

# First description of the male genitalia of *Psorosa lacteomarginata* (A. Costa, 1888) (Lepidoptera: Pyralidae, Phycitinae)

M. Pinzari

## Abstract

The genitalia of *Psorosa lacteomarginata* (A. Costa, 1888) endemic to Sardinia (Italy) are illustrated and described for the first time.

KEY WORDS: Lepidoptera, Pyralidae, Phycitinae, male genitalia, Italy.

## Primera descripción de la genitalia del macho de *Psorosa lacteomarginata* (A. Costa, 1888) (Lepidoptera: Pyralidae, Phycitinae)

## Resumen

Se describe e ilustra, por primera vez, la genitalia del macho de de *Psorosa lacteomarginata* (A. Costa, 1888) endémico de Cerdeña (Italia).

PALABRAS CLAVE: Lepidoptera, Pyralidae, Phycitinae, genitalia macho, Italia.

## Introduction

In the context of an ongoing study on Lepidoptera fauna in Italy, the results of which were partly cited in PINZARI *et al.* (2019) and concerning the history and distribution of *Pempeliella* (PINZARI & PINZARI, 2019a) and *Delplanqueia* (PINZARI & PINZARI, 2019b) group in Italy, we found a specimen of *Psorosa lacteomarginata* (A. Costa, 1888) of Hartig's collection that is preserved at "Museo di Zoologia dell'Università la Sapienza di Roma" (MZUR).

Genitalia of *Psorosa lacteomarginata* have never been described in the literature, perhaps because it is an endemic species of Sardinia (Italy) with a relatively well characterized habitus. Available information on this topic is sparse and limited to the description by A. COSTA (1888). Recently, LERAUT (2014) said simply in his book on pyralids of Europe he does not know the species.

At present, only the original citation by A. Costa in 1888 is known and the author referred that he did not dissect the genitalia to preserve the specimen (a male). An image of this individual (only moth) is shown in Lepiforum (2019).

Here, we provided for the first time the description of the male genitalia of *Psorosa lacteomarginata*.

## Materials and methods

Distribution of *Psorosa lacteomarginata*: It is endemic of Sardinia (Italy); It was described by

A. COSTA (1888) on the basis of a single individual collected on the banks of the river Coghinas in the S. Rocco district (Sassari) in northern Sardinia. In Europe and in Italy there are also three species belonging to the genus *Psorosa*: *P. dahliella* (Treitschke, 1832), *P. mediterranea* Amsel, 1954 and *P. nucleolella* (Moschler, 1866). According to BASSI *et al.* (1995) the Italian specimens of *P. nucleolella* are perhaps to be attributed to *mediterranea*. Male genitalia were illustrated by LERAUT (2014).

A specimen of *P. lacteomarginata* in Prose's collection (ZSM) was photographed by Michel Kettner and shown at [www.lepiforum.de](http://www.lepiforum.de) in "Bestimmung von Schmetterlingen (Lepidoptera) und ihren Präimaginalstadien" (2019). It is a male collected on 7-VII-1972 at Musei (Southern Sardinia) (120 m) by Hartig.

Material examined: We studied a male of *P. lacteomarginata* from the South of Sardinia and collected on 9-VIII-1936 at "Stagno di Cagliari" by Hartig (fig.1). The specimen was identified by Zerny as *Psorosa predotai* Rbl. and is located in Hartig's collection at Museo di Zoologia dell'Università di Roma "La Sapienza" (MZUR).

Species identification: The moth species was identified by external habitus using the taxonomic characters reported by A. COSTA (1888): "*Il di sopra del corpo ha color di vinaccia. ....Le ali hanno il margine costale o esterno di un bianco latteo e la frangia del margine estremo cenerino-argentina*". "The upper surface of the body is cinnabar red coloured.... The costal or external margin of wings is milky white and the fringe of the extreme margin is cenerine argentine". The complete original description of *Psorosa lacteomarginata* is reported in Appendix 1. For the species determination we took into account the label of species identification by Zerny (fig. 1 F) as *P. predotai* Rebel, 1936 (= *Pempelia lacteomarginata* A. Costa, 1888) (BASSI *et al.*, 1995) and we also considered the photographs published on the website Lepiforum (Lepiforum, 2019).

Genitalia dissection and preservation: The male genitalia were not in good condition; they were boiled in 10% potassium hydroxide solution for few minutes and mounted on a slide to make a photograph. Successively, the slide was dismantled to preserve the genitalia. 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 again deposited in Hartig's collection at MZUR.

## Results

Original description of *Pempelia lacteomarginata* A. Costa, 1888: "*Avendone un individuo solo in perfetto stato di conservazione, rimasto con le ali adattate al corpo come nel riposo, non abbiám voluto sconciarlo col distenderne le ali; con che si sarebbe perduto l'abito naturale della specie. Per la qual cosa delle ali inferiori, che rimangono del tutto nascoste, nulla diremo. D'altronde il loro colorito varia di poco nelle specie tutte del medesimo gruppo. Descriveremo quindi l' insetto nella forma sotto cui si ritrova. Capo: fronte molto convessa, sporgente, con squame allungate dirette in avanti formando un bel ciuffo avanzato al di là della faccia: questa verticale, piana, quasi rettangolare, rivestita di squame minutissime non elevate. Palpi foltamente squamosi: inferiormente con una cresta compressa a margine seghettato costituita da squame più grandi; l'ultimo articolo molto ottuso all'estremità. Antenne robuste: il primo articolo ingrossato, cilindraceo. Ali superiori anguste, fortemente accartucciate, sicché nello stato di riposo l'insetto si presenta di forma cilindracea. Il di sopra del corpo ha color di vinaccia. Nel capo vi ha una striscia da cadaun lato contigua al rispettivo occhio e la faccia per intero, argentine. Le ali hanno il margine costale o esterno di un bianco latteo e la frangia del margine estremo cenerino-argentina. Il petto ed i piedi sono piombini con scarse squame argentine. L'addome è rivestito di squame argentine. Osservazione. La fattezze del capo di questa specie è alquanto diversa da quelle di molte altre *Pempelia* da noi osservate. Non ci saremmo pertanto azzardati a dar come nuova la*

*specie, se non fossimo stati in ciò confortati dall'autorevole parere del chiaro Lepidotterologo Staudinger, cui l'abbiamo comunicata."*

In figure 1 we showed the studied specimen of *Psorosa lacteomarginata* (A. Costa, 1888) displaying the upper and lower surface of adult (fig. 1 A and B), its genitalia and two historical labels (fig. 1 F). Terms used by ROESLER (1986) were adopted for the following description of the male genitalia of *Psorosa lacteomarginata*.

Male genitalia: Uncus normal, rounded; gnathos triangular hook; processus vinculi well developed; valva slender and longer than vinculum; spatula-shaped; narrower in the basal area after *sacculus*, then it widens up to fl, then begins to squeeze towards the upper edge until it reaches the costa which is straight and free of processes, rounded tip; unfortunately, in fig. 1 C the detachment of the valvae from the costae does not allow the shrinkage to be appreciated well; verrucose basal process that is present in other species of *Psorosa* genus (LERAUT, 2014) is absent; finally, two coremata are present at VIII abdominal segment (fig. 1 D). Aedeagus (fig. 1 E): relatively short with semilateral ductus ejaculatorius; slender to caecum penis; at vesica, almost throughout its circumference, a denticulate plate surrounds two cornuti: one of these is large, corrugated, along two thirds of the aedeagus; the other cornutus is long half of the first.

## Remarks and conclusions

Currently the male of *Psorosa lacteomarginata* in Europe is unmistakable in appearance especially if the specimens are in good condition.

The female is not known to us, nor is biology known. The original description in the case of sloppy specimens probably does not allow easy identification of the species which in the male is however easily distinguishable from the other *Psorosa* and from *Deplanqueia* species (PINZARI & PINZARI, 2019b) with the examination of the genitalia.

Male genitalia differ from the other European *Psorosa* species in particular for cornuti contained in the vesica of aedeagus.

## Acknowledgments

We thank Dr Emanuele Piattella (Museo di Zoologia dell'Università di Roma La Sapienza) for allowing the study of the specimens of Hartig's collections.

## BIBLIOGRAPHY

- BASSI, G., PASSERIN D'ENTREVES, P., SPEIDEL, W. & ZANGHERI S., 1995.– Lepidoptera Pyraloidea. pp. 1-28.– In S. MINELLI, S. RUFFO & S. LA POSTA (eds). *Checklist delle specie della fauna italiana*, **87**: 28. Calderini, Bologna.
- COSTA, A., 1888.– Notizie ed osservazioni sulla Geo-Fauna Sarda. Memoria Sesta. Risultamento delle ricerche fatte in Sardegna nella state del 1885.– *Atti della Reale accademia delle scienze fisiche e matematiche*, (2) **2**(8): 1-40.
- LERAUT P., 2014.– Pyralids 2. *Moths of Europe*, **4**: 440 pp. N.A.P. Editions, Verrières-le-Buisson.
- PINZARI, M., 2019.– *Epicallima icterinella* (Mann, 1867) new to Italy (Lepidoptera: Oecophoridae).– *SHILAP Revista de lepidopterología*, **47**(188): 735-738.
- PINZARI, M., PINZARI, M. & SBORDONI, V., 2019.– Make it simply: the mating behaviour of *Euphydryas aurinia provincialis* (Lepidoptera: Nymphalidae).– *The European Zoological Journal*, **86**(1): 220-232.
- PINZARI, M. & PINZARI, M., 2019a.– Genus *Pempeliella* Caradja, 1916 and *P. bayassensis* Leraut, 2001 (Lepidoptera, Pyralidae) in Italy.– *ZooKeys*, **854**: 131-144.
- PINZARI, M. & PINZARI, M., 2019b.– Genus *Deplanqueia* Leraut, 2001 and *D. inscriptella* (Duponchel, 1836) (Lepidoptera: Pyralidae) in Italy.– *Journal of Entomological and Acarological Research*, **51**(2): 60-68.

LEPIFORUM, 2019.– *Bestimmung von Schmetterlingen (Lepidoptera) und ihren Präimaginalstadien.*– Available from <http://www.lepiforum.de/> (accessed on 20 December 2019).

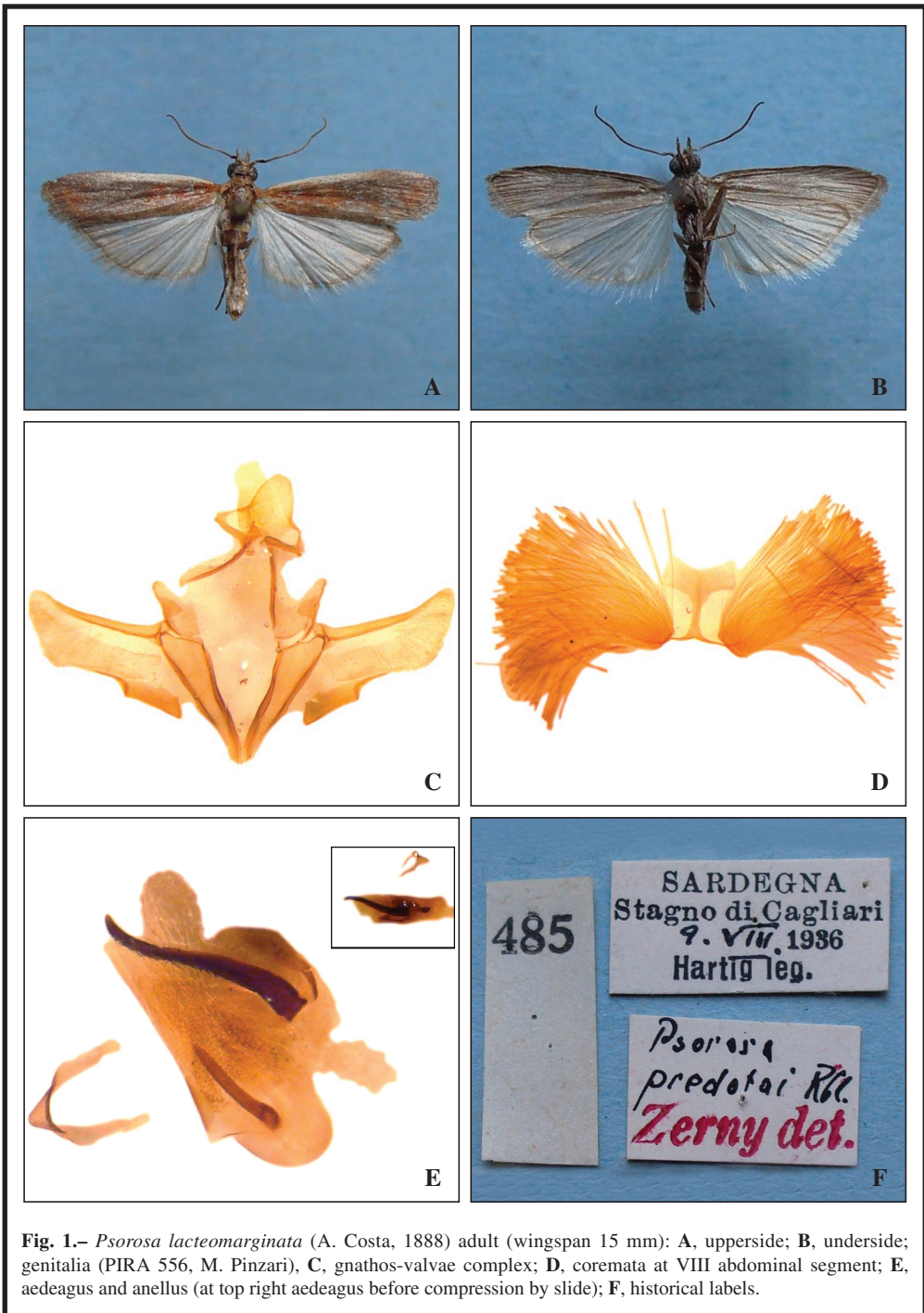
ROESLER, R. U., 1986.– Merkmalsbewertungen in der genitalstruktur für taxonomie und phylogenie am beispiel der Phycitinae (Lepidoptera, Pyralidae).– *Neue Entomologische Nachrichten*, **19**(1/2): 51-78.

M. P.  
Dipartimento di Biologia  
Università di Roma Tor Vergata  
Via della Ricerca Scientifica, 1  
I- 00133 Roma  
ITALIA / ITALY  
E-mail: manuela.pinzari@uniroma2.it  
<https://orcid.org/0000-0003-0829-3453>

(Recibido para publicación / *Received for publication* 7-I-2020)

(Revisado y aceptado / *Revised and accepted* 15-II-2020)

(Publicado / *Published* 30-III-2020)



**Fig. 1.**– *Psorosa lacteomarginata* (A. Costa, 1888) adult (wingspan 15 mm): **A**, upperside; **B**, underside; genitalia (PIRA 556, M. Pinzari), **C**, gnathos-valvae complex; **D**, coremata at VIII abdominal segment; **E**, aedeagus and anellus (at top right aedeagus before compression by slide); **F**, historical labels.