An accurate procedure to describe colors in taxonomic works, with an example from Ichneumonidae (Hymenoptera)

ALEXANDRE P. AGUIAR

Museu de Zoologia da Universidade de São Paulo, Avenida Nazaré 481, São Paulo, SP, Brazil, 04263–000 (aguiar.2@osu.edu)

Abstract

The use of the RGB color system is suggested as a desirable option to increase accuracy of color descriptions in taxonomic works, and two techniques are proposed to allow the conversion of observed colors into RGB formulas: direct comparison with colors generated on a computer screen, and color sampling from digital images of the specimens, through commonly used illustration software. Equipment and software costs are considered the main limitations, but stability, reproducibility, objectiveness, prompt visualization, and the null influence of surrounding colors on colors displayed on a computer screen are recognized as major advantages justifying the adoption of the procedure.

Key words: RGB, HLS, CMYK, method, Munsell, Coleoptera, Diptera, Hemiptera, Lepidoptera

Introduction

Accurate color description, even if accompanied by illustrations, is one major difficulty in taxonomic work. This occurs because color description itself is necessarily subjective, since no color name has, yet, a universal standard associated with it. Even the names of the primary colors, red, green and blue, reflect a wide variety of wave lengths each, and may therefore incorporate a variety of hues and tonalities. As expected, the accuracy of color names is even more ambiguous when they refer to (1) a particular darker or lighter tone, such as dark red or pale yellow, (2) when color varieties are described with specific names, such as stramineous or ferruginous, (3) when particular names are used to describe different proportions of colors, such as orange (yellow + red), and (4) when comparative terms are used, as in "brick red" or "olive green."

The most obvious aid or option to describing colors is to illustrate them photographically or by providing a color pallet. In this way, each color name can be directly associated