


AN EXTRAORDINARY JEWEL BEETLE SPECIES (*PEROTIS UNICOLOR* (OLIVIER, 1790)) FROM NORTHEASTERN ALGERIA: RE-DISCOVERY OF THIS SPECIES IN NORTH AFRICA AFTER MORE THAN HALF A CENTURY

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Jewel beetles (Buprestidae), also known as metallic wood-boring beetles, predominantly inhabit forest environments. Several taxa within this family hold heritage status in both broadleaf and conifer forests. The larvae of most species undergo development within the inner, living part of tree bark, while some species can behave as opportunistic pests, causing considerable damage to weakened host trees. Notably, in Algeria, *Lamprodila festiva* on Barbary thuja (*Tetraclinis articulata*), and *Agrilus biguttatus* on oak trees were recognized as significant pests. Given the potential impact of climate change on forest jewel beetles, there were two key concerns: i) many of these species prefer warmer climates, making them thermophilic, and shifts in temperature patterns can affect their distribution and abundance, ii) following severe droughts, forest declines and diebacks may occur, offering an opportunity for these beetles to exploit weakened trees. In the context of this study, a Buprestidae (Coleoptera) species was re-discovered in the northeastern region of Algeria within holm oak (*Quercus ilex*) shrub lands, *Perotis unicolor* (Olivier, 1790). This is an important finding as it has not been reported in the fauna of North Africa for more than half a century.

Keywords: Jewel beetles, Coleoptera, *Quercus ilex*, *Perotis unicolor*, Algeria, North Africa

Menaa, M.: Osobita vrsta krasnika (*Perotis unicolor* (Olivier, 1790)) iz sjeveroistočnog Alžira: ponovni nalaz u sjevernoj Africi nakon više od pola stoljeća. *Nat. Croat.*, Vol. 33, No. 1., 191-195, 2024, Zagreb.

Krasnici (Buprestidae) su poznati kao kukci metalik boja čije ličinke se hrane drvom, a pretežno nastanjuju šumska staništa. Neke svojte posebno su karakteristične za listopadne i šume četinjača. Ličinke većine vrsta razvijaju se u unutarnjoj, živoj kori drveća, dok su neke vrste oportunistički štetnici te uzrokuju značajnu štetu na oslabljenim stablima domaćina. Tako su u Alžiru kao značajni štetnici prepoznati *Lamprodila festiva* na tuji *Tetraclinis articulata*, te *Agrilus biguttatus* na hrastovima. Što se tiče potencijalnog utjecaja klimatskih promjena na šumske krasnike, postoje dva ključna momenta: i) mnoge od tih vrsta preferiraju topliju klimu, pa bi promjene u temperaturi utjecale na njihovu rasprostranjenost i brojnost, ii) zbog jakih suša može doći do propadanja šuma, a oslabljena stabla mogli bi napasti ovi kukci. Ovaj rad donosi ponovni nalaz vrste *Perotis unicolor* (Olivier, 1790) iz porodice Buprestidae (Coleoptera) iz šumaraka hrasta crnike (*Quercus ilex*) sjeveroistočnog Alžira. To je važan nalaz jer vrsta nije spomenuta za faunu sjeverne Afrike više od pola stoljeća l.

Ključne riječi: krasnici, Coleoptera, *Quercus ilex*, *Perotis unicolor*, Alžir, sjeverna Afrika

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INTRODUCTION

Jewel beetles typically display an elongated or oblong shape, ranging from 3 to 35 mm in length, with some species, such as *Megaloxantha*, reaching sizes of up to 83 mm. They are characterized by a tapered posterior end. They are recognized for their robust and highly sclerotized cuticles, which often display striking metallic hues such as green, blue, purple, or bronze. Although the identification of the majority of jewel beetle species has been facilitated by readily available and current literature, differentiating among species within specific genera remains a challenging task (STAVENGA *et al.*, 2011).

The Buprestidae family comprises approximately 15,000 species distributed worldwide, with a predominant presence in tropical regions. However, the exact number of jewel beetle species in Africa remains unknown (VOLKOVITSH, 2020).

Many of these species are closely associated with woody plants, demonstrating lignicolous, xylophagous, or saproxylophagous behavior, their larvae feeding on woody tissues (BRIN & BOUGET, 2018). Jewel beetles exhibit a broad spectrum of host preferences, with very few tree species remaining untouched. It is worth noting that a higher number of lignicolous jewel beetle species are linked to broadleaf than to conifer species. Buprestids typically show a preference for open rather than dense tree stands, particularly favoring forest edges in the northeastern or northwestern regions (FACCOLI & FAVARO, 2016).

The Jewel beetle fauna of North Africa is only partially known. While many species, such as *P. unicolor*, are widespread and commonly found in the Palearctic region, and frequently collected and present in extensive beetle collections, there have been no published records from North Africa for more than half century.

MATERIALS AND METHODS

Material

The specimen was collected on Mount Tiffech, located in Souk Ahras Province, within a forested ecosystem comprising various types of vegetation, including pure holm oak stands, mixed holm oak stands with Aleppo pine forests or cypress woodlands. Traditional collecting methods, such as sweeping on grassy vegetation and beating branches of trees and bushes, were employed during the collection process.

Study area

The province of Souk Ahras is situated in the extreme northeast of Algeria. It shares its northern border with the province of El-Tarf, to the west with the provinces of Guelma and Oum El Bouaghi, to the south with the province of Tebessa, and to the east with the country of Tunisia. The study was conducted in Mount Tiffech, located in the west of the southern part of the municipality of Souk Ahras, approximately 40 km from it, and within the southeastern part of Khemissa municipality (Fig. 1). Mount Tiffech covers an area of 3000 hectares and comprises three major stands categorized by their dominant plant species: pure holm oak (*Quercus ilex*) stands, mixed holm oak with Aleppo pine (*Pinus halepensis*) forests, and mixed holm oak with cypress (*Cupressus sempervirens*) forests. The region has a semi-arid climate with an average annual rainfall ranging from 560 to 650 mm and mean temperatures between 15.1°C and 16.5°C.

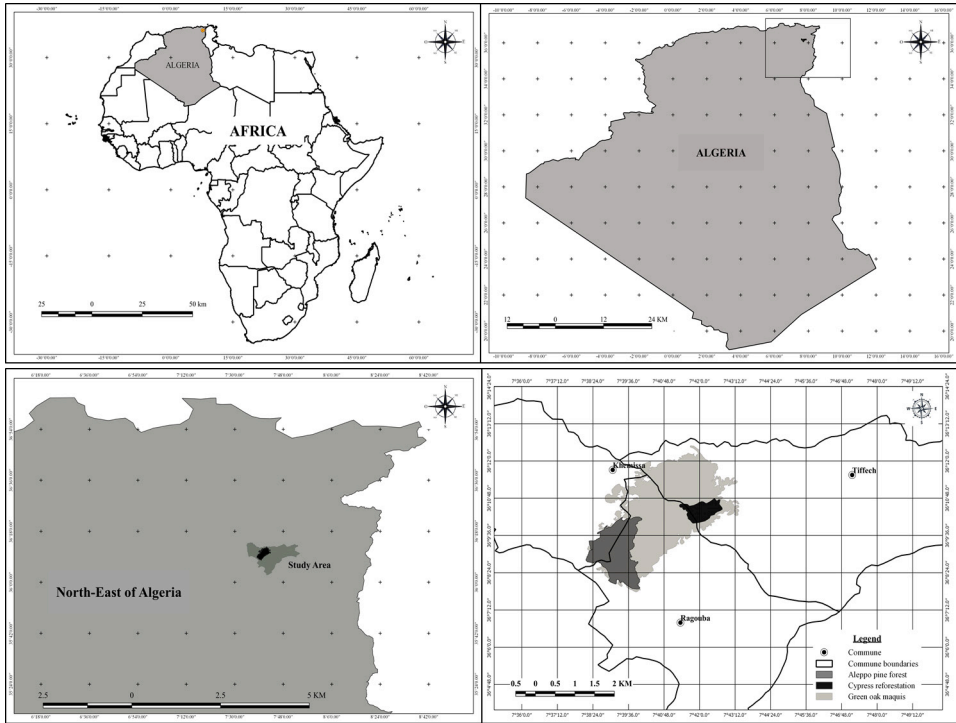


Fig. 1. Location of the study area - Mount Tiffech, North-eastern Algeria.

RESULTS AND DISCUSSION

Perotis unicolor (Olivier, 1790) or *Aurigena unicolor* is a jewel beetle species currently found along a West Mediterranean arc in Tunisia, Algeria, Morocco, Portugal, Spain, southern France, and the southern part of Italy on the island of Marettimo (off Sicily). Although *P. unicolor* was once widely distributed in North Africa and documented in historical references (PEYERIMHOFF, 1926; THÉRY, 1928; KOCHER, 1956), it has received less attention in recent decades, resulting in limited records. Recently, only old reports from Algeria have been available, making it crucial for a comprehensive understanding of the Algerian entomological fauna to investigate and document the current presence and distribution of this species.

In Algeria, the first reliable mention of *P. unicolor* is attributed to a member researcher of 'The Transylvanian Society of Natural Sciences,' who reported this species from Biskra (north-east of the Algerian Sahara) in 1886 and cited it as *A. unicolor* (VLAD-ANTONIE & RUCĂNESCU, 1996). Subsequently, other observations were made by Peyerimhoff in 1911 and shortly after by the same author until the year 1926. All these collections unquestionably confirmed the presence of this species in Algeria and were published by THÉRY (1928).

Additionally, it was first recorded in the North-Eastern Algeria within Aures meridionalis in by Descarpentries (1958; as *Aurigena*). Moreover, the subspecies *igniventris* Escalera, 1914, was described from Morocco and was mentioned by different authors



Fig. 2. *Perotis unicolor* (Olivier, 1790) in the holm oak stands of Mount Tiffech (photo: M. Menaar).

much later (see BELLAMY, 2008; KUBAN *et al.*, 2006, 2016). On 11th June 2023, I observed a buprestid beetle emerging from a branch of a holm oak tree in Mount Tiffech, located in northeastern Algeria (Fig. 2). I took photographs of the emerging adult and sent the images to Andreas Herrmann for identification. A preliminary identification of the specimen was provided by Andreas Herrmann. Subsequently, the identification was confirmed by the buprestid expert, Hans Mühle. This re-discovery marks the second recorded instance of *P. unicolor* in northeastern Algeria.

Q. ilex, commonly known as holm oak or evergreen oak, is a broadleaved shrub distinguished by its coriaceous dark green leaves with a woolly underside and small acorns. It is native to the central western Mediterranean basin, where it stands as the dominant species within the maquis vegetation (DE RIGO & CAUDULLO, 2016).

This finding highlights the potential for Buprestidae to remain undetected in lumber products and to be redistributed to new areas.

CONCLUSION

Buprestid beetles form a changing community of forest organisms in response to global changes. We anticipate that weakened forest stands, due to climate change, may soon highlight certain opportunistic species, resulting in significant damage, with some native African buprestids potentially becoming severe pests. However, despite recent unfavorable climatic conditions, damage to oak trees does not appear to be increasing. Beyond the damage that some species may cause to weakened stands, it is important to consider the rarity of many species in management measures. Buprestid beetles, a family of often discreet but remarkable beetles, constitute an important component of forest biodiversity.

This recent re-discovery has illuminated the ecological dynamics of these beetles, offering valuable insights into the biodiversity of the region.

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