

# *Coleophora cantabrica* Baldizzone, sp. nov. a new species from Spain. *Coleophora repentis* Klimesch, 1947 new species for the Iberian Peninsula. Contribution to the knowledge of Coleophoridae CLVI (Lepidoptera: Coleophoridae)

Giorgio Baldizzone

## Abstract

The publication deals with the description of *Coleophora cantabrica* Baldizzone, sp. nov., species of the Cantabrian Mountains and Sierra de Gredos belonging to the group of *C. genistae* Stainton, 1857, close to *C. oreiosella* Baldizzone, 2019. *C. repentis* Klimesch, 1947 is also reported, for the first time from Spain and the Iberian Peninsula.

**Keywords:** Lepidoptera, Coleophoridae, *Coleophora*, new species, new faunistic record, Spain.

*Coleophora cantabrica* Baldizzone, sp. nov. una nueva especie de España. *Coleophora repentis* Klimesch, 1947 nueva especie para la Península Ibérica. Contribución al conocimiento de Coleophoridae CLVI (Lepidoptera: Coleophoridae)

## Resumen

La publicación trata de la descripción de *Coleophora cantabrica* Baldizzone, sp. nov., especie de la Cordillera Cantábrica y Sierra de Gredos perteneciente al grupo de *C. genistae* Stainton, 1857, próxima a *C. oreiosella* Baldizzone, 2019. También se cita *C. repentis* Klimesch, 1947, por primera vez de España y la Península Ibérica.

**Palabras clave:** Lepidoptera, Coleophoridae, *Coleophora*, nueva especie, nuevo registro faunístico, España.

## Introduction

The fauna of the Spanish Coleophoridae is among the richest in Europe and certainly still contains many species to be added, including some not yet described. Over the years I have had the opportunity to study numerous specimens collected by various lepidopterologists, identifying most of the species, but many still remain to be determined with certainty, for various reasons, such as the small number of specimens, or belonging to difficult groups for which an overall review is necessary and difficulty in obtaining a result with DNA examination especially from specimens not collected in recent years. Last year I received many specimens collected by Toni Mayr (Feldkirch, Austria) collected in various areas of Spain, especially in the northern part. Among these I discovered a new species from the Cantabrian Mountains belonging to the group of *Coleophora genistae* Stainton, 1957 which is described below with the name *C. cantabrica* Baldizzone, sp. nov. Further specimens were detected from the collection

of T. & K. Nupponen (Espoo, Finland), collected from the Sierra de Gredos Mountain range. I also identified a specimen of *C. repentis* Klimesch, 1947, a species new to Spain and the Iberian Peninsula.

## Material and methods

The Euparal slide mounts of dissected genitalia were photographed with a Bresser 5.0 camera attached to a Bresser BioScienze 40-1000x trinocular microscope, using a Leitz PL Fluotar 6.3 / 0.20 objective. The images were edited in Corel Paint Shop Pro. The habitus was photographed with a Canon EOS 5D Mark II digital camera equipped with a Canon MP-E 65 mm objective, with lighting provided by two circular neon lamps OSRAM L 32W / 8400 C (cool white). The CombineZP program was used for stacking layers into deep-focus images. Morphological terms follow Baldizzone (2019a).

## Abbreviations

Bldz = Giorgio Baldizzone

GP = genital preparation

MNCN = Collection of Antonio Vives, Museo Nacional de Ciencias Naturales, Madrid, Spain

TLMF = Tiroler Landesmuseum Ferdinandeum, Hall, Austria

## Taxonomy

### Description of new species

#### *Coleophora cantabrica* Baldizzone, sp. nov. (Figures 1, 4-7, 8-10)

Holotype ♂ (GP Bldz 17635) “Spanien, Castilla y León, Cantabrische Gebirge, Picos de Europa, Umg.[ebung] Portilla de la Reina, 1230 m, N 43°02,86’ W 4°51,09’, 9-VII-2012, Mayr Toni leg.”, in coll. TLMF. Paratypes: 1 ♀ (GP Bldz 17640), same label, in coll. Mayr; 3 ♂♂ (GP Bldz 17639, 17651) “Spanien, Cantabrische Gebirge, NP Picos de Europa, Portillas del Boquejón bei Espinama, 1340 m, N 43°08,92’ W 4°46,53’, 11-VII-2012, Mayr Toni leg.”, in coll. Mayr, in coll. Baldizzone and in coll. MNCN; 1 ♂ [DNA Specimen ID: TLMF Lep 19994] same place and date, leg. P. Huemer, coll. TLMF. 1 ♂ (DNA sample 21819 Lepid Phyl) “Spain, Avila, Mombeltran 3 km W, 19-V-2007, K. Nupponen leg., coll. Nupponen; 2 ♂ (GP 5289 J. Tabell, DNA sample 24553 Lepid Phyl; DNA sample 24554 Lepid Phyl) “Spain, Castilla y León, Avila, La Herguijuela 1 km W, 1650 m, 15-VII-2012, T. Nupponen leg., in coll. Nupponen and in coll. Tabell; 1 ♀ (GP 6203 J. Tabell, DNA sample 24555 Lepid Phyl), same label, in coll. Nupponen.

Diagnosis: Medium-small sized species, with ochreous-brown forewing and white costal stripe. It belongs to the group of *Coleophora genistae* Stainton, 1857 and based on the male genitalia it is similar to *C. oreiosella* Baldizzone, 2019, a species known only from the high altitudes of Sierra Nevada (Spain) of which the female is unknown. In comparison with that of *C. oreiosella*, the male genitalia of *C. cantabrica* shows the following differences: the tegumen is slightly longer and trapezoidal, and the pedunculus is shorter; the valvula is broader and lacks the robust short seta erect on the edge at the base of the cucullus; the sacculus is longer and thinner, with a more curved ventral edge; the phallosome is longer and dorsally not sclerified; the cornuti are much more numerous and thinner. The female genitalia somewhat resemble that of *C. vulpecula* Zeller, 1849. The main differences are as follows: in *C. cantabrica* the papillae anales are longer and narrower; the sterigma is higher and the two oblique folds on its surface are thicker; the colliculum is wider; the corpus bursae is much smaller, oval and not sac-shaped, and the signum is markedly larger.

Molecular data: Five samples were sequenced successfully, resulting in 658 bp (n=4) and 600 bp (n=1) barcodes (BIN:BOLD:ACT1870). The nearest neighbour is *Coleophora septembra* Tabell, 2017,

with a 5.61 % divergence (BIN:BOLD:AAV8014). The barcodes of *C. cantabrica* exhibit no intraspecific variation. So far there are no barcodes for *C. oreiosella* in BOLD.

Description (Figure 1): Wingspan 12-13 mm. Head white, almost completely yellow dorsally. Antenna white ringed with brown; scape white with tuft of light ochreous short erect scales. Labial palpus white, suffused with brown on the outer side; the third segment is about two-thirds length of the second. Proboscis of normal shape. Thorax white, tinged with yellow in the median part, tegula yellow. Forewing ochreous-brown, slightly tinged with yellow in the dorsal half with four white stripes: costal stripe very narrow in basal one-fifth, then wider up to the apex, a very thin barely visible stripe along the edge of the cell, an incomplete stripe wider at the base along the anal fold, dorsal stripe wider at the base and then progressively narrower; costal fringes white, apical ochreous-brown, dorsal fringes light grey suffused with pale yellow. Hindwing grey; with light ochreous-grey fringes. Abdomen dirty white.

Abdominal structures (Figures 7, 10): No posterior lateral strut, transverse strut with proximal edge slightly curved, more sclerotized in middle, distal edge arched and thicker in the male, while in the female the transverse strut is thinner with a straight proximal edge and a distal edge slightly arched, not medially sclerotized. Tergal discs (3rd tergite) length about 3.5 times their width, covered with about 45-50 small conical spines in the male; in the female the tergal discs are twice their width.

Male genitalia (Figures 4-6): Gnathos knob globular. Tegumen large, subtrapezoidal, slightly constricted medially, pedunculus short. Transtilla short, triangular. Valvula large, subtrapezoidal, slightly curved on dorsal edge, inclined on the outer edge. Cucullus elongated, slightly narrower at the base, club-shaped. Sacculus small, with slightly inclined ventral edge, curved outer edge, inclined and more sclerotized dorsal edge. Phallosome conical, slightly curved, more sclerotized at the base. Numerous cornuti, of different lengths, collected in a long braid, progressively longer towards the apex where some protrude elongated and divergent.

Female genitalia (Figures 8-9): Papillae anales elongated oval. Apophyses posteriores twice as long as anteriores. Sterigma subtrapezoidal, with curved distal border bristling with setae of different lengths, deeply hollowed by the sinus vaginalis; on the surface there are two curved longitudinal folds on the sides of the colliculum starting from the base of the apophyses posteriores and ending at the level of the distal end of the colliculum. Ostium bursae oval. Colliculum as long as the sterigma, large, calyx-shaped, crossed by the broad medial line which widens in a funnel shape and divides at the distal part of the colliculum following the edges. Ductus bursae: the posterior part is wrapped in small spines in the distal section, about 3 times the length of the sterigma, while in the central convoluted part, where the median line begins, it is transparent; the anterior part of the ductus is completely transparent, coiled, about as long as the sterigma. Corpus bursae round with a large anchor-shaped signum

Bionomy: Unknown.

Distribution: The new species was collected in Spain in the Cantabrian Mountains in the Picos de Europa area and the Sierra de Gredos at an altitude between 1230 and 1650 m.

Etymology: The name derives from the Cantabrian Mountains, where the species was found.

### New faunistic record

*Coleophora repentis* Klimesch, 1947 (Figures 11-13)

*Coleophora repentis* Klimesch, 1947. *Z. wien. ent. Ges.*, 31, 35

TL: AUSTRIA, Altaussee (Steiermark)

= *Coleophora franzi* Klimesch, 1947. *Z. wien. ent. Ges.*, 31, 33

TL: AUSTRIA, Gamsgrube, Grossglockner

Material: 1 ♂ (GP Bldz 17641) Spain, Aragón, Valle de Acumuer, surroundings of Larrés, 920 m, bed of Río Aurín, N 42°04'54" W 0°23'24", 23-VII-2006, T. Mayr leg., in coll. Mayr.

Distribution: Rare and localized species, which feeds on *Gypsophila repens* (Caryophyllaceae),

known only from a few alpine xerothermic localities in France, Italy, Switzerland and Austria. **First record for Spain and the Iberian Peninsula.**

### Acknowledgements

I thank Toni Mayr (Feldkirch, Austria) for sending me his interesting material for the determination and for some information and photographs of the places where he collected the new species. I also thank Jukka Tabell (Hartola, Finland) for his opinion and help with genetical information and analysis of molecular data and Pier Giuseppe Varalda (Morano sul Po, Italy) for the photos of the imagos. Thanks to Martin Corley (Faringdon, UK) for the correction of the English text and finally to Dr. Antonio Vives (Madrid, Spain) for the translation of the abstract into Spanish.

### References

- Baldizzone, G. (2019a). Description of *Coleophora oreiosella* Baldizzone, sp. n. and new records on the distribution of some European Coleophoridae (Lepidoptera: Coleophoridae). *SHILAP Revista de lepidopterología*, 47, 269-277.
- Baldizzone, G. (2019b). Lepidoptera Coleophoridae. *Fauna d'Italia. LIII*. Calderini.
- Klimesch, J. (1947). Ueber zwei neue Arten aus der *Coleophora millefolii* Z-Gruppe. *Coleophora franzi* spec. nov. und *C. repentis* spec. nov. (Lep., Coleophoridae). *Zeitschrift der Wiener Entomologischen Gesellschaft*, 31 [Band 57] [1946], 3338.
- Stainton, H. T. (1857). New British species in 1856. *The Entomologist's Annual*, 1857, 97-112.
- Zeller, P. C. (1849). Beitrag zur Kenntniss der Coleophoren. *Linnaea Entomologica*, 4, 191-416.

Giorgio Baldizzone  
Via Manzoni, 24  
I-14100 Asti  
ITALIA / ITALY  
E-mail: baldizzonegiorgio@gmail.com  
<https://orcid.org/0000-0001-8127-0843>

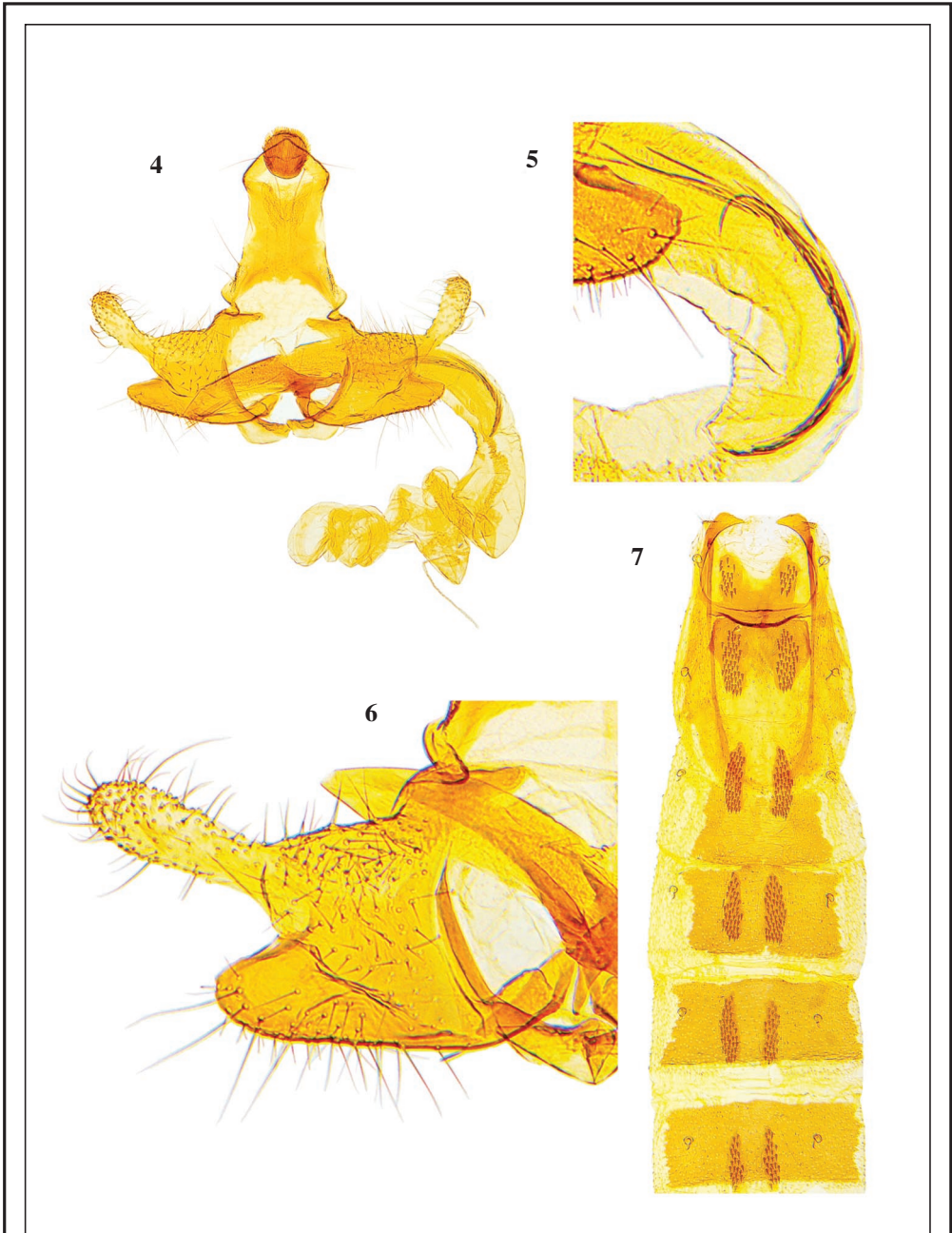
y / and

Muséum d'Histoire Naturelle de Genève  
(Corresponding member)  
C. P. 6434  
CH-1211 Geneva 6  
SUIZA / SWITZERLAND

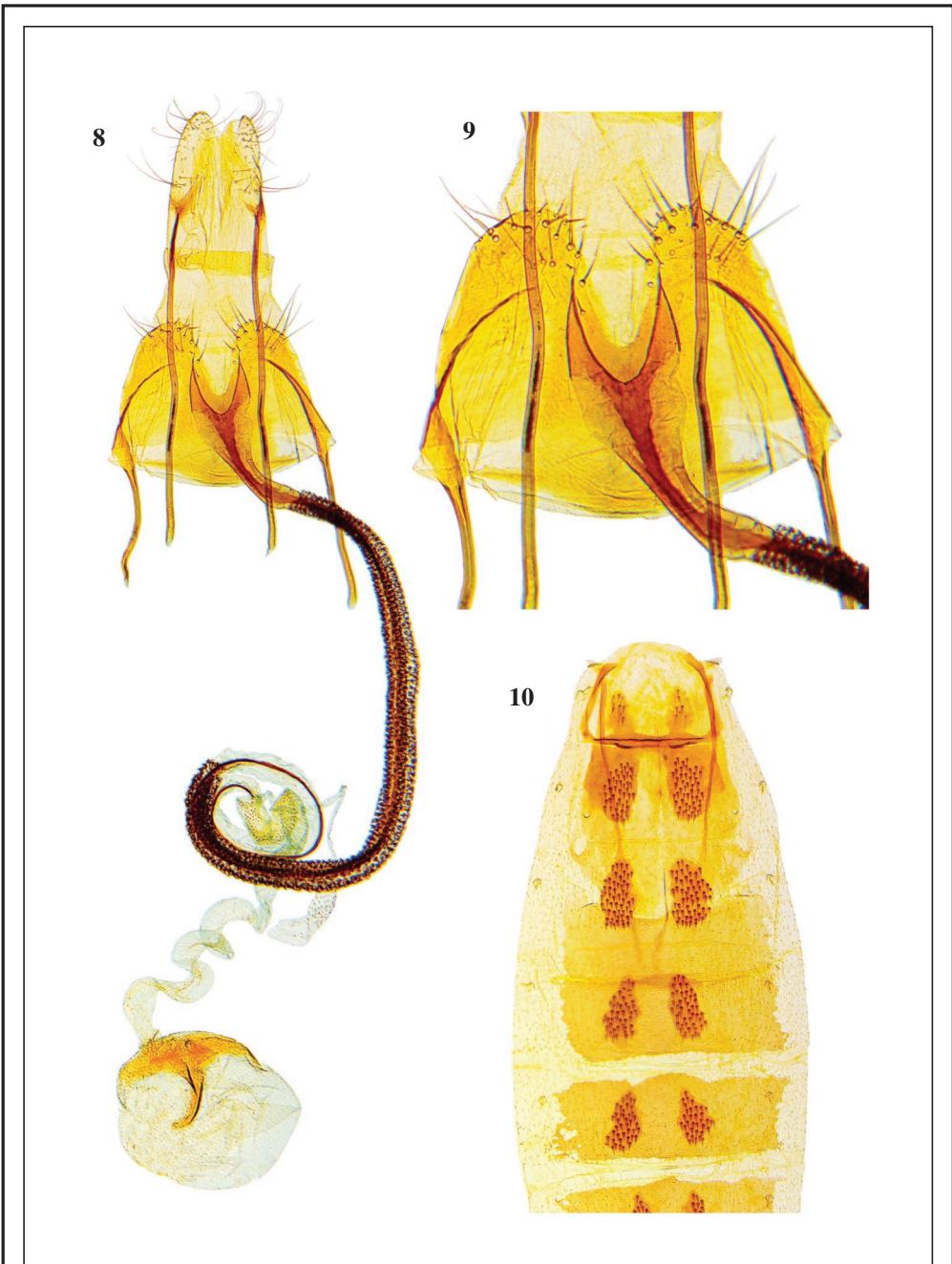
Recibido para publicación / *Received for publication* 10-III-2023)  
(Revisado y aceptado / *Revised and accepted* 21-V-2023)  
(Publicado / *Published* 30-IX-2023)

**Derechos de autor:** El autor(es). Este es un artículo de acceso abierto distribuido bajo los términos de la Licencia de Reconocimiento 4.0 Internacional de Creative Commons (CC BY 4.0), que permite el uso, distribución y reproducción sin restricciones en cualquier medio, siempre que se cite al autor original y la fuente. / **Copyright:** The author(s). This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

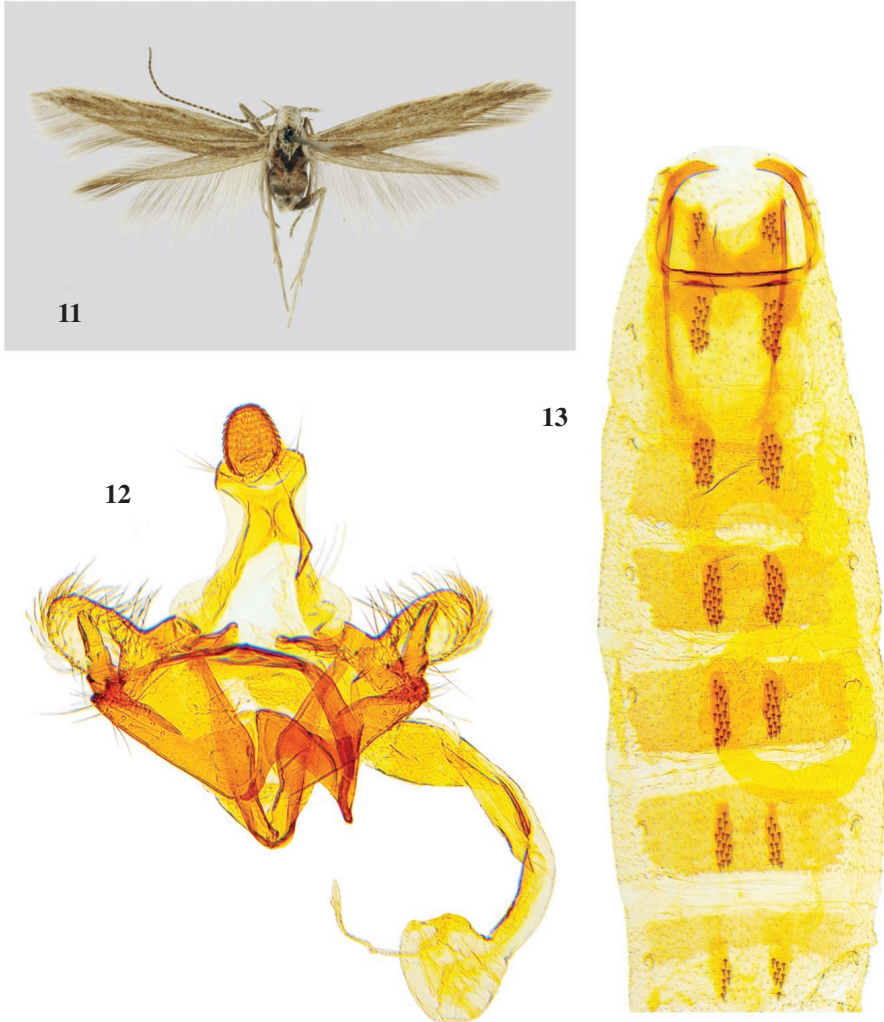




**Figures 4-7.** 4. *C. cantabrica* Baldizzone, sp. nov., male genitalia, paratype (GP Bldz 17651). 5. Enlarged detail of cornuti, holotype (GP Bldz 17635). 6. Enlarged detail of valva and phallosome, holotype. 7. Abdominal segments 1-6. paratype (GP Bldz 17639).



**Figures 8-10.** 8. *C. cantabrica* Baldizzone, sp. nov., female genitalia, paratype (GP Bldz 17640). 9. Enlarged detail of sterigma and colliculum. 10. Abdominal segments 1-5.



**Figures 11-13.** 11. *C. repentis* Klimesch, 1947, male, Spain, Aragón, Valle de Acumuer, surroundings of Larrés, 920 m, bed of Río Aurín, 23-VII-2006, T. Mayr leg. (photo P. G. Varalda). 12. Male genitalia (GP Bldz 17641). 13. Abdomen.