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A new species of *Micropterix* Hübner, [1825] from southern Spain (Lepidoptera: Micropterigidae)

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Abstract

Micropterix stuebneri Zeller, Werno & Kurz, sp. n. is described from the Sierra Nevada (Spain) and compared with its likely closest relative *Micropterix isobasella* Staudinger 1871. The new species is well characterized by its wing pattern and by the structure of the male genitalia. This is the eighth species of *Micropterix* Hübner, [1825] known for the Spanish fauna (mainland) with certainty. A Spanish checklist is presented.
KEY WORDS: Lepidoptera, Micropterigidae, *Micropterix*, *Micropterix stuebneri*, Sierra Nevada, checklist, Spain.

Eine neue *Micropterix* Hübner, [1825]-Art aus Südspanien (Lepidoptera: Micropterigidae)

Zusammenfassung

Aus der Sierra Nevada (Spanien) wird *Micropterix stuebneri* Zeller, Werno & Kurz, sp. n. beschrieben und mit ihrer nächsten Verwandten *Micropterix isobasella* Staudinger 1871 verglichen. Die neue Art ist sehr gut durch den Genitalapparat des Männchens und durch ihre Flügelzeichnung charakterisiert. Es ist die achte *Micropterix*-Art, die mit Sicherheit für die Fauna des spanischen Festlandes angegeben werden kann. Alle acht Arten werden in einer Checkliste genannt.
SCHLÜSSELWORTE: Lepidoptera, Micropterigidae, *Micropterix*, *Micropterix stuebneri*, Sierra Nevada, Checkliste, Spanien.

Una nueva especie de *Micropterix* Hübner, [1825] del sur de España (Lepidoptera: Micropterigidae)

Resumen

Se describe *Micropterix stuebneri* Zeller, Werno & Kurz, sp. n. de Sierra Nevada (España) y se compara con su pariente más próximo *Micropterix isobasella* Staudinger 1871. La nueva especie está bien caracterizada por el dibujo alar y por la estructura de la genitalia del macho. Esta es la octava especie de *Micropterix* Hübner, [1825] conocida para la fauna de España peninsular con seguridad. Se presenta una lista española.
PALABRAS CLAVE: Insecta, Lepidoptera, Micropterigidae, *Micropterix*, *Micropterix stuebneri*, Sierra Nevada, España.

Introduction

The genus *Micropterix* Hübner, [1825] is distributed in the temperate and subtropical zones of Eurasia, as well as of Northern Africa (ZELLER-LUKASHORT *et al*., 2007). Up to now, 88 species are

known (76 have been described), of which 53 occur in Europe, 17 additional species in Asia (very few of which reach the eastern Palaearctic) and about 17 additional species in Northern Africa. Most of the European species occur in the Mediterranean region (KURZ & KURZ, 2013).

There are only five endemic species (including *Micropterix stuebneri* sp. n.) known from the Iberian Peninsula (CORLEY, 2007; KURZ & KURZ, 2013), which, for the main Mediterranean peninsulas, is depauperate (13 endemic species in the southern Balkans and 14 endemic species in Italy).

Therefore it was not surprising to find two specimens of an unknown Spanish species in the collection of Staudinger deposited in ZMHB, unfortunately only females. Most structures of the genitalia of females of *Micropterix* are of little or no value for recognizing species (ZELLER-LUKASHORT *et al*., 2007), hindering further investigations.

Two years later, in 2011, Andreas Werno went together with Franz Theimer and Andreas Stübner to southern Spain to investigate the Lepidoptera fauna of the Sierra Nevada. Near Posada de los Arrieros at an elevation of 1700 m at the end of June, Andreas Stübner chanced upon some specimens of an unknown *Micropterix* species as he scrutinised the roadside shrubs and flowers. In the next two days, further specimens were collected. The two unknown females of Staudinger appeared conspecific by wing pattern.

In 2013, during the investigation of the collection of *Micropterix* in BMNH, one other specimen was found which also belongs to this new species from Spain, collected by Dr. Klaus Sattler and David J. Carter in mid July 1969 at Collado del Lobo at an elevation of 2300 m.

For more information about the genus *Micropterix* Hübner, [1825] such as morphology of adults and preimaginal stages, life history, diagnosis and the phylogenetic relationships see ZELLER-LUKASHORT *et al*. (2007: 239-244).

Material and methods

The complete type series (including the material from BMNH and ZMHB) and all Spanish species were investigated for this paper. We compared the new species with similar species from Northern Africa by investigating the types in BMNH and in MNHN and with similar species from other regions of Europe (KURZ & KURZ, 2013).

As in our previous papers we consequently build on the important identification treatments by HEATH (1987), KOZLOV (1989, 1990a, b) and ZELLER-LUKASHORT *et al*. (2007). For more information about collecting sites, preparation techniques and data archive see ZELLER-LUKASHORT *et al.* (2007).

Abbreviations

BMNH	The Natural History Museum, London
MNCN	Museo Nacional de Ciencias Naturales, Madrid
MNHN	Muséum National d'Histoire Naturelle, Paris
ZFBS	Zentrum für Biodokumentation, Saarbrücken
ZMHB	Museum für Naturkunde, Humboldt-Universität zu Berlin, Berlin

Checklist of *Micropterix* recorded from the Spanish mainland (in alphabetical order)

Micropterix aglaella (Duponchel, 1840).

Micropterix aruncella (Scopoli, 1763).

Micropterix granatensis Heath, 1981.

Micropterix herminiella Corley, 2007: This species was found in May 2009 near Coirós, Galizia (Spain) (RAMÓN, 2009). According to Corley (pers. comm.) this first record for the fauna of Spain is as yet unpublished.

Micropterix ibericella Caradja, 1920.

Micropterix imperfectella Staudinger, 1859.

Micropterix paykullella (Fabricius, 1794): According to KARSHOLT (2012), *M. paykullella* is also recorded from Spain, which is almost certainly a misidentification of *M. aglaella*. *M. paykullella* is restricted only to the Alps according to present knowledge (ZELLER-LUKASHORT *et al*., 2007). Therefore *M. paykullella* should be deleted from the Spanish fauna.

Micropterix stuebneri Zeller, Werno & Kurz sp. n.

Micropterix tunbergella (Fabricius, 1787).

Micropterix stuebneri Zeller, Werno & Kurz sp. n.

Holotype ♂: SPAIN; Sierra Nevada 1700 m; Almería / Granada; Pasada [Posada] de los Arrieros; Df. 21-VI-2011; leg. A. Werno; [red label] Holotype of Micropterix stuebneri Zeller, Werno & Kurz; ID-Number; CZ-Z20496; www.nkis.info. The Holotype is deposited in collection ZFBS.

Paratypes: 10 ♂♂, 5 ♀♀ same data as holotype; labels with identification numbers CZ-Z20315–CZ-Z20317, CZ-Z20319, CZ-Z20321, CZ-Z20490, CZ-Z20493, CZ-Z20494, CZ-Z24577 in collection Andreas Werno; CZ-Z20320, CZ-Z20489, CZ-Z20495 (genitalia slide no. 3/2012 by Christof Zeller) in collection Christof Zeller; CZ-Z20491 (genitalia slide no. 974 by Michael Kurz) in collection Michael Kurz; CZ-Z20318, CZ-Z20492 in collection A. Vives / MNCN. 8 ♂♂, 1 ♀♀, F. Theimer / E; Sierra Nevada; Ragua 1700 m; P. los Arrieros; 19 / 26-VI-2011; labels with identification numbers CZ-Z20334-CZ-Z20337, CZ-Z20339, CZ-Z20340, CZ-Z20485 in collection Franz Theimer; CZ-Z20488 (genitalia slide no. 973 by Michael Kurz) in collection Michael Kurz; CZ-Z20338 in collection Christof Zeller. 1 ♂, Spain, Sierra Nevada; 5 km N Bayarcal; 20-VI-2011; leg. A. Stübner; ID-Number; CZ-Z20322; www.nkis.info, in collection Andreas Stübner. 8 ♂♂, 5 ♀♀, Spain, Sierra Nevada; 5 km N Bayarcal; 22-VI-2011; leg. A. Stübner; labels with identification numbers CZ-Z20323, CZ-Z20324, CZ-Z20326-CZ-Z20332, CZ-Z20486, CZ-Z20487 in collection Andreas Stübner; CZ-Z20325, CZ-Z20333 in collection Christof Zeller. 1 ♂, Sierra Nevada; Collado del Lobo; North Side 2300 m; 13-VII-1969; K. Sattler & D. J. Carter; ID-Number; CZ-Z24574; www.nkis.info, in collection BMNH. 2 ♀♀, Lanjaron; ex coll. Staudinger; labels with identification numbers CZ-Z20483, CZ-Z24575 in collection ZMHB. All paratypes bear red label "Paratype of Micropterix stuebneri Zeller, Werno & Kurz".

Description of adults (Figs 1-4): Forewing length: ♂ 2.6-3.0 mm (n=29), ♀ 3.2-3.5 mm (n=13). Head black-brown; vestiture of hair-like scales on the head, yellow to dirty yellow; antennae dark brown, 4/5 ♂, respectively, 3/5 ♀ of forewing length; thorax and tegulae violet with golden reflection; forewings dark purple to bluish-violet with mostly golden bronze markings: inner margin bronzy to 1/4, a moderately broad straight fascia at 1/4, joined with inner margin; at 1/2 moderately broad straight fascia across the whole wing width, sometimes slightly constricted medially and sometime slightly lightened centrally; in ♂ outer third of wing golden bronze except for the purple apex and sometimes a more or less prominent purple subapical spot at 4/5, in ♀ this purple subapical spot always present, more prominent and elongated, thus the golden bronze outer third forming an "U" around; fringe golden bronze; hindwings golden bronze, apically tinged purplish; fringe golden bronze; legs and abdomen brown, golden shining.

The wing pattern differs between the sexes only little in the broadness of the fasciae but distinctly in the prominence of the purple subapical spot. With present knowledge there is no variation between the three populations comparable to KOZLOV (1994, 1995).

Genitalia ♂ (Fig. 5): Uncus long, slender, tip broadly rounded; an area of long straight spinoid setae along dorsal margin of accessory claspers; accessory claspers large, lobe-like, broadened distally; along distal margin, a row of about 12 or 13 moderately long distally hook-like unmodified thickened setae oriented in slightly ventral direction; at inner surface proximally another row of four shorter and three very short finer spinoid setae; valvae moderately long, stout, distal third part enlarged and strongly bent dorsally, constricted at the point of inflection; at inner surface of valvae four shorter

spinoid setae postbasally, grouped in pairs; on inner surface, at lower margin two or three irregular rows of shorter spinoid setae and some longer setae on distal fourth part.

Genitalia ♀ (Fig. 6): Tergite IX missing; sternite IX very much reduced weakly sclerotized, with indistinct lateral margins; terminal papillae with band-like centrally enlarged sclerotization; receptaculum seminis moderately long with indistinct striation.

Diagnosis: In the Iberian Peninsula and North Africa there is no knowledge of any other externally similar species (HEATH, 1981, 1986; KARSHOLT, 2012; CORLEY, 2009). *Micropterix ibericella* Caradja, 1920 lacks the golden bronze coloration along the inner as well as along the outer margin and has distinctly narrower fasciae. In the male genitalia, *M. stuebneri* sp. n. closely resembles *Micropterix isobasella* Staudinger, 1871, being distinguished mainly by the larger and broader accessory claspers (ZELLER-LUKASHORT *et al*., 2007). From *M. ibericella*, *M. stuebneri* sp. n. is clearly separated in the male genitalia by its longer uncus, the shape of the accessory claspers and the valvae (see Fig. 5). In the female genitalia (Fig. 6), the species can easily be distinguished from *M. ibericella* by the platelets of the papillae anales, which are broadened medially, whereas in *M. ibericella* they are narrow throughout. Furthermore, in *M. ibericella* sternite IX is distinctly larger (KURZ & KURZ, 2013).

Biotope (Fig. 7): The moths were found along a small creek bed with low shrubs, located on a westwardly oriented dry and sunny slope with scattered vegetation. The imagines were sitting on flowers of *Thymus* sp. and *Helianthemum* sp., as well as on different unidentified flowering plants. Their flight time was June.

Distribution: As presently known, the species is endemic to the Sierra Nevada in southern Spain. The larger part of the type series was found at an elevation of 1700 m. One male was found at Collado del Lobo, and two females also included in the type series originate from near Lanjarón.

Derivatio nominis: The new species is named in honour of our friend Andreas Stübner, who collected the species first during a trip around the Sierra Nevada (Spain) in 2011.

Remark: The labels used by Franz Theimer, Andreas Stübner and Andreas Werno differ in the usage of local names of the type location but all refer to the same location centered on N37,0767445º W3,019583º.

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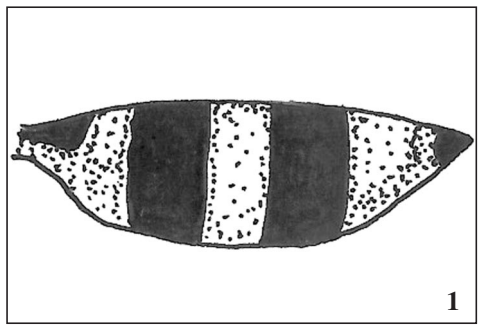

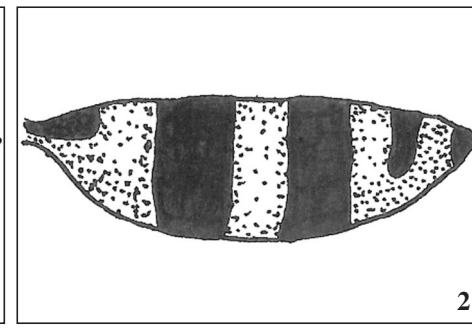

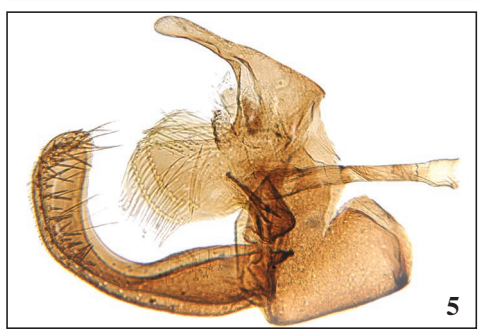

Figs 1-7.– 1-2. Wing pattern of *M. stuebneri* Zeller, Werno & Kurz sp. n. **1**. ♂. **2**. ♀. **3-4**. Adults. **3**. ♂. **4**. ♀. **5-6**. Genitalia. **5**. ♂ **6**. ♀. **7**. Type location indicated by arrows.