

A rare form of *Pseudochazara graeca* with white spots on the forewings (Lepidoptera: Nymphalidae, Satyrinae)

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Abstract. A rare form of *Pseudochazara graeca* with white spots on the forewings is presented for the first time, posing questions on the validity of alleged records of *Pseudochazara amymone* from Greece. Illustrations of a captured specimen, along with a supplementary record found in the Internet are provided.

Samenvatting. Voor het eerst wordt een zeldzame vorm van *Pseudochazara graeca* met witte vlekken op de voorvleugels gepresenteerd, wat vragen oproept over de geldigheid van vermeende waarnemingen van *Pseudochazara amymone* uit Griekenland. Illustraties van een gevangen exemplaar, samen met een aanvullende waarneming die op internet is gevonden, worden verstrekt.

Résumé. Une forme rare de *Pseudochazara graeca* avec des taches blanches sur les ailes antérieures est présentée pour la première fois, posant des questions sur la validité des enregistrements présumés de *Pseudochazara amymone* de Grèce. Des illustrations d'un spécimen capturé, ainsi qu'un enregistrement supplémentaire trouvé sur Internet sont fournis.

Key words: Aberrations – Forms – Greece – Lepidoptera – *Pseudochazara graeca* – *Pseudochazara amymone*.

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Introduction

Pseudochazara graeca (Staudinger, 1870) is a well-studied butterfly, whose geographic range and phenotype variability has been documented in several research articles in the literature, e.g. Anastassiou *et al.* (2009), in which the clinal variation of the species was demonstrated, instead of the existence of isolated subspecies (Brown, 1976). *Pseudochazara amymone* Brown, 1976, however, is notorious for its rarity in Greece (Brown 1976). It was originally discovered in NW Greece (Brown, 1976), and since then no other specimens have been collected, until the recent discovery of strong

colonies in Albania (Eckweiler 2012, Verovnik *et al.* 2014, Cuvelier & Mølgaard 2015). Only photographs, but no voucher specimens, are available from Greece (Pamperis 1997, 2009), and the correct identification of the specimens depicted has been a matter of debate, discussed in detail in the aforementioned papers. The most interesting picture is undoubtedly the one in the 2009 edition showing the upperside of a worn female. The strongest argument in favour of the *P. amymone* identity is the existence of two white postdiscal spots on the forewings, a feature that is not supposed to be found in *P. graeca*, and therefore traditionally considered as a reliable identification feature among all researchers who failed to find *P. amymone* after Brown.



Fig. 1. *Pseudochazara graeca*, Greece, upperside. 1. ♀, Ípiros, Ioánnina district, Mt. Kakardítsa, 1600 m, 15.viii.2016 (form with white postdiscal spots); 2. ♀, Ípiros, Ioánnina district, Mt. Lákmos, 1900 m, 4.viii.2007 (standard form). Scale bar: 1 cm. © H. T. Anastassiou.



Fig. 2. *Pseudochazara graeca*, Greece, underside. 1. ♀, Ípiros, Ioánnina district, Mt. Kakardítsa, 1600 m, 15.viii.2016 (form with white postdiscal spots); 2. ♀, Ípiros, Ioánnina district, Mt. Lákmos, 1900 m, 4.viii.2007 (standard form). Scale bar: 1 cm. © H. T. Anastassiou.

Extraordinary specimens of *Pseudochazara graeca* with white spots on the forewings

On August 15, 2016, the first author was collecting on Mt. Kakardítsa, Ípiros, NW Greece, at an altitude of 1600–1700 m, where a single female *Pseudochazara* was netted. Although the date and altitude were typical for *P. graeca*, great astonishment arose by the fact that the specimen featured two white postdiscal spots on the forewings! Additionally, a single tiny white spot was present on each hindwing. In search of a second specimen, the first author hiked several miles on the mountain slopes for a couple of days, to no avail. Strangely enough, no other specimens of *Pseudochazara* were found, although in most of its colonies *P. graeca* is usually numerous. Even more intense research was carried out by both authors in the same area in mid-August 2018, and again no butterflies were seen, either with or without white spots.

On the basis of these facts, the authors investigated the possibility that the particular specimen might actually be a *P. amymone*. Unfortunately, genitalia structure does not provide any reliable identification features for this butterfly group. Hence, the specimen was only visually compared to *P. graeca* females collected at a locality nearest to the site, i.e. from Mt. Lákmos, and the best match was found (see Figs 1–3). Apart from the white spots, the two specimens look almost identical leaving no doubt that the specimen is indeed *P. graeca*. The authors meticulously examined dozens of specimens in Greek collections in search of other white-spotted examples. It turned out that this characteristic may rarely be faintly visible (Coutsis & Ghavalás pers. comm. 2021), usually through a magnifying glass, in isolated individuals originating from the entire geographical range of the species in Greece. Perhaps the most striking example is shown in Fig. 4 (Rowlings, 2021), which has prominent white spots even on the hindwing. The particular

specimen was photographed on Mt. Parnassós, South-Central Greece (Rowlings, pers. comm.) which is far from Mt. Kakardítsa, proving that this feature is not geographically restricted, and is probably due to some recessive gene.

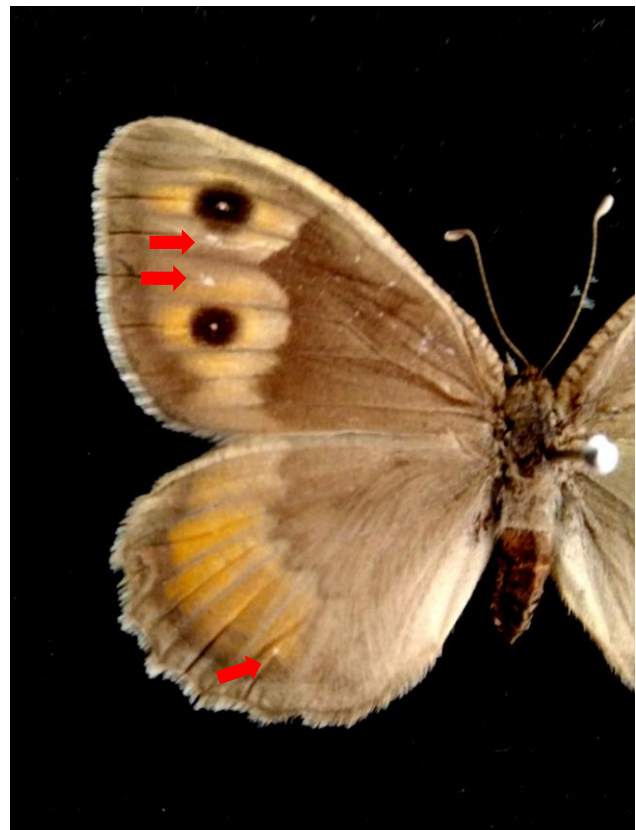


Fig. 3. *Pseudochazara graeca*, Greece, upperside, zoomed view of specimen no. 1. in Fig. 1. Two white spots on the forewing and one on the hindwing are clearly seen. © H. T. Anastassiou.

It is shown conclusively that this is a very rare form of *P. graeca*, which may be the source of possible confusions.



Fig. 4. *Pseudochazara graeca*, ♂ Greece, Stereá Ellás, Viotía district, Mt. Parnassós, 1600 m, 15.vii.2018. © M. Rowlings.

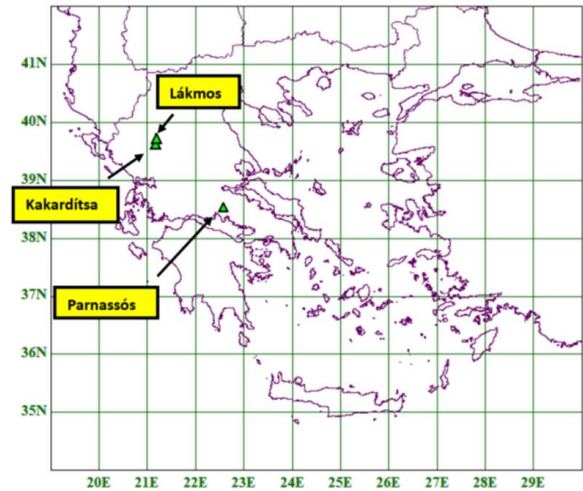


Fig. 5. Map showing the location of the mountains mentioned in the text, created with DMAP for Windows, version 7.2. (<http://www.dmap.co.uk>)

Even the specimen shown by Pamperis in his book may be another example of the same form of *P. graeca*, although this issue remains unclear. Moreover, unconfirmed observations of *P. amydone* at high altitudes, ranging up to 1700 m, might be attributed to similar misidentifications.

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