



Conference Abstract

# *Lophyra flexuosa* (Fabricius, 1787) (Coleoptera: Cicindelidae) in desert countries: morphological variability in geographic aspect as potential beginning of speciation?

Radomir Jaskuła<sup>‡</sup>, Axel Schwerk<sup>§</sup>, Mateusz Plóciennik<sup>‡</sup>

<sup>‡</sup> Department of Invertebrate Zoology and Hydrobiology, Faculty of Biology and Environmental Protection, University of Lodz, Lodz, Poland

<sup>§</sup> Laboratory of Evaluation and Assessment of Natural Resources, Warsaw University of Life Sciences - SGGW, Warsaw, Poland

Corresponding author: Radomir Jaskuła ([radomir.jaskula@biol.uni.lodz.pl](mailto:radomir.jaskula@biol.uni.lodz.pl))

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## Abstract

*Lophyra flexuosa* is one of only several eurytopic tiger beetles species known from Palearctic realm. Its geographical distribution shows several populations that are spread from the Iberian Peninsula and Morocco, across some regions of south-western Europe and northern Africa to Israel and Syria. The species is characterized by long phenological activity, wide altitudinal distribution, and occurs in the highest number of habitats among all Cicindelidae known from Maghreb region.

In the present study the geographical variation in morphology and sexual dimorphism in north African populations of *L. flexuosa* was studied. In total 52 samples with over 700 specimens were collected including 20 samples in Morocco and 32 in Tunisia. To test the variation in morphometric traits measurements of eight body parameters were taken from all males (383) and females (352) including right mandible length, length of head, width of head, length of pronotum, maximum pronotum width, length of elytra, maximum elytra width, and total body length.

We discovered significant sexual dimorphism expressed by larger body size of females and longer mandibles in males, what can be explained by different roles of particular sexes in courtship. Moreover, we recorded significant differences in body sizes between western and eastern Maghreb populations which can suggest genetic isolation between these populations. As the species is related to habitats placed close to water reservoirs, which in the desert countries are under significant human pressure (including climate change), we expect an reduction of habitats occupied by this taxon. Therefore, the geographic morphological variability that we observe today in the tiger beetle *Lophyra flexuosa* may lead to speciation and creation of separate species in the future.

## Keywords

tiger beetles, morphological diversity, sexual dimorphism, Mediterranean Region, North Africa

## Presenting author

Radomir Jaskuła

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## Author contributions

Radomir Jaskuła designed the work, collected material, identified species, analyzed material, performed statistical analysis, prepared figures, wrote the text

Mateusz Płóciennik performed statistical analysis, prepared figures, wrote the text

Axel Schwerk performed statistical analysis, prepared figures, wrote the text

## Conflicts of interest

Authors declare no conflict of interest.