

## First record of *Pempelia amoenella* (Zeller, 1848) for Western Europe (Lepidoptera Pyralidae)

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### ABSTRACT

The first record of *Pempelia amoenella* (Zeller, 1848) (Lepidoptera Pyralidae) for Western Europe is reported. The species was collected in Southern Italy, on the Ionian coast of Calabria, where the vegetation is dominated by *Tamarix*, the known feeding plant of the larvae. Female genitalia are figured for the first time.

### KEY WORDS

Mediterranean shrubland; *Tamarix*; diversity; Calabria.

Received 21.05.2014; accepted 09.06.2014; printed 30.06.2014

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### INTRODUCTION

*Pempelia amoenella* (Zeller, 1848) is a species of Pyralidae belonging to the tribe of Phycitini, subfamily Phycitinae. Described by Zeller (1848) as *Acrobasis amoenella*, was sometimes mentioned as *Salebria amoenella* and now is included in the genus *Pempelia* (Hübner, 1825). Mann (1867) described *Pempelia erberi* for the island of Corfu, Greece, but two years later the same author reported *P. erberi* as a synonym of *P. amoenella*.

This species was rarely reported in literature and very few data on its distribution are published. Zeller (1848) indicated the European Turkey as the locus typicus, without further details. Subsequently in Europe it was collected in Croazia: Southern Dalmatia (Mann, 1869) and Gravosa (Klimesch, 1942), Montenegro: Cattaro (Caradja, 1910), Greece: Corfù Island (Rebel, 1913), Macedonia (Klimesch, 1968), and Russia: Rostov-on-Don Province (Poltavsky et al., 2009) and Astrakhan region,

Astrakhan Nature Reserve (coll. Tatyana A. Trofimova). It was also generically reported for Albania and Romania (Karsholt & Razosky, 1996). Outside of Europe the species was collected in Turkey: Lüle Burgas (Rebel, 1913), Iğdir province (Koçak & Kemal, 2006) and Erzincan (coll. Zoological Museum, University of Copenhagen), Afghanistan (Koçak & Kemal, 2012), Uzbekistan (Koçak & Kemal, 2012), Turkmenistan (coll. Siberian Zoological Museum), Tadjikistan (coll. Siberian Zoological Museum), Kazakhstan: Kyzyl-Orda region, Aral lake, Karatup peninsula (coll. Tatyana A. Trofimova), China: Kashgar, Xinjiang Province (Caradja, 1910) and Mongolia: Hovd Aimak, Mongolian Altai, Uenchin-Gol Valley, 50 km N Uench (coll. Tatyana A. Trofimova).

To date the corotype of *P. amoenella* can be defined as Centrasianic-South East European.

Larvae feed on *Tamarix* L. (Tamaricaceae). Mann (1867) observed larvae feeding on *Tamarix* sp. where they live in silky structures built around

the vegetative apex. The same behaviour was observed by Klimesch (1942) who also found whitish cocoon of this species on small tree branches.

Larvae pupate at the end of May. Adults were observed to emerge from the end of June to the beginning of July near the coastal line in southern Croazia (Klimesch, 1942), whilst in Turkey were collected later during the third week of July at higher altitude (1200-1300 metres).

The habitat of *P. amoenella* is in coastal areas and in salty and arid soils. It is more frequently recorded at low altitude, especially in dune woodlands of coastal habitats, but, in Turkey, its altitudinal range is extended up to 1300 metres.

## MATERIAL AND METHODS

A light source was utilised to collect moths during the night. Light source was a 160W mercury-vapour lamp that reflected onto a white vertical screen. Two operators were assigned to collect the moths on the screen surface and on the ground around the lamp.

The collecting site was located on the bed of the Fiumara Trionto in the municipality of Crosia (Cosenza), Southern Italy, at 90 metres of altitude (lat.: 39°33'09"N; long.: 16°45'31"E) (Fig.1).

The so-called "fiumare" are streams with large beds characterised by a torrential regime and developing primarily along a high altitude gradient, then having a high erosive and transporting power. In summertime the bed is usually dry and surface water appears mainly from late September to late June. The light source was positioned near to a small riparian woodland dominated by *Tamarix africana* Poir. and *Nerium oleander* L., mostly associated to *Spartium junceum* L., *Asparagus acutifolius* L., *Rubus canescens* DC., *Crataegus oxyacantha* L., *Rosa sempervirens* L., *Verbascum sinuatum* L., *Lagurus ovatus* L., *Vicia sativa* L., *Arum italicum* Mill., *Galactites tomentosa* Moench, *Dracunculus vulgaris* Schott, *Artemisia vulgaris* L., and *Trifolium campestre* Schreb. Around the small woodlands and where the soil was stabile from some years, grows a garrigue characterised by *Helichrysum italicum* (Roth) G. Donand, *Ephedra distachya* L., otherwise the soil is bare (Fig. 2).

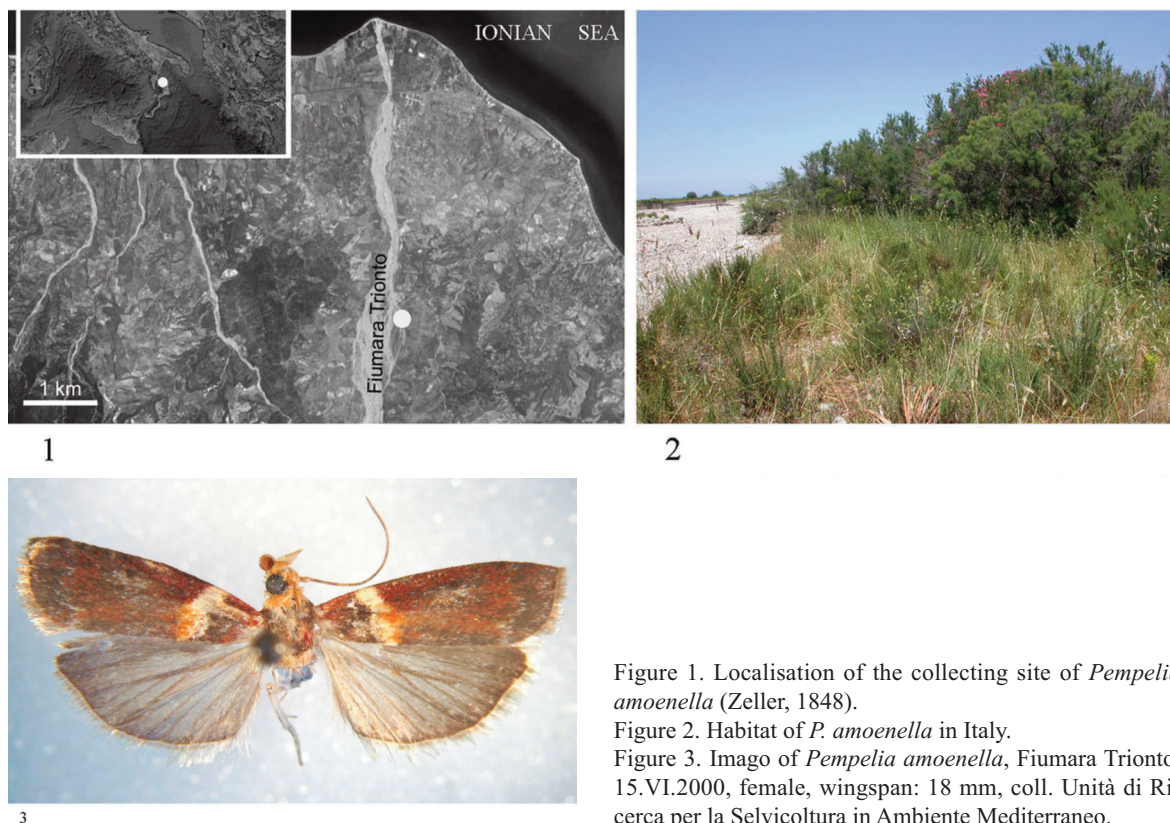
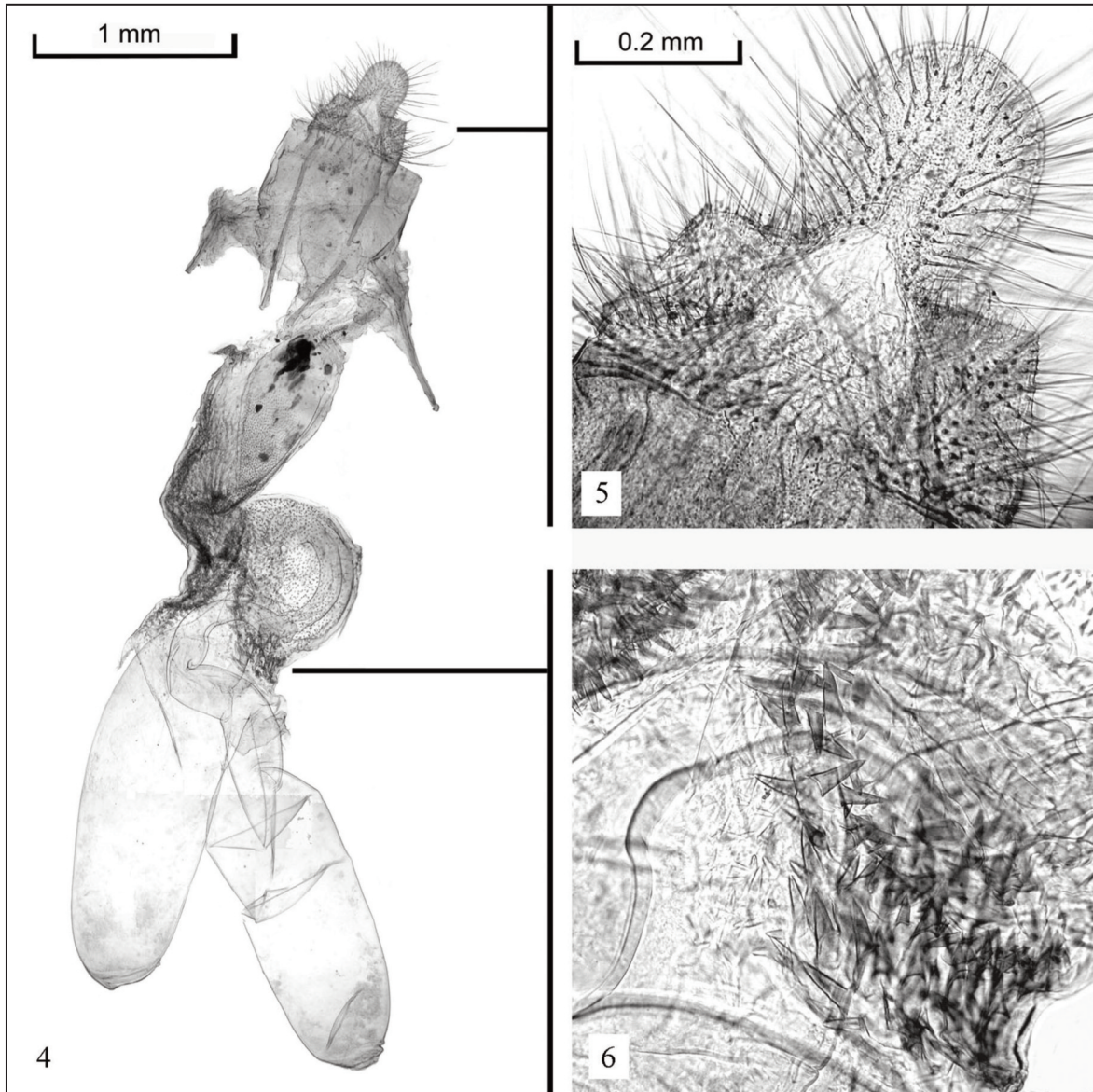


Figure 1. Localisation of the collecting site of *Pempelia amoenella* (Zeller, 1848).

Figure 2. Habitat of *P. amoenella* in Italy.

Figure 3. Imago of *Pempelia amoenella*, Fiumara Trionto, 15.VI.2000, female, wingspan: 18 mm, coll. Unità di Ricerca per la Selvicoltura in Ambiente Mediterraneo.





Figures 4–6. Female genitalia of *P. amoenella*. Fig. 4: general view (gen. praep. CRASAM-012). Fig. 5: details of papillae anales. Fig. 6: details of cornuti on the bursa copulatrix.

## RESULTS AND DISCUSSION

One female of *P. amoenella* was collected at light on 15 June 2000 (Fig. 3). This is the first record for Italy and Western Europe of this interesting species. During the night of sampling, mean temperature was of 24°C, humidity rate of 75%, with no wind, the 40% of the moon surface was illuminated and the sky was variably clouded. The sampling session started at 9:10 PM and lasted four hours.

Female genitalia are figured for the first time (Figs. 4–6). The specimen and its genitalia (gen.

praep. CRASAM-012) are conserved in the collection of the Unità di Ricerca per la Selvicoltura in AmbienteMediterraneo (CRA-SAM).

In Italy the habitat of *P. amoenella* is similar to that of localities where the species was previously collected on the eastern coastal areas of Adriatic and Ionian seas, whilst phenology appears to be anticipated due to the higher mean annual temperature in the new discovered range. In fact, our adult female is the earliest known capture for this species.

The presence of trans-ionic species in Southern Italy is not a novelty. In fact, among macrolepidoptera at least 6 species of the Calabrian fauna have a similar range, namely *Oiketicoides lutea* (Staudinger, 1870) (Psychidae), *Anthocaris damone* Boisduval, 1836 (Pieridae), *Idaea determinata* (Staudinger, 1876) (Geometridae), *Aegle agatha* (Staudinger, 1861) (Noctuidae), *Tiliacea cypreago* (Hampson, 1906) (Noctuidae) and *Conistra ragusae* (Failla-Tedaldi, 1890) (Noctuidae).

Further investigation along Ionian coastal areas of Calabria can probably provide more detailed information on the biology of *P. amoenella*.

#### ACKNOWLEDGMENTS

Many thanks to Tatyana A. Trofimova (Samara State University, Russia) for providing distributional data from her private collection.

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