld 2009; Veldekamp & Zonneveld 2012; Govaerts 2021). This is the case of *T. didieri* or *T. planifolia*, binomen under which these plants have recently been mentioned in France (Tison & De Foucault 2014), while in Italy the presence of *T. gesneriana* is recognized (Pignatti 2017; Galasso & al. 2018; Domina & al. 2018).

Observation: SPAIN, ALICANTE: (Benilloba), Barranc d'Agustí, 30SYH2687, (726672, 4287257), 500 m, 5 April 2021, *L. Serra 12754 & A. Bort*, LSH 14385, MA.

It appears in grasslands of *Festuco-Brometea erecti* Br.-Bl. & Tüxen ex Br.-Bl. 1949 highly nitrified on a slope of a small ravine, 420 m from the nearest houses, under subhumid ombrotype and mesomediterranean thermotype in the Alcoyan-Dianic subsector (Setabensean Sector, Balearic-Catalan-Provençal Province), together with *Brachypodium phoenicoides* (L.) Roem. & Schult., *Brassica fruticulosa* Cirillo, *Bryonia dioica* Jacq., *Galium aparine* L., *Geranium purpureum* Vill., *Mercurialis tomentosa* L., and *Rubus ulmifolius* Schott.

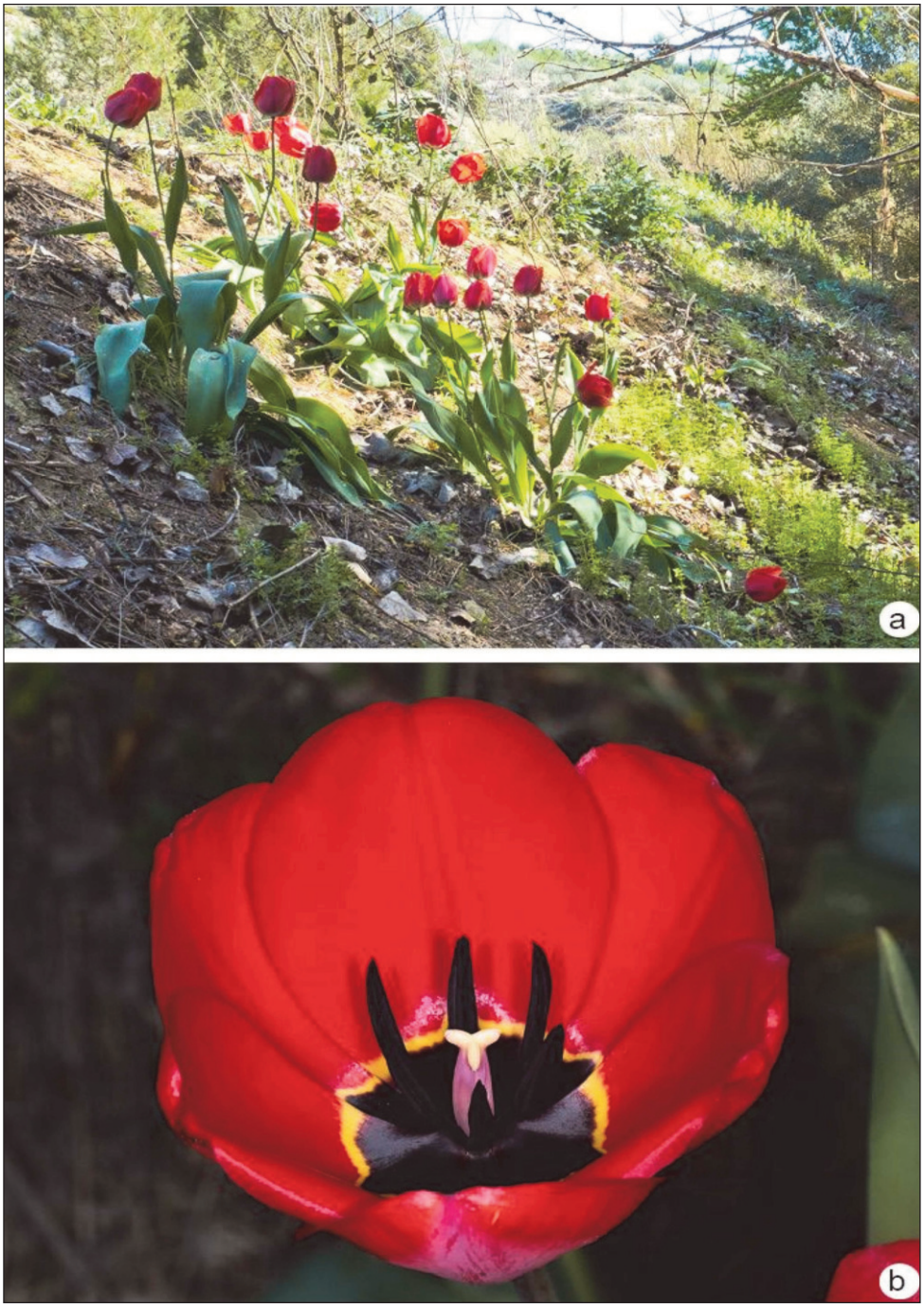

Fig. 1. *Tulipa gesneriana*. Benilloba, Barrac d'Agustí, 5, April 2021: **a)** the studied population, **b)** detail of flower, photos by L. Serra.

The found population consists of 6 well-developed and flowered specimens (Fig. 1). It does not seem that it has a significant colonization capacity, but it will be necessary to observe in the future if the population remains stable or ends up disappearing. It must have its origin from plants grown in the vicinity, since it is very close to the Frainós river and the town of Benilloba. It is a similar case to that of other geophytes that we have recently located naturalized in nearby areas such as *Sternbergia lutea* (L.) Spreng. or *Hyacinthus orientalis* L. (Serra & al. 2018).

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References

Bolòs, O. de & Vigo, J. 2001: Flora dels Països Catalans, **4.** – Barcelona.

Clusius, C. 1576: Rariorum aliquot stirpium per Hispanias observatarum Historia. – Antwerpen.

Domina, G., Galasso, G., Bartolucci, F. & Guarino, R. 2018: Ellenberg Indicator Values for the vascular flora alien to Italy. – Fl. Medit. **28:** 53-61. https://doi.org/10.7320/FlMedit28.053

Galasso, G., Conti, F., Peruzzi, L., Ardenghi, N. M. G., Banfi, E., Celesti-Grapow, L., Albano, A., Alessandrini, A., Bacchetta, G., Ballelli, S., Bandini Mazzanti, M., Barberis, G., Bernardo, L., Blasi, C., Bouvet, D., Bovio, M., Cecchi, L., Del Guacchio, E., Domina, G., Fascetti, S., Gallo, L., Gubellini, L., Guiggi, A., Iamonico, D., Iberite, M., Jiménez-Mejías, P., Lattanzi, E., Marchetti, D., Martinetto, E., Masin, R. R., Medagli, P., Passalacqua, N. G., Peccenini, S., Pennesi, R., Pierini, B., Podda, L., Poldini, L., Prosser, F., Raimondo, F. M., Roma-Marzio, F., Rosati, L., Santangelo, A., Scoppola, A., Scortegagna, S., Selvaggi, A., Selvi, F., Soldano, A., Stinca, A., Wagensommer, R. P., Wilhalm, T. & Bartolucci, F. 2018: An updated checklist of the vascular flora alien to Italy. – Pl. Biosyst. **152(3):** 556-592. https://doi.org/10.1080/11263504.2018.1441197

Govaerts, R. H. A. 2021: World checklist of selected plant families, Kew. – http://apps.kew.org/wcsp/qsearch.do [Last accessed 20.4.2022]

Grey-Wilson, C. & Mathew, B. 1980: *Tulipa* – Pp. 28-31 in: Tutin, T. G., Heywood, V. H., Burges, N. A., Moore, D. M., Valentine, D. H., Walters, S. M. & Webb, D. A. (eds), Flora Europaea, **5.** – Cambridge.

— & — 1982: Bulbosas. Una guía de identificación de las plantas bulbosas de Europa. – Barcelona.

Güemes, J. 2013: *Tulipa.* – Pp. 74-80 in: Rico, E., Crespo, M. B., Quintanar, A., Herrero, A. & Aedo, C. (eds), Flora iberica, **20.** – Madrid.

Hernández Bermejo, E. & García Sánchez, E. 2009: Tulips: An Ornamental Crop in the Andalusian Middle Ages. – Econ. Bot. **63(1):** 60-66. https://doi.org/10.1007/s12231-008-9070-3

Lázaro Ibiza, B. 1920: Botánica descriptiva. Compendio de la flora española. Estudio de las plantas que viven espontáneamente en España y de las más frecuentemente cultivadas que tienen aplicaciones en Medicina, Agricultura, Industria y Horticultura, ed.3ª, **3.** – Madrid.

Pignatti, S. 2017: Flora d'Italia, 2 º ed, **1.** – Milano.

Raamsdonk, L. W. D. van & Vries, T. de 1995: Species relationships and taxonomy in *Tulipa* subg. *Tulipa* (*Liliaceae*). – Pl. Syst. Evol. **195:** 13-44. https://doi.org/10.1007/BF00982313

Rivas Martínez, S., Asensi, A., Díez Garretas, B., Molero, J., Valle, F., Cano, E., Costa, M., López, M. L., Díaz, T. E., Prieto, J. A. F., Llorens, L., Arco, M. J., Fernández, F., Sánchez Mata, D., Penas Merino, A., Masalles, R. M., Ladero, M., Amor, A., Izco, J., Amigo, J., Loidi, J., Molina

Abril, J. A., Navarro, G., Cantó, P., Alcaraz, F., Báscones, J. C., & Soriano, P. 2007: Mapa de series, geoseries y geopermaseries de vegetación de España. – Itinera Geobot. **17:** 5-436.

Serra, L. 2007: Estudio crítico de la flora vascular de la provincia de Alicante: aspectos nomenclaturales, biogeográficos y de conservación. – Ruizia **19:** 1-1414.

—, Aragoneses García, J., Belda Antolí, A. & Vives, M. 2018: Dos geófitos nuevos para la provincia de Alicante. – Fl. Montiberica **71:** 58-60.

Thiers, B. 2021: Index Herbariorum: A global directory of public herbaria and associated staff - New York. [Continuously updated] – http://sweetgum.nybg.org/science/ih/ [Last accessed 20/4/2022]

Tison, J.-M. & De Foucault, B. 2014: Flora Gallica. Flore de France. – Mèze.

Veldekamp, J. F. & Zonneveld, B. J. M. 2012: The infrageneric nomenclature of *Tulipa* L. – Pl. Syst. Evol. **298:** 87-92. https://doi.org/10.1007/s00606-011-0525-0

Willkomm, M. & Lange, J. 1862: Prodromus florae hispanicae seu synopsis methodica omnium plantarum in Hispania sponte nascentium vel frequentius cultarum quae innotuerunt, **1.** – Stuttgart.

Zonneveld, B. J. M. 2009: The systematic value of nuclear genome size for "all" species of *Tulipa* L. (*Liliaceae*). – Pl. Syst. Evol. **281:** 217-245. https://doi.org/10.1007/s00606-009-0203-7

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