Entomol. Croat. 2025, Vol. 24. Num 1: 1–5
Izvorni znanstveni rad / Original scientific paper
Zaprimljeno/Received 19.10.2023. Prihvaćeno/Accepted 18.02.2025. doi: https://doi.org/10.17971/ec.24.1.5

First records of Death's Head Hawkmoth *Acherontia atropos* (Linnaeus, 1758) in Baranja (Croatia)

Prvi nalazi noćnog leptira mrtvačka glava *Acherontia atropos* (Linnaeus, 1758) u Baranji (Hrvatska)

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Abstract

One specimen of Death's Head Hawkmoth *Acherontia atropos* (Linnaeus, 1758), was recorded on the wall of an abandoned district school, at the locality of Majške Međe in October 2007. This is the first observation of this species in the north-eastern part of Croatia (Baranja), but it was not published yet. Similarly, another record from September 2019 in the village of Lug can be seen only from the online data base. This case indicate the importance of citizen science in recording of easily recognizable species. Eight butterflies species (Sphingidae) have been recorded in Baranja so far, which represents 36.36% of the total species number of this family in Croatia.

Keywords: citizen science, distribution, fauna, Lepidoptera, Sphingidae

Sažetak

Jedna jedinka vrste mrtvačka glava *Acherontia atropos* (Linnaeus, 1758) zabilježena je na zidu napuštene područne škole na lokalitetu Majške Međe u listopadu 2007. godine. To je prvo opažanje navedene vrste u sjeveroistočnom dijelu Hrvatske (Baranja), ali do sada nije objavljeno. Isto tako, još jedan nalaz iz rujna 2019. godine u selu Lug vidljiv je samo iz online baze podataka. Ovaj slučaj ukazuje na važnost građanske znanosti u bilježenju lako prepoznatljivih vrsta. Osam vrsta leptira iz porodice ljiljaka (Sphingidae) zabilježeno je do sada u Baranji, što predstavlja 36.36% od ukupnog broja vrsta ljiljaka Hrvatske.

Ključne riječi: fauna, građanska znanost, leptiri, rasprostranjenost, Sphingidae

Introduction - *Uvod*

Fauna of moths in Baranja has been very poorly and sporadically studied. The first study was carried out in 1943 in the area of Kopački rit and Podravlje (Jenőfalva) by entomologists from the Albertina biological station established by the Hungarian National Museum in Budapest, and 49 species was recorded in the area (Szent-Iványi 1944). After more than 60 years the next research was performed in Kopački rit Nature Park where 201 species of moths were recorded (Vignjević et al. 2010). In the studies carried out in 2021 and 2022 in the Baranja region, the species Lenisa geminipunctata (Haworth 1809), new to the fauna of Croatia, was recorded (Koren 2023). The occurence of the species Amphipyra cinnamomea (Goeze 1781) in Bilje is the second record in the fauna of Croatia (Koren 2023). The small number of findings indicates the need for further study in this region. The aim of this short note is to present information about the observations of the migratory moth species which is less known in this area.

Materials and Methods – *Materijali i metode*

During the autumn of 2007, the sistematc field study was performed in the Baranja region (in the north-eastern part of Croatia, enclosed by the rivers Danube and Drava) aiming to collect Common Barn-owl (*Tyto alba*) pellets (Szép et al. 2018). During these surveying of the attic spaces of tall buildings and churches, such as abandoned grain warehouses and old buildings in addition to the collecting of pellets, the observed animal species, like insects, reptiles, and birds were also documented. Among observed insects an conspicuous species of moth was also recorded with the camera only on the one locaton. Identification of the moth was performed according to Chinery (2012).

Results and Discussion – *Rezultati i rasprava*

One specimen of the species Death's Head Hawkmoth *Acherontia atropos* (Linnaeus, 1758) was recorded on the wall of the abandoned district school in the village of Majške Međe (45.737999°N 18.483551°E, CR 06 according 10×10 km UTM) on October 4, 2007 (Figure 1). This is the first observation of this moth species in Baranja (Figure 2), but it was not published yet. Meanwhile another observation by Ákos Tiffán on September 29, 2019 in the village of Lug 45.66299°N, 18.77482°E, CR 25 according 10×10 km UTM (Figure 2) was submitted to online data base (Horváth 2019). Submitting faunal data to the web portals e.g. Global Biodiversity Information Facility (GBIF) is much simpler and faster than preparing a manuscript for publication in journals. However, these data from online sources are often overlooked, as in the case of recent publication by Koren and Šašić (2023).

The first finding of moths from the Sphingidae family in Baranja region was recorded in 1943 in the Podravlje (Jenőfalva) locality (Szent-Iványi 1944). Six species were recorded in the studies by entomologists from the Department of Biology in Osijek (Vignjević et al. 2010).

Seven species of moths from the hawkmoths family are recorded recently in this area (Koren and Šašić 2023). In the list of hawkmoths of Croatia, 22 species are listed (Koren and Šašić 2023). However, there was no data on the species Death's Head Hawkmoth in the north-western part of Baranja region, while it has been recorded in all biogeographical regions of Croatia (Continental, Alpine and Mediterranean). According to Koren and Šašić (2023), individuals of this species were recorded in 54 localities in Croatia, but in their report was not included data from online data basis (GBIF). Our finding represents a new record and it is also the first occurrence in a locality not far from the Drava river. This species was also recorded in Hungary in the in neighbour southern part of Baranya County at the Sellye locality (Uherkovich 1971), as well as from the Komló area (Fazekas 2004). The monthly newsletter and website of the Danube-Drava National Park Directorate reported that an Death's Head Hawkmoth individual was observed on the balcony of its central building in Tettye Square in city Pécs on October 1, 2024 (Laczik 2024). This Afrotropical species is recorded in almost all European countries, except Denmark, Faroe Islands and Selvagens Island, Svalbard & Jan Mayen Islands (FaunaEeuropaea 2023). The Death's Head Hawkmoth arrives from North Africa in April and May in many European countries, including Croatia and Hungary. During the summer, the moths migrate in small numbers to Northern Europe. Their offspring joined by more migrants make up the generation seen by northern Europeans in July and August (Durkin 2003). In Croatia it appears in one generation during summer from July to October (Kranjčev 2009). They lay eggs once and the caterpillars that hatch here can be found until November in potato (Solanum tuberosum) fields, or on some shrubs, e.g. *Lycium halimifolium* and *Ligustrum vulgare* as well as on a wide range of other host plants (Lelo and Memišević 2020; Poolpandi et al. 2022). They pupate in holes dug in the ground, but they cannot survive the winter in the Carpathian Basin. This species can overwinter only in the southern parts of Europe (Biologer HR 2023).

The threat status of Death's Head Hawkmoth in Croatia and in Europe hasn't been evaluated, nor has the species been assessed for the IUCN Red List. In Hungary it has been on the list of protected species (Bálint et al. 2002).

The very small number of findings and published data of this easily noticeable moth species in the last decades primarily indicates that the number of experts is small compared to the size of the country, therefore the importance of citizen science increases.

Figure 1 Death's Head Hawkmoth *Acherontia atropos* found in settlement Majške Međe at October 4, 2007 (Photo J. J. Purger).
Slika 1. *Mrtvačka glava* Acherontia atropos *nađena u naselju Majške Međe 4. listopada 2007. godine (Slikao J. J. Purger).*

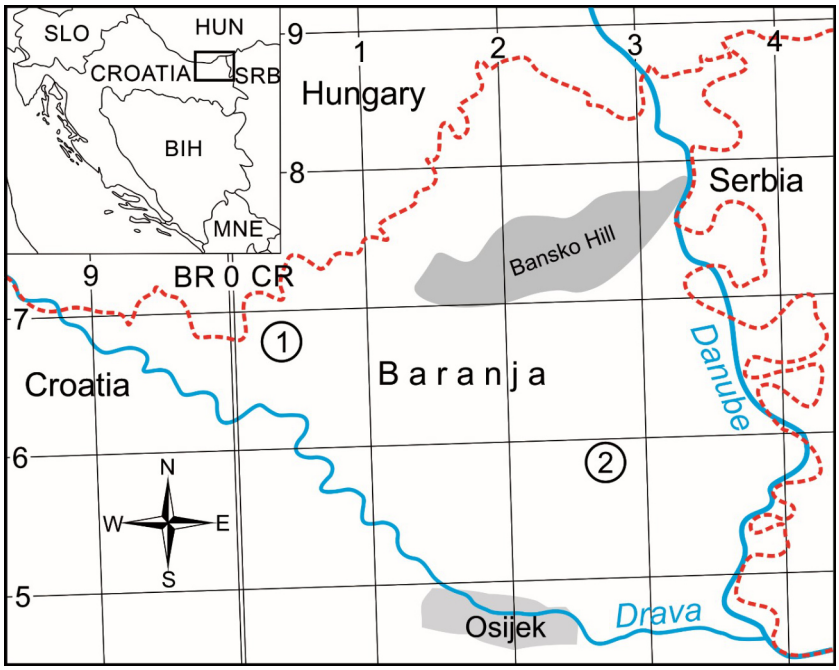

Figure 2 New finding locations of *Acherontia atropos* in the Baranja region (Croatia): 1 - Majške Međe, 2 - Lug.
Slika 2. *Novi lokaliteti nalaza vrste* Acherontia atropos *u Baranji (Hrvatska): 1 - Majške Međe, 2 - Lug.*

References - Literatura

Bálint, Z., Ronkay, L., Pál, J. 2002. Iconographia Faunae Hungaricae Lepidopterorum. A magyar lepkefauna képekben. Szenderfélék - Sphingidae. Hungarian Natural History Museum, Budapest. 12 pp.

Biologer HR. 2023. https://www.biologer.hr [Accessed: October 13, 2023]

Chinery, M. 2012. Insects of Britain and Western Europe. Bloomsbury Publishing, London. 320 pp.

Durkin, P. 2003. Tails & Tales: The unnatural history of the Death's Head Moth, *Acherontia atropos* (Linnaeus, 1758). *News of the Lepidopterists' Society*, 45 (1): 15-16.

Fauna Europaea 2023. https://www.faunaeuropaea.org [Accessed: October 13, 2023]

GBIF - the Global Biodiversity Information Facility 2025. https://www.gbif.org [Accessed: January 19, 2025]

Fazekas, I. 2004. Catalogue of Macrolepidoptera fauna from Komló area (South-Hungary), Lepidoptera. *Folia Comloensis*, 13: 5-68.

Horváth, D. 2019. African death's head hawkmoth *Acherontia atropos* Linnaeus, 1758 observed in Croatia. https://www.izeltlabuak.hu/talalat/90475 and https://www.gbif.org/occurrence/4907721121 [Accessed: January 19, 2025]

Koren, T. 2023. Additions to the owlet moth fauna (Lepidoptera: Noctuidae) of Croatia. *Entomologia Croatica*, 22 (1): 67-72.

Koren, T., Šašić, M. 2023. An annotated checklist of hawk moths (Lepidoptera: Sphingidae) of Croatia with their distribution and common names. *Natura Croatica*, 32 (1): 49-68.

Kranjčev, R. 2009. Leptiri Hrvatske. Prilozi istraživanju biološke i stanišne raznolikosti faune Lepidoptera Hrvatske. Veda, Križevci, 255 pp.

Laczik, D. 2024. Ritka vendég az erkélyen / Rare guest on the balcony/. Békalencse - Newsletter of the Danube-Drava National Park Directorate 10: 2.

Lelo, S., Memišević, E. 2020. First finding of species *Acherontia atropos* (Linnaeus, 1758) and *Angerona prunaria* (Linnaeus, 1767) (Insecta: Lepidoptera) from Johovača (Manucipality Milići). *Prilozi fauni Bosne i Hercegovine*, 16: 23-27.

Poolpandi, K., Santhi Pon Indira, Y. S., Rajathi, L. R., Bama, J.S. 2022. First documented occurrence of *Acherontia atropos* (African Death's Head Hawk Moth) in India: Life cycle and distribution at Pope's college, Tamil Nadu. *Revista Electrónica de Veterinaria*, 23 (3): 576-579.

Szép, D., Horváth, G. F., Krčmar, S., Purger, J. J. 2018. Connection between prey composition and the landscape structure in the hunting area of Barn Owls (*Tyto alba*) in Baranja (Croatia). *Periodicum Biologorum*, 120 (2-3): 125-133.

Szent-Iványi, J. 1944. Lepidopterenfaunistische und ökologische Beobachtungen in der Umgebung der Erzherzog Albrecht Biologischen Station des ungarischen National-Muzeums. *Albertina*, 1: 135-148.

Uherkovich, Á. 1971. Beiträge zur Beschreibung der Fauna der grossen Schmetterlinge im Komitat Baranya III. Neuere faunistische Angaben aus der Umgebung von Sellye. *A Janus Pannonius Múzeum Évkönyve*, 16: 29-39.

Vignjević, G., Zahirović, Ž., Turić, N., Merdić, E. 2010. Moths (Lepidoptera: Heterocera) of Kopački rit Nature Park – results of preliminary research. *Entomologia Croatica*, 14 (3/4): 17-32.