

**Short scientific note**Submitted: May 15<sup>th</sup>, 2019 - Accepted: October 10<sup>th</sup>, 2019 - Published: November 15<sup>th</sup>, 2019**The likely alien species *Pseudacrobasis tergestella* (Ragonot, 1901) in central Italy (Lepidoptera: Pyralidae)**Manuela PINZARI<sup>1</sup>, Mario PINZARI<sup>2</sup>, Gianluca BENCIVENGA<sup>3</sup>, Zerun ZERUNIAN<sup>4</sup><sup>1</sup> Dipartimento di Biologia, Università di Roma Tor Vergata - Via della Ricerca Scientifica 1, 00133 Rome (Italy)  
manuela.pinzari@uniroma2.it<sup>2</sup> Piazza Francesco Morosini 12, 00136 Rome (Italy) - mario.pinzari@uniroma3.it<sup>3</sup> Via del Righetello 8, 06132 Perugia (Italy)<sup>4</sup> Via degli Olivi 7, 06081 Assisi (PG) (Italy) - zerunian@virgilio.it**Abstract**

In this paper, we refer to the finding of *Pseudacrobasis tergestella* in central Italy. This species was found in Europe and described for the first time from NE Italy; subsequently it was found in Eastern Asia and described again as *P. nankingella*. In Italy, only two specimens from the North and four specimens from the South were known. Now the species was also recorded in central Italy providing evidence of the continuity of its distribution in our country.

**Key words:** *Pseudacrobasis tergestella*, *P. nankingella*, Pyralids.

**Introduction**

The arrival of alien species in Europe appears inexorable. The cumulative number of alien species introduced in Europe has been constantly increasing since the 1900s. Their arrival and then the establishment of alien species are favored both by the increase in trade among countries and global heating and consequent climate changes.

In Italy, there are several reports of alien species belonging to insects (reviewed by Inghilesi et al. 2013), even very recent (Pinzari et al. 2018a, 2018b). The finding of species new to Italy, and not only of alien species, is the result of the increasing research in central and southern Italy as evidenced by numerous recent publications (Pinzari 2016a, 2016b, 2019; Pinzari & Pinzari 2013, 2019a, 2019b; Pinzari & Sbordoni 2012; Pinzari et al. 2017, 2018c, 2019a, 2019b; Scalercio 2016; Scalercio et al. 2015, 2016; Baldizzone & Scalercio 2018; Infusino & Scalercio 2018; Leonetti et al. 2018; Trematerra et al. 2018). The study of ongoing surveys has also led to the discovery of new species, as *Coleophora curictae* Baldizzone, 2016, *Coleophora sabina* Baldizzone & Tabell, 2016, and *Acompisia baldizzonei* Pinzari, Nel & Pinzari, 2016 (Baldizzone 2016; Baldizzone & Tabell 2016; Pinzari et al. 2016c).

The finding of *Pseudacrobasis tergestella* (Ragonot, 1901) also resulted from these studies. *Pseudacrobasis tergestella* is very likely an alien species that is native to Far East and known in Europe for Portugal, Spain, France, Corsica, Croatia and Albania (Asselberg 1998; Corley et

al. 2000, 2011; Leraut 2014; Scalercio & Slamka 2015; Speidel et al. 2013; <http://www.lepiforum.de/>, accessed on 2019).

Biology, ecology and distribution along its entire range of *P. tergestella* were reviewed by Scalercio and Slamka (2015). The authors also well summarized its taxonomic history in the light of the synonymy of *P. tergestella* with the Far East *Pseudacrobasis nankingella* Roesler, 1975 (Vives-Moreno 2014) and provided a potential reconstruction of its putative migration from Asiatic areas to Europe. In Asia *P. tergestella* is known as a pest of *Quercus* spp. and *Pinus* spp. (Park et al. 1998a, 1998b). In Europe and in particular in Italy its biology is yet unknown.

The type specimen, a female, of *P. tergestella* was found in Italy at Miramare (Trieste) on the 29<sup>th</sup> July by Rebel and was described by Ragonot (1901). After 113 years from the species description, only five individuals have been collected in Italy: 1 ♀, 16.VI. 2011 at Cesenatico by G. Bonoli; 2 ♂♂ and 2 ♀♀, in 2014 by Stefano Scalercio in the Fiume Argentino valley nearby the village of Orsomarso (CS) in Calabria (Scalercio & Slamka 2015). At present, the species is known from the northern (Bassi et al. 1995) and southern areas of Italy (Scalercio & Slamka 2015).

The aim of this paper is to report *P. tergestella* for new Italian localities providing evidence of the continuity of its distribution in Italy.



**Fig. 1** – *Pseudacrobasis tergestella*: a, female (wingspan 16 mm) Castiglione del Lago (PG), 250 m, 4.VIII.2018, Z. Zerunian and G. Bencivenga legit; b, genital parts (gen. praep. PIRA 542 ♀, M. Pinzari).

## Materials and methods

The collecting site is located nearby Fosso Paganico, a running water that after a few meters flows into Trasimeno Lake in the municipality of Castiglione del Lago (Perugia, Umbria). It is located at the edge of an urban area and is characterized by a large flat surface that occupies the western shore of Trasimeno Lake with the presence of non-native vegetation (e.g. *Pinus pinea* L.) and cultivated fields. The study area also includes permanent semi-natural meadows of the former Eleuteri Airport and a well-developed strip of riparian arboreal and shrub vegetation, mainly composed of *Salix alba* L., *Salix purpurea* L., *Populus nigra* L. and *Populus canescens* (Aiten) Sm. Along the bank of Fosso Paganico there is a strip of marsh vegetation dominated by *Phragmites australis* (Cav.) Trin. ex Steud.

The individual was light-trapped by Mixed Light 160 W lamp on white cloth.

The species was identified by both external habitus and a dissection of the genitalia using the taxonomic characters reported by Leraut (2014), Scalercio & Slamka (2015) and <http://www.lepiforum.de/>, accessed on 2019).

## Results

A single female of *Pseudacrobasis tergestella* was collected by Z. Zerunian and G. Bencivenga on 4.VIII.2018 at Castiglione del Lago (PG) in Umbria (250 m a.s.l.).

The habitus of the specimen was not in good condition but the species determination was confirmed by the examination of the genitalia (Fig. 1a-b).

Genital parts were glycerol-preserved into microtubes. These were closed with vinyl glue that is easily soluble in water and put under the specimen itself. The specimen is deposited in the private collection of Z. Zerunian (Assisi, Italy).

## Final Considerations

*Pseudacrobasis tergestella* was considered as an alien species of Asiatic origin, but it has been known for over a century in Europe and although in climatically analogous countries of the Asiatic range it is a pest of plants that are widely spread even in Italy, in 120 years, only seven specimens have been found: two in the north, one in the centre and four in the south of Italy. The taxonomic story of this species (it was first described in the putatively country of arrival and then re-described in the putatively country of origin) immediately posed the question that could rightly be placed for several other species: “Is it an alien species stabilized throughout Europe or is it simply a widely distributed species?” To solve the question, which has been raised by other authors, Scalercio & Slamka (2015) suggested to submit Asiatic and European populations of *P. tergestella* to DNA barcoding analysis. This could be a useful tool to investigate the genetic relationship between them and provide information to hypothesize the origin of this species in Europe or in Asia. We agree with Scalercio and Slamka and our specimen, preserved in the Zerunian collection, is available for further studies.

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