

# A first report of *Asclepias speciosa* (Asclepiadaceae) for Greece and the Balkan Peninsula

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**Abstract.** *Asclepias speciosa* was discovered for the first time in northern Greece. It has never been previously recorded in the Balkan Peninsula or even in southern Europe. A detailed description of the species, its habitat and distribution as well as conjectures on its arrival in Greece, are provided.

**Key words:** *Asclepias*, milkweeds, naturalized alien species, occurrence and distribution

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## Introduction

Milkweeds (*Asclepias* species) are so named for their milky white sap which contains alkaloids and cardenolides, complex chemicals that make the plants unpalatable to most animals. The generic name derives from the Greek god of medicine, *Aesculapios*, son of Apollo, who is reputed to be able to bring back the dead. Only one species of *Asclepias* L. has so far been reported from Greece, viz., *A. curassavica* L., the milkweed plant with brightly coloured orange-red flowers native to tropical America. *Asclepias syriaca* L. (the common milkweed) native to Canada and the U.S.A. was introduced to Europe in the 17<sup>th</sup> century (Bagi 2008). It was first cultivated for ornamental and melliferous purposes, as a potential fibre plant, for biofuel and latex production

(Follak & al. 2018). It is now an invasive species in western and central Europe and added to the list of the invasive alien species of (European) Union concern (EU 2017/1263). Although occurring in the Balkan Peninsula including Bulgaria, it has so far not been reported from Greece.

A rather similar but more tomentose-lanate plant was recently found near the Bulgarian border by some nuns of the Monastery of Timios Prodromos in Serres, northeastern Greece. It was identified by Filip Verloove as *A. speciosa* Torr. (the showy milkweed), also native to Canada and the U.S.A. The distinctive large corona which is the broadest of any American species of *Asclepias*, and the densely white-tomentose pedicels immediately distinguish *A. speciosa* from *A. syriaca*. These two species hybridize at their zone of contact in the U.S.A.

## Material and methods

The locality in northern Greece where *A. speciosa* was found has not been investigated botanically for many years. Eckhard Willing, a careful and diligent plant-collector, made a stop southwest of the village of Kapnofyto, Serron in May 2006 but did not record *Asclepias speciosa*. As his collecting routine includes a stop every 5 km, we can deduce that the species has arrived in Greece fairly recently, possibly within the last decade. Sporadic visits by Kit Tan in the late 1990s and early 2020s while on the way to Achladori in northeastern Greece did not reveal it. However, the species must have been locally established for some years along the road as there are approximately fifty individuals of various height, several fully flowering and on later visits, noted to be in fruit. As it is long-rhizomatous its spread is possibly by vegetative means. A thorough search of the area was carried out by accompanying members Sister Theofano and Elias Stoilas but no other populations were found. One can only speculate how it had been introduced other than being dumped at the roadside.

## Results and discussion

### Description of species

*Asclepias speciosa* Torr. in Ann. Lyceum Nat. Hist. New York 2: 218 (1827) (Figs. 1-3)

Nomos Serron, Eparchia Sintikis: Mt Vrontou (Lailias), 1 km from Kapnofyto on way to Achladori, gravelly roadside, 538 m, 41°17'N, 23°31'E, 18.06.2024, Sister Pachomia & al. s.n. (herb. Monastery of Timios Prodromos, Serres).

Rhizomatous perennial herb with single or few, erect, tomentose to puberulent stems 40–125 cm tall. Leaves opposite, stipulate; petioles 4–10 mm, tomentose to pilose; lamina ovate-oblong to ovate, cordate to truncate and broadest at base, entire, acute to obtuse. Inflorescence pedunculate, umbellate, 7–25-flowered. Bract caducous. Pedicels 10–20 mm, densely white-tomentose. Flowers erect or pendent. Calyx lobes ellip-

tic, 4–8 mm, acute. Corolla pale to dark purplish-pink; lobes reflexed, elliptic, 8–10 mm, acute, pilose externally; column 0.5–1 mm. Anthers connate, 2.5–3 mm, apical appendages deltoid. Corona segments pale pink to creamy white, spatulate; appendage long-attenuate, subulate, inflexed above style, glabrous. Follicles on upwardly curved pedicels, fleshy, ovoid-lanceolate, 3–10 cm, attenuate at apex, muricate, white-tomentose. Seeds numerous, ovate, c. 6 × 3.5 mm, dark reddish-brown, with marginal wing and apical tuft of white silky hairs.

Open sunny places at dampish gravelly roadsides, c. 540 m. Flowering late May to mid-June; fruiting July to August. In its native occurrence it is found in a variety of habitats both dry and moist, and on various substrates, from sea level to over 2000 m. It flowers poorly in shade.

The flowers were very fragrant and several butterflies were observed visiting for the copious nectar. The unique flower form presents a complex pollination mechanism whereby the waxy pollinia (containing the pollen) become attached to the pollinator's leg and thereby transported to another flower. The fleshy follicles split when ripe, releasing the seeds (Fig. 2C). It took more than a month for the seeds to fully mature. The seed hairs aid in wind dispersal. Milkweed floss is currently used as a hypo-allergenic filling for pillows. Ethnobotanical uses by American tribes include the stem fibers for making string, rope and a coarse cloth. The species is reported as the least toxic of all species in the genus, and the sap was used to heal wounds, removal of warts and ringworm (USDA, NRCS 1999).

The village of Kapnofyto is c. one km distant from the locality but the plant had not been cultivated there in private gardens as an ornamental or melliferous plant which could indicate possible chances of escape to the wild. There is no habitation in the direct vicinity, the Ski resort of Lailias is a 1.5 hour drive away. The nearest *Triticum* fields are half a km distant, perhaps seed had been transported with an imported sack of grain or hay. Unlike *A. syriaca*, it was not observed on arable land, only at the roadside, a disturbed site. In Lithuania which is the only country in Europe to document the occurrence of *A. speciosa* as naturalized, sexual reproduction was stated to be probably absent as





Fig. 1. *Asclepias speciosa*: A, plants at roadside; B & C, regeneration by rhizomes.





Fig. 2. *Asclepias speciosa*: A, inflorescences; B, follicle; C, dehiscent follicle with seeds.



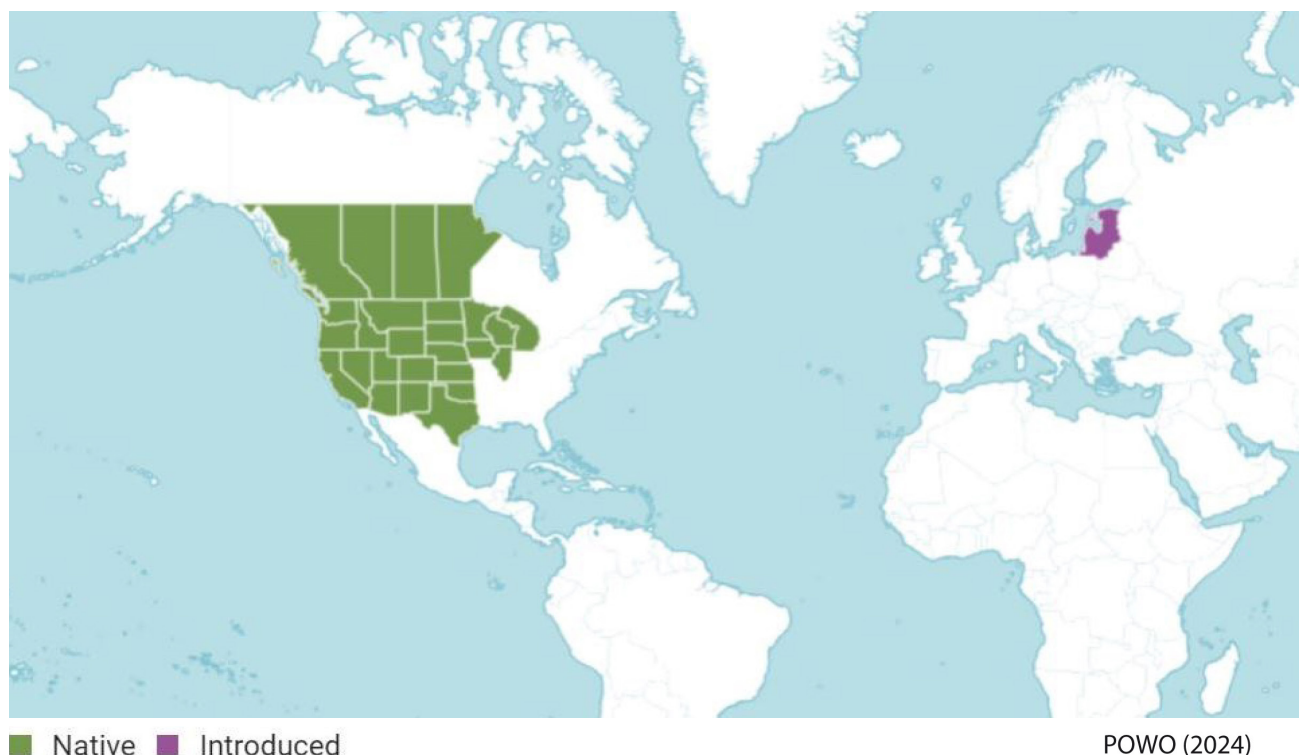


Fig. 3. *Asclepias speciosa*: global distribution map (POWO 2024).

the fruits are never well-developed. The plant spreads vegetatively by its long rhizomes. However, the plants in northern Greece set fruit. The number of fruits produced per umbel of 7-25 flowers is low, usually one or two (Fig. 2B). The light wind-dispersed seeds are easily spread by vehicular traffic and the main road to Bulgaria with the crossing at Kulata is within a 45-minute drive. It is possible *A. speciosa* occurs in Bulgaria but is still unrecognized, undocumented or under the guise of *A. syriaca*. This is the first report of the established occurrence of *A. speciosa* in Greece, the Balkan Peninsula, and southern Europe (see Fig. 3). At the moment, it can be considered a rare, locally naturalized, non-invasive alien in the Greek flora. However, it is very likely to spread in the near future as it is probably not palatable to grazing animals; at least we have not noticed any cattle, sheep or goats browsing it. It is native from W and Central Canada to W and Central U.S.A., and in Europe, documented as naturalized in the southern part of Lithuania (Gudžinskas & al. 2019) where *A. syriaca* is already invasive (Gudžinskas & al. 2021). The population size, distribution, fruit set and preferred habitats in Greece should be carefully noted.

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