

# *Argyresthia cedrusella* Falck, sp. nov. from the Canary Islands, Spain (Lepidoptera: Argyresthiidae)

Per Falck

## Abstract

*Argyresthia cedrusella* Falck, sp. nov. is described from Tenerife, Canary Islands, Spain. It is compared with its morphological close relative, *A. chrysidella* Peyerimhoff, 1877. Photographs of the adults and the genitalia of both species are provided. The new species is barcoded.

**Keywords:** Lepidoptera, Argyresthiidae, *Argyresthia cedrusella*, new species, endemic, DNA barcodes, Canary Islands, Spain.

*Argyresthia cedrusella* Falck, sp. nov. de las Islas Canarias, España  
(Lepidoptera: Argyresthiidae)

## Resumens

Se describe *Argyresthia cedrusella* Falck, sp. nov. de Tenerife, Islas Canarias, España. Se compara con su pariente morfológico más cercano, *A. chrysidella* Peyerimhoff, 1877. Se proporcionan fotografías de los adultos y de la genitalia de ambas especies. La nueva especie tiene código de barras.

**Palabras clave:** Lepidoptera, Argyresthiidae, *Argyresthia cedrusella*, nueva especie, endemismo, ADN código de barras, Islas Canarias, España.

## Introduction

The family Argyresthiidae is consisting of about 206 species with only one single genus, *Argyresthia* Hübner, [1825], which is often separated into two subgenera, *Argyresthia* and *Blastotere* Ratzeburg, 1840 (Santa-Rita et al. 2020). Several species of the subgenus *Blastotere* are unicolorous and very difficult to determine (Bengtsson & Johansson, 2012). During field work in Tenerife by the author two specimens of an unknown *Argyresthia*-species, belonging to the subgenus *Blastotere*, were attracted to artificial light. On a later visit several specimens were disturbed from the branches of *Juniperus cedrus* Webb & Berthel. The genus *Argyresthia* is recorded from the Canary Islands, Spain for the first time (Aguiar & Karsholt, 2006, p. 87, Vives Moreno, 2014, p. 103).

## Abbreviations used

PF	Collection of Per Falck, Neksø, Denmark
MNCN	Collection of Antonio Vives, Museo Nacional de Ciencias Naturales, Madrid, Spain
NMW	Collection of Naturhistorisches Museum Wien

## Material and methods

Most of the specimens were collected by beating the branches of *Juniperus cedrus* Webb & Berthel and two specimens were attracted to an 8-watt super actinic light.

Male and female genitalia were dissected and prepared following Robinson (1976).

Adults were photographed with a Canon EOS 700D camera equipped with a Canon EF 100 mm objective. The genitalia slides were photographed using a Soptop CX40T Trinocular microscope in conjunction with a Toup Tek P10500AE3 / E3ISPM05000KPA-E3 / 5.0MP USB3 camera.

The author examined the morphology and the DNA barcodes from the new species. DNA samples were prepared as described by Falck & Karsholt (2023, p. 271). Details of successfully sequenced voucher specimens are publicly available through the dataset DS-XXXX at [www.boldsystems.org](http://www.boldsystems.org). Plant names are according to World Flora Online (2024).

***Argyresthia cedrusella* Falck, sp. nov.** (Figures 1, 2, 5, 5a, 7, 7a)  
<https://zoobank.org/4E4FA782-D5FF-4A1C-8F96-DD222D82BBDC>

Holotype ♀: SPAIN, TENERIFE, Aguamansa, 1050 m, 1-13-VI-2022, leg. P. Falck (MNCN).

Paratypes: SPAIN, Tenerife, Aguamansa, 1050 m, 2 ♀, 21-V-3-VI-2019, leg. P. Falck, genitalia slide 3320PF, DNA samples Lepid Phyl 0216PF/CILEP215-19, 0217PF/CILEP216-19, same data but 5 ♂, 31 ♀, 1-13-VI-2022, leg. P. Falck, genitalia slide 4096PF, 4097PF, 4105PF (all PF).

Diagnosis: *A. cedrusella* -resembles especially *A. chrysidella* Peyerimhoff, 1877 (Figures 3-4) and it is not possible to separate them without dissection of the genitalia. *A. cedrusella* is distinguished from other unicolorous species of the subgenus *Blastotere* by its larger wingspan and the ochreous colour of the forewings.

The male genitalia (Figures 5-5a) of *A. cedrusella* differ from those of *A. chrysidella* (Figures 6-6a) by the phallus. The cornutus is more than half the length of the phallus and the vesica is densely covered with small spines in *A. cedrusella* while in *A. chrysidella* the cornutus is clearly shorter than half the length of the phallus and the number of small spines in the vesica is fewer.

The female genitalia (Figures 7-7a) of *A. cedrusella* are characterized by the heavily sclerotized colliculum, the relatively long and anteriorly widening of ductus bursae and the shape of the signum. In *A. chrysidella* (Figures 8-8a) the colliculum is weakly sclerotized, ductus bursae is short and not widening towards corpus bursae and the oval plate of signum is smaller and the teeth on the lateral horns are larger.

Description (Figures 1-2): Wingspan 13.5-15.5 mm. Labial palp slender, gently upturned, segment 2 off white, laterally mottled with brownish scales, segment 3 off-white. Antenna dark grey, distinctively ringed with white; scapus off-white. Head and neck off-white. Tegula and thorax ochreous. Forewing plain ochreous with a golden sheen, sometimes with a few light-brown scales in the cell. Fringe brownish at apex, towards tornus yellowish grey. Hindwing light grey, with yellowish grey fringe. Abdomen light grey.

Variation: The colour of the palp, head and neck varies from almost pure white to light ochreous.

Male genitalia (Figures 5-5a): Tuba analis membranous, sclerotized laterally; tegumen sub-triangular, antero-laterally a pair of well sclerotized appendices angles; uncus absent; gnathos linear, sclerotized; socius a lateral extension covered by about 20 large scales; valva weakly sclerotized, oblong, cucullus rounded at anterior margin with short bristles; vinculum anteriorly concave; phallus twice as long as valva, almost straight; one large, apically pointed cornutus more than half the length of phallus; vesica densely covered by small spines; sclerotized fork on eighth sternite.

Female genitalia (Figures 7-7a): Papillae anales membranous, relatively narrow, covered with short setae; posterior apophysis twice as long as anterior apophysis; antrum funnel-shaped with minute teeth; colliculum an incomplete, heavily sclerotized ring; ductus bursae long, membranous, widening in anterior third; corpus bursae semi-oval; signum a semi-oval plate covered by microdenticles, anteriorly with two lateral thick, toothed hollow horns, which are standing at an angle of almost 180° to each other.

DNA barcodes: DNA fragments of 545 bp were obtained from two specimens. The barcodes fall within Barcode Index Number (BIN) BOLD: AEA1155. The maximum intraspecific p-distance within BIN is 0 %. The minimum p-distance to nearest neighbour (*A. praecocella* Zeller, 1839) is 6.49 % with BIN BOLD:

AAV9868.

**Biology:** Early stages unknown. Most of the specimens were netted during the morning by beating the branches of *Juniperus cedrus* Webb & Berthel, and a few specimens were attracted to actinic light from late May to the end of June. *J. cedrus* is probably the hostplant. It is recorded from the Canary Islands, Spain (Gran Canaria, Tenerife, La Gomera and La Palma) and Madeira, Portugal (World Flora Online, 2024).

**Distribution:** Known only from the northern part of Tenerife, Spain. Probably endemic to the Canary Islands.

**Etymology:** The species is named after its supposed hostplant *Juniperus cedrus* Webb & Berthel.

## Discussion

Due to their small size and unicolorous wings of many species of the subgenus *Blastotere*, it is likely, that further cryptic diversity will be detected in the future, especially by the use of DNA barcoding. However, the present study is primarily based on morphology. The closest relative to *Argyresthia cedrusella*, based on adult and genitalia morphology, is *A. chrysidella*. During the course of the present study, it proved very difficult to trace specimens of *A. chrysidella*. The two specimens available are from southern France (Figures 3a-4a) (NMW) and very old, why barcoding has not been attempted. The differences in the genitalia morphology supports the status of *Argyresthia cedrusella* sp. nov. as a distinct species. For comparison adults, male- and female genitalia of *A. chrysidella* are figured.

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## Conflict of Interest

The author declares that he has no financial interest or personal relationship that could influence the work presented in this article.

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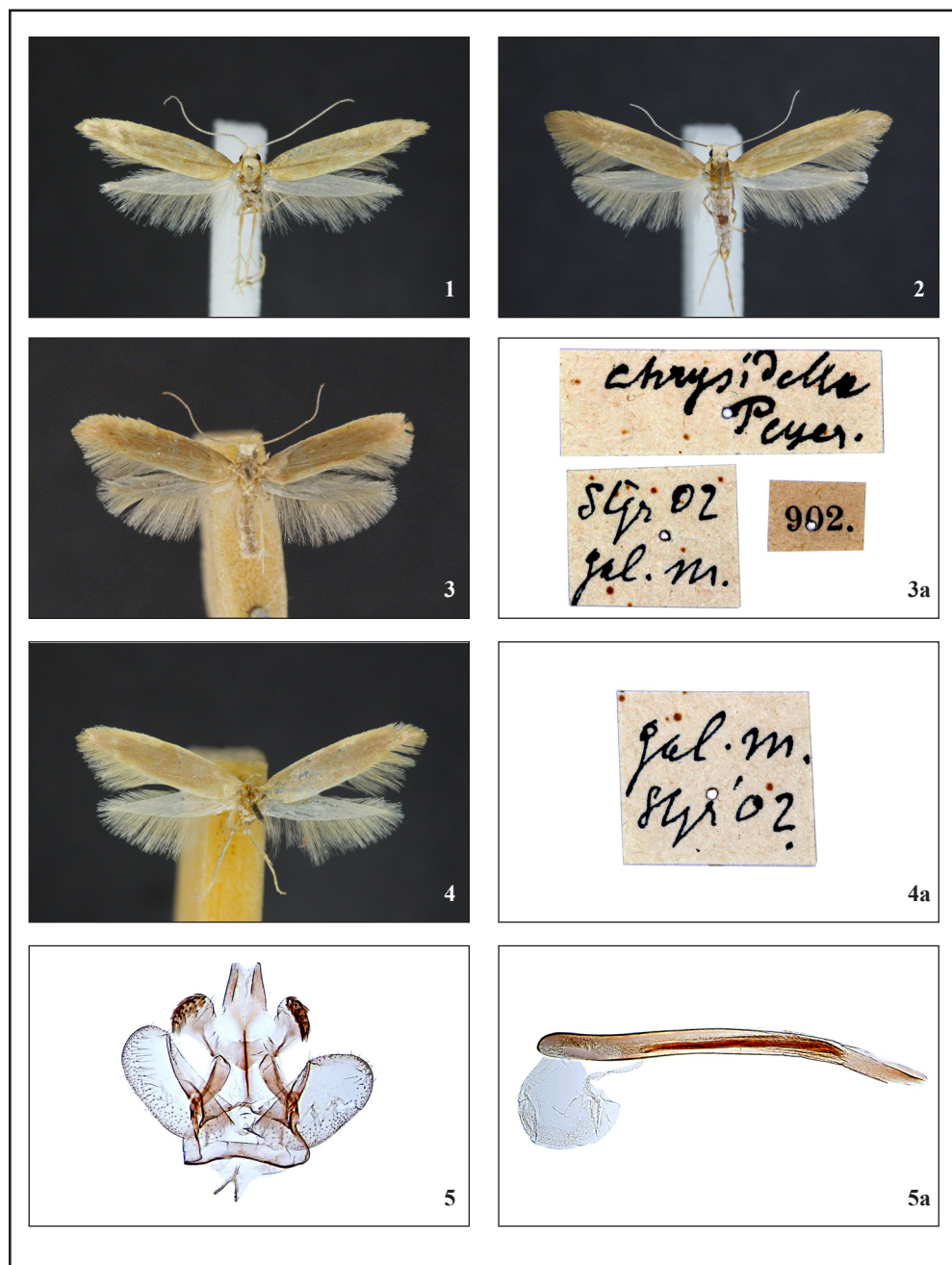
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**Figures 1-5.** 1. *Argyresthia cedrusella* Falck, sp. nov. ♂, Tenerife, 14 mm. 2. *Argyresthia cedrusella* Falck, sp. nov. ♀, Tenerife, 14 mm. 3. *Argyresthia chrysidella* Peyerimhoff, 1877, ♂, France, 14 mm. 3a. Label. 4. *Argyresthia chrysidella* Peyerimhoff, 1877, ♀, France, 14 mm. 4a. Label. 5. *Argyresthia cedrusella* Falck, sp. nov. ♂ genitalia, Tenerife, GP4096PF. 5a. *Argyresthia cedrusella* Falck, sp. nov. ♂, Tenerife, phallus, GP4105PF.





**Figures 6-8.** 6. *Argyresthia chrysidella* Peyerimhoff, 1877, ♂ genitalia, France, GP4111PFa. 6a. *Argyresthia chrysidella* Peyerimhoff, 1877, ♂, phallus, GP4111PFa. 7. *Argyresthia cedrusella* Falck, sp. nov. ♀ genitalia, Tenerife, GP3320PF. 7a. *Argyresthia cedrusella* Falck, sp. nov. ♂, signum, GP3320PF. 8. *Argyresthia chrysidella* Peyerimhoff, 1877, ♀ genitalia, France, GP4004PFa. 8a. *Argyresthia chrysidella* Peyerimhoff, 1877, ♀, signum, GP4004PFa.

