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First female record of the Psychidae species *Dahlica michaela* Arnscheid, 2016, in the Pyrenees of Huesca in Aragon (Spain) (Lepidoptera: Psychidae, Naryciinae)

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Abstract

In 2016 the senior author described the Psychidae species *Dahlica michaela* from the Pyrenees of Aragon based on 10 males, reared from larvae. No females were included in the type series. It was assumed that the female larvae live hidden on the ground near rocks where the male larvae were found. During a hiking trip on 28 April 2017 a small larval case has been detected attached near the base of a rock at the type locality. From this case a female emerged on 10 May 2017.
KEY WORDS: Lepidoptera, Psychidae, Dahlicini, *Dahlica*, morphology, distribution, biology, Huesca, Spain.

Primer registro de la hembra de la especie de Psychidae *Dahlica michaela* Arnscheid, 2016, en el Pirineo de Huesca en Aragón (España) (Lepidoptera: Psychidae, Naryciinae)

Resumen

En 2016, el autor principal describió la especie Psychidae *Dahlica michaela* del Pirineo aragonés a partir de 10 machos, que fueron criados de larvas. En la serie tipo no se incluyó ninguna hembra. Se ha supuesto que las larvas hembras viven escondidas en el suelo cerca de las rocas donde se han encontrado las larvas del macho. Durante una excursión de senderismo el 28 de abril de 2017 a la localidad tipo, se ha detectado una pequeña larva adherida al fondo de una roca. En este caso, una hembra que eclosionó el 10 de mayo de 2017.
PALABRAS CLAVE: Lepidoptera, Psychidae, Dahlicini, *Dahlica*, morfología, distribución, biología, Huesca, España.

Erstmalige Entdeckung des Weibchens der Psychidae *Dahlica michaela* Arnscheid, 2016, in den Pyrenäen von Huesca in Aragonien (Spanien) (Lepidoptera: Psychidae, Naryciinae)

Zusammenfassung

2016 beschrieb der Erstautor die Psychidae-Art *Dahlica michaela* aus den Pyrenäen der Region Aragonien nach 10 Männchen, die aus gesammelten Raupen gezüchtet wurden. In der Typenserie war kein Weibchen enthalten. Es wurde daher angenommen, dass die weiblichen Larven sehr versteckt am Boden in der Nähe der Felsen leben, an denen die männlichen Larven gefunden wurden. Während einer Wanderung am 28. April 2017 entlang der Felsen des Typenfundortes wurde ein kleiner Raupensack angesponnen am Fuß eines Felsens gefunden. Aus diesem schlüpfte ein Weibchen am 10. Mai 2017.
SCHLÜSSEL WORTE: Lepidoptera, Psychidae, Dahlicini, *Dahlica*, morphologie, verbreitung, biologie, Huesca, Spanien.

Introduction

As reported by (ARNSCHEID, 2016a, b; ARNSCHEID & WEIDLICH, 2017) only a few species of *Dahlica* Enderlein, 1912, are known from the Iberian Peninsula. These species belong to either the subgenus *Dahlica* Enderlein, 1912, or the subgenus *Brevantennia* Sieder, 1953. The latter is characterized by the short antennae of the female which bear less than 11 segments, mostly 3-5. Moreover, the male genitalia show a low genital index (mostly < 1.0; ARNSCHEID & WEIDLICH, 2017). Both subgenera are characterized by the absence of a tarsal epiphysis which is present in the subgenus *Siederia* Meier, 1953. The subgenus *Dahlica* was, until now, not known from Spain or Portugal as well as the alpine and south-east European distributed subgenus *Postsolenobia* Meier, 1958. When *Dahlica michaela* was described, it´s inclusion in the genus *Dahlica* was provisional. Due to the lack of females, it could not be definitively verified whether or not it belongs to *Brevantennia*. The general appearance, relatively broad scales on forewings, and the higher genital index were good reasons for the inclusion into *Dahlica*.

Dahlica michaela is presently only known from the type locality, a coniferous belt with a dense population of *Buxus sempervirens* and *Ilex aquifolium* in Benasque (Province of Huesca, Aragon). It seems quite certain that the flight period ranges from the middle of May to early June. During a hiking trip to the Valle de Ballibierna on 28 April 2017, we found a small larval case at the type locality of *D. michaela* near the base of a rock. We collected the case suspecting it could be the long missed female. After a few days, a female emerged and after a short assumed the mating position on the case for two days without laying eggs. Because no other sexual species of Dahlicini occur at the type locality, we have not the slightest doubt that this is the female of *D. michaela*. At the type locality two parthenogenetic *Dahlica* species exist (ARNSCHEID, 2016a, b). At the same rocks, we collected the larval cases of *D. triquetrella* (Hübner, [1813]) and *D. lichenella* (Linnaeus, 1761) and reared these to adults in recent years. Furthermore the asexual psychid species *Diplodoma laichartingella* (Goeze, 1783), *Eumasia parietariella* (Heidenreich, 1851), *Pseudobankesia casaella* Hättenschwiler, 1994, and *Apterona nylanderi* (Wehrli, 1927) occur in the same habitat.

Description

Adult female (Figs 1, 2). Length 4.0 mm, light greyish. Apterous, but head, antenna and legs well developed. Antenna with 17 segments. Labial palp reduced, forleg, midleg and hindleg with one pair of tibial spurs. Tarsi of all legs with 4 segments; tarsal segments not fused.

The intersegmental membrane between segment VII and VIII is covered with long spines.

Pupa (Figs 2, 3). Capito-prosternal plate with antennal sheaths and leg sheaths of equal length. Dorsal part of segments light brownish, divided. Anal hair-tuft ventrally, creamy white.

Case (Fig. 3). Length 6.2 mm, width 2.0 mm, yellowish brown, covered densely with particles of soil and other mineral debris, especially small stones.

Discussion

As noted the inclusion of *D. michaela* in the genus *Dahlica* was provisional, based on the general appearance of the males, their relatively broad scales on forewings and the higher genital index. After examination of the only known female we now have no doubt that *D. michaela* belongs to the subgenus *Dahlica* and not to *Brevantennia* due to the length of the antenna (17 segments). This generic placement is also supported by the fact that after emergence pupal exuviae of *Brevantennia* females often project more or less at a right angle from the case unlike that of *D. michaela*.

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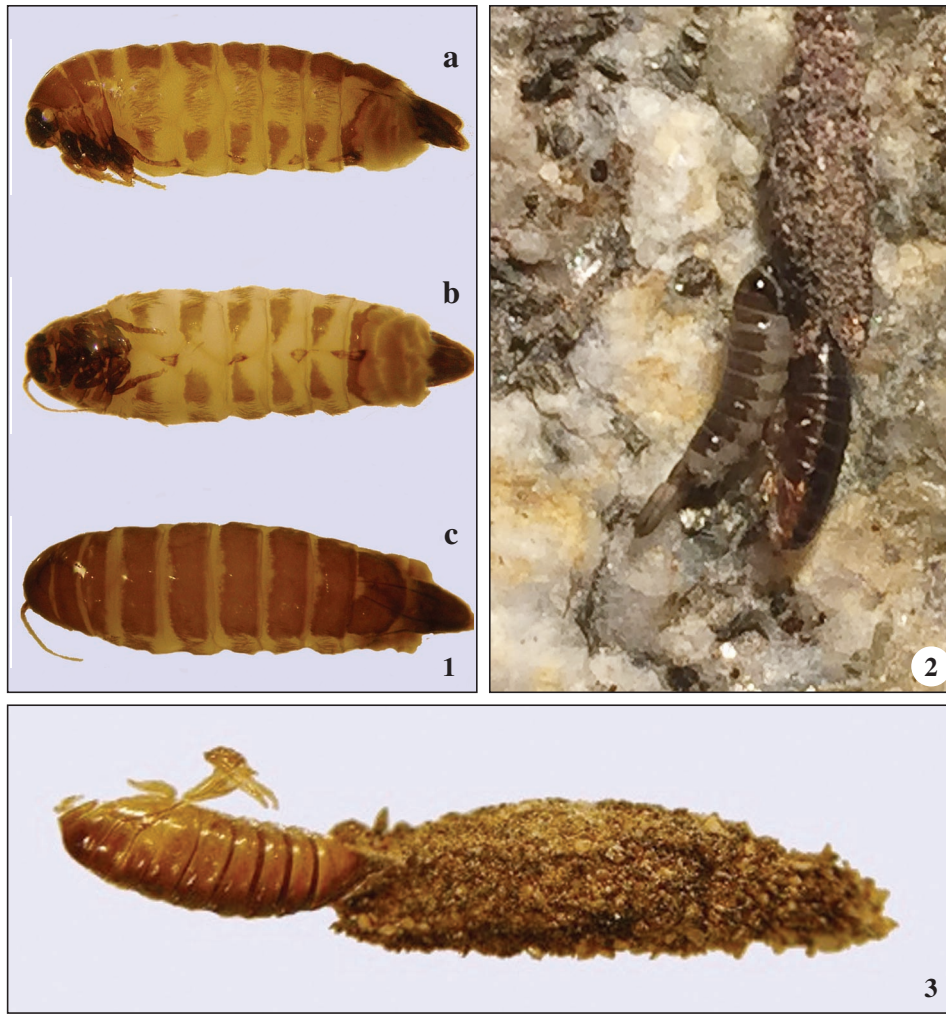

Figs 1-3.– 1. Female of *Dahlica michaela.* **a.** lateral view. **b.** ventral view. **c.** dorsal view. **2.** Female of *Dahlica michaela* in mating position. **3.** Female case with exuvia of *Dahlica michaela*, Arnscheid 2016.