

Scythris clavella (Zeller, 1855) in Italy (Lepidoptera, Gelechioidea, Scythrididae)

M. Pinzari

Department of Biology, University Tor Vergata of Rome, Italy

Abstract

During an extensive collection of Lepidoptera in *Reatini* Mountains (Central Apennines, Italy) a male of *Scythris clavella* (Zeller, 1855) was collected. This species is distributed in Central and Southern Europe and eastwards to Bulgaria, Greece, Southern Ural Mountains, Altai Mountains and Central Asia (Kazakhstan, Kirgisia). It was cited for Italy; however, accurate data of its presence are not present in literature. Our data support the conclusion that it is the first record for Peninsular Italy.

Introduction

The family Scythrididae is part of the superfamily Gelechioidea and includes small or medium-sized moths, which are usually rather difficult to separate from each other owing to the small differences in their external appearance. In the past many misidentifications were made but when examination of the genitalia became a standard procedure the reliability of the determination increased considerably. It has a worldwide distribution, and scythridids may be found even in isolated islands, where they often show special features, which differ from the

rest of the family. In the Palaearctic area more than 300 species are known and in the Mediterranean area many species are present with high numbers especially in Spain and Turkey (Bengtsson, 1997).

At present, the Italian scythridid fauna and its distribution is still poorly known. In fact, few regions were detected with dedicated sampling and several areas are still completely unknown. For nearly twenty years an extensive work was carried out for a revision of the Palaearctic scythridid species revealing some synonymies due to the great intraspecific variability and interspecific uniformity within the family (Passerin d'Entreves, 1995).

The genus *Scythris* is the most extensive of thirteen genera of the family Scythrididae. In Italy, it is represented by sixty species (Passerin d'Entreves, 1995). Among these, *Scythris clavella* is not a common species in Italy and accurate data of its presence are unknown in literature. In fact, *S. clavella* has been reported from Italy without specifying localities (Bengtsson, 1984; 1997); it is mentioned as doubtful in the checklist of Italian Fauna for the north of the peninsula (Passerin d'Entreves, 1995), while the species is cited generically as present in Italy on the website of Fauna Europaea (Karsholt & Nieukerken, 2013).

In the past, *S. clavella* has been the subject of investigations when the congeneric species *Scythris villari* Agenjo, 1971 was described (Agenjo, 1970). In fact, on the advice of H.J. Hanneman, Agenjo initially considered *S. villari* as a subspecies of *S. clavella*; successively, comparing the Spanish material with the Russian male specimens of *S. clavella* from Sarepta (the type locality), the author, observing distinct white markings in the forewing, became convinced that his specimens were not conspecific with *clavella* and described the new species *S. villari* emphasizing also the differences of the genitalia and VIII sternum. The species identification was confirmed by Passerin d'Entreves (1979) in the revision of Scythridids comparing the holotypus of *villari* deposited in the collection of Instituto Español de Entomología in Madrid with the lectotypus of *clavella* deposited in the collections of British Museum (N. H.) in London. In 1984 comparing unicolor specimens of *clavella* from France (Hautes Alpes) with the illustrations of the original description of *villari*, Bengtsson (1984) suggested that *villari* was a junior synonym of *clavella*. Additionally, in the same article the author mentioned for the first time the presence in Italy of *clavella*. In 1991 Derra collected for the first time in Spain some specimens of *S. clavella* on Pyrenees (Bengtsson, 1991). The author refers also to have had a personal communication with Passerin d'Entreves in which the *villari-clavella* synonymy was criticized based on the constancy of the genitalia features supporting the separation of the two species. After further investigations *villari* was confirmed to be a distinct species from *clavella* (Bengtsson, 1997), but *clavella* was not longer cited for Italy and a unicolorous male specimen collected in Sila Grande, Loricca (1315 msl) in 18-30 June 1986 by Bassi was assigned to *villari*. Interestingly, investigations on populations of *S. clavella* in the Southern Ural Mountains, where the species is widely distributed and abundant (Nupponen *et al.*, 2000), showed that in all populations in the investigated area specimens

Correspondence: Manuela Pinzari, Department of Biology, University Tor Vergata of Rome, via della Ricerca Scientifica 1, 00133 Rome, Italy.
Tel.: +39.06.72595950 - Fax: +39.06.72595965.
E-mail: manuela.pinzari@uniroma2.it

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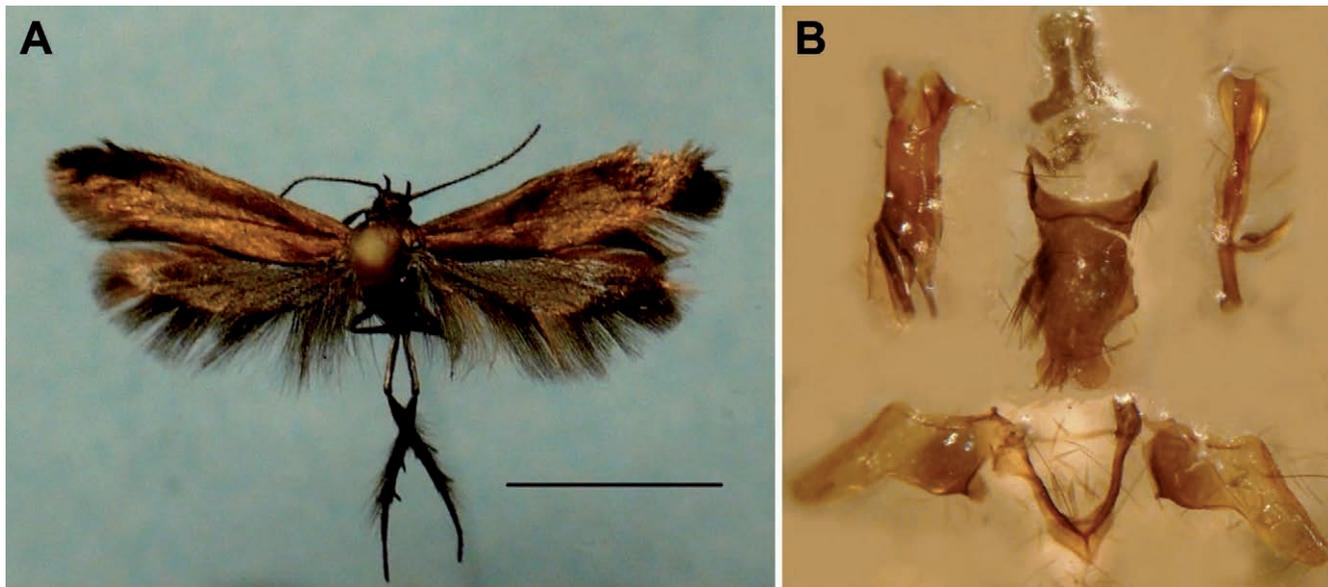


Figure 1. *Scythris clavella*: male A) adult (bar scale: 5 mm) and B) genitalia.

with white marking on forewings (a streak in fold and/or a spot at cell end) were present. The ratio between marked and uni-coloured specimens was estimated in 4 localities (60 specimens each) and varied between 25-30 % (Nupponen *et al.*, 2000).

Materials and methods

The collecting site is located in a small area near Vallemare, a secondary village belonging to the municipality of Borbona (Province of Rieti, Latium, Central Italy) (Pinzari *et al.*, 2010, 2013).

In particular, a single male of *Scythris clavella* was collected by Mario Pinzari on 31.V.2015 at Bivio Brignola (1062 m a.s.l.), Vallemare, Borbona (RI), Italy. The moth was collected by sweeping in a northern facing grassy slope on calcareous soil (1000 m a.s.l.) in the afternoon. The species was identified by both external habitus and a dissection of the genitalia using the taxonomic characters reported by Bengtsson (1997). The species identification was confirmed by Prof. Pietro Passerin d'Entreves.

Genital parts were mounted on a microscope slide (gen. praep. SCYT 32, Manuela Pinzari, Figure 1A). The specimen is deposited in the private collection of Mario Pinzari (Rome, Italy).

Discussion

Supported by Prof. Passerin d'Entreves (personal communication, 2016), I can affirm that the specimen collected in Vallemare and reported here is the first record for Peninsular Italy. The reconstruction of the taxonomic events of the sibling species, *S. clavella* and *S. villari*, and the absence of accurate data of presence of *clavella* in Italy let me to suppose that the previous citation of *clavella* for Italy is bound to the improperly proposed synonymy of *clavella* with *villari*, this last species well documented to be present in Southern Italy.

The capture of *S. clavella* in Italy is of biogeographic interest, taking

into account the distribution of the sibling species *S. villari*. In the Southern Ural Mountains *S. clavella* is present both with unicolor and white marking on forewing (Nupponen *et al.*, 2007), while in Southern and Western Europe and in particular in Spain and in Italy the habitus is exclusively unicolor. Forms of *villari* with white marking on forewing are not known in literature. These forms mimic bird droppings, as occur in other microlepidoptera (*i.e.*, Olethreutinae), camouflaging and then protecting moths from predators and in particular birds. In the Eastern Europe *S. clavella* is widely distributed, common and sometimes abundant species; this could mean that *S. clavella* is probably well-known to some species of birds that feed on them selecting over time the bird dropping form in these populations. Otherwise the bird dropping form was never recorded in Southern and Western Europe and the limited data available describe *S. clavella* rare, uncommon and never abundant letting suppose that the species could not represent an important trophic resource for local predators and then not be subjected to any selection by predation. Interesting enough that *S. villari* is present only in the south-west of the distribution area of *clavella* where this species is rare and whenever the distribution areas of the two species overlap *villari* and *clavella* show the same habitus.

Beyond the interest of the discovery of *S. clavella* in Peninsular Italy the knowledge on distribution, ecology and biology of this species are still scarce to support the framework proposed and dedicated investigations would be needed.

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