

Guido Govi & Gabriele Fiumi

***Cryphia claudiae*, a new noctuid moth from Corsica**

(Insecta: Lepidoptera: Noctuidae: Bryophilinae)

Abstract

After a discussion about the taxonomic status and the geographical distribution of *Cryphia simulatricula* (Guenée, 1852) and *Cryphia lusitanica* (Draudt, 1931), *Cryphia claudiae* n. sp. is described. The species seems to be very rare and restricted to the mountains of Corsica.

Key words: Lepidoptera, Noctuidae, *Cryphia*, new species, Corsica.

Riassunto

[*Cryphia claudiae*, una nuova specie di noctuide della Corsica (Insecta: Lepidoptera: Noctuidae: Bryophilinae)]

Dopo una discussione sulla situazione tassonomica e sulla distribuzione geografica di *Cryphia simulatricula* (Guenée, 1852) e *Cryphia lusitanica* (Draudt, 1931), viene descritta *Cryphia claudiae* n. sp.. La specie sembra essere molto rara ed endemica delle montagne della Corsica.

Introduction

During the summers of 2001 and 2003 one of the authors collected three specimens of *Cryphia* Hübner, 1818, at Gorges de l'Asco (Haute Corse - France), identified as *Cryphia simulatricula* (Guenée, 1852) on the basis of the taxonomy then in force. These appeared to be the first records from Corsica. So the authors, together with Leonardo Dapporto (DAPPORTO et al., 2006) mentioned for the first time the presence in Corsica of *Cryphia simulatricula*.

Subsequently, in the volume Noctuidae Europaeae 11 (FIBIGER et al., 2009), a revision of the group was made and two different species *Cryphia simulatricula* (Guenée, 1852) e *Cryphia lusitanica* (Draudt, 1931) were recognized.

The publication of the book was an incentive to review the specimens from Corsica by comparing them with the illustrations of the text depicting specimens from Spain, France and the Swiss Alps.

The collected specimens were two males and one female: unfortunately the abdomen of the only female specimen was damaged and it is not possible to study the genitalia. Dissection of the two males showed some unusual features not found

in both *simulatricula* and *lusitanica* (*sensu* FIBIGER et al., 2009). Therefore more than 15 years after collection, it has been realized that the specimens belong to an undescribed hidden species.

Some notes on *Cryphia simulatricula* (Guenée, 1852) e *Cryphia lusitanica* (Draudt, 1931).

For morphological examination, all genitalia preparations were made by G. Fiumi and all photographs were taken by him.

According to Noctuidae Europaeae, 11 (FIBIGER et al., 2009), “The external differences between *C. lusitanica* and *C. simulatricula* are easily recognizable, whereas those of the genitalia are small, though consistent”. The principal are: “In *C. simulatricula* the uncus is not enlarged basally, the pleurite is shorter and more curved, the margins of the valva are parallel, and more rounded at tipoff ventral margin, and the flap like dorsal extension is shorter and broader and the clasper-ampulla crest is not hill like. In *C. simulatricula* the aedeagus is narrower, more curved and apically broader at the ventral extension, and the medial sclerital band on the vesica is shorter.”

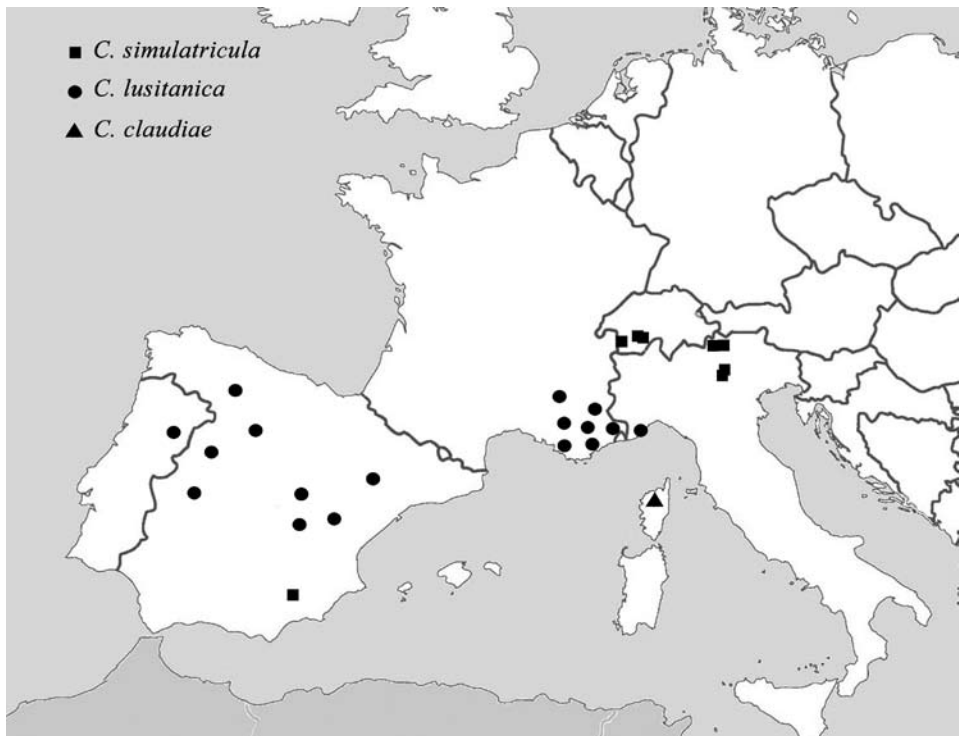


Fig. 1 – *Cryphia* sp. distribution.

Thanks to the generosity of some colleagues we were able to study two specimens of the taxon *simulatricula* and more than a dozen of *lusitanica*.

In our specimens of *simulatricula* and *lusitanica* we have observed the same differences present in the photos in the Fibiger's book. The differences between the two species are small but in our opinion consistent.

About the distribution of the two taxa in FIBIGER et al. (2009) it seems that there is some confusion about the distribution of the two species. According to the distribution maps and the text, *C. lusitanica* seems only present in Iberian Peninsula, while the TAV. 10 of the same volume also illustrates specimens from south-eastern France. According to Alberto Zilli (*in litteris*) the final revision of the volume was affected by the illness of the main author Michael Fibiger, unfortunately died shortly thereafter.

Based on the specimens we have been able to examine, the data in the literature and also the information available on the Web, it can be said that *Cryphia simulatricula* is distributed in southern Spain (Sierra Nevada) and in some warm valleys of the Alps, in the southern part of Switzerland and in northern Italy (Val Venosta - Alto Adige and Lake Garda).

Cryphia lusitanica is widespread in Portugal, in the central part of Spain, in southern France and in the western extremity of Liguria (Italy). (ARNSCHEID, 1999). Quotations for other Italian regions are not considered reliable; by the way the species was described from Florence (Tuscany - Italy) with the question mark after the locality.

Genetic studies

DNA extracts were prepared from a dried leg of each of 10 specimens of *Cryphia* and processed at the Canadian Centre for DNA barcoding Biodiversity Institute of Ontario, University of Guelph to obtain DNA barcodes.

The 10 specimens were sent altogether for the DNA barcoding, including all of the three available specimens of the new species, the two of *Cryphia simulatricula* from Switzerland and 1 Spanish specimen and 4 from the south of France of *Cryphia lusitanica*.

Unfortunately for the samples of *C. simulatricula* and for those of the new species from Corsica it was not possible to obtain any sequence probably due to the age of the specimens.

Instead the sequences of one specimen from Spain and 4 from south France of *C. lusitanica* were successfully obtained. So it was possible to compare this data with the specimens present in the database of BOLD which are two specimens of *C. simulatricula* (common data) from Val Venosta (Northern Italy) belonging to the Tiroler Landesmuseen Innsbruck and of which Peter Huemer kindly proceeded to verify the determination by extraction of the male genitals.

Maximum intraspecific distance of *C. lusitanica* is 1,14 %.

The two specimens of *C. simulatricula* show a DNA that falls within the range of *C. lusitanica* variability.

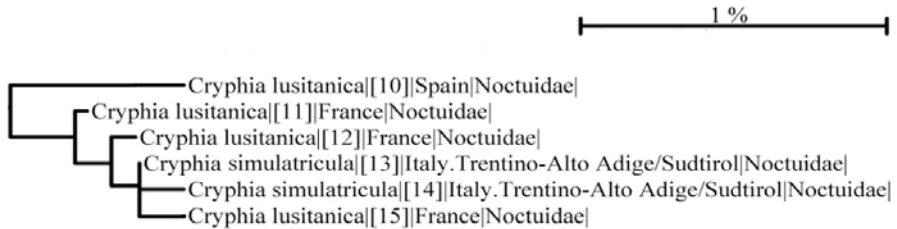


Fig 2 – BOLD taxonID tree.

At the moment therefore the genetics does not seem to confirm the validity of the specific separation between the two taxa *Cryphia simulatricula* and *Cryphia lusitanica*. A more reliable evaluation can only be performed by examining the genetics of a larger number of specimens of the *Cryphia simulatricula* – *lusitanica* complex from all distribution areas.

With regard to the new species, the authors have repeated researches in Corsica in the hope of finding new specimens that could allow to obtain the genetic sequence of this population. However not having succeeded in the attempt, it was decided to publish this note with the description of the species on the basis of only morphological characters.

***Cryphia claudiae* sp. n.**

Material.

Holotype: ♂, Corsica, Haut Asco, 1500 m, 18.VII.2003, leg. et coll. G. Govi.

Paratypes: 1 ♂, same collecting data as holotype, 1 ♀, Corsica, Haut Asco, 1150 m, 11/13.VII.2001, leg. et coll. G. Govi.

Description.

Adult (Figs 5 ex 6, 7, 8).

C. claudiae is a fairly large and narrow winged species very similar in external features to *Cryphia lusitanica*.

Antenna very shortly ciliatae in male, filiform in female. Male antennomeres with dorsal scales white. White erect palps with sparse grey lateral scales. Wingspan 26-27 mm. Forewings light olive grey; on the costal margin are evident three dark spots. The antemedian line is poorly defined while the postmedian is black and well marked. The antemedian and postmedian lines are joined to the base by a

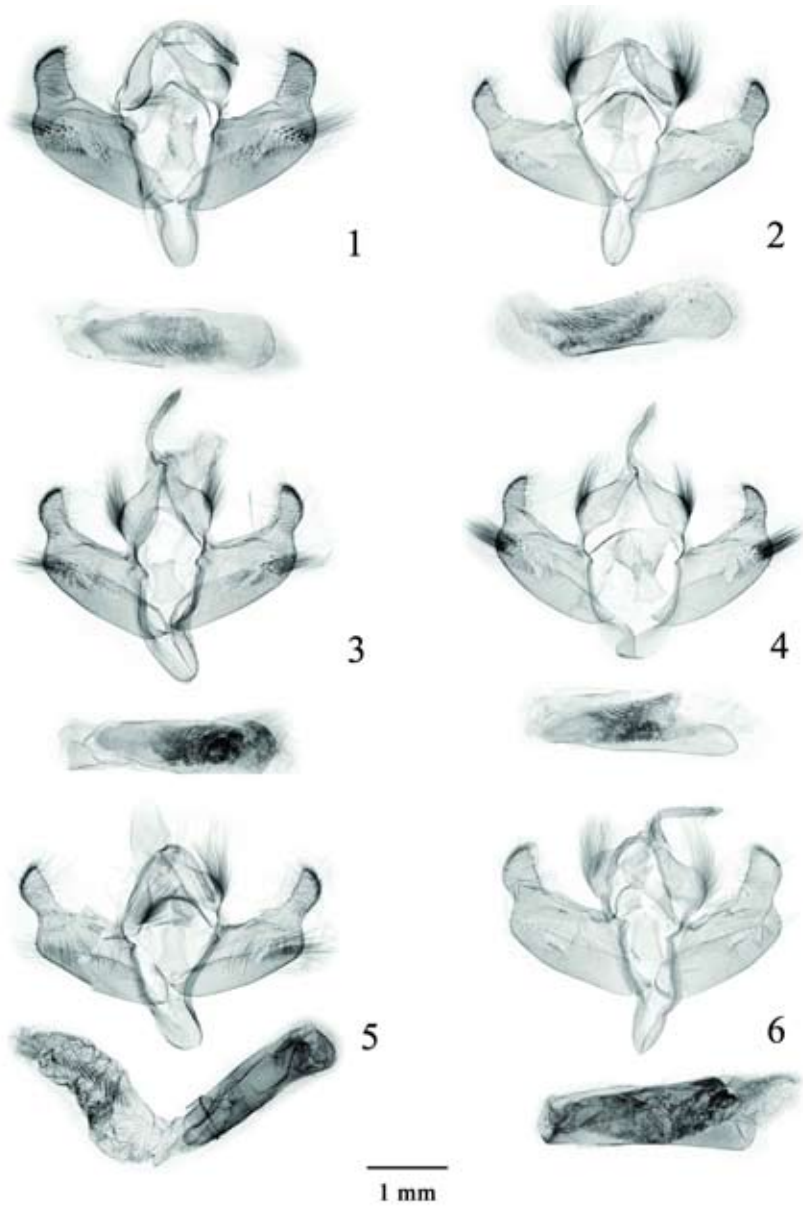


Fig. 3 – Male genitalia: 1) *C. simulatricula* Switzerland Erschmatt; 2) *C. lusitanica* France Drôme Auelon; 3) *C. lusitanica* France H. Provence; 4) *C. lusitanica* Spain Aragona; 5) *C. claudiae* (holotypus) France Corsica H. Asco; 6) *C. claudiae* France Corsica H. Asco.

marked black stripe as in *lusitanica*. Hingwings with a blurred discal spot and a dark postmedian band; the fringes are checkered.

Male genitalia (Figs 3 ex 5, 6 - Figs 4, 5).

Squared valva with parallel margins as in *C. simulatricula*, the sacculus distally forms an almost upright angle. Cucullus stretched more than in *simulatricula* and *lusitanica* variable in width and curvature in the two known specimens; this is a peculiar aspect because the form of cucullus shows a little intraspecific variability both in *simulatricula* and *lusitanica*. Under the costal margin of the valva it's possible to observe a sharp process "editum" (sensu BERIO, 1985) not detectable in *simulatricula* and *lusitanica*. Below the uncus is well developed an arc-shaped tegumen linking two silky penniculi. The juxta is elongated compared to congeners. Aedeagus short, wide, with a membranous vesical bladder length equal to the aedeagus and with a long medial sclerital band wider than in *simulatricula* as well as in *lusitanica* (Fig. 3)

Female genitalia. Unknown.

Derivatio nominis.

The new species is dedicated to Claudia Feralli, the wife of the first author.

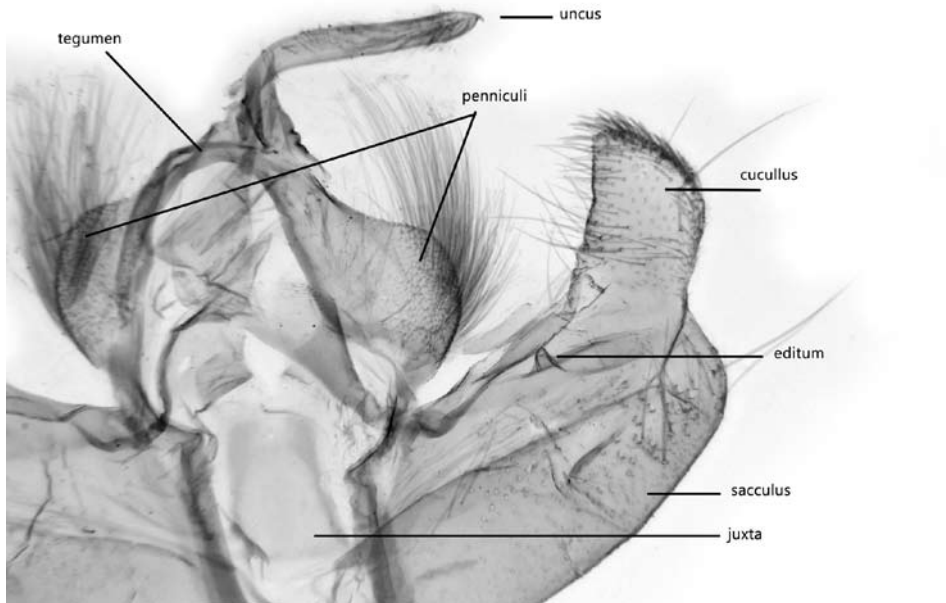


Fig. 4 – *C. claudiae* holotypus: Male genitalia.

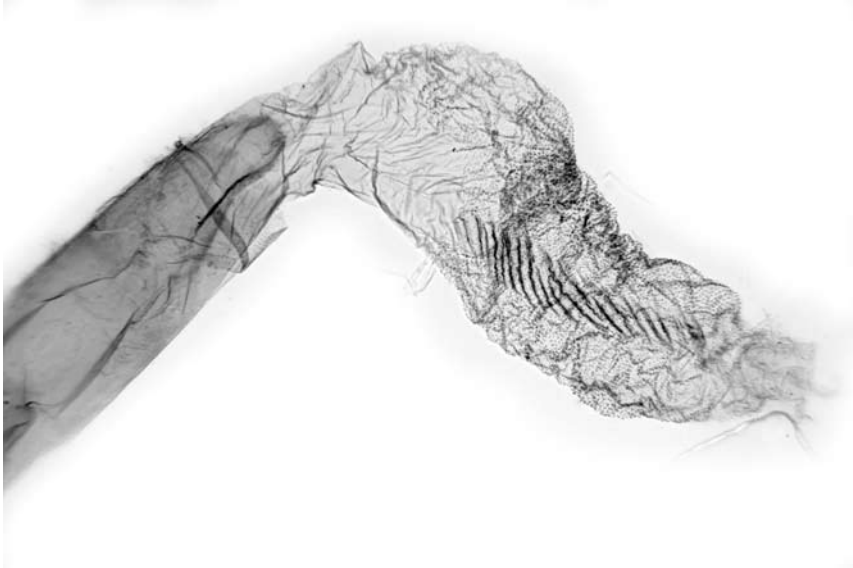


Fig. 5 – *C. claudiae* holotypus: Aedeagus vesica.

Remarks and ecological notes.

The three known specimens of *Cryphia claudiae* n. sp. were found in two different years in the Gorges de L'Asco, northern Corsica, in the massif of Monte Cinto, at an altitude between 1110 and 1500 meters a.s.l..

Data about the bionomics are scarce. The flight habitat is characterized by rocky slopes with forests of *Pinus nigra laricio* (Fig. 7).

The larval food plant is unknown but most likely the larva feeds on lichens like the congeners.

The species seems to be extremely rare because the researches carried out by one of the authors in the locality of flight during several years have allowed to find the only three known specimens.

The phenology of the new species also appears peculiar. The known specimens were collected in the middle of July, about 1-2 months earlier than in the populations of both *C. simulatricula* and *C. lusitanica*, that fly between the second half of August and the first half of September.

Conclusions

The new species is similar in the external habitus to *C. lusitanica* from which it is distinguished by the male genitalia, that show constant peculiar characteristics in the two known male specimens.

Unfortunately it was not possible to obtain the genetic sequences of any of the three known specimens and therefore the description of the new species *Cryphia*



1



2



3



4



5



6



7



8

claudiae is based only on morphological study.

It is hoped that the description of this new species may be of inspiration to carry out specific researches by other entomologists. In this way it would be possible the finding of new specimens with the possibility to use the consequent molecular data to confirm the validity of the new taxon.

Aknowledgements

The authors are mostly grateful to Dr Alberto Zilli (Natural History Museum, London) for the loan of specimens of *Cryphia simulatricula* from Provera-Zilli collection and the comment about the problems in the map distribution of *C. simulatricula* and *C. lusitanica* in the book Noctuidae Europaeae 11 (FIBIGER et al., 2009); to the French colleagues Claude Tautel, Philippe Mothiron, Jean P. Descombes who have gifted us several specimens of *Cryphia lusitanica* from France and Spain; to Peter Huemer (Tiroler Landesmuseum Ferdinandeum, Innsbruck) who kindly confirmed the classification of the two specimens of *Cryphia simulatricula* present in BOLD with preparations of the genitalia; to Egbert Friedrich who allowed us to use the photo of a specimen of *Cryphia simulatricula* collected in Northern Italy; to Aidas Saldaitis and Alessandro Floriani for the DNA barcoding.

Fig. 6 – Imagos of:

- 1) *C. simulatricula* ♂, Switzerland (VS) Erschmatt m 1000, 12-19/08/1996 leg. P. Provera.
- 2) *C. simulatricula* ♂, Italy Sudtirolo Vinschgau Tanas m 1300, 28/07/2005 leg. E. Friedrich.
- 3) *C. lusitanica* ♂, France Drôme Auceleon m 800, 01/09/2005 leg. A. Pouget.
- 4) *C. lusitanica* ♂, France Alta Provenza la Thuiles m 1400, 08/08/2016 leg. Ph. Mothiron.
- 5) *C. lusitanica* ♂ Spain Aragona Ladrurian, 06/09/2010 leg. J.P. Descombes.
- 6) *C. claudiae* ♀, France Corsica Haute Asco m 1150, 18/07/2003 leg. G. Govi.
- 7) *C. claudiae* ♂, France Corsica Haute Asco m 1150, 11-13/07/2001 leg. G. Govi.
- 8) *C. claudiae* ♂, (holotypus) France Corsica Haute Asco m 1500, 18/07/2003 leg. G. Govi.

References

- ARNSCHIED W. 1999 – Die Macrolepidopterenfauna Westligurien. *Neue Entomologische Nachrichten*, 47: 3-310.
- BLÁZQUEZ Á., 2012 – Nuevos datos sobre la fauna de macroheteróceros de la provincia de Cáceres (España) VI. *SHILAP Revta. Lepid.*, 40 (160): 433-446.
- BRUSSEAU G. NEL J.- 2004 – Lépidoptères de Corse. Revision de la liste-inventaire de Charles E. E. Rungs (1988) des especes de l’Ile. Supplément à R.A.R.E. Tome XIII.
- BERIO E. 1985 – Lepidoptera Noctuidae. I. Generalità Hadeninae Cuculliinae - Fauna d’Italia, Vol. XXII., *Ed. Calderini*, Bologna: 970 pp., 32 tavv.
- CORLEY M.F.V., MERCKX T., CARDOSO J.P., DALE M.J., MARABUTO E., MARAVALTHAS E. & PIRES P., 2012 – New and interesting Portuguese Lepidoptera records from 2011. *SHILAP Revta. Lepid.*, 40 (160): 489-511.
- DAPPORTO L., FIUMI G. & GOVI G., 2006 – Interessanti specie della regione Sardo-Corsa (Lepidoptera Heterocera). *Boll. Soc. entomol. ital.*, 138(1): 45-50.
- FIBIGER M., RONKAY L., STEINER A. & ZILLI A., 2009 – Noctuidae Europaeae. Vol. 11. Pantheinae-Bryophilinae. *Entomological Press*, Sorø: 504 pp.
- MAGRO R. & JAMBRINA J., 2014 – Catálogo razonado de los Lepidoptera de Castilla y León, España (Parte III). *SHILAP Revta. Lepid.*, 42 (166): 173-212.
- ORTIZ A.S., GARRE M., GUERRERO J.J., RUBIO R.M. & CALLE J.A., 2012 – Los Noctuoidea del Parque Natural de la Serranía de Cuenca (España). *SHILAP Revta. Lepid.*, 40 (159): 245-277.
- PARENZAN P. & PORCELLI F., 2007 – I Macrolepidotteri Italiani - Fauna Lepidopterorum Italiae. *Phytophaga*, Palermo, XV (2005-2006), 5-391.L.,
- WOLFSBERGER J., 1965 – Die Macrolepidopteren-Fauna des Gardasegebietes. *Mem. Museo St. Nat.*, Verona, Vol XIII: 1-385.
- <http://www.lepiforum.de/lepiwiki.pl>
- <http://www.lepinet.fr/especies/nation/lep/index.php?e=l&id=43560>



Fig 7 – Corsica: Haute Asco.

Authors' addresses:

Guido Govi
via F. Rossi, 23 I- 47121 Forlì (FC)
e-mail: ggovi@tiscali.it

Gabriele Fiumi
via Decio Raggi, 167 I-47121 Forlì (FC)
e-mail: gabfium@tiscali.it