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Record of a Blue Morph of *Pseudotorynorrhina japonica* (Hope, 1841) from Gureopdo Island, Republic of Korea (Coleoptera: Scarabaeidae: Cetoniinae)

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초록

풍이 *Pseudotorynorrhina japonica* (Hope, 1841)는 꽃무지과(Scarabaeidae: Cetoniinae)에 속하는 대형 딱정벌레로 한국, 중국 및 일본에 분포하며, 국내에서는 일반적으로 녹색의 금속광택을 띠는 것으로 알려져 있다. 본 종에서는 드물게 청색형(blue morph)을 포함한 다양한 체색 변이가 보고되어 있으나, 정확한 채집 정보와 표본(voucher specimen)을 수반한 국내 기록은 매우 제한적이다. 본 연구에서는 2026년 7월 17일 인천광역시 옹진군 굴업도에서 채집된 청색형 수컷 1개체를 보고하였다. 채집된 표본은 일반적인 *P. japonica*의 형태적 특징과 일치하였으나, 등면 전체에서 균일한 금속성 청색을 나타냈다. 본 논문은 채집 정보, 표본 정보 및 서식환경을 제시하며, 국내 풍이 청색형의 분포와 체색 변이 연구를 위한 기초자료를 제공한다.

Abstract

Pseudotorynorrhina japonica (Hope, 1841) (Coleoptera: Scarabaeidae: Cetoniinae) is a large flower chafer distributed in Korea, China, and Japan and is typically characterized by metallic green coloration. Although several color morphs, including a blue morph, have been reported in this species, voucher-based records accompanied by precise collection data remain scarce in Korea. Here, we report a single male blue morph collected on 17 July 2026 from Gureopdo Island, Ongjin-gun, Incheon Metropolitan City, Republic of Korea. The specimen agrees well with the diagnostic morphology of *P. japonica* but differs distinctly from the typical morph in possessing a uniformly metallic blue dorsal surface. Collection data, habitat information, and morphological notes are presented. This record provides baseline information for future studies on the geographic distribution and body color variation of *P. japonica* in Korea.

Keywords: *Pseudotorynorrhina japonica*, blue morph, color variation, voucher specimen, Gureopdo Island

Introduction

Pseudotorynorrhina japonica (Hope, 1841) is a large flower chafer belonging to the subfamily Cetoniinae (Scarabaeidae) and is distributed throughout Korea, China, and Japan (Hope, 1841; National Institute of Biological Resources, 2011). In Korea, the species is relatively common in forests and rural landscapes. Adults are active mainly from June to August and typically aggregate on sap-flows of deciduous trees, particularly oaks, as well as on overripe fruits (National Institute of Biological Resources, 2011).

The typical phenotype exhibits a metallic green to greenish-bronze coloration; however, several alternative color morphs, including blue, dark indigo, and blackish-purple forms, have also been documented (National Institute of Biological Resources, 2011). Such color morphs represent intraspecific phenotypic variation. Recently, Ohba et al. (2025) quantitatively demonstrated significant geographic variation in both body coloration and body size among mainland and island populations of *P. japonica* in Japan, suggesting that isolated island populations may differ in the frequency of particular color morphs. These findings indicate the need for comparable records from Korean island populations.

Although the blue morph of *P. japonica* has long been recognized among Korean insect collectors and amateur entomologists, published records accompanied by voucher specimens and precise collection data remain scarce. Accordingly, documenting a voucher specimen with reliable locality information is important for establishing baseline data on the geographic distribution of the blue morph in Korea and for facilitating future studies on color variation within this species.

Materials & Methods

Republic of Korea: Incheon Metropolitan City, Ongjin-gun, Gureopdo Island, 37°11'20.64" N, 125°58'37.22" E (37.1890674°N, 125.9770063°E), 17 Jul. 2026, 1♂, collected by hand, leg. Joonseo Hyawn, deposited in the Collection of Seonjae Moon.

The specimen was prepared as a dried voucher specimen and deposited in the Collection of Seonjae Moon. It is retained as reference material for future studies on geographic variation and body color polymorphism in *Pseudotorynorrhina japonica*.

Body length and maximum body width were measured to the nearest 0.1 mm using digital calipers.

Morphological notes

The specimen agrees well with the diagnostic morphology of *Pseudotorynorrhina japonica* (National Institute of Biological Resources, 2011). The body is elongate-oval, and the pronotal outline, scutellum, elytral sculpture, antennal club, and tibial morphology correspond well with

those of the typical form.

Body length: 27 mm

Maximum body width: 12 mm

The principal difference from the typical morph is the body coloration. Whereas the typical morph exhibits metallic green to greenish-bronze coloration (Fig. 1), the present specimen possesses a uniformly metallic blue dorsal surface covering the head, pronotum, scutellum, and elytra (Fig. 2). The ventral surface also exhibits metallic luster but is darker than the dorsal surface. No structural differences other than coloration were observed.

Habitat notes

The collecting site was located in a coastal deciduous forest adjacent to a sandy beach on Gureopdo Island (Fig. 3). Several adults of *P. japonica* were observed feeding on sap exuding from a broadleaved tree, and the blue morph was found together with typical green individuals on the same sap source.



Figure 1–2. *Pseudotorynorrhina japonica*. (1) Female typical morph; (2) male blue morph of *P. japonica* collected from Gureopdo Island.

No apparent behavioral differences between the blue morph and the typical morph were observed during the field survey. However, because the present report is based on a single specimen, no conclusions regarding ecological differences between the two morphs can be drawn.



Figure 3. Collecting site on Gureopdo Island. The blue morph was collected from a sap-flowing broadleaved tree in a coastal deciduous forest.

Discussion

The present study documents a male blue morph of *P. japonica* collected from Gureopdo Island, Incheon Metropolitan City, Republic of Korea. The specimen conforms to the diagnostic morphology of the species and exhibits no structural differences from the typical morph. However, it is readily distinguished by its uniformly metallic blue dorsal coloration covering the head, pronotum, scutellum, and elytra.

A recent study demonstrated significant geographic variation in body coloration and body size among mainland and island populations of *P. japonica* in Japan (Ohba et al., 2025), suggesting that geographically isolated island populations may differ in the frequency of particular color morphs. In this context, the present specimen represents valuable voucher material from a Korean island population and provides a useful reference for future comparative studies on geographic variation in body coloration.

Although the blue morph of *P. japonica* has long been recognized among Korean insect collectors and amateur entomologists, published records supported by voucher specimens and precise collection data remain scarce. Accordingly, the present study contributes baseline information on the occurrence of the blue morph in Korea by documenting a well-preserved voucher specimen together with reliable collection data and habitat information.

Because the present report is based on a single specimen, no conclusions can be drawn regarding the frequency, origin, or ecological significance of the blue morph. Future specimen-based surveys throughout Korea, particularly on offshore islands including Jeju Island, combined with molecular phylogenetic analyses, will be essential for understanding the evolutionary and biogeographic background of this remarkable color morph.

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