International Journal of Scientific Trends- (IJST)
ISSN: 2980-4299
Volume 4, Issue 10, October - 2025
Website: https://scientifictrends.org/index.php/ijst
Open Access, Peer Reviewed, Scientific Journal

# Distribution and bio-ecological characteristics of the species Meloe Tuccius Rossi, 1792 (Meloidae: Meloe Linnaeus, 1758) in the Tashkent Region

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**Abstract**

**This article presents the distribution and bio-ecological characteristics of the species Meloe tuccius Rossi, 1792, belonging to the genus Meloe Linnaeus, 1758, distributed in the regions of Tashkent region. In particular, information is provided about the development of the larval stages, imago phase, and bio-morphological structures of the species Meloe tuccius Rossi, 1792. As a result of the research, the bio-ecological characteristics and practical significance of the species Meloe tuccius Rossi, 1792 were studied. General conclusions were given regarding the identified species..**

**Keywords: Blister beetle, Meloe tuccius species, area, Tashkent region, entomophagous, pest, larva, imago**

## Introduction

Like other species of beetles belonging to the Meloidae family, the larvae of the species Meloe tuccius are considered important as entomophagous, feeding on harmful locust eggs, reducing them to 31.5% of their natural population. In addition to being a pest of pastures and cultivated crops, the beetles' venom has a negative effect on humans and livestock. When eaten with fodder, it has been confirmed that the poison can cause severe poisoning and even death of livestock [1,5].

In this region, there are more than 3 million hectares of land where harmful locusts can spread, and according to their geographical structure, it covers areas of seasonal and stable lakes, forests, shrubs and deserts [7,8].

About 100 species of locusts have been identified in the territory of our republic, of which 3 species are considered dangerous. Among them, the Asian locust, the Italian locust, and the large saxaul locust are considered to be swarming locusts [2,12]. Asian locusts are mainly found in the reed beds around stable and seasonal

lakes in the Tashkent region of our Republic, where there are natural breeding grounds for Asian locusts, and cases of the spread of Asian locust larvae in the reed beds around these lakes occur every year. This requires the development of environmentally friendly, ecologically clean methods of combating harmful organisms.

## Materials and Methods

Experiments were conducted in 2023-2024 to determine the distribution of the blister beetle Meloe tuccius Rossi, 1792 in natural and anthropogenic areas of the Tashkent region and to clarify its practical significance. The studies were conducted based on the methods of Bondarenko (2010), Golub (2012) [2,3,4,5,10,11]. In order to fulfill the tasks set in the study, biomaterials were collected from the mountainous areas of Bostonlyk, Zangiota, Oqqorgon, Ahangaron, Parkent districts of the Tashkent region.

The collected materials were stored in 96% alcohol in plastic bottles. Also used were MBS-109 binoculars, Motik V 1-220A -1, SZM -161-TL, P122 DISSECING MICROSCOPE microscopes and Power Shot A 2500 Canon cameras.

## Results and Discussion

As a result of the research, the species Meloe tuccius Rossi, 1792 was identified in the Suqoq Reserve, Parkent District, Tashkent Region (41°14'19.91"N 69°50'06.57"E) (Figure 1).

Figure 1. Suqoq Nature Reserve, Parkent District, Tashkent Region (location of Meloe tuccius Rossi, 1792).

One of the most important genera of the family of blister beetles is Meloe Linnaeus, 1758. The genus includes more than 160 species. Most of the species are distributed in North Africa, South-Western Europe, and Central Asia. The length of the beetle

species belonging to this genus ranges from 12 mm to 30 mm. Blister beetles are sexually dimorphic, with females being larger than males and distinguished by the shape of their antennae. The imago of most species is active in the spring. Blister beetles of the genus Meloe are herbivorous and are active both at night and during the day. In the larval stage, its representatives parasitize in the eggs of grasshoppers, regulating their numbers. In the imago stage, the beetles are herbivorous, gathering in large swarms and capable of destroying a large amount of green mass of plants in a short time. The species of blister beetle we studied has the following taxonomy.

Arthropoda: Phylum Arthropoda
Insecta: Class Insecta
Coleoptera: Order Coleoptera
Polyphaga: Suborder
Tenebrionoidea: Superfamily
Meloidae Gyllenhal, 1810: Family of blister beetles
Meloinae Gyllenhal 1810: Subfamily
Meloe Linnaeus, 1758: Genus
Meloe tuccius (Rossi, 1792): Species

Morphology of the species Meloe tuccius: Body black, head and thorax solid. Length 14–40 mm. Hindwings absent [6].


Figure 2. Type of Meloe tuccius Rossi, 1792.

Bio-ecological characteristics: It is a eurybiont species, found from flat sands to mountains, but prefers mountainous areas. The beetle Meloe tuccius is active from late April to late June [9]. A compote-like larva hatches from the egg, which crawls out of the flower, attaches itself to a honey bee of the family Apidae, and enters its nest. The larva pupates there and turns into a worm-like larva. The larva feeds on the food of the honey bee, undergoes several molts and undergoes a series of changes. During the imago stage, it feeds on plant species such as Sonchus, Lactuca, Taraxacum, Centaurea, Eryngium, Ranunculus, Hordeum, Avena.

Distribution: North Africa, South-West Europe, Central Asia.

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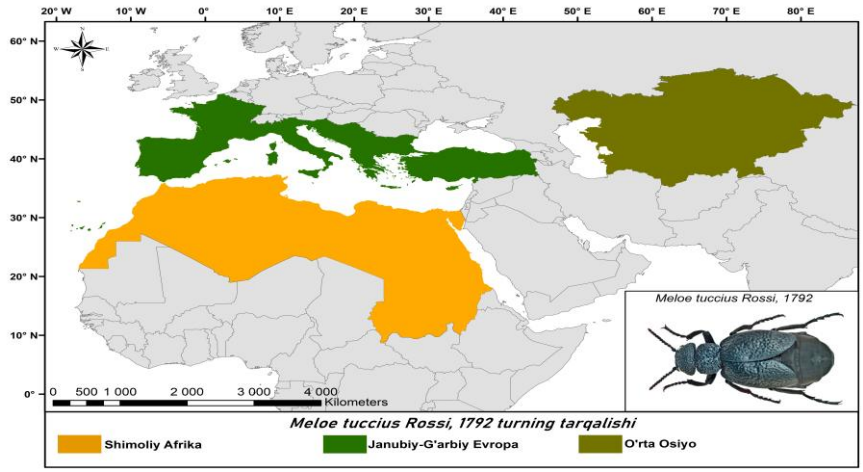


Figure 3. Worldwide distribution of type Meloe tuccius Rossi, 1792.

## Conclusion

In conclusion, it should be said that the study took samples from different districts of Tashkent region. As a result of the research, 1 species belonging to the genus Meloe Linnaeus, 1758 was identified in the Suqoq reserve of Parkent district. The larvae of the blister beetle Meloe tuccius are specialized predators. Larvae of species of the Meloidae family feed on honey bee eggs, negatively affecting the food industry. They are also considered pests of pastures and cultivated crops. After all, wax beetles, especially species belonging to the genus Meloe Linnaeus, 1758, are important in human life and nature. In addition, these species are distinguished by their aesthetic appeal.

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