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## An endemic species very important for eco-tourism: *Pygopleurus koniae* (Coleoptera: Glaphyridae) and new nomenclature Furry wedding beetle and the Turkish name: Kürklü Düğün Böceği

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### Abstract

In this article, information related to some morphologic characteristics, distribution areas and population of *Pygopleurus koniae* (Coleoptera: Glaphyridae), which is an endemic species in Turkey. The species has been named as “Kürklü Düğün Böceği” in the Turkish language and as “Furry Wedding Beetle” in the English language, while the local name is “Hasan Mountain (Haroğlu) Polar Beetle. The species feeds on the *Ranunculus* spp. pollens, and exhibit the mating behavior on its flowers. It is found abundantly and has constructed a high population density between the dates 01.05.2021 and 15.05.2021. It was found that the altitude of 2340m, which is the altitude of Hasan Mountain (Haroğlu) is important regarding the natural habitat of this species. In this study, it was observed that the compound eyes of the species are blue, they do not avoid humans just like pets, and positively reacted to music played in the nature. Furthermore, new faunistic records have been reported involving the Elazığ and Malatya provinces. It is thought that the species can be significant for nature tourism in Elazığ and Baskil districts in Turkey, thanks to its beauty.

**Keywords:** *Pygopleurus koniae*, Elazığ, Baskil, Turkey

### Introduction

This species was found in Haroğlu Mountain in the frame of scientific surveys. This species is the *Pygopleurus koniae* (Petrovitz, 1957) with endemic properties and belongs to the Coleoptera'nın Glaphyridae family registered by various researchers in our Country in previous years. This species, which was found in Antalya, Tunceli and Konya in previous years, was named as the “Konya Rose Beetle” then. The species is known with its furry and hairy exoskeleton. In this article, the weekly population fluctuations of the species on *Ranunculus* spp (wedding flower), on which it is seen in nature, the reason for being named with the name in Turkish, and its significance regarding the biodiversity of this species, which is endemic for Turkey, in the Elazığ province and Turkey. Furthermore, some morphologic characteristics and benefits of its presence in this region are handled.

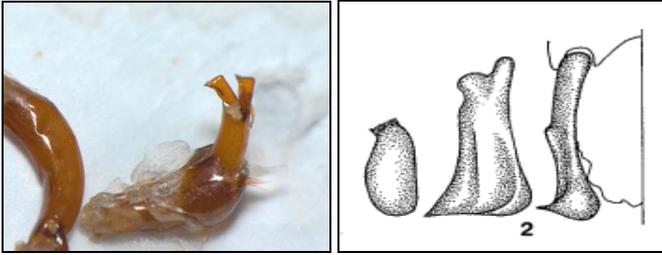
### Material and Methods

The species was counted on the flowers of *Ranunculus* flowers that it feeds on pollens of. Male and female individuals were collected by hand, two from each gender, to examine their genitalia and other morphologic studies. Olympus SZX7 stereo-binocular microscope was used for these examinations. Diagnosis of the species was carried out by Denis Keith (France), and diagnosis of the wedding flower was carried out by Prof Dr. Harun Evren (Firat University, Science Faculty, Biology Department) and Associate Prof. Dr. Cumali Özarlan (Dicle University, Agriculture Faculty, Plant Protection Department). The three-week population fluctuation of the species was determined in the location of the species by swinging 20 sweep-nets each time, and the samples thus collected were freed to the nature afterwards. Care was taken not to damage the wedding flowers when swinging the sweep-nets. Diagnosis of the species was carried out by the French Entomologist Denis Keith through the examination of genitalia (Figure 1).

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**Fig 1:** The genitalia of *Pygopleurus koniae* (Petrovitz, 1957).

## Results and Discussion

*Pygopleurus koniae* (Petrovitz, 1957) (Figure 2)

**Material examined:** Elazığ, Baskil, Hasan Mountain, Haroğlu location, 01.05.2021-15-05. 2021, 01, 05.2021, 730 exc, 07.05.2021, 680 exc, 15.05.2021, 2340 m altitude, 120 exc, leg. Ozgen, *Ranunculus* spp, Malatya-Pötürge road 30. km 1854 m altitude, 01.05.2021, 1 exc, leg. Kolaç, Malatya, Yeşilyurt, Beydağı, 15.04.2018, 1900 m altitude, leg. Sağlam, 1 exc.,

**Totally:** 1532exc<sup>1</sup>.

<sup>1</sup> The Endemic species was counted in the nature.

**Turkish name:** Kürklü Düğün Böceği

**English name:** Furry wedding beetle

**Local name:** Hasandağı (Haroğlu) Polar beetle

**Distribution in World:** Turkey, İran<sup>2</sup>

**Distribution in Turkey:** Karaman, Konya (Hadim), Tunceli (Anonymous, 2021 a; 2021 b; Polat *et al.*, 2017)

<sup>1, 2</sup> It is thought that distribution in this location is very dubious, and most probably the species was erroneously labelled. It is an old specimen from the fairmaire-collection.

**Biologic Note:** It was also observed that the species looks like

a pet reduced to micro size, and has perfectly blue eyes in close take (Figure 2). Additionally; it was observed that the species has a strong sexual dimorphism



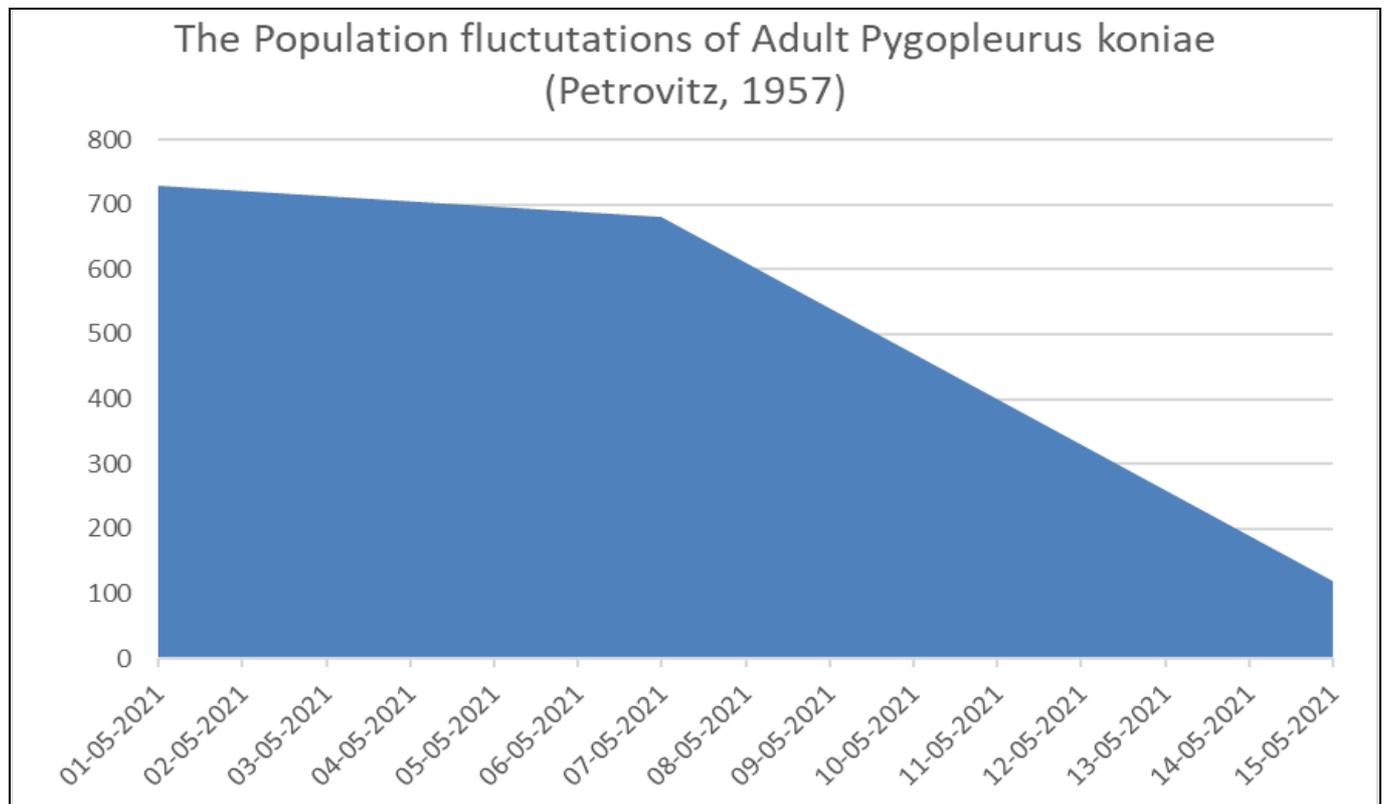
**Fig 2:** The Habitus of *Pygopleurus koniae* (Petrovitz, 1957) and its blue compound eyes.



In conclusion, the species was named after its appearance as if wearing a fur coat and also after its feeding on the pollens of wedding flower and its abundance on these flowers. The Wedding Beetle with Velvet Fur were seen in abundance on wedding flowers between the dates 01.05.2021 and 15.05.2021, and it was also found that they had their reproduction activities on the flowers. Location of the species and three-week population fluctuations are given in Figures 3 and 4.



**Fig 3:** The Habitat of *Pygopleurus koniae* (Petrovitz, 1957)\* on Hasan (Haroğlu) Mountain, 2340 m.



**Fig 4:** The Population Fluctuations of Adult *Pygopleurus koniae* (Petrovitz, 1957)

This species was diagnosed in the frame of a nature expedition with scientific purposes in the Haroğlu Mountain. This species is the *Pygopleurus koniae* (Petrovitz, 1957) with endemic properties and belongs to the Coleoptera'nın Glaphyridae family registered by various researchers in our Country in previous years. The altitude of 2340m, which is the altitude that the species has been determined in Elazığ Province, Baskil District, Haroğlu Mountain, indicates that the species is mostly distributed in higher altitudes. The species was determined when feeding on the pollens of the *Ranunculus* spp. flowers. This species is an endemic one in country. This is the first registry of the species in our country with the wedding flower as the host. This species is known as an Asiatic species. It was determined in our country in Karaman, Konya and Tunceli Province, Mazgirt District at an altitude of 1000m (Anonymous, 2021 a, b; Polat *et al.*, 2021) [1, 2]. The registry of this species in Haroğlu was the highest altitude among altitudes of registry in our country. Let us mention the possible benefits regarding biodiversity in Elazığ Province and Turkey.

Presence of this endemic species in this ecosystem, which is an important location regarding the habitat in the Hasan Mountain (Haroğlu) habitat that we have confirmed the presence of the species, is a significant benefit. Although it is mentioned in the social media that "This beetle existed previously, was it found newly?" it is seen that this finding holds a very important position as regards the altitude and abundance of the species. The species was notable in its location with its population and abundance. This species that was photographed and registered in certain locations in our country in previous years was presented in limited quantities in such areas it was found. The Turkish naming of the species was based on the plant it was found on together with its morphologic characteristics. This name was registered in Ekşi

Sözlük (Sour Dictionary), which is an important dictionary in Turkey (Anonymous, 2021 c) [3]. This name is one of the rare names given to species living in natural habitats in Turkey. As regards this insect, the following are important:

1. Enclosure of this area intensely hosting this insect, and implementing projects to help disadvantaged groups and children in defeating their insect phobias and encourage the love of nature between May and June,
2. Arranging nature expeditions to this area, placing a statue of the insect on the road at close vicinity of the Mountain, placing road marks on the on the roads going to the Mountain with folloed tables and illustrations with phrases "Goes to the Habitat of the Furry Wedding Beetle", and presentation of the area with its natural beauties,
3. Cinevision shows on the Furry Wedding Beetle habitat, and production models and souvenirs, and providing direction to ensure significant tourism revenues in this area,
4. Playing folkloric music in the area that the beetle enjoys and promotion of regional music are also important.
5. Medical significance of the *Ranunculus* spp hosting the insect must be investigated and supporting the habitat through health tourism is also important.

#### Acknowledgement

We express our thanks to Denis Keith (Chartres-France) for the diagnosis of the insect, to Prof Dr. Harun Evren and Associate Prof. Dr. Cumali Özarlan (Dicle University Agriculture Faculty, Plant Protection Department) for the diagnosis of the Wedding Flower, and also to the Anadolu Agency Elazığ Regional Supervisor, Ismail Şen for his important contributions to the presentation of and writing an article on the species.

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