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NEW RECORD OF *BLAPS NITIDULOIDES* (SOLDATI, 2017) (COLEOPTERA, TENEBRIONIDAE, BLAPTINI) IN THE ANCIENT RUINS OF THUBURSICUM NUMIDARUM (KHEMISSA, NORTHEASTERN ALGERIA)

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Menaa, M., Boutabia, L. & Telailia, S.: New record of *Blaps nitiduloides* (Soldati, 2017) (Coleoptera, Tenebrionidae, Blaptini) in the ancient ruins of Thubursicum Numidarum (Khemissa, northeastern Algeria). Nat. Croat., Vol. 33, No. 2, 397–402, Zagreb, 2024.

The city of Thubursicum Numidarum is considered one of the most important and richest ancient archaeological sites in Algeria, in terms of magnitude and the diversity of archaeological buildings. This city is located in the far east of Algeria, specifically in the municipality of Khemissa, the state of Souk Ahras, distinguished most importantly by its Numidian origins, as indicated by its ancient name. In the context of this study, a Tenebrionidae (Coleoptera) species was discovered in these Roman ruins. *Blaps nitiduloides* (Soldati, 2017) is a significant finding as it had been reported previously in Northeastern Algeria fauna biodiversity.

Key words: *Blaps nitiduloides*, Coleoptera, fauna biodiversity, Thubursicum Numidarum, Algeria

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Grad Thubursicum Numidarum smatra se jednim od najvažnijih i najbogatijih antičkih arheoloških nalazišta u Alžiru s obzirom na veličinu i raznolikost arheoloških građevina. Taj grad se nalazi na krajnjem istoku Alžira, točnije u općini Khemissa, u provinciji Souk Ahras, a ističe se prije svega svojim numidijskim podrijetlom, na što ukazuje i njegovo drevno ime. U tim rimskim ruševinama otkrivena je vrsta kornjaša iz porodice Tenebrionidae (Coleoptera). *Blaps nitiduloides* (Soldati, 2017) značajno je otkriće jer je ranije zabilježeno u bioraznolikosti faune sjeveroistočnog Alžira.

Ključne riječi: *Blaps nitiduloides*, Coleoptera, bioraznolikost, fauna, Thubursicum Numidarum, Alžir

INTRODUCTION

The Tenebrionidae family, commonly known as darkling beetles, stands out as one of the most varied beetle groups globally. With over 20,000 documented species across approximately 2,300 genera worldwide (Ślipiński *et al.*, 2011), their diversity is significant. Research into the diversification patterns within this highly diverse family has re-

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vealed an initial branching out of species adapted to arid environments (Kergoat *et al.*, 2014b). According to Kergoat *et al.*, 2014a and 2014b, among the richest genera in terms of species-number, is the genus *Blaps* Fabricius, 1775, situated within the Blaptini tribe, as part of the polyphyletic Tenebrioninae subfamssily. The Blaptini tribe encompasses approximately 500 species (Medvedev, 2007). Significantly, around half of the species diversity within this tribe is attributed to the *Blaps* genus, comprising approximately 250 species (Löbl *et al.*, 2008: 219–228). Most of the Blaptini are widely distributed in Western and Central Asia. Given that these regions host the highest concentration of species and genus diversity within the Blaptini tribe, they are widely regarded as the center of origin and diversification for the tribe (Medvedev, 2000; Condamine *et al.*, 2013). Several *Blaps*-species are also distributed around the Mediterranean Basin (Condamine *et al.*, 2011, 2013). Within the *Blaps*, former enthomological studies have identified two distinct groups, termed sections by Seidlitz (1893), based on morphological characters (Solier, 1848; Allard, 1880, 1881, 1882; Seidlitz, 1893; Gebien, 1937).

All the *Blaps* species are flightless and possess suitable adaptations for living in semi-arid and arid environments, attributed to specific behavioral and morphological traits (Condamine *et al.*, 2011) and constitute relevant biological indicators of these environments for conservation biology in biodiversity hotspots (De Los Santos *et al.*, 2000).. Moreover, earlier biogeographical studies have highlighted the influential role of geological events in shaping the evolutionary history of these insects (Condamine *et al.*, 2013). Within this subgenus, the former classification system introduced by Seidlitz (1893) remains largely applicable. Seidlitz's system comprises two primary groups, consisting of 11 and 17 species groups, respectively. Among these, 27 species groups encompass *Blaps* species from the subgenus Blaps, while one species group corresponds exclusively to the subgenus Dineria. Notably, species within these two main groups exhibit distinct morphological characters and share several common features. Furthermore, their distribution patterns are significantly different: the first group (comprising approximately 90 species) is predominantly found in the Mediterranean Basin, whereas the second group (comprising around 140 species) has a Eurasian distribution (Allard, 1880; Seidlitz, 1893).

Due to their flightlessness, *Blaps* species show constrained abilities for dispersal. Within the Mediterranean Basin, the combination of diverse topography, environmental variations, and the geographical isolation of numerous mountainous regions renders them highly susceptible to allopatric speciation, particularly through vicariance events. This intricate biogeographic scenario closely mirrors the taxonomic history of Blaptini, in which multiple taxa have alternately been classified as distinct species or subspecies.

MATERIALS AND METHODS

Material

The specimens were collected in the ancient ruins of Thubursicum Numidarum, located in the Northeast of Algeria, specifically in the municipality of Khemissa, province of Souk Ahras. 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. In the north, it borders onthe province of El-Tarf, to the west on the provinces of Guelma and Oum El Bouaghi, to the south the province of Tebessa, and to the east on Tunisia. The study was conducted in the ancient ruins of Thubursicum Numidarum, approximately 40 km S–W of the municipality of Souk Ahras (Figs. 1 & 2).

The climate is semi-arid with an average annual rainfall ranging from 560 to 650 mm and mean temperatures between 15.1°C and 16.5°C.

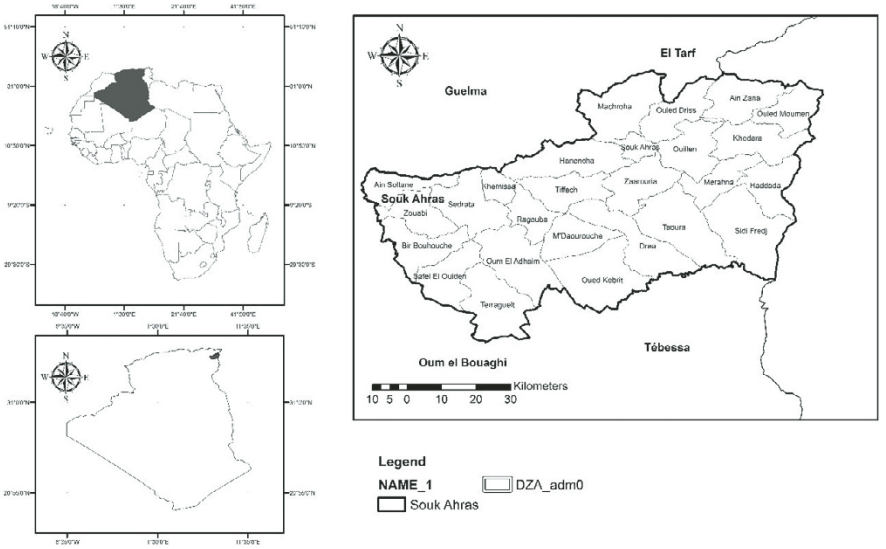

Fig. 1. Location of the study area, Thubursicum Numidarum, north-eastern Algeria.

Fig. 2. Khemissa Roman Ruins.

RESULTS AND DISCUSSION

Blaps nitiduloides Soldati, 2017 is a Tenebrionidae species recently discovered by Soldati *et al.* (2017) in Tunisia and in the Constantine region of Algeria. This species belongs to the *Blaps emondi* species group (sensu Condamine *et al.*, 2017).

On 17th June 2023 at 06:45, we observed two *Blaps* mating under a holm oak tree in the Roman ruins. We took some photographs of the two specimens and a preliminary identification was provided by the first author. At first it was assumed they belonged to *Blaps maldesi* Soldati, 2017. Then, we sent the images to the Tenebrionidae expert Laurent Soldati for identification, and he provided the identification of *Blaps nitiduloides*. This discovery is the first record of *B. nitiduloides* in the extreme Northeastern Algeria (Fig. 3).

Fig. 3. *Blaps nitiduloides* Soldati in the city of Thubursicum Numidarum (© M. Menaa).

Most of the *Blaps* species are well adapted to semi-arid and arid environments (Condamine *et al.*, 2013; Kergoat *et al.*, 2014a, b). The two specimens discovered in the archaeological site of Khemissa, which belong to the realm of semi-arid environments, confirm this ecological addaptation. The prevalence of darkling beetles within arid and semi-arid ecosystems in North Africa can probably be attributed to the enduring consistency of these biomes since the late Oligocene. This proposition aligns with the hypothesis introduced by Condamine *et al.* (2013) regarding tenebrionids belonging to the Blaptini tribe.

Their notable size and conspicuousness render them appealing to collectors, leading to their extensive representation in museums as well as private collections. These insects are commonly named 'funeral beetles' or 'churchyard beetles,' owing to their association with ruins and caves and their distinctive black coloring.

CONCLUSION

This article increases the distribution area of *Blaps nitiduloides* in the north-east of Algeria, by adding the locality of Thubursicum Numidarum (Khemissa). The presence of this species in this locality tends to confirm a biogeographic link with the semi-arid climate zone corresponding to the border region with Tunisia.

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