

Abstract

Many species are sensitive to a light in ultraviolet spectrum. Some species have surface patterns that reflect ultraviolet light. These markings have been observed in many animal taxa; butterflies (Lepidoptera) are no exception. UV-reflectance in butterflies has been primarily connected to sexual selection and in this respect it has been a subject of many studies. In my work I propose an alternative view to this phenomenon. The aim of my work is to reveal how a particular environmental factors influence the morphospace of UV-reflectant patterns and wing shape of the *Gonepteryx rhamni* (Pieridae). The effect of various environmental factors (latitude, longitude, altitude, mean annual temperature, mean annual precipitation, normalized difference vegetation index – NDVI or net primary productivity – NPP) on wing morphospace was tested using the methods of Geometric morphometrics. I have also studied shape variability among the males and females, specimens from different locations and differences in morphospace of several *G. rhamni* subspecies. The dataset used in this analysis includes 118 males and 67 females from the Palearctic ecozone.

The effect of almost all environmental (except to NDVI and NPP) predictors on shape of the UV-pattern and wing margin was significant in the case of males. In the case of females the only significant factors influencing the shape variability were the latitude and altitude. When dataset was divided to smaller geographical regions the effect of most variables was not observed. CVA revealed that there is a difference in shape among the specimens from different locations and that the variability of the wing differs between males and females. Shape differences were observed also in a few various subspecies of *G. rhamni*.