

***Pontia beckerii* from Balkhash Lake, Kazakhstan, new to the Palaearctic, and misidentified larva and pupa of *Pieris krueperi* from the Tarbagatai Range, Kazakhstan (Lepidoptera: Pieridae)**

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Abstract. *Pontia beckerii* (Edwards, 1871) is recorded for the first time from the Palaearctic Region, in Kazakhstan. Recently published illustrations of erroneously determined larva and pupa of supposed *Pieris krueperi* Staudinger, 1860 are determined as belonging instead to the *Euchloe ausonia* species-group.

Samenvatting. *Pontia beckerii* van het Balkhash meer, Kazakhstan, en verkeerd gedetermineerde rupsen en poppen van *Pieris krueperi* uit het Tarbagatai gebergte, Kazakhstan (Lepidoptera: Pieridae)

Pontia beckerii (Edwards, 1871) wordt voor het eerst uit het Palaearctisch gebied, meer bepaald uit Kazakhstan, gemeld. Onlangs gepubliceerde afbeeldingen van rupsen en poppen, die verondersteld worden van *Pieris krueperi* Staudinger, 1860 te zijn, blijken bij nader onderzoek te behoren tot de *Euchloe ausonia* soortengroep.

Résumé. *Pontia beckerii* de la région du Lac Balkash, Kazakhstan, et détermination fautive de chenilles et chrysalides de *Pieris krueperi* de la chaîne Tarbagatai, Kazakhstan (Lepidoptera: Pieridae)

Pontia beckerii (Edwards, 1871) est mentionné pour la première fois de la région paléarctique et plus spécifiquement de Kazakhstan. Des illustrations récentes, indiquées comme représentant des chenilles et chrysalides de *Pieris krueperi* Staudinger, 1860, appartiennent en réalité au groupe d'espèces de *Euchloe ausonia*.

Key words: Pieridae – *Pontia* – *Pontia chloridice* – *Pontia beckerii* – *Pieris* – *Pieris krueperi* – *Euchloe* – *Euchloe ausonia* – Zoogeography – Immature stages – Greece – Kazakhstan – Turkey.

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Introduction

In Coutsis & Tolman (1996: 271, 272) the full grown larva and pupa of a Greek *Pontia chloridice* (Hübner, 1808) are figured and described, and the almost identical to it by external characters N American *Pontia beckerii* (Edwards, 1871) is separated from it at species level on account of differences between their respective above mentioned immature stages. In a recent publication on butterflies from eastern Turan, Tarbagatai, Saur and south-western Altai (Toropov & Zhdanko 2013: 99), a larva and pupa from the Tarbagatai Range, Kazakhstan are figured, erroneously said to belong to *Pieris krueperi* Staudinger, 1860.

Differences between the full grown larva and pupa of *P. beckerii* and *P. chloridice*

These may be summed up as follows:

Full grown larva.

In *P. beckerii* (Emmel & Emmel 1973: 16, 17, fig. 16 upper left, top; Scott 1986: 220) greenish white, mottled with small greyish purple dots, especially dorsally and dorso-laterally, giving larva overall darker and less shiny appearance than in *P. chloridice*; dorsum with greenish white medial line; shiny black tubercles small and topped by single black bristle; ventrum pale bluish green; head greenish white with small black dots.

In *P. chloridice* (Coutsis & Tolman 1996: 272, fig. 1; Hesselbarth *et al.* 1995: vol. 1, 366, fig. 4) overall shiny porcelain white, and devoid of any dark dot mottling, or

any lighter coloured dorsal medial line; shiny black tubercles large and topped by single black bristle with white extremity; head orange and free of small black dots.

In fact, just about the only things in common between the full grown larvae of *P. beckerii* and *P. chloridice* are their overall shape and the presence of an orange transverse line extending dorsally and laterally along each body segment.

Pupa.

In *P. beckerii* (Emmel & Emmel 1973: 16, 17, fig. 16 upper left, bottom) contrast between dark and light areas strong, division between these areas sharp.

In *P. chloridice* (Coutsis & Tolman 1996: 272, fig. 2) contrast between dark and light areas less strong, division between these areas somewhat suffused.

Differences between the male genitalia of *P. beckerii* and *P. chloridice*

On the basis of two male *P. beckerii* from California, USA, and nine male *P. chloridice* from Greece it was found that in lateral aspect the valval distal and dorso-distal edge of the former is smoothly, though somewhat unevenly, rounded (figs. 1, 2), while the dorso-distal edge of the latter exhibits a bulge which is wanting in *P. beckerii* (figs. 3, 4).

A *P. chloridice*-type valve from Negorcki, Republic of Macedonia is also figured in Jakšić (1998: 37, fig. 8), erroneously confused with that of *Pontia callidice* (Hübner, [1800]) (fig. 7).



Figs. 1–4 . Genitalia components of *Pontia* species. 1, 2. *P. beckerii*. USA, California, Alpine Woodfords, 5800 ft., 14.viii.2003. 3, 4. *P. chloridice*. Greece, Thráki, near Pessáni, 110 m, 29.vi.1991. 1, 3. Lateral aspect of inner face of right valva. 2, 4. Flat aspect of inner face of distal end of right valva.

Differences in size between male adult *P. beckerii* and *P. chloridice*

FW length in N American male *P. beckerii* is 20–28 mm, while in *P. chloridice* 20–22 mm, but even though there is ample overlap in these values, the former butterfly may reach sizes unattainable by the latter.

Known localities for *P. chloridice*-type larvae and pupae

So far, the only known such localities are in NE Greece, from where a larva and pupa are figured in Coutsis & Tolman (1996: 272, figs. 1, 2), and in Asiatic Turkey, from where a single larva is figured in Hesselbarth *et al.* (1995: vol. 1, 366, fig. 4).

The first Old World record for *P. beckerii*

In Toropov & Zhdanko (2013: 88), the figured dorso-lateral aspect of a full grown larva and lateral aspect of a pupa, both from Balkhash Lake, Kazakhstan, and both attributable by the authors to *P. chloridice*, bear instead all the characters of the full grown larva and pupa of *P. beckerii*, the larva exhibiting a well defined dorsal medial greenish white line, dark latero-dorsal areas (almost certainly caused by presence of small greyish dots), small black tubercles, and greenish white head with black dotting, and the pupa exhibiting strong contrast and sharp division between dark and light areas.

Species common to both Asia and N America

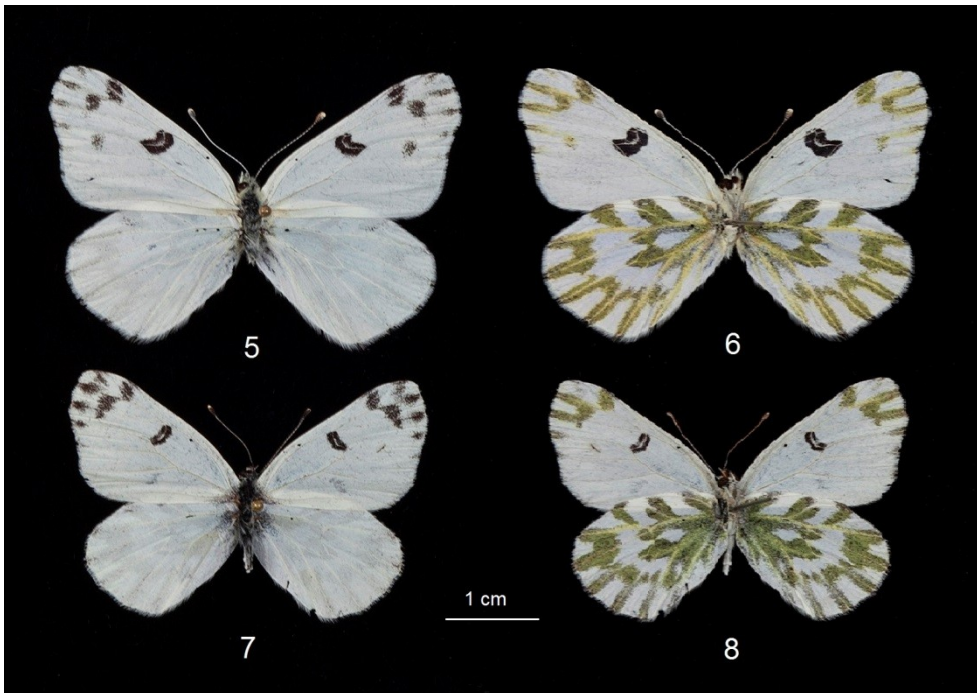
The existence in Kazakhstan of a butterfly species hitherto considered as native exclusively to N America should not come as a surprise. At least 37 other butterfly species (including skippers) are already known to inhabit both Asia and N America, amongst which there are a good many with non-expansive ranges, belonging in the genera *Erebia*, *Oeneis* and *Coenonympha*.

The ranges of *P. beckerii* and *P. chloridice* in the Palearctic region

At present these are unknown. A study of the male genitalia of the two species under consideration should eventually solve the problem. It would be important to find out whether their respective ranges meet, and if so, whether or not the two species are syntopic and prone to hybridization.

P. chloridice type locality and syntype depository

According to Hesselbarth *et al.* (1995: vol. 1, 432) the type locality for *P. chloridice* is “?Südrußland” and the syntypes have been lost. It thus becomes obvious that a neotype should be designated preferably originating from somewhere in S Russia, despite the fact that there is only an indication, but no proof, that the syntypes originated from there.



Figs. 5–8. Male *Pontia* species.
5, 7. Upper side. 6, 8.
Underside. 5, 6. *P. beckerii*.
USA, California, Alpine
Woodfords, 5800 ft.,
14.viii.2003. 7, 8. *P. chloridice*.
Greece, Thráki, near Pessáni,
110 m, 29.vi.1991.

The larva and pupa of *Pieris krueperi*, and a case of misidentification

The larva and pupa of *P. krueperi*, both of which closely resemble those of other members of the genus *Pieris*, were described and figured respectively in Coutsis (1970: 75, 76; 1973: 290). The larva and pupa of a supposed *P. krueperi*, figured in Toropov & Zhdanko (2013: vol. 1, 99), both exhibit characters common to the larvae and pupae of the *Euchloe ausonia* species-group

specimens (larva with alternating light and dark longitudinal stripes, body above with large, shiny black warts; pupa with pronounced, feebly downwards-curved and distally pointed conical head prominence) and have nothing in common with those of *P. krueperi* (larva overall greenish, with faint yellowish spotting along sides, faint mid-dorsal yellowish line and small greenish warts; pupa without head prominence other than a distally extending very short triangular spine).

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