

## Macrophotography as tool for taxonomic identification and conservation of insects in Colombia.<sup>1</sup>

### Macrofotografía como herramienta para la identificación taxonómica y conservación de insectos en Colombia.

Ricardo Martínez Gamba<sup>2</sup>

William Fernando Rincón<sup>3</sup>

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#### Introducción

Insects are the most important, diverse and successful group of land animals on the planet (Rosas-Echeverría, 2015). They include a wide variety of species whose intense colors, detailed patterns, body shapes and wing structure, make them particularly interesting for amateur photographers, photography and scientific illustrations (McCullough, Worthington and Paradise, 2013; Roaux, 2015). With latest technological advances, macro photography should be understood as a specialized photographic technique that allows us to observe details beyond the capacity of the naked eye (Savazzi 2011). Thus achieving images of very small objects through special lenses, with which you can achieve full-size images (Cosentino 2013; Gajski et al. 2016), reaching a magnification between 1.0 and 50 times (Harcourt, 2000). In addition to delivering details that are imperceptible to simple view (Rivas V et al. 2017).

This makes macro photography a useful tool for research in entomology and ecology, including observational studies that have traditionally been based on the identification of species in sight (Marshall, 2008; McCullough; Worthington and Paradise, 2013, Martínez and Guerrero, 2018). Macro photography has also played an important and widely variable

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<sup>2</sup> Grupo de investigación CASCADA, Universidad pedagógica Nacional, Calle 72 11-86. Bogotá, Colombia, [rmartinezg@pedagogica.edu.co](mailto:rmartinezg@pedagogica.edu.co)

<sup>3</sup> Estudiante de Maestría en Manejo uso y Conservación del Bosque, Universidad Distrital Francisco José de Caldas, Cra. 5 Este # 15-82. Bogotá, Colombia, [wfrinconf@correo.udistrital.edu.co](mailto:wfrinconf@correo.udistrital.edu.co)

role in taxonomy (Steinke et al. 2009). But sometimes such data is not used correctly to contribute to the formal identification or description of the samples under study (Leggett and Kirchoff, 2011). However, the photographs that accompany a publication facilitate the understanding of scientific work and it is also provides a great way to validate it (Marshall, 2008, Sánchez et. al, 2015). It is also recognized that field macro photography, in some situations where closely related individuals with a very similar exterior appearance (Eberhard, 1985), cannot ensure a correct determination of the individual. In this case, genitalia exploration is necessary for identification (Córdoba, 2000).

Today, photography is a powerful research and dissemination tool (Gálvez, 2017). As a consequence, it allows observing characters so they can be determined of ir applicable it is a complement to its identification, when being send to specialist of each taxon in this way can be made photographic inventory allowing to minimize the excessive collection of individuals and achieving that so many amateurs photographers , researchers and experts can be in constant communication for example through the Naturalist virtual platform (<https://colombia.inaturalist.org/>), which is linked to the Biodiversity information System in Colombia (<https://sibcolombia.net/>). Taking lead from these ideas, our purpose is to demonstrate the importance of the use of insect macro photography as a tool for identification and also to publicize these photographic works for the conservation of this group of great biological interest. We see macro photography of insects as a source of visual knowledge that is more attractive and easily accessible when observing, them allowing the non-scientific community to have this information, achieving appropriation, valuation and conservation of this important group of organisms. To achieve this goal, photographs of insects that have been determined and corroborated by national and international specialists will be presented.

*Title: Nigth stranger*

*Author: Ricardo Martínez*

*Date: 14 maye of 2018*



This interesting picture of this insect of the order Neuropteran, it did taken this photography in the night, it is a gravid female of the family Mantisipidae, this specie is the *Dicromantispa gracilis* (Erichson, 1839), determinated for specialized Adrian Ardila Camacho, Universidad Nacional Autónoma de México. Through this picture sent. Was

*Title: Amazing caterpillar*

*Author: Ricardo Martínez*

*Date: 8 agoust of 2018*



This image was taken in the Park Ecocenter in the San Antonio del Tequendama, Cundinamarca, Colombia, it is a caterpillar of moth *Manduca Scutata* (Rothschild & Jordan, 1903), this belong to the family sphingidae, determinated for the specialized Jean Haxaire, Muséum National d'Histoire Naturelle .Paris, France. Through this picture sent

*Title: Artwork*

*Author: William Rincón*

*Date: 20 July of 2018*



This photo was taken in Cali Colombia, its colors and position make for a very striking natural portrait. is a female from *Hypoleia ocalea ocalea* (E. Doubleday, 1847) determined by the entomologist Renato Mattei from Venezuela. This photo was sent and determined by him.

*Title : Unexpected visit*

*Author: William Rincón*

*Date: 3 November of 2019*



Photo taken in the Los Tunos natural park, Cundinamarca Colombia,. At night it appears unnoticed, attracting attention to its color. This specimen belongs to the species *Archandra glabra*, (Degeer, 1774) Cerambycidae, which was determined by means of this photograph by the entomologist Celso Godinho from Brazil.

*Title : Colorfull jumper*

*Author: William Rincón*

*Date: 16 july of 2019*



This photograph was taken in San Luis Antioquia, the combination of colors that nature offers us is always impressive. The specimen belongs to the species *Homeomastax dereixi*, (Descamps, 1971) The collar was determined by this photo by Juan Manuel Cardona Granda from Colombia

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