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***Phyllanthus tenellus* (Phyllanthaceae) a new alien species naturalized to Sicily, first record for Italy**

Abstract

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Phyllanthus tenellus Roxb. (Phyllanthaceae), native to Madagascar and Mauritius's Island, was found naturalized around Messina (E Sicily). This report represents the first record for Italy and the Mediterranean area.

Key words: Alien flora, Mediterranean, biogeography.

Introduction

Phyllanthus tenellus Roxb. [syn.: *Diasperus tenellus* (Roxb.) Kuntze, *Diasperus corcovadensis* (Müll. Arg.) Kuntze, *Phyllanthus brisbanicus* F. M. Bailey] is a monoecious annual herb-up to 0.2-0.5 m tall (fig. 1); branching phyllanthoid, the branches 5-15 cm long, with 10-25 leaves. Leaves broadly elliptic to obovate, (6-) 10-20 (-24) mm long, (4) 5-9 (-11) mm wide, petioles 0.5-0.8 mm long, stipules lanceolate, 0.7-1.1 mm long. Flowers in axillary cymes on the branches, lower ones with 2-3 staminate flowers and 1-2 pistillate flowers, those above with solitary pistillate flowers; staminate flowers on pedicels 0.5-1.5 mm long, calyx lobes 5, 0.4-0.7 mm long, obtuse petals 5, nectary disk 5-lobed, stamens 5, free filaments distinct; pistillate flowers on capillary pedicel (2.5-) 3-5 (-8) mm long, calyx lobes 5, 0.6-0.8 mm long, reflexed in fruit, 6 (5) oblanceolate petals, nectary disk sub-entire, styles distinct, bifid. Capsules depressed-globose, 1.7-1.9 mm in diameter, explosively dehiscent. Seeds 0,8-1 mm long, orange-brown, dorsally minutely tuberculate in longitudinal rows (Wagner & al. 1999; Webster 1999).

P. tenellus is native to Madagascar and Mauritius's Island; the species was described for the first time by Roxburgh (1832) in Flora Indica as a plant introduced from Mauritius's Island in 1802 by Captain Tennant (Roxburgh 1832). In Ethiopia *P. tenellus* is a weed in sugar cane fields (Yirefu & al. 2007). It is established and occasionally invasive also in Polynesia (Florence & al. 2010), Australia (Orchard 1994), Hawaii (Oppenheimer & Bartlett 2000), New Zealand (MacKee 1994) and Japan (Mito & Uesugi 2004).

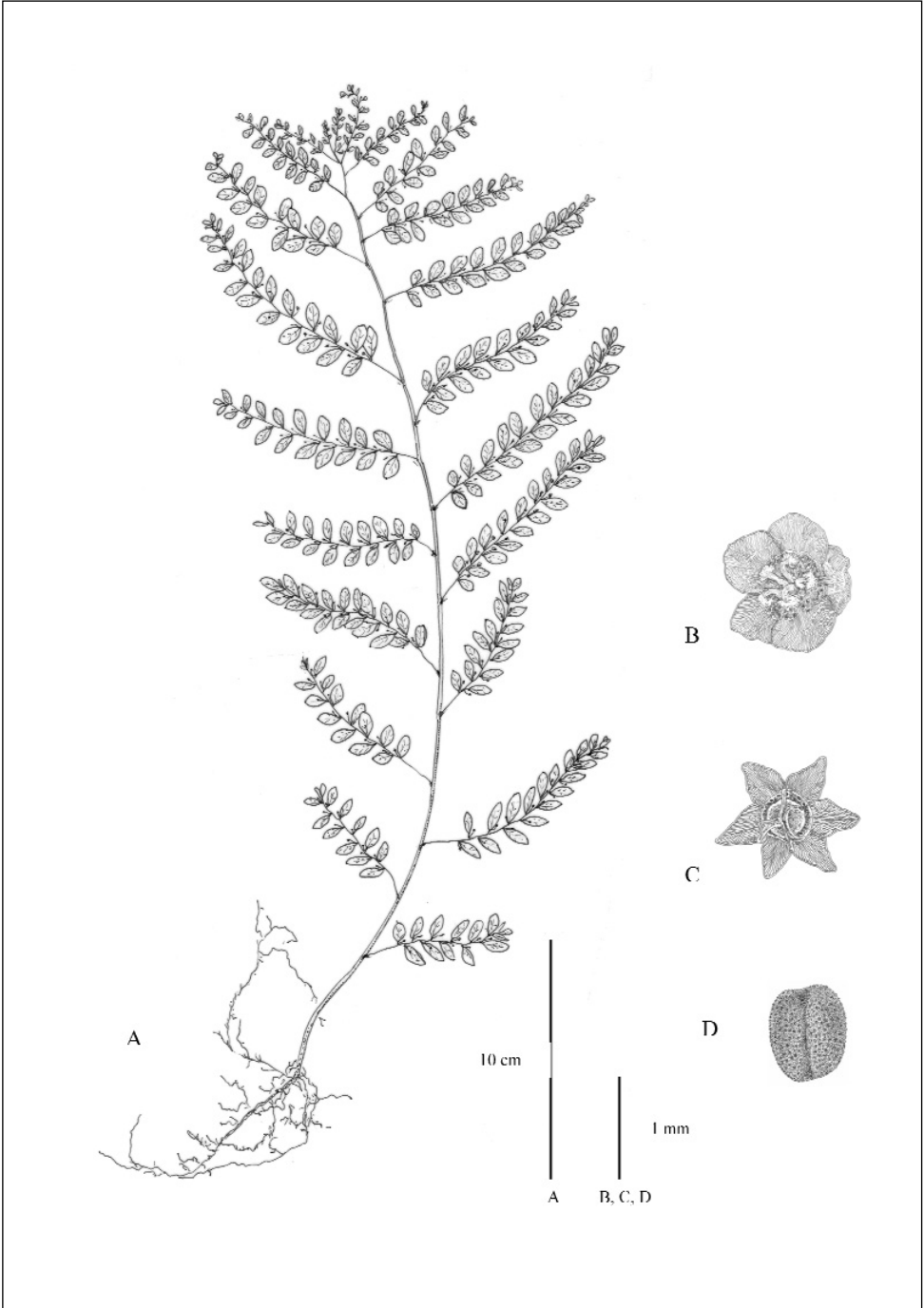


Fig. 1. *Phyllanthus tenellus*. A, habit; B, staminate flower; C, pistillate flower; D, seed (Drawing by Salvatore Casella).

At present, it is widely established as a neophyte invasive in several tropical and subtropical areas, for example in Florida (Wunderlin & Hansen 2008). Specific and powerful weed-killers were used in several country of Central America, during more than 20 years, to contrast the diffusion of this weed but no results were attained (Norcini & Aldrich 1992).

In Europe, *P. tenellus* is known as an alien species established for Azores and Madeira (DAISIE 2008). Recently, it is been detected in Canarias Islands (Padròn-Mederos & al. 2009).

P. tenellus is not reported in any Italian flora (Fiori 1925-1929; Zangheri 1976; Pignatti 1982) or recent floristic updating (Conti & al. 2005; Celesti-Grapow & al. 2009; Celesti-Grapow & al. 2010). Therefore, the Sicilian report represents the first record for Italy and the Mediterranean area.

Plants of *P. tenellus* were observed in 1992, for the first time, as weed in several pots of ornamental exotic plants in a nursery of Milazzo, near Messina, NE Sicily. It was, probably, introduced by way of exotic plants commerce. Later, few individuals were introduced unintentionally in the Botanical Garden of Messina in 1992; although they were regularly weeded, they are still present and continue to reproduce and spread thoroughly.

Our observations show that *P. tenellus* behaves as a synanthropic pluriennial species in Sicily, flowering from April to December with a continuous seed production (Fig. 2-3). Its spread and distribution is strictly linked to wet environments, as gardens and flower beds, because of its special need of moisture.



Fig. 2-3. *Phyllanthus tenellus* in flowerpots (with *Schefflera arboricola*) in a street of Messina and in the Botanical Garden of Messina (with *Parietaria judaica*, *Acanthus mollis* and *Viola odorata*).

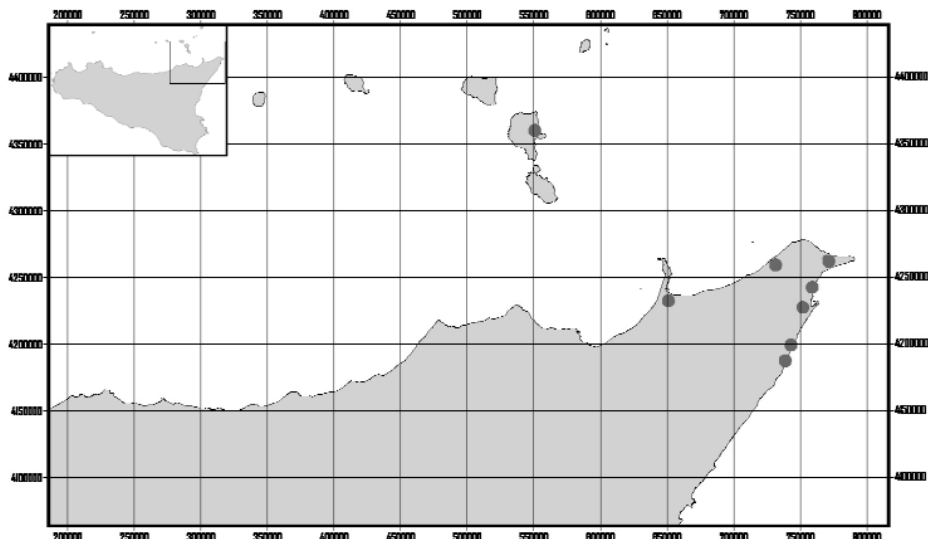


Fig. 4. Distribution of *Phyllanthus tenellus* in Sicily.

Frequent records in the area around Messina, in more than 20 years (Fig. 4), confirm that *P. tenellus* must be considered a naturalized species (Pyšek & al. 2004).

Exsiccata are deposited in *Herbaria* of Messina (MS), Palermo (PAL) and Florence (FI).

Records:

loc. Marracchia – Milazzo (Me), (UTM: 33S 521.4227), near a garden center, 15 m, Oct. 29, 1992, *Picone*; Messina Botanical Garden (Me), (UTM: 33S 547.4227), beds, 40 m, Sept. 27, 1997, *Picone*; Canneto – Lipari (Me), (UTM: 33S 496.4260), beds, 10 m, Jul. 12, 2006, *Crisafulli*; loc. Cartesiano – Salice (Me), (UTM: 33S 542.4234), beds, 130 m, Jul. 18, 2007, *Crisafulli*; State Street 114 – Mili Marina (Me), (UTM: 33S 545.4219), uncultivated areas in a nursery, 20 m, Sept. 29, 2009, *Zaccone*; strada statale n°114 – S.Margherita (Me), (UTM: 33S 544.4217), uncultivated areas within a nursery, 20 m, Oct. 02, 2009, *Zaccone*; S. Stefano Medio (Me), (UTM: 33S 442.4217), private garden, 100 m, Oct. 2, 2009, *Travagliante & Zaccone*; via delle Mura (Me), (UTM: 33S 448.4228), beds, 10 m, Nov. 3, 2009, *Parlato & Picone*; viale della Libertà - Messina (Me), (UTM: 33S 549.4230), urban flowerpots, 1 m, Oct. 08, 2010, *Crisafulli, Picone & Zaccone*; loc. Granatari – Torre Faro (Me), (UTM: 33S 555.4236), uncultivated areas within a garden center, 5 m, Oct. 18, 2010, *Zaccone*.

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