Notes on the Two Little Known *Idaea* Treitschke Species in the Fauna of Turkey (Lepidoptera, Geometridae)

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ABSTRACT

In this study, distributional and ecological information about two rare and little known geometrid moth, *Idaea allongata* (Staudinger, 1898) and *Idaea proclivata* (Fuchs, 1902) that known only one locality in Turkey are presented. Second locality records of the species in Turkey are explained. Habitats, distribution areas, adult and genitalia pictures of the male species are given.

Keywords: *Idaea*, *allongata*, *proclivata*, fauna, Geometridae

Türkiye Faunasında Az Bilinen İki *Idaea* Treitschke Türü Üzerine Notlar (Lepidoptera, Geometridae)

ÖZET

Bu çalışmada, Türkiye'de sadece tek lokaliteden kaydı bulunan iki nadir ve az bilinen geometrid güve türünün, *Idaea allongata* (Staudinger, 1898) ve *Idaea proclivata* (Fuchs, 1902), yayılışları ve ekolojik istekleri hakkında bilgi sunulmuştur. Ülkemizdeki ikinci lokalite kayıtları açıklanmıştır. Habitatları, yayılış alanları, yetişkin birey ve erkek genital resimleri verilmiştir.

Anahtar kelimeler: *Idaea*, *allongata*, *proclivata*, fauna, Geometridae

1. Introduction

The genus *Idaea* Treitschke, 1825 includes about 680 described species worldwide (Hausmann, 2004) and about 70 species (Koçak, 2014) in Turkey. Many *Geometridae* species, belonging to genus *Idaea* are known only from the type specimens. In this study, *Idaea allongata* (Staudinger, 1898) and *Idaea proclivata* (Fuchs, 1902) that are rare and known only one locality in Turkey (Koçak and Kemal, 2009) are presented. The distribution and ecology of the species are given.

2. Materials and Methods

The specimens were collected in Batman and Siirt provinces from southeast of Turkey, between 2014 and 2016. Materials were captured by a special UV light trap. Genital preparations were made after the samples held in museum standart. For diagnosis, firstly, samples were investigated by their morphological features. When these characters are insufficient for the precise identification, the genitalia of the species were prepared and compared. The materials are deposited in the special collection of the author in Batman province, Turkey. In study, distribution areas of the species are indicated on the map (Fig. 1-2. d). The picture of habitats and adults are given and genital structure of the species (Fig 1-2. a-c) were submitted for the first time.

3. Results

Idaea allongata (Staudinger, 1898) (Fig. 1. b-c)

Examined materials: 7♂ Batman, Batıraman, 570m, 28.04.2015; 1♂ same locality 12.04.2016, (leg. & coll. E. Seven).

It was described and illustrated in the study ‘‘*Neue Lepidopteren aus Palaestina*’’ that written in German language by Staudinger in 1898 (Fig. 3) from Israel (Jerusalem), and subsequently, record of this species is given from Turkey (Mardin) (Staudinger and Rebel, 1901). Prout (1912-1916) (in Seitz) has explained external morphological features with distributional areas of the species in a comprehensive study that named ‘‘*The Macrolepidoptera of the World: a systematic description of the known Macrolepidoptera*’’ and pointed out distribution of *I. allongata* from Mardin, N. Mesopotamia, also from Jerusalem and the Jordan Valley. Afterwards, it has been identified from Crete by Rebel in 1916. In this study, second locality record in Turkey is presented from Batman (Batıraman) province. It was captured in April at 570 m high above sea-level from steppe area in the intensive herbaceous plants (Fig. 1. a). It was captured only early-spring month in a warm habitat that includes annual *Asteraceae*, *Poaceae* and *Fabaceae* herbaceous plants from south-eastern Turkey.

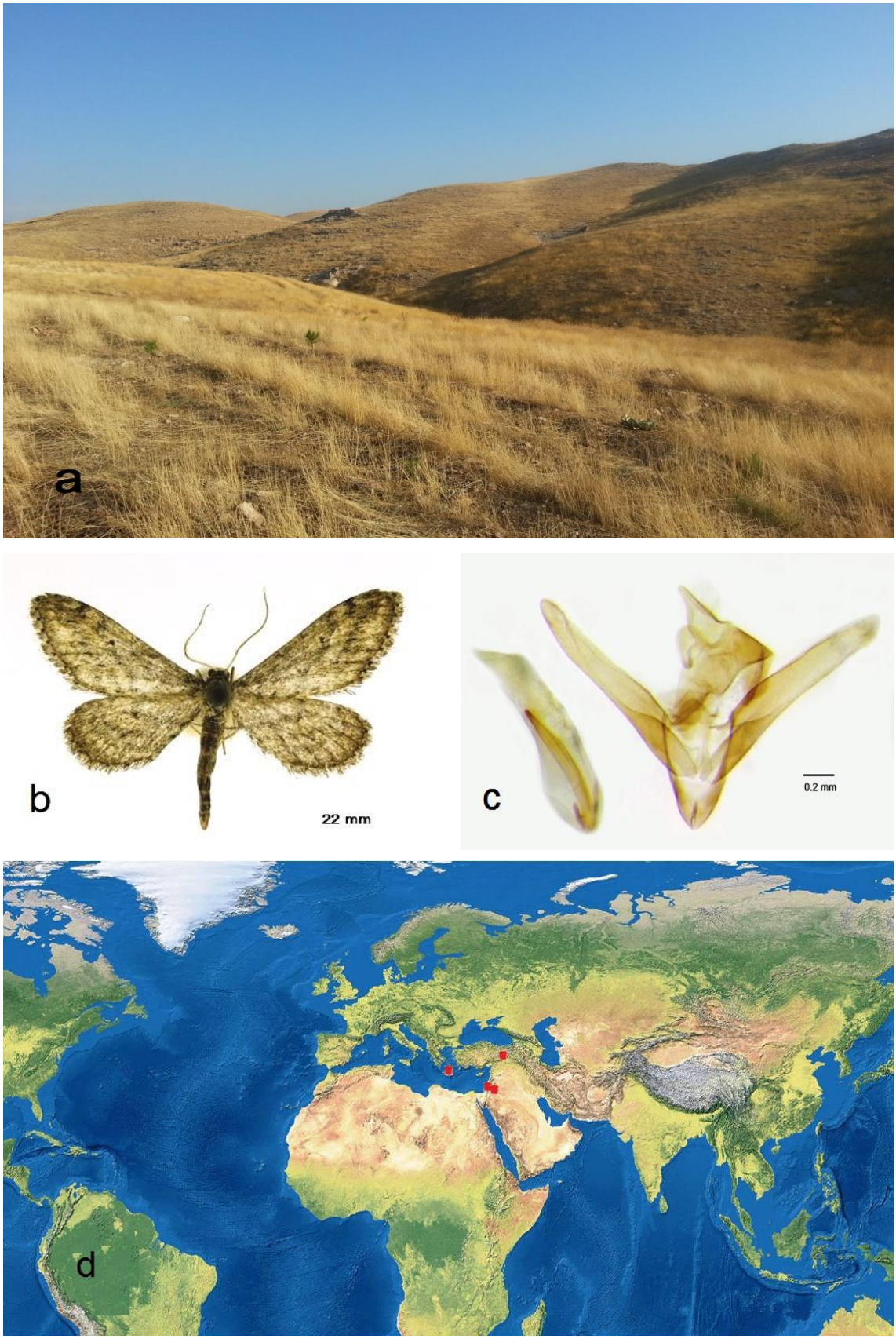


Fig. 1. a. Habitat (Turkey, Batman, Batıraman, 570 m, 16.10.2015), **b.** Adult, **c.** Male genitalia, **d.** Distribution area (Israel, Jordan, Turkey and Crete) of the *I. allongata* (Staudinger, 1898).

Idaea proclivata (Fuchs, 1902) (Fig. 2. b-c)

Examined materials: 4♂ 1♀ Siirt, Akyamaç, 700 m, 30.06.2014; 2♂ same locality 02.07.2014 (Gp539♂), (leg. & coll. E. Seven).

It was described by Fuchs in 1902 from ‘‘Russian Armenia’’ (at the present time: northwest of Armenia) and it was given again only same locality by Prout (1912-1916). Later, it was recorded from Iran (Khorasan) by Brandt (1941). So far, this species was known only Kahramanmaraş province in Turkey (Koçak and Kemal, 2009). In this study, second locality record of the *I. proclivata* (Fuchs, 1902) is given from Siirt (Akyamaç) province (Fig. 2. a) where it could not be found in field researches carried out previously (Seven, 2014). Samples were captured at 700-800 m high above sea-level, between June and July months of the rocky habitat that contains *Quercus*, *Astragalus* and *Paliurus* plant species.

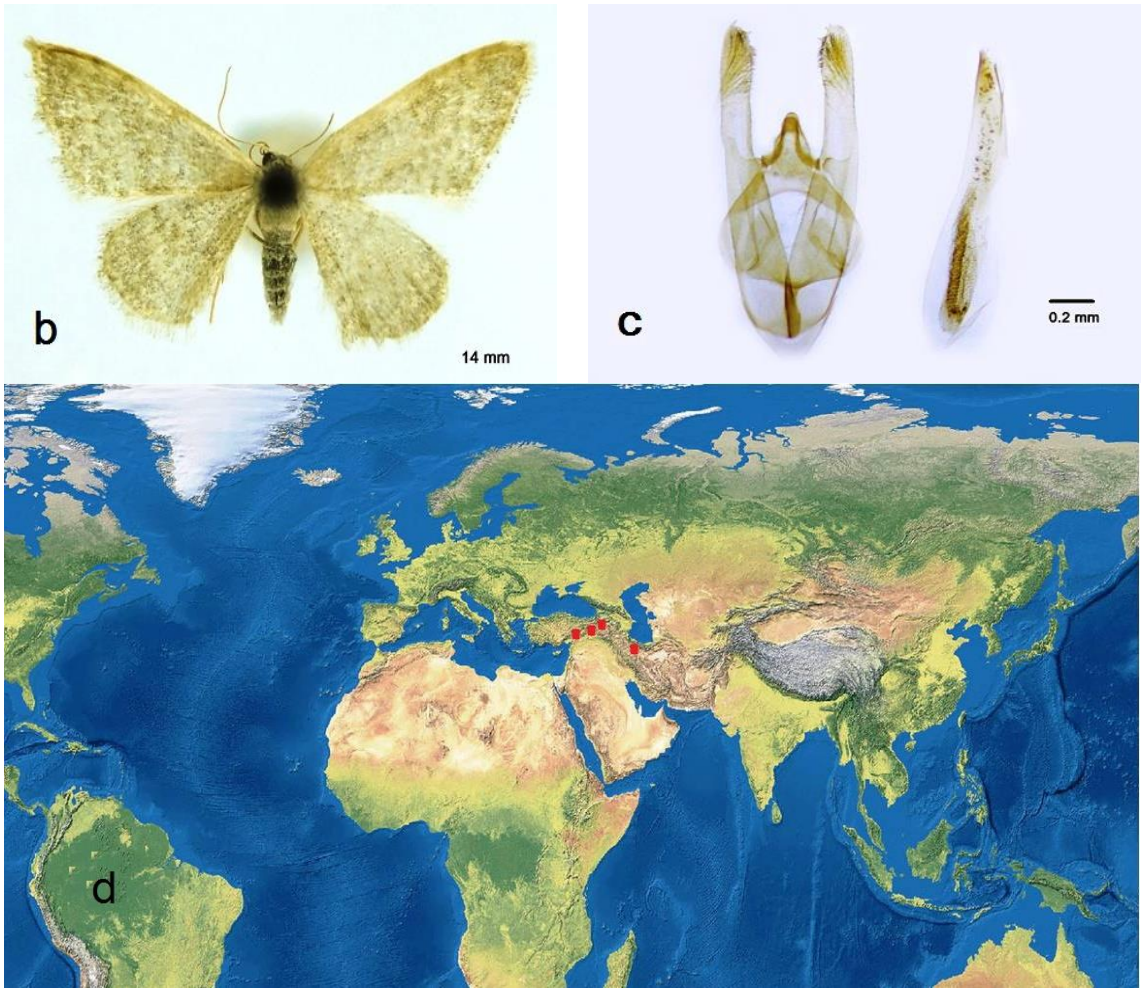
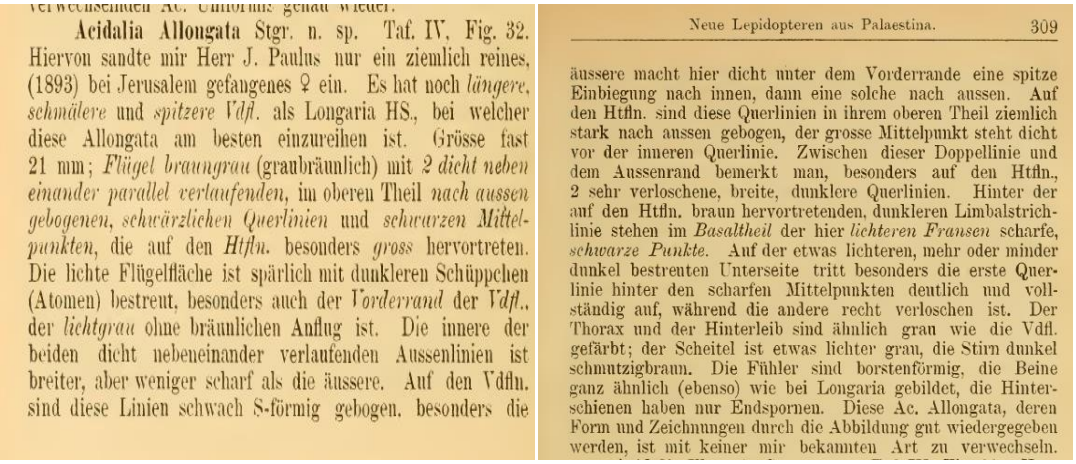


Fig. 2. a. Habitat (Turkey, Siirt, Akyamaç, 700 m, 24.5.2014), **b.** Adult, **c.** Male genitalia, **d.** Distribution area (Iran, Turkey and Armenia) of the *I. proclivata* (Fuchs, 1902).

Diagnose becomes difficult, when original source of the described species was written in centuries ago (Fig. 3) and because of morphological features were explaining that sources much more in writing (without figures). It is often not possible to find the genitalia armatures of such rare species in the literature. Therefore, identification of the species in this study could be done by compared the species within the Munich museum (Zoologische Staatssammlung Muenchen, Germany) by Axel Hausmann who is specialist on the geometrid moths.



Acidalia Allongata Stgr. n. sp. Taf. IV, Fig. 32. Hiervon sandte mir Herr J. Paulus nur ein ziemlich reines, (1893) bei Jerusalem gefangenes ♀ ein. Es hat noch *längere, schmälere* und *spitzere Vdfl.* als Longaria HS., bei welcher diese Allongata am besten einzureihen ist. Grösse fast 21 mm; *Flügel braungrau* (graubräunlich) mit *2 dicht neben einander parallel verlaufenden*, im oberen Theil *nach aussen gebogenen, schwärzlichen Querlinien* und *schwarzen Mittelpunkten*, die auf den *Htfln.* besonders *gross* hervortreten. Die lichte Flügelfläche ist spärlich mit dunkleren Schüppchen (Atomen) bestreut, besonders auch der *Vorderrand* der *Vdfl.*, der *lichtgrau* ohne bräunlichen Anflug ist. Die innere der beiden dicht nebeneinander verlaufenden Aussenlinien ist breiter, aber weniger scharf als die äussere. Auf den Vdfln. sind diese Linien schwach S-förmig gebogen, besonders die

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äussere macht hier dicht unter dem Vorderrande eine spitze Einbiegung nach innen, dann eine solche nach aussen. Auf den Htfln. sind diese Querlinien in ihrem oberen Theil ziemlich stark nach aussen gebogen, der grosse Mittelpunkt steht dicht vor der inneren Querlinie. Zwischen dieser Doppellinie und dem Aussenrand bemerkt man, besonders auf den Htfln., 2 sehr verloschene, breite, dunklere Querlinien. Hinter der auf den Htfln. braun hervortretenden, dunkleren Limbalstrichlinie stehen im *Basaltheil* der hier *lichteren Fransen* scharfe, *schwarze Punkte*. Auf der etwas lichteren, mehr oder minder dunkel bestreuten Unterseite tritt besonders die erste Querlinie hinter den scharfen Mittelpunkten deutlich und vollständig auf, während die andere recht verloschen ist. Der Thorax und der Hinterleib sind ähnlich grau wie die Vdfl. gefärbt; der Scheitel ist etwas lichter grau, die Stirn dunkel schmutzigbraun. Die Fühler sind borstenförmig, die Beine ganz ähnlich (ebenso) wie bei Longaria gebildet, die Hinterschienen haben nur Endspornen. Diese Ac. Allongata, deren Form und Zeichnungen durch die Abbildung gut wiedergegeben werden, ist mit keiner mir bekannten Art zu verwechseln.

Fig. 3. Original description of *I. allongata* written in German language by Staudinger in 1898.

It is estimated that distribution of many endemic geometrid species showing similarities in terms of geographical, ecological and vegetation types from Levant, northern borders of the Middle East, southeast of Turkey to Caucasia. But, determining of distribution areas of these species is so difficult, due to insufficient studies in the region. In this regard, these results may contribute to improve knowledge about their ecology and distribution areas.

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