(P19) **Problems with spectral measurements: when colour patches are too small**

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During the last decades, reflectance spectrophotometry has become a powerful tool in the evolutionary study of animal coloration. Portable spectrophotometers make it possible to obtain huge amounts of quantitative data, and subsequently calculate many valuable variables. However, spectrophotometers can provide misleading data. If a measurement is well done, the resulting spectrum represents the light reflected from a natural colour patch. In contrast, a wrong measurement gives an artifactual spectrum, which is contaminated by light from more than one colour patch (i.e. a chimeric spectrum). Therefore, these spectra do not represent natural colours and cannot be used in analyses. The problem of artifactual spectra is especially serious when the colour patches of interest are relatively small (i.e. smaller than the light beam of the spectrophotometer) and/or they are shown in a complex pattern. In lacertids, some of the most interesting colour patches are small spots, such as the conspicuous ultraviolet (UV) spots shown by many species in their lateral and ventrolateral surfaces. In many cases, the small size of these patches prevents measurement and causes a loss in sample size. Here, we evaluate the actual impact of chimeric spectra on spectral analyses, testing whether useful information can be obtained from artifactual spectra. We captured 60 adult males *Podarcis muralis* and measured the reflectance of their UV spots ensuring that the light beam only illuminates the spot. In addition, we measured artifactual spectra which included, in addition to the UV spot, a portion of the surrounding black spots, or a portion of the white, yellow or orange ventral background coloration. We extracted hue (i.e. peak location), chroma (UV chroma) and brightness values from the spectra and compared those variables extracted from the correctly measured spectra with those of the artifactual spectra. Correlative analyses and paired-t tests show that chroma and brightness are extremely affected by artifactual measurements. However, hue is relatively unaltered, especially when the contamination comes from a black spot. We suggest that, with due caution, the peak location of artifactual spectra may be used for analyses. However, chroma and brightness measures calculated from artifactual spectra are not valid measures and should be discarded.

Coloration, lizards, methodology, sample size, spectrophotometry.