

Two new species of the genus *Acleris* Hübner, [1825] from the Canary Islands (Spain) (Lepidoptera: Tortricidae, Tortricinae, Tortricini)

Per Falck

Abstract

Two species of the genus *Acleris* Hübner, [1825] (Tortricidae) are described from the Canary Islands (Spain): *Acleris bencomiana* Falck, sp. nov. from Gran Canaria and *Acleris martinbruni* Falck, sp. nov. from Tenerife. The hostplant of both species is *Bencomia caudata* (Aiton) Webb & Berthel. Their biology is briefly described. The paper is illustrated with photographs of adults and genitalia of both species. Analyses of DNA barcodes confirm the identifications and demonstrate that each species is well-supported and genetically isolated.

Keywords: Lepidoptera, Tortricidae, Tortricinae, Tortricini, *Acleris*, new species, DNA barcodes, Canary Islands, Gran Canaria, Tenerife, Spain.

Dos nuevas especies del género *Acleris* Hübner, [1825] de las Islas Canarias (España) (Lepidoptera: Tortricidae, Tortricinae, Tortricini)

Resumen

Se describen dos especies del género *Acleris* Hübner, [1825] (Tortricidae) procedentes de las Islas Canarias (España): *Acleris bencomiana* Falck, sp. nov., de Gran Canaria, y *Acleris martinbruni* Falck, sp. nov., de Tenerife. La planta nutricia de ambas especies es *Bencomia caudata* (Aiton) Webb & Berthel. y se describe brevemente su biología. El artículo se ilustra con fotografías de adultos y genitalia de ambas especies. Los análisis de códigos de barras de ADN confirman las identificaciones y demuestran que cada especie está bien fundamentada y es genéticamente distinta.

Palabras clave: Lepidoptera, Tortricidae, Tortricinae, Tortricini, *Acleris*, nuevas especies, códigos de barras de ADN, Islas Canarias, Gran Canaria, Tenerife, España.

Introduction

The family Tortricidae Latreille, 1803 comprises 1071 genera with more than 10,300 species (Nieukerken et al. 2011, p. 215). The total number of species in the genus *Acleris* Hübner, [1825] is about 263 (Gilligan et al. 2018). It is known from all regions, except the Australian region (Razowski, 2002, p. 21). Many species are Holarctic with about 140 species in the Palaearctic region (Razowski, 1984, 2002, p. 21). During fieldwork in Gran Canaria and Tenerife (Spain) the author collected adults at artificial light and found larvae in spun leaves of *Bencomia caudata* (Aiton) Webb & Berthel. (Rosaceae) belonging to an unknown species of *Acleris*. Dissection of the genitalia and barcoding revealed two undescribed species dealt with in the present paper. The genus *Acleris* is recorded from the Canary Islands for the first time (Vives Moreno, 2014, p. 204).

Abbreviations used

PF Collection of Per Falck, Neksø, Denmark

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

Material and methods

All specimens were collected by the author, either at actinic light, netted in the evening or found as larvae.

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 macro lens. The genitalia slides were photographed using a Soptop CX40T trinocular microscope in conjunction with a Touptek 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-BATACAN at www.boldsystems.org and at <https://doi.org/10.5883/DS-ACLCAIS>.

Results

***Acleris bencomiana* Falck, sp. nov.** (Figures 1, 2, 5, 5a, 7, 7a, 9, 9a)
<https://zoobank.org/C32F9CF3-BFE5-462D-BF49-591D0167235C>

Holotype ♂: SPAIN, GRAN CANARIA, Los Tilos de Moya, 500 m, 4-23-III-2019, leg. P. Falck (MNCN).

Paratypes: SPAIN, GRAN CANARIA, Los Tilos de Moya, 500 m, 1 ♂, 11-24-VI-2018, same data but, 2 ♂, 3 ♀, 17-30-IX-2018, genitalia slides 4391PF, 4394PF, same data but, 8 ♂, 3 ♀, 4-23-III-2019, genitalia slide 4390PF, DNA sample Lepid Phyl, 0510PF/CILEP509-20, 0512PF/CILEP511-20, leg. P. Falck (all PF); Teror, 575 m, 2 ♀ larvae in spun leaves on *Bencomia caudata*, 24-X-13-XI-2020, leg. P. Falck (PF); Lanzarote, 1250 m, 1 ♀, 24-X-13-XI-2020, leg. P. Falck (PF).

Diagnosis: *Acleris bencomiana* Falck, sp. nov. resembles especially *A. martinbruni* Falck, sp. nov. It can be distinguished by its darker reddish brown ground colour and the contrasting greyish, oblique fascia. In the male genitalia the shape of the relatively wide cucullus with a curved distal margin, the deep concavity of the sacculus and the presence of two cornuti are characteristic. In the female genitalia the form of the colliculum with lateral, posteriorly curved protrusions and the relatively large signum are characteristic.

A. bencomiana may superficially resemble some forms of the North American species *A. inana* (Robinson, 1869), *A. maculidorsana* (Clemens, 1864) and *A. robinsoniana* (Forbes, 1923). However, these species can be distinguished by their genitalia (see McDunnough, 1934) and by their DNA barcodes.

Description: Adult male (Figure 1): Wingspan 14.5-19 mm (n = 22). Labial palpus straight, with white-tipped dark brown scales; segment 2 with a fan-shaped scale brush; segment 3 slightly protruding from the scale brush of segment 2 and scarcely visible. Antenna greyish brown, slightly ringed with grey. Head, neck and thorax dark brown. Tegula reddish brown. Forewing sub-rectangular, costa slightly concave towards the relatively pointed apex, termen oblique; ground colour reddish brown, darker in basal and subcostal area; at dorsum near base an outwardly oblique, short brownish streak ending in a relatively large tuft of black raised scales; at 1/3 an oblique, broad fascia slightly widening towards dorsum, lighter than the ground colour and with the middle part mixed with grey scales, distally edged by reddish brown and black raised scales; small tufts of black raised scales in the basal area, at the end of the cell and at tornus. Fringe grey with a brown fringe line. Hindwing greyish. Fringe grey.

Female (Figure 2): As male, but the oblique fascia is lighter grey, giving a more contrasting appearance.

Variation: Unlike many other members in the genus, no notable variation has been observed.

Male genitalia (Figures 5, 5a): Tegumen sub-rectangular, about twice as long as wide. Uncus bilobed, lobes large and rounded. Tuba analis curved, large, heavily sclerotised and spatulate. Socius semi-oval,

tapering towards the apex, short and hairy, base narrow. Valva elongate, dorsal margin slightly concave, apically hairy; sacculus broad basally, sclerotised, ventral edge basally rounded, distally with deep U-shaped concavity terminating in triangular process; cucullus relatively wide with outer margin curved; brachiola very short, setose. Vinculum rounded. Phallus evenly curved; vesica with two cornuti and one irregular sclerite.

Female genitalia (Figures 7, 7a): Papillae anales elongate, slightly pointed apically, setose. Posterior apophyses slightly longer than papillae anales and twice as long as anterior apophyses. Segment VIII short, posterior margin with long setae. Sterigma relatively short, sclerotised, posterior margin slightly convex, anterior margin concave, laterally with a short, rounded protrusion. Ostium bursae broad, slightly concave. Colliculum laterally concave, anteriorly with large lateral, posteriorly curved protrusion, almost anchor-shaped, heavily sclerotised. Ductus bursae widening in posterior third, membranous. Corpus bursae ovoid, membranous. Signum rounded with 12-14 small spines.

DNA barcodes: Full length DNA barcodes (658 bp) were obtained from two specimens. The barcodes fall within Barcode Index Number (BIN) BOLD: AEE2591. The maximum intraspecific p-distance is 1.28% (n = 2). The nearest neighbour is *Acleris martinbruni* sp. nov. with a 2.24% divergence. The nearest neighbours to both species are *Acleris cristana* ([Denis & Schiffermüller], 1775), *A. variegana* ([Denis & Schiffermüller], 1775) and the North American species *A. inana*, *A. maculidorsana* and *A. robinsoniana* with a minimum uncorrected p-distance of more than 4%.

Biology: The larva is bright green, with a darker green dorsal line. The prothoracic plate is green with a large and a small black spot on each side (Figure 9). It feeds within an upwardly spun leaf (Figure 9a) of *Bencomia caudata* (Aiton) Webb & Berthel. (Rosaceae) (Figure 10), an endemic plant of the Canary Islands, known only from the islands of Gran Canaria, Tenerife and La Palma (Biodiversidad de Canarias, 2025). Larvae have been observed in June, October, November and January. Adults have occasionally been beaten from branches of the hostplant or attracted to light in March, June, and from September to November.

Distribution: Endemic to the Canary Islands, Spain and hitherto known only from the northern part of the island of Gran Canaria.

Etymology: The species is named after its hostplant, *Bencomia caudata*.

***Acleris martinbruni* Falck, sp. nov.** (Figures 3, 4, 6, 6a, 8, 8a)
<https://zoobank.org/B3DE4A22-823D-4EA2-9F1B-24721C08D7DF>

Holotype ♂: SPAIN, TENERIFE, Guimar, 700 m, larva in spun leaf on *Bencomia caudata*, 9-21-I-2023, leg. P. Falck (MNCN).

Paratypes: SPAIN, TENERIFE, Guimar, 700 m, 1 ♂, 1-13-VI-2022, genitalia slide 4388PF (PF), same data but, 4 ♂, 8 ♀, larvae in spun leaves on *Bencomia caudata*, 9-21-I-2023, same data but, 1 ♂, 30-III-5-IV-2024, leg. P. Falck (all PF); Ifonche, 1040 m, 1 ♂, 21-V-3-VI-2019, leg. P. Falck (PF).

Diagnosis: In the male genitalia of *A. martinbruni* the relatively narrow cucullus with an almost straight distal margin, and the vesica with three cornuti and a small pointed sclerite are characteristic. In the female genitalia the form of the colliculum with lateral, perpendicular protrusions and the relatively small signum are characteristic (see also the diagnosis of the previous species).

Description: Adult male (Figure 3): Wingspan 14.5-20 mm (n = 16). Labial palpus straight, with ochre-tipped brown scales; segment 2 with a fan-shaped scale brush; segment 3 slightly protruding from the scale brush of segment 2 and scarcely visible. Antenna greyish brown, slightly ringed with grey. Head and neck brown. Thorax and tegula ochre brown. Forewing sub-rectangular, costa slightly concave towards the relatively pointed apex, termen oblique; ground colour ochre brown, darker in sub-costal area, sometimes forming a diffuse costal blotch; at dorsum near the base an outwardly oblique, short brownish streak ending in a small tuft of black raised scales; at 1/3 an oblique, broad, ochre fascia widening towards the dorsum and slightly mottled with grey and ochre brown scales, distally edged by ochre brown and black raised scales; tiny tufts of black raised scales in basal area, at the end of the cell and at tornus. Fringe grey, in the middle part more or less ochreous; fringe line brownish. Hindwing greyish. Fringe grey. Female (Figure 4): As male.

Variation: Only minor variation in the ground colour is observed.

Male genitalia (Figures 6, 6a): Tegumen sub-rectangular, about twice as long as wide. Uncus bilobed, lobes large and rounded. Tuba analis curved, large, heavily sclerotised and spatulate. Socius semi-oval, tapering towards the apex, short and setose, base narrow. Valva elongate, dorsal margin slightly concave,

apically hairy; sacculus broad basally, sclerotised, ventral edge basally slightly rounded, angle slightly pronounced, beyond the middle with a deep U-shaped concavity, terminating in a long, apically rounded process; cucullus relatively narrow with outer margin almost straight; brachiola very short, setose. Vinculum rounded. Phallus evenly curved; vesica with three cornuti and an endophallite with a conical spine.

Female genitalia (Figures 8, 8a): Papillae anales elongate, slightly pointed apically, setose. Posterior apophyses slightly longer than papillae anales and twice as long as anterior apophyses. Segment VIII narrow, posterior margin with long setae. Sterigma relatively short, sclerotised, posterior margin slightly convex, anterior margin concave, laterally with a short, rounded protrusion. Ostium bursae broad and straight. Colliculum laterally concave, anteriorly with a large lateral, perpendicular protrusion, heavily sclerotised. Ductus bursae widening in posterior third, membranous. Corpus bursae ovoid, membranous. Signum small, rounded with 5-6 small spines.

DNA barcodes: Full length DNA barcodes (658 bp) were obtained from two specimens. The barcodes fall within Barcode Index Number (BIN) BOLD: AEE3988. The maximum intraspecific p-distance is 0% (n = 2). The nearest neighbour is *Acleris bencomiana* sp. nov. with a 2.24% divergence. See also under DNA barcodes of the previous species.

Biology: The larva feeds within an upwardly spun leaf, as the previous species. It is bright green, though not described in detail. Larvae have been observed in January and March. A few adults were beaten from the hostplant in March and May.

Distribution: Endemic to the Canary Islands, Spain and hitherto known only from a few localities in the southern part of Tenerife.

Etymology: The species is named after the author's son-in-law, Martin Brun Rasmussen, who has been very helpful in bringing and picking up the author at the airport on numerous trips to the Canary Islands.

Discussion

Acleris bencomiana sp. nov. and *Acleris martinbruni* sp. nov. are probably endemic to Gran Canaria and Tenerife (Spain), respectively. This is supported by the fact that their hostplant, *Bencomia caudata*, is itself endemic, and that many endemic species in the Canary Islands show island-specific differentiation - at least at the genetic level, and less frequently in morphology.

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Conflict of Interest

The author declares that there are no known financial interest or personal relationships that could have influenced the work presented in this article.

References

- Banco de Datos de Biodiversidad de Canarias (BIOTA). 2025. Gobierno de Canarias. <https://www.biodiversidadcanarias.es/biota> (accessed 5 November 2025).
- Falck, P., & Karsholt, O. (2023). The Symmocinae and Holcopogoninae in the Canary Islands and Madeira, with descriptions of 13 new species (Lepidoptera: Autostichidae). *SHILAP Revista de lepidopterologia*, 51(202), 269-314. <https://doi.org/10.57065/shilap.462>
- Gilligan, T. M., Baixeras, J., & Brown, J. W. (2018). *T@RTS: Online World Catalogue of the Tortricidae* (Ver. 4.0). <https://tortrid.net/catalogue.asp>.
- McDunnough, J. (1934). The Canadian species of the Tortricid genus *Peronea*. *Canadian Journal of Research*,

10(9). 290-332. <https://doi.org/10.1139/cjr-093>

- Nieukerken, E. J. van, Kaila, L., Kitching, I. J., Kristensen, N. P., Lees, D. C., Minet, J., Mitter, Mutanen, M., Reiger, J. C., Simonsen, T. J., Wahlberg, N., Yen, S.-H., Zahiri, R., Adamski, D., Baixeras, J., Bartsch, D., Bengtsson, B. Å., Brown, J. W., Bucheli, S. R., Davis, D. R., De Prins, J., De Prins, W., Epstein, M. E., Gentili-Poole, P., Gielis, C., Hättenschwiler, P., Hausmann, A., Holloway, J. D., Kallies, A., Karsholt, O., Kawahara, A., Koster, S. J. C., Kozlov, M., Lafontaine, J. D., Lamas, G., Landry, J.-F., Lee, S., Nuss, M., Park, K. T., Penz, C., Rota, J., Schmidt, B. C., Schintlmeister, A., Sohn, J. C., Solis, M. A., Tarmann, G. M., Warren, A. D., Weller, S., Yakovlev, R. V., Zolothuhin, V. V. & Zwick, A. (2011). Order Lepidoptera Linnaeus, 1758.- *In* Z.-Q. Zhang (Ed.). Animal biodiversity: An outline of higher-level classification and survey of taxonomic richness. *Zootaxa*, 3148, 212-221. <https://doi.org/10.11646/zootaxa.3148.1.41> PMCID:PMC12881915
- Razowski, J. (1984). Tortricini. *In* H. G. Amsel, F. Gregor, H. Reisser & R.-U. Roesler (Eds.). *Microlepidoptera Palaearctica* (Vol. 6). G. Braun.
- Razowski, J. (2002). Tortricinae and Chlidanotinae. *Tortricidae (Lepidoptera) of Europe* (Vol. 1). František Slamka.
- Robinson, G. S. (1976). The preparation of slides of Lepidoptera genitalia with special reference to the Microlepidoptera. *Entomologist's Gazette*, 27, 127-132.
- Vives Moreno, A. (2014). *Catálogo sistemático y sinónimo de los Lepidoptera de la Península Ibérica, de Ceuta, de Melilla y de las Islas Azores, Baleares, Canarias, Madeira y Salvajes*. Improitalia.

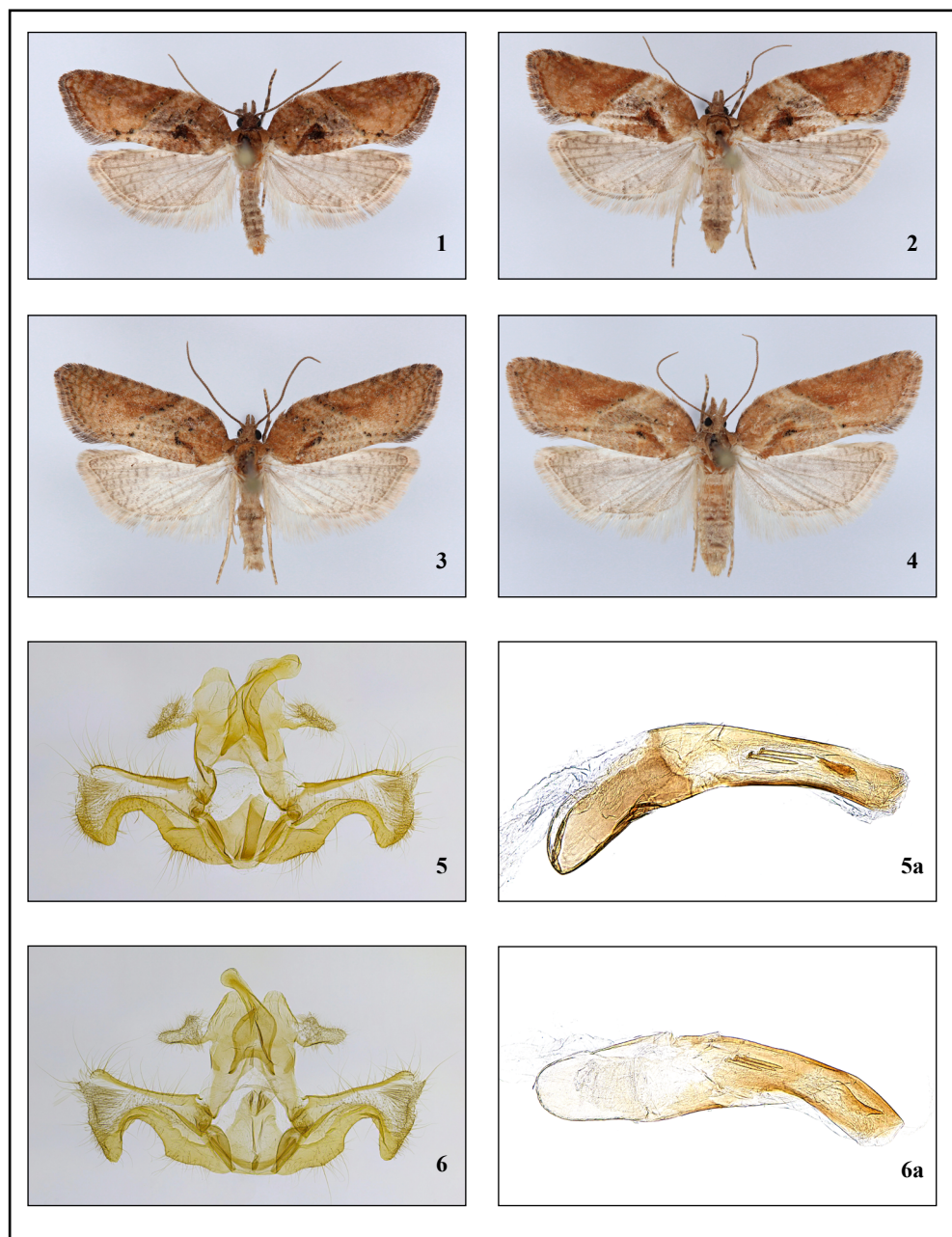
Per Falck
Aarsdalevej, 22
DK-3730 Neksø
DINAMARCA / DENMARK
E-mail: per.falck@live.dk
<https://orcid.org/0000-0002-0030-9214>

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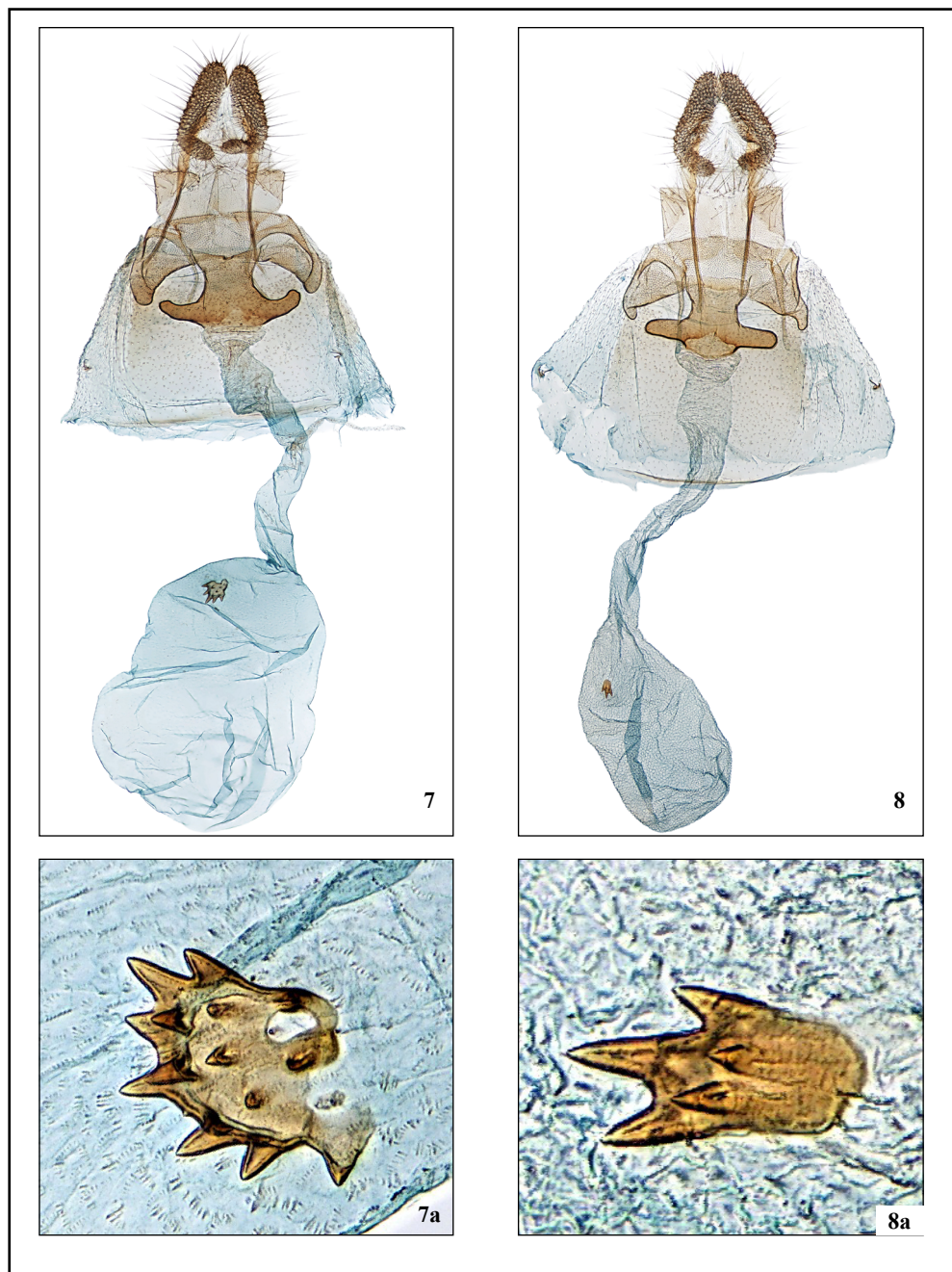
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Figures 1-6a. 1. *Acleris bencomiana* Falck, sp. nov., ♂, Gran Canaria, 18 mm. 2. *Acleris bencomiana* Falck, sp. nov., ♀, Gran Canaria, 18.5 mm. 3. *Acleris martinbruni* Falck, sp. nov., ♂, Tenerife, 18.3 mm. 4. *Acleris martinbruni* Falck, sp. nov., ♀, Tenerife, 20 mm. 5. *Acleris bencomiana* Falck, sp. nov., ♂, Gran Canaria, GP4390PF. 5a. *Acleris bencomiana* Falck, sp. nov., ♂, Gran Canaria, phallus, GP4390PF. 6. *Acleris martinbruni* Falck, sp. nov., ♂, Tenerife, GP4392PF. 6a. *Acleris martinbruni* Falck, sp. nov., ♂, Tenerife, phallus, GP4392PF.



Figures 7-8a. 7. *Acleris bencomiana* Falck, sp. nov., ♀, Gran Canaria, GP4394PF. 7a. *Acleris bencomiana* Falck, sp. nov., ♂, Gran Canaria, signum enlarged, GP4391PF. 8. *Acleris martinbruni* Falck, sp. nov., ♀, Tenerife, GP4395PF. 8a. *Acleris martinbruni* Falck, sp. nov., ♀, Tenerife, signum enlarged, GP4395PF.



Figures 9-10. *9. Acleris bencomiana* Falck, sp. nov., larva on a spun leaf of *Bencomia caudata*, Gran Canaria. **9a.** Spun leaf of *B. caudata*, with larva of *Acleris bencomiana* Falck, sp. nov., Gran Canaria. **10.** Habitat of *Acleris bencomiana* Falck, sp. nov. with bushes of *Bencomia caudata*, near Valleseco, Gran Canaria.

