

A REMARKABLE DISCOVERY: *ATARA* (= *RAPALA*) *ARATA* (BREMER, 1861), A BUTTERFLY GENUS AND SPECIES RECORDED FOR THE FIRST TIME FROM TÜRKIYE

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The presence of the theline lycaenid butterfly *Atara arata* (Bremer, 1881) is recorded from the region of Isparta in west-central Türkiye for the first time, representing a new country record of both genus and species some 7,500km west of its previously known westerly limits in eastern China. Several specimens were seen in a remote montane locality on several visits in the late spring and early summer of 2024, indicating a small resident colony. One worn male specimen was collected and dissected to confirm identity. Distribution, variation and habitat is briefly discussed. A lectotype is designated for *Thecla tyrianthina* Butler, 1881 (= *Atara arata* Bremer).

Key words: butterflies, Turkey, distribution, lectotype

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Leptir iz skupine plavaca *Atara arata* (Bremer, 1881) po prvi je put zabilježen u regiji Isparta u zapadnoj središnjoj Turskoj, što predstavlja novi rekord i za rod i za vrstu, budući da se nalazi nekih 7500 km zapadno od njegovih ranije poznatih zapadnih granica u istočnoj Kini. Nekoliko je primjeraka viđeno na udaljenom brdovitom lokalitetu tijekom nekoliko posjeta u kasno proljeće i rano ljeto 2024., što ukazuje na malu, stalnu populaciju. Jedan oronuli muški primjerak je sakupljen i seciran kako bi se potvrdila determinacija. U radu se ukratko raspravlja o rasprostranjenosti, varijetetima i staništu. Određen je i lektotip za *Thecla tyrianthina* Butler, 1881 (= *Atara arata* Bremer).

Ključne riječi: leptiri, Turska, rasprostranjenost, lektotip

INTRODUCTION

The thecline genus *Rapala* Moore, [1881] was raised in *The Lepidoptera of Ceylon* (MOORE, [1881]: 105); said to be allied to *Virachola* Moore, 1881, the type species is *Rapala varuna* (Horsfield, [1829]) (Type Locality: Java), a widespread species ranging from Sri Lanka and Taiwan through southeast Asia to New Guinea and Australia. *Rapala* comprises some 20 species, most with dull blue or red upperside and brown undersurface with subtle lines and stripes. Distribution of the genus includes the eastern Palearctic and southern Asia in India and Sri Lanka. *Thecla arata* (Type Locality: Burenski Mountains, Ussuri River Region in eastern Russia, north of Vladivostok) was described by Bremer in 1861 and has long been associated with the genus *Rapala*. However, the *arata* phenotype is quite unusual in having an undersurface with broad white stripes and a prominent orange area on the hindwing tornus, distinctive features lacking on most other species of *Rapala*. This prompted ZHDANKO to raise a new genus, *Atara* (Type species *Rapala arata*) in 1996, a placement acknowledged and provisionally adopted here; time will tell whether this becomes widely accepted.

Known distribution of *A. arata* is largely confined to eastern Asia; judging from the available literature and the collections of the NHM in London, it ranges from Japan and Korea west to eastern Russia and northeastern China, with mainland localities clustered in the Amur Region of Russia including Lake Changka (Khanka) and adjacent northeastern Regions of China in Hebei, Heilongjiang and Jilin. The westernmost record we have seen is Kiuniang or Kiukiang (Jiujiang [Jiūjiāng]) on the Yangtze River near Lake Poyang in east-central China, from where "*Thecla tyrianthina*" Butler, 1881, was described (BUTLER, 1881: 34-35, plate IV, fig. 5). Although Butler's description and figure of *tyrianthina* are inconclusive, the butterfly has been considered a synonym of *Rapala arata*, and this is supported by the description: "... [hind wing] with an orange patch enclosing a square of four black spots ..." and monochrome drawing of the under surface showing the same distinctive spots. Butler considered *tyrianthina* to be "allied to *T. [Thecla] arata*" but the pair of type specimens (Figs 1, 2) seem never to have been illustrated (Butler's original illustration was a monochrome line drawing), and we include it here (Fig. 3) to resolve its status and confirm synonymy with *Atara arata*.



Fig. 1. *Thecla tyrianthina* Butler, 1881, ♂ LECTOTYPE. a, labels; b, reverse side of locality label; c, upperside; d, underside.



Fig. 2. *Thecla tyrianthina* ♀ PARALECTOTYPE. a, labels; b, reverse side of locality label; c, upperside; d, underside.

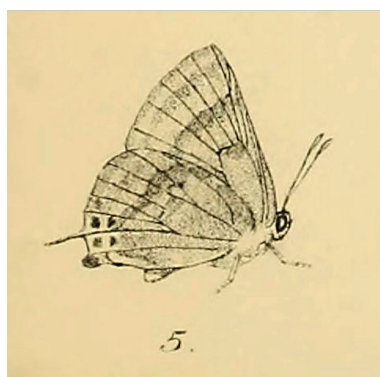


Fig. 3. Butler's 1881 monochrome drawing of *Thecla tyrianthina* accompanying his description.

An established colony of *Atara arata* in western Türkiye

The second author, Süleyman Erdeğer, is an experienced butterfly recorder and photographer in the region of Isparta, western Türkiye and regularly monitors local butterfly populations. On 27 May 2024, he paused for what was planned to be a short stop at a known roadside locality at ca 1,300 metres elevation; late May is an early date for butterflies at that elevation in this part of the country and, to our knowledge, the locality has not previously been monitored for butterflies. Some minutes later, he observed an unfamiliar butterfly and managed to take two photographs of it (Fig. 4) before it disappeared in the tree canopy. He visited the same locality again a week later, on 2 June, when he saw one individual of the same butterfly species and took a better quality photograph (Fig. 5), confirming that this was something not previously recorded from Türkiye.



Fig. 4. *Atara* specimen seen, but not collected, in Türkiye in May 2024.

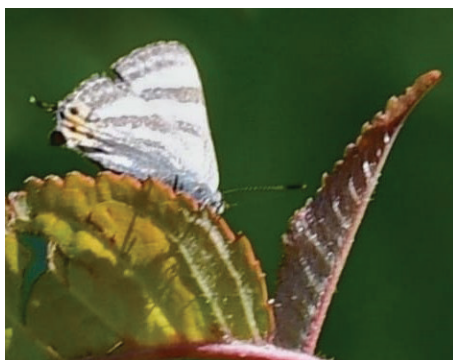


Fig. 5. *Atara* specimen seen, but not collected, in Türkiye in June 2024.

The butterfly was provisionally identified as *Atara arata* (Bremer, 1861) and two days later, the second and third authors returned to the locality with a group of observers; only one specimen of the elusive butterfly was encountered – and fortunately captured, enabling confirmation of its identity (Fig. 6). The literature suggests that the butterfly is, at least in some eastern localities, double-brooded. The locality (and others in the vicinity) was visited again by the second author and others on eight further dates in June, July and August, 1 and 15 September and finally on 6 October with no further sightings at any locality. Thus, no evidence for the occurrence of a second generation was obtained, although the locality became extremely hot (almost 40°C) in mid-summer, when little was flying. It is also noted that a second generation, often with a different phenotype, occurs in some (or all?) eastern localities under favourable conditions, but this may not be annual.

By any measure, this is a remarkable discovery of what appears to be an established colony of *A. arata* more than 7,500 kilometres west of what we believe is the nearest previously recorded site for this species. The ♂ specimen collected was in poor condition (perhaps indicating that on 4 June it had already been on the wing for some time), as were other specimens subsequently seen and photographed (Figs 4, 5); dissection confirmed its identity (but see Discussion) and was generously donated to the NHM in London.

The habitat (Fig. 7) where *A. arata* was encountered comprises a mixture of meadows and deciduous woodland, where wild cherry (*Prunus*), oak (*Quercus*), cypress (*Cupres-*

**TÜRKIYE (west),
Isparta Province,
4th June 2024,
Süleyman Erdeğer**



Fig. 6. *Atara arata* ♂ collected in Türkiye, June 2024. a, label; b, upperside; d, underside.

sus) and poplar (*Populus*) predominate. The ground is semi-swamp resulting in a climate which retains some water for most of the year; a small stream assists in keeping plants fresh, even at the hottest times of the season. Temperatures approach 40°C in summer, despite frequent frost and snow in the winter season. The second and third authors observed that the stream bed is significantly larger than the actual stream seen in the summer, indicating that it represents a major drainage channel when the mountain snow melts in the spring. The habitat separates the dry/cold habitat conditions of central Anatolia with the more mild/wet habitat conditions of the Mediterranean region, accounting for a significant fluctuation in summer and winter temperatures. The locality has mountains of 2,000-2,500 metres elevation to both the east and west, which may form a corridor bringing a milder climate from the Mediterranean to the south.



Fig. 7. Habitat of *Atara arata* in Türkiye (general area).

DISCUSSION

The solitary male collected (Fig. 6) was dissected to confirm identification and compared with material from eastern Russia. Unfortunately, there was damage to the genitalia of our specimen, perhaps occurring in transit, but although it appears fundamentally similar to eastern populations, some minor differences were seen. The aedeagus is huge, appearing slightly broader and longer than that of eastern *arata* specimens, with the vesica terminally broad and flattened. The conjoined valvae are similar, terminally blunt, but apparently lacking the profuse, filamentous terminal spines of eastern *arata*. If confirmed, the latter would be an unusual distinction.

In far-eastern Russia *A. arata* flies usually in two broods, from late May to late August; in more northern regions it may occur in a single brood in June. It is possible that in this recently discovered locality in western Türkiye, extreme seasonal variance, with ideal conditions in the early spring and excessive heat with an accompanying change in the vegetation in the summer, may preclude a second brood. In late summer the oppressive heat makes observations uncomfortable; the second author found the butterfly flying only in the morning, before 1,100–1,200 hrs, when the temperature was ca 20–25°C and observed individuals resting on freshly-sprouting new leaves. We do not know the reason for this, although *Rapala s.l.* is known to utilise several widespread plant families; larvae feed mostly on inflorescences, buds, or berries and in common with many other lycaenid species, are actively associated with ants (KORSHUNOV & GORBUNOV, 1995: 347; FIEDLER, 1991: 103).

It is interesting that such an unusual and distinct addition to the Turkish butterfly fauna relates to a species that does not appear to have been recorded previously from any locality between eastern China and western Türkiye. The detailed attention Turkish butterflies have received in recent years, especially by German collectors and researchers: from the substantial (2,200 pages) three-volume work of Hesselbarth, van Oorschot and Wagener, in 1995 and its many supplements (see references), to the field guides of BAYTAŞ (2009, 2019), as well as several sophisticated online reporting platforms, makes such a discovery even more remarkable.

We forewent early publication in the hope of securing additional material from a second brood but failed to do so. *A. arata* is a variable species and in some localities specimens of the two broods are quite different in appearance. The “spring brood” fundamentally has a pale ‘off-white’ or creamy ground colour on the under surface, with a variable series of broad brown vertical stripes (a phenotype with which our June specimen conforms); the “summer” brood is similar, but the underside is overlain to some degree by dusky brown scales that in extreme examples almost obscure the markings. Historical material in the NHM collection can be difficult to place because of limited locality data and a lack of any date.

A diagnostic feature of both sexes of *A. arata*, is the four evenly spaced black spots in a broad orange area on the underside hindwing tornus. These spots are variable, and that distad in space 2 is often slightly elongated and ‘open’, with a pale centre; the tornus of our specimen is damaged on both wings, obscuring this feature, but its overall appearance (*i.e.*, the collected ♂, together with photographs of other specimens, also damaged) suggest a butterfly with a number of minor apparent dissimilarities that may warrant recognition as a distinct taxon. We prefer to wait until further material is available before making an assessment and confine this paper to recording this extraordinary new record for Türkiye.

In addition to the Turkish specimen (Fig. 6), we illustrate a ♂ collected in June 1909 in the Sichota-Alin Mountains in eastern Russia, southeast of the *arata* type locality (Fig. 8) and a ♀ collected in June 1893 on Kyushu Island, southwest Japan (Fig. 9).

As we have already noted, Butler’s description of *Thecla tyrianthina* is believed to refer to *A. arata* although his monochrome illustration (BUTLER, 1881, pl. IV, fig. 5: our fig. 3) is, with the exception of the hindwing tornal area, not definitive. Butler made no indication of how many specimens he examined – unusually, since he gave the numbers of available specimens for other taxa described and named in the same paper. But he referred to both sexes in his description, and a pair labelled as ‘types’ were found in



Fig. 8. ♂ *arata* collected in June 1909 in the Sichota-Alin Mountains in eastern Russia. a, upperside; b, underside.



Fig. 9. ♀ *arata* collected in June 1893 on Kyushu Island, southwest Japan. a, upperside; b, underside.

the NHM collections (his paper was entitled “*Descriptions of new Species of Lepidoptera in the Collection of the British Museum*”). Collecting data was presented as “Kiukiang, China (Maries)”. Phenotypically, both specimens are of what is loosely considered to be a “summer form” of *arata*, although neither carries a date of capture. The collector, ‘Maries’, refers to Charles Maries (1851-1902) an English botanist and plant collector sent on a plant collecting expedition to Japan, China and Taiwan between 1877 and 1879 by horticulturalists James Veitch & Sons, Chelsea, London. Judging from other entries in Butler’s paper, Maries collected a number of butterflies on his travels.

In large part because the identity of *tyrianthina* has previously been unclear, we formally designate and illustrate a ♂ lectotype (Fig. 1) and recognise a ♀ paralectotype (Fig. 2) for *Thecla tyrianthina* Butler, 1881, in the NHM London. The lectotype specimen is labelled: (1) handwritten “Kiukiang 80.25”, on reverse “*Thecla tyrianthina* ♂ Butler Type”; (2) red-bordered, circular, typed “Type”; (3) typed “LECTOTYPE: *Thecla tyrianthina* Butler, 1881, designated by John Tennent, 2024”; (4) purple-bordered, circular, typed “Lectotype”. The paralectotype specimen is labelled: (1) handwritten “Kiukiang 80.25”, on reverse “*Thecla tyrianthina* ♀? Butler Type.”; (2) red-bordered, circular, typed “Type”; (3) typed “PARALECTOTYPE: *Thecla tyrianthina* Butler, 1881, designated by John Tennent, 2024”; (4) blue-bordered, circular, typed “Paralectotype” (both NHM, London).

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