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Two new *Mimosaceae* naturalized in Italy

Abstract

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Senegalia visco (Lorentz ex Griseb.) Seigler & Ebinger and *Leucaena leucocephala* (Lam.) subsp. *glabrata* (Rose) S. Zárate (*Mimosaceae*) were found cultivated and naturalized, the former in Termini Imerese (Palermo), the latter in Agrigento and in Palermo provinces. These are the first findings in Sicily and in Italy.

Key words: Alien Flora, Sicily, *Senegalia visco*, *Leucaena leucocephala*.

Introduction

In the frame of the survey of the adventivous and naturalized flora of Sicily two new species of woody *Mimosaceae*, belonging to two different genera, both new to the Italian flora, have been found: *Senegalia visco* (Lorentz ex Griseb.) Seigler & Ebinger and *Leucaena leucocephala* subsp. *glabrata* (Rose) S. Zárate. Both taxa are small trees, highly vigorous, introduced in Sicily as ornamental plants; they are characterized also by a rich blooming and seed production.

The new findings

The descriptions below were based on material collected in Sicily. The relevant plates, from literature, are offered as an aid identification.

Senegalia visco (Lorentz ex Griseb.) Seigler & Ebinger (Fig. 1)

Small tree, up to 15 m tall, with flat or globose crown; bark brown, smooth. Young shoots glabrous or puberulent. Leaves bipinnatae 15-20 × 7-15 cm; petioles glabrous, petiolar nectary elliptical or ovate; rachis puberulent with small circular glands; pinnae 5-16 pairs, 5-20 mm long; leaflets 14-48 pairs per pinna, oblong lanceolate, 3-9 × 1-2.5 mm, sparsely puberulent. Capitula 15-20 mm in diameter, 1 to many per shoot; peduncles 15-20 mm,

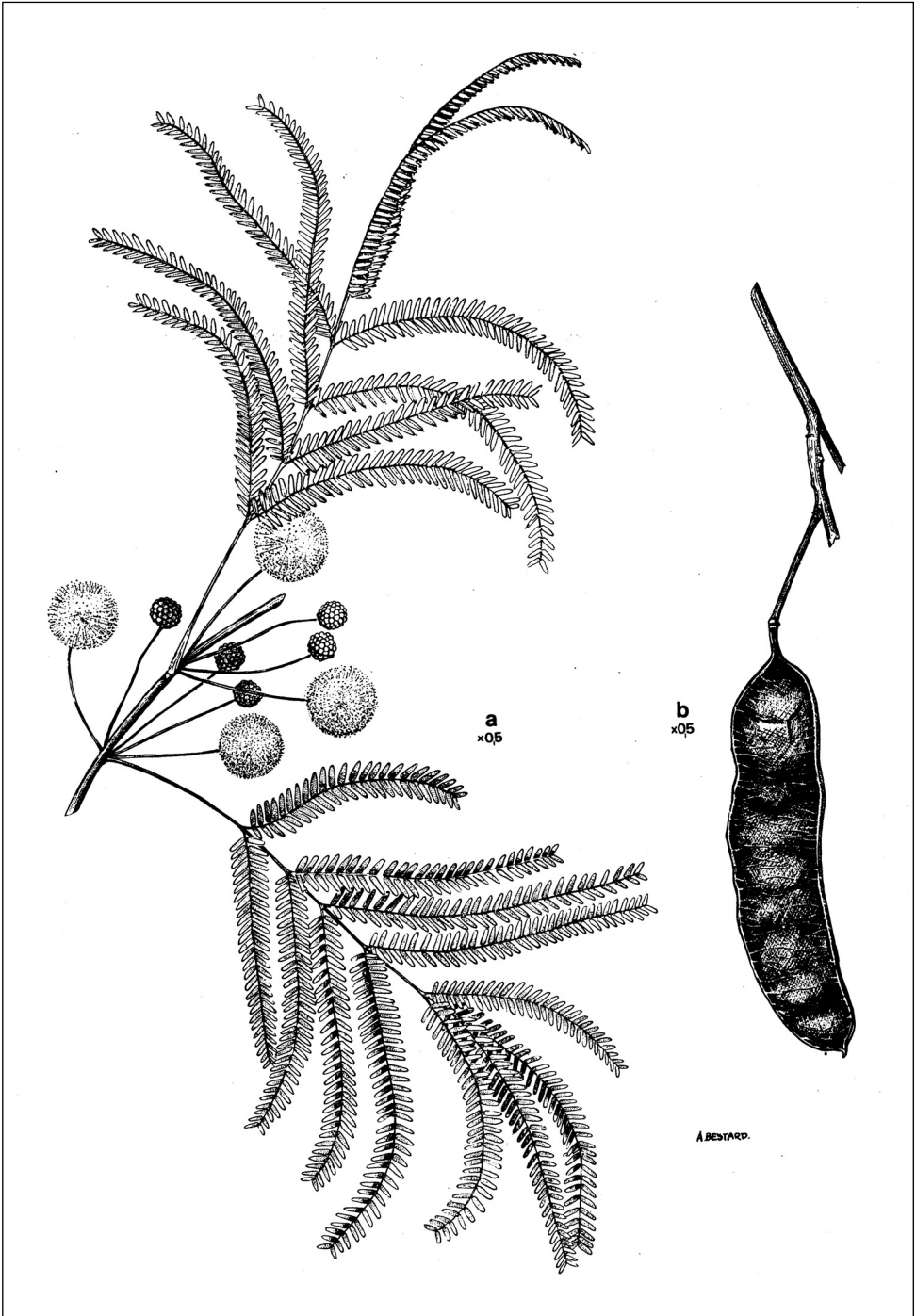


Fig. 1. *Senegalia visco* (from Burkart & al. 1987).

glabrous. Flowers yellow, sessile, subtended by linear-lanceolate bracts, 1.5-2 mm long; calyx 3-3.5 mm, 5-7 dentated; corolla 4-5 mm, 5-6 dentated; stamens 40, 7-9 mm long with glabrous anthers; ovary glabrous or hairy in the upper part. Pods 1-4 per capitulum, cartaceous, 10-17 × 1.5-2.5 cm; apex apiculated; valves light brown, reticulated. Seeds elliptical, 10-14 × 10 mm, 8-12 per pod.

The genus *Senegalia* includes 86 species in America, 69 in Africa, 43 in Asia and 2 in Australia (Maslin & al. 2003). It has recently been separated from *Acacia* by clear morphological and genetic proofs that showed the polyphyletic origin of *Acacia* and the need of split it at least in 5 different genera (Seigler & al. 2006).

Senegalia visco is native to C and NE-Argentina, its status is uncertain in Bolivia and Chile (Cialdella 1984) and is cultivated for ornament and escaped to cultivation in South Africa (Ross 1975).

This species was introduced in the Botanic Garden of Palermo between 1948 and 1953 from Antibes (France). In Sicily it is used as street tree only in Termini Imerese village, in Palermo province. In this place, several individuals have formed for some years a large population in an area of some hectares on the W slope of the Rocca di Termini Imerese (Figs. 2, 3 & 7) at 50 m a.s.l., along the hairpin bends of the panoramic street. The individuals cultivated in the highest part of the belvedere and in other places in the village are about 40 years, the older among those naturalized about 10 years.

Exsiccata:

Rocca di Termini Imerese (Palermo), along the winding road, edges of the road, 3.6.2005, F. M. Raimondo (PAL); ibidem, 22.7.2007, G. Domina (PAL).



Fig. 2. *Senegalia visco*: a) detail of inflorescence, b) detail of pod.



Fig. 3. *Senegalia visco* on the western slope of the Rocca di Termini Imerese (Palermo).

Leucaena leucocephala* subsp. *glabrata (Rose) S. Zárate (Fig. 4)

Small tree, up to 15 m tall, with open, irregular crown; bark brown, smooth. Young shoots glabrous. Leaves bipinnatae (17-) 19-25 × 12-16 cm; petioles glabrous or puberulent, petiolar nectary elliptical or ovate; rachis glabrous or puberulent; pinnae 5-8 pairs, 8-10 mm long; leaflets 15-20 pairs per pinna, oblong lanceolate, 11-15 × 3-4 mm, very sparsely ciliate along margins near the base. Capitula 18-21 mm in diameter, 2-6 per shoot; peduncles 17-20 mm, glabrous. Flowers white, sessile, subtended by peltate bracts, 2.4-3 mm long; calyx 2.3-3.2 mm, 5-dentated; corolla 4-5.6 mm, petals free; stamens 10, 7-11 mm long with hairy anthers; ovary glabrous. Pods 6-20 per capitulum, 12-19 × 1.8-2.1 cm; apex rounded with a short curled beak; valves light brown. Seeds elliptical, 7.5-8.2 × 5.5 mm, 13-18 per pod.

The genus *Leucaena* includes 22 species arboreous or shrubby, native to C America (Hughes 1998). *Leucaena leucocephala* is native to Tropical America, it is pantropically cultivated and has become naturalized and weedy in many areas (Hughes & Style 1989). It occurs in open spaces, often near the coast, in semi-natural and other ruderal and secondary or disturbed areas, sometimes also in agricultural lands. In the Mediterranean area it is known as naturalized in Portugal (K), Cyprus (K), Lebanon (K) and Israel (!). In this

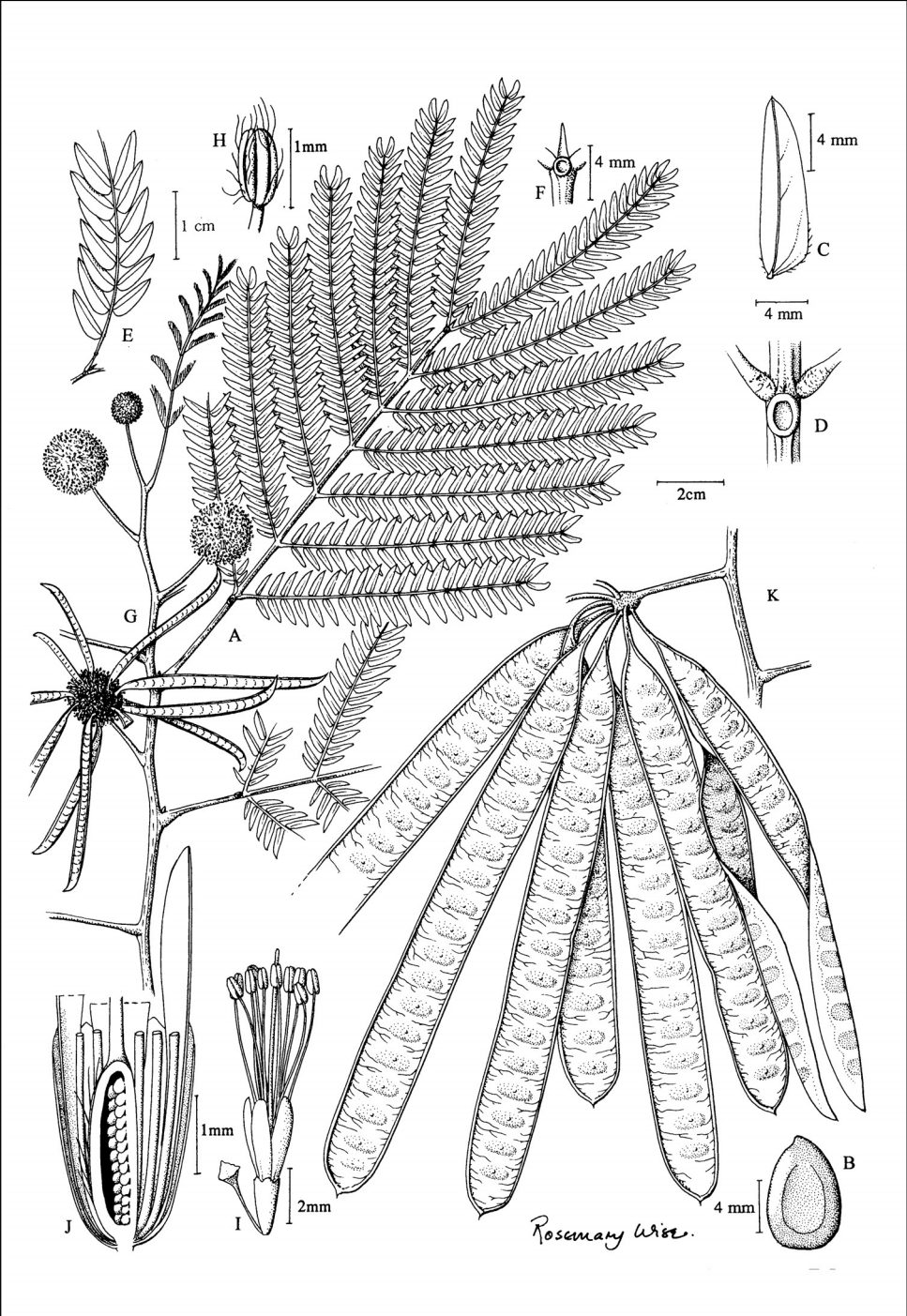


Fig. 4. *Leucaena leucocephala* subsp. *glabrata* (from Hughes 1998).



Fig. 5. *Leucaena leucocephala* in a palm plantation in Kibbutz Kfar-Ruppin, located in the Beit-Shean Valley (Jordan Valley, N-Israel).



Fig. 6. *Leucaena leucocephala* near Agrigento (Sicily) on the verge of the road.

country *Leucaena* is a dangerous weed in specialized date palm plantations (Fig. 5).

Leucaena leucocephala includes 3 subspecies: *L. leucocephala* (Lam.) de Wit subsp. *leucocephala*, *L. leucocephala* subsp. *ixtahuacana* C. E. Hughes and *L. leucocephala* subsp. *glabrata* (Rose) S. Zárate. The first two are shrubby, the third is upright arborescent. *L. leucocephala* subsp. *leucocephala* was propagated in the tropical belt during the 300 years of the Spanish colonial period, *L. leucocephala* subsp. *glabrata* has been widely introduced outside C America only in the last few decades (Hughes 1998).

Leucaena leucocephala is cultivated along the coast of Sicily both in public and private gardens. It was introduced in the Botanic Garden of Palermo in 1793 and occurs in the registers for 1820 of the Prince of Butera Botanic Garden near Palermo. In Sicily it has produced fertile seeds since its introduction being included in the 1825 *Index seminum* of the Botanic Garden of Boccadifalco (Gussone 1825).

The plants cultivated in Sicily belong to subsp. *glabrata*. This is distinguished by its larger pods and larger leaves / leaflets which are glabrous or nearly so, while subsp. *leucocephala* has dense short white pubescence on its leaves and pods.

The naturalized populations occur scattered near Agrigento (Fig. 6) and in the province of Palermo near Campofelice di Roccella and Cefalù (Fig. 7) along the coastal roads and among the citrus plantations near built-up areas.

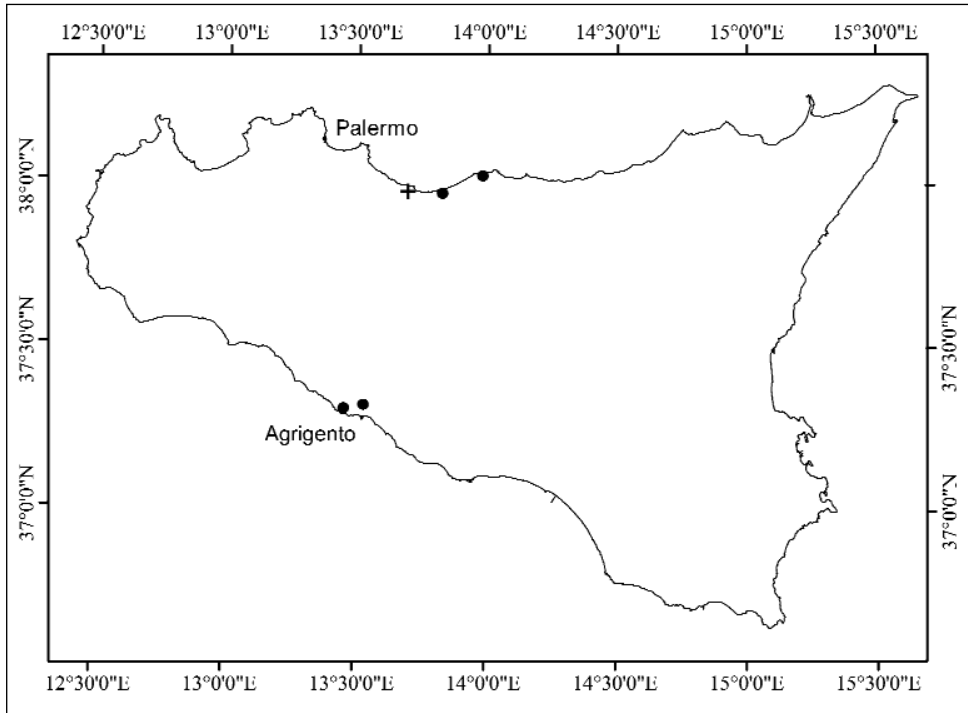


Fig. 7. Distribution of *Senegalia visco* (+) and *Leucaena leucocephala* subsp. *glabrata* (●) naturalized in Sicily.

Exsiccata:

Agrigento, s.s. n.118, along the road, wasted land, 17.06.2007, *G. Domina* (PAL); Campofelice di Roccella, near the rail station, citrus plantation, 8.7.2007, *G. Domina* (PAL).

Conclusions

Both taxa are self-compatible (Cialdella 1984, Hughes 1988), crossing pollination is done by generalist pollinators such as both small and large bees. The spreading of the species is done by seeds and lateral shoots. The former gives the possibility to seedlings to grow far from the parent plant, the latter is used to form dense monospecific populations that take the place of native vegetation.

What was observed up to now leads to consider the two *Mimosaceae* as Cultivated naturalized (Cs) high invasive in disturbed areas, according to Raimondo & al. (2005).

For this reason it is very important to follow the dynamics of these two species, in the view of a diffusion in cultivation in coastal Sicily owing to their ornamental attitude and to their rustic nature.

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