Like many other animals, butterflies are able to visually perceive the ultraviolet (UV) light; many species even have patterns on their wings which are visible in this part of the electromagnetic spectrum. Over the last forty years, it has been shown that these UV patterns play an important role in behaviour of many butterflies, especially in relation to sexual selection – they are involved in the process of recognising a suitable mate, and likely can signal some of the mate's qualities, such as its age, ability to handle stressful environmental factors, or efficiency in foraging. The patterns may also be used for taxonomical purposes. This dissertation thesis contains a comprehensive research into ultraviolet patterns of the Gonepteryx brimstones, with a primary focus on the issue of environmental influences in relation to the expression of these traits, on the patterns' potential role in sexual selection, or on their evolution. It has been successfully demonstrated that UV patterns of at least some Gonepteryx species are affected by the environment to a strong degree, significantly more than the traits not involved in sexual selection. On the whole, the conclusions made by submitted publications suggest that UV patterns play a role in the sexual selection of the chosen brimstones, though it is not clear in which way. The most likely answer is that the patterns contribute to mate recognition; furthermore, it cannot be ruled out that they reflect some of the qualities mentioned above.