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A critical form of *Celtis* tree (*Ulmaceae*) occurring in Sicily

Abstract

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The morphological variability of the Sicilian population of *Celtis australis* is examined. On the basis of leaf and branching characters, recurrent in various trees growing both in natural and urban environment, a new variety is recognized and described, indicated as *Celtis australis* var. *panormitana*. The most significant differential characters and the ecology of the new taxon are reported. Finally, the taxonomic affinities with the two other conspecific taxa are recalled. At the current state of knowledge the new variety is endemic to Sicily.

Key words: Taxonomy, dendrological flora, new variety, endemism, Italy.

Introduction

According to Giardina & al. (2007), and in agreement with other authors studying the Italian flora (Pignatti 2017; Bartolucci & al. 2018), to date, the genus *Celtis* in Sicily is represented by only two species: *Celtis australis* L. and *C. tournefortii* DC. The former is reported with only the nominal subspecies; the latter with two different subspecies: respectively *C. tournefortii* subsp. *aetnensis* (Guss.) Raimondo & Schicchi and *C. tournefortii* subsp. *asperrima* (Lojac.) Raimondo & Schicchi.

C. australis, in the European flora is represented both by *C. asutralis* subsp. *australis* and *C. australis* subsp. *caucasica* (Willd.) C. C. Towns., often treated at specific level sub *C. caucasica* Willd. (Tutin 1964). Recent observations of this subspecies have revealed very close similarities of the Caucasian population with forms of *C. australis* growing in Sicily and so far recognized with the same binomial.These specimens are widely distributed in the plain of Palermo, where they can be found both in semi-natural and cultivated environments (citrus groves and city green spaces created after the building activity that developed at the expense of the citrus gardens that surrounded the old town of Palermo, after the last world war).

The studies on the urban and peri-urban green of this city, which in the same period of time has tripled the built space, allowed to appreciate a widespread presence of this form of *Celtis* considered similar to *C. australis* subsp. *caucasica*. However, due to its presence in the urban and peri-urban area of Palermo, together with the typical form of the species, it is taxonomically distinguished from *C. australis* subsp. *caucasica*, giving it the varietal rank better defined below.

Materials and Methods

The variability of the population of *Celtis australis* occurring in the central-western Tyrrhenian sector of Sicily, between Messina and Trapani (Caronia, Polizzi, Palermo, Segesta, Erice, Trapani) is analyzed.

The critical materials - collected both in Palermo, in anthropized and semi-natural environments, as well as in natural environments in the nearby Caronie – were compared with the authors' personal collections partly kept at the SAF herbarium of the Department of Agricultural, Food and Forestry Sciences (SAAF) and partly at PAL-Gr. These materials come both from natural habitat in the Boschi di Caronia (Nebrodi Mountains), where the species occurs widely, taking part in the forest structure of the extensive cork oak woods (*Quercus suber* L.) among the most important in Sicily, and in urban and peri-urban areas.

The material, taxonomically critical and related to *C. australis* subsp. *caucasica*, was compared with material from the South Caucasus (Raimondo in PAL-Gr).

Results and Discussion

The taxonomic analysis of the Sicilian population of *Celtis australis* subsp. *australis* allows to distinguish and describe the following variety.

Celtis australis var. ***panormitana*** Raimondo & Venturella **var. nov.**

Diagnosis: differs from the nominal variety by the globular, regular, drooping foliage, smaller and narrower leaves, elongated, gradually attenuated and acuminated.

Type – Holotypus: Sicilia, Palermo, nel giardino di Villa Mary adiacente il Parco della Favorita, su suolo rosso mediterraneo, ca. 40 m (s.l.m), 20.11.2020, *Raimondo* (PAL-Gr) – *Isotypi* in FI and PAL.

Description: Tree 8-10 m tall, with globular, regular crown. Branches dense, slender, drooping (Fig. 1a-b). Leaves with variable asymmetrical, acuminate lanceolate lamina, 3-6 cm long, 2.5-3.5 cm wide (Fig. 1e).

Distribution and Ecology: Piana di Palermo (Fig. 2), on clayey-loamy soils (Mediterranean red soils), both in Mediterranean forest scrub and in urban spaces spared by building constructions, as well as in the surviving citrus groves, almost always together with the nominal variety (*C. australis* var. *australis*).

Taxonomic remarks

From a taxonomic point of view the new variety is similar to *C. australis* subsp. *caucasica* (Fig. 3) from which, however, differs in the shape of the leaf blade. Compared to the other Sicilian population of *C. australis* var. *australis* and with the Linnean type materials of the species for the leave morphology, the new variety besides the regular and globular shape of the crown, is distinguished by the thicker and thinner branching, the drooping branches, the smaller leaves and the narrower and longer acuminate lamina. Almost similar

Fig. 1. a) Type tree of *Celtis australis* var. *panormitana* resumed in full vegetative activity; b) The same tree in winter version; c) Typical habitus of *C. australis* var. *australis* in Bosco di Caronia; d) Trees related to the new var. *panormitana*, present together with the typical form of the species in the same Bosco di Caronia; e) Detail of a branch showing the leaf shape of the new variety; f) Detail of the leaves and fruits of plants related to var. *panormitana* found in Bosco di Caronia.

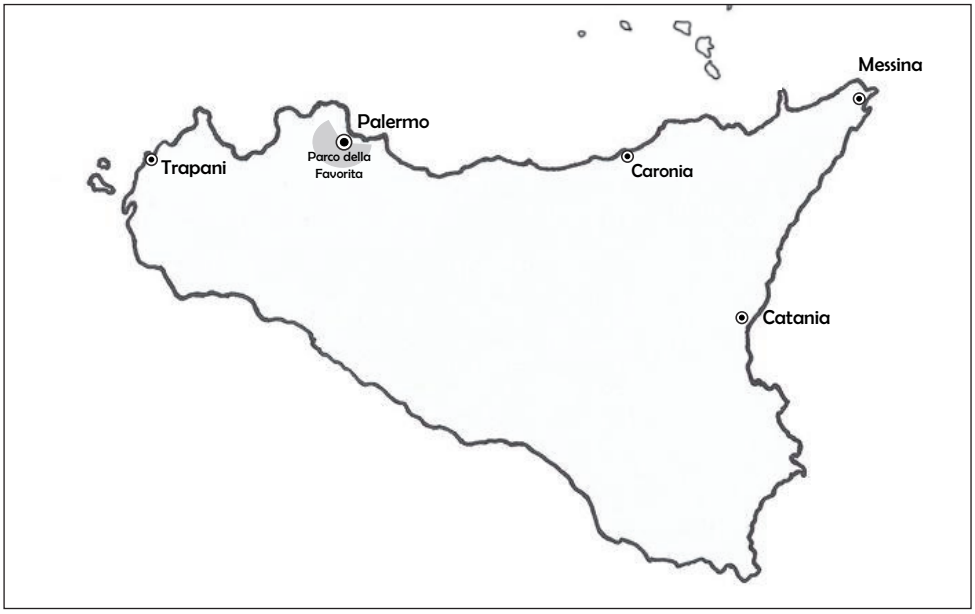

Fig. 2. Localization in Sicily of the area where the *locus classicus* of *Celtis australis* var. *panormitana* occurs.

Fig. 3. *Celtis australis* subsp. *caucasica* in Tbilisi.

characters present some plants found in nature in the Bosco di Caronia (Fig. 1d, f). Here, too, these plants coexist with trees of the same species with assurgent canopy (Fig. 1c), a character more adherent to the usual shape of the typical species.

Exsiccata

Sicily – *C. australis* var. *panormitana* Raimondo & Venturella, Nebrodi: Bosco di Caronia, versante settentrionale di Monte Pagano, 480 m (s.l.m.) ai margini della sughereta, 18.09.2019, *Raimondo* (PAL-Gr); Palermo: Parco della Favorita, su terra rossa mediterranea, 40 m (s.l.m.), 18.10.2020, *Venturella* (Herb. Dep.to SAAF); Monreale: incolti ai margini della circonvallazione, su litosuolo calcareo, 300 m (s.l.m.), 10.11.2020, *Raimondo & Venturella* (PAL-Gr).

Georgia – *C. australis* subsp. *caucasica* (Willd.) C. C. Towns, Tbilisi: nel parco del Museo Etnografico, 30.10.2017, *Raimondo* (PAL-Gr).

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