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ONE MORE ALLOCHTHONOUS PRAYING MANTIS IN SERBIAN FAUNA: *AMELES SPALLANZANIA* (ROSSI, 1792) (MANTODEA: AMELIDAE)

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Abstract

The allochthonous mantis *Ameles spallanzania* (Rossi, 1792), from the family Amelidae, has been recorded for the first time in Serbia, in the urban settlement of Klisa, in the city of Novi Sad. Although the manner of the species' introduction cannot be determined with certainty, we assume it was imported with ornamental plant nursery stock, considering the immediate proximity of a plant nursery. This is the second species of the genus *Ameles* Burmeister, 1838 recorded in Serbia, the first non-native representative of its genus (and the second non-native mantis species after the already widespread *Hierodula tenuidentata* Saussure, 1869), and the fifth mantis species recorded in the fauna of Serbia in total.

KEYWORDS: mantis, *Ameles spallanzania,* Novi Sad

Introduction

In the past few years, numerous allochthonous animals have appeared for the first time or have significantly expanded their ranges, establishing stable populations in the territory of Serbia. This applies to both vertebrates, as in the case of geckos in urban areas (Urošević *et al.*, 2023a, 2023b), and invertebrates, such as snails (Gojšina *et al.*, 2022, 2024; Vujić & Gojšina, 2025) and insects (Petrović-Obradović *et al.*, 2020; Šeat *et al.*, 2020; Nadaždin & Šeat, 2022; Žikić *et al.*, 2025). Among insects, a particularly prominent example of rapid spread, well documented in the literature, is the mantid *Hierodula tenuidentata* Saussure, 1869, which was first recorded in 2019 (Vujić *et al.*, 2021), and which, by 2023, had already colonized a substantial part of the territory of Serbia (Vujić & Ivković, 2023).

The main tool for documenting its presence across the country has been citizen science, which has already proven effective (Sevgili & Yılmaz, 2022). Simultaneously with the spread of *H. tenuidentata* in Serbia, several

other species of Mantodea have spread in Europe, predominantly in areas with a Mediterranean climate (e.g., Battiston *et al.*, 2020; Martinović *et al.*, 2022; Yılmaz & Sevgili, 2025). Among these species is *Ameles spallanzania* (Rossi, 1792), native to the Mediterranean area, whose range has expanded significantly in recent years (Székely *et al.*, 2025; Yılmaz & Sevgili, 2025), likely facilitated by climate change and human-mediated transport of people and goods (Anselmo *et al.*, 2023). Today, this species has successfully colonized European regions outside Mediterranean or mild climates, such as Hungary (Székely *et al.*, 2025), and has also been reported in Slovakia, Romania, Luxembourg, and Türkiye (Yılmaz & Sevgili, 2025). In Bulgaria, specimens have been recorded at coastal sites along the Black Sea, including Burgas and Varna, as well as inland locations, such as Stara Zagora and Sofia (Vasilev *et al.*, 2023).

Materials and Methods

In this article, we report the first findings of *A. spallanzania* in Serbia.

***Ameles spallanzania* (Rossi, 1792)** (Fig. 1)

Material examined: Two juvenile specimens (Fig. 1 A-B), Serbia, Vojvodina Autonomous Province, Novi Sad, Klisa neighborhood, geographical coordinates: 45°16'42.1"N 19°50'39.0"E, 11.07.2025, leg. K. Ilić; 15.07.2025 (the same data as previously mentioned); ootheca (Fig. 2), 03.10.2025, leg. M. Vujić (the same data as previously mentioned).

Habitat description. The specimens were found in a suburban area of Novi Sad, northern Serbia, on a neglected plot of land densely overgrown with a mixture of allochthonous, invasive, and ruderal plants. Dominant species in the area included non-native plants such as *Amorpha fruticosa* L., *Solidago canadensis* L., *Sorghum halepense* (L.) Pers., *Ambrosia artemisiifolia* L., *Ulmus pumila* L., *Asclepias syriaca* L., and *Anethum graveolens* L. The plot also supported ruderal native species, such as *Populus alba* L., *P. nigra* L., *Salix alba* L., *Alcea biennis* Winterl, *Artemisia vulgaris* L., and *Calamagrostis epigejos* (L.) Roth (Fig. 2).

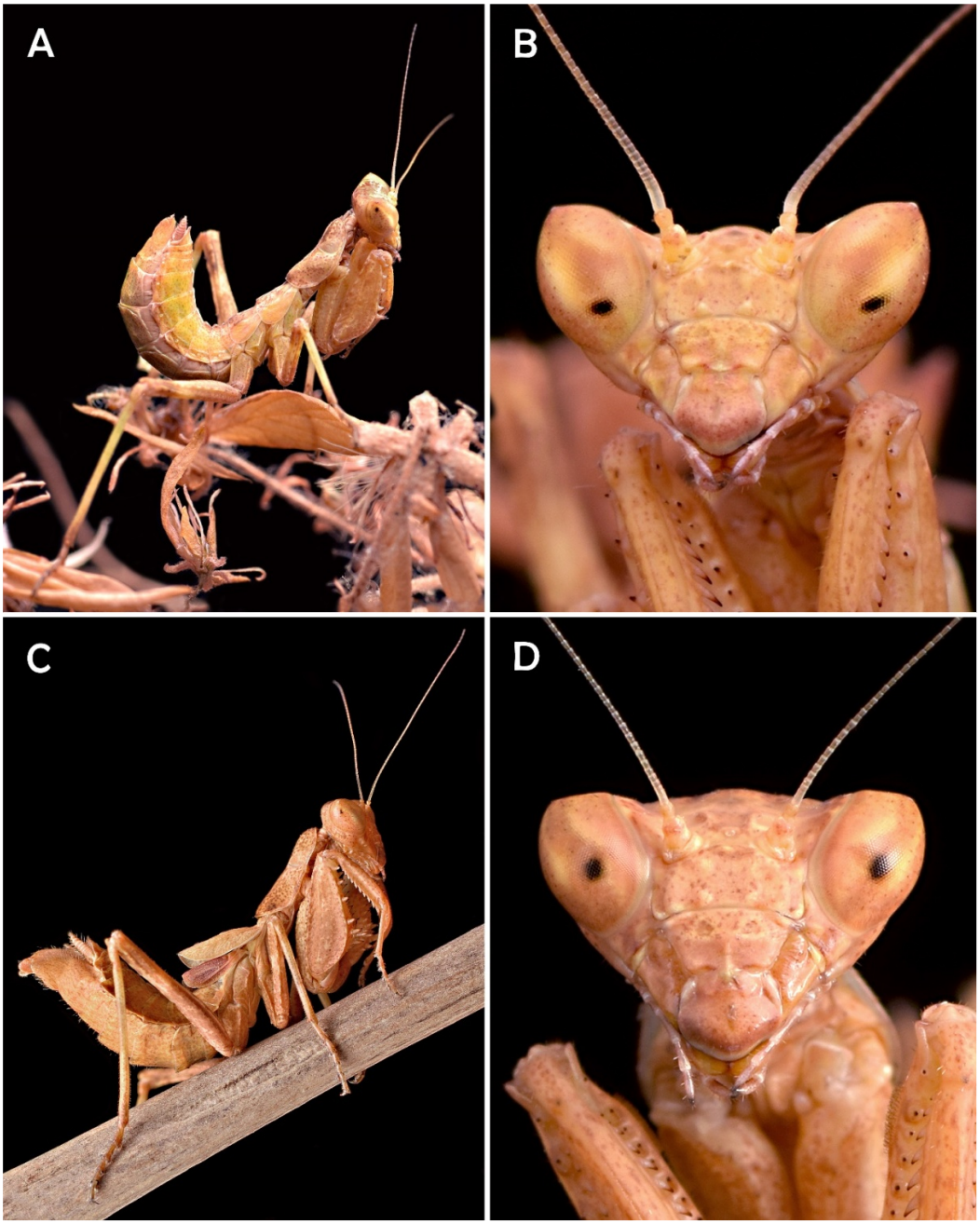

Figure 1. *Ameles spallanzania*, a newly recorded non-native praying mantis from Serbia: A – lateral view of nymph, B – frontal view of nymph head, C – lateral view of adult, and D – frontal view of adult head. The nymph was reared in captivity, and the adult photographs depict the same individual. Photo: N. Vesović

Figure 2. The habitat, a neglected plot of land in suburban Novi Sad, where the allochthonous praying mantis *Ameles spallanzania* was first recorded in Serbia, with a close-up of its ootheca. Photo: K. Ilić & M. Vujić.

Results

These findings constitute the first records of *A. spallanzania* in Serbia. This species is the first allochthonous amelid and only the second amelid species documented in the Serbian fauna, after *A. heldreichi* Brunner von Wattenwyl, 1882. The latter is restricted to the southernmost regions of the country, occurring only at a few sites in the Pčinja District (Pavićević *et al.*, 2014). This is the fifth mantis species recorded in Serbia, alongside *A. heldreichi*, *Empusa fasciata* Brulle, 1832, *Mantis religiosa* (Linnaeus, 1758), and the allochthonous *H. tenuidentata* (Vujić *et al.*, 2021; Vujić & Ivković, 2023).

As with most newly recorded allochthonous species in Serbia, the introduction pathway remains uncertain. However, the most likely route for *A. spallanzania* is the horticultural plant trade, given the proximity of a plant nursery to the locality where the species was recorded. It is not uncommon for the introduction of allochthonous invertebrates to follow this pattern, at least in Serbia, as seen in previous studies on both aquatic and terrestrial species (e.g., Milenković & Gligorijević *et al.*, 2012; Vujić *et al.*, 2022; Gojšina *et al.*, 2024). Given the ongoing range expansion of *A. spallanzania* across Europe (Vasilev *et al.*, 2023; Székely *et al.*, 2025; Yılmaz & Sevgili, 2025), further colonization of new habitats in Serbia is likely in the coming years. Citizen science has been instrumental in detecting and monitoring the spread of allochthonous mantodeans in Serbia and across Europe (Vujić *et al.*, 2021; Vujić & Ivković, 2023; Yılmaz & Sevgili, 2025).

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ЈОШ ЈЕДНА АЛОХТОНА БОГОМОЉКА У ФАУНИ СРБИЈЕ: *AMELES SPALLANZANIA* (ROSSI, 1792) (MANTODEA: AMELIDAE)

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Извод

Алохтона богомољка *Ameles spallanzania* (Rossi, 1792), из породице Amelidae, по први пут је регистрована на територији Србије у градском насељу Клиса, у Новом Саду. Иако начин интродукције врсте није могуће са сигурношћу утврдити, претпостављамо да је она увезена са садним материјалом украсних биљака, узимајући у обзир непосредну близину расадника. Ово је друга врста рода *Ameles* Burmeister, 1838 у Србији, први алохтони представник свог рода (друга алохтона богомољка након већ распрострањене *Hierodula tenuidentata* Saussure, 1869) и укупно пета забележена врста богомољке у фауни Србије.

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