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A survey of the praying mantises of Rwanda, including new records (Insecta, Mantodea)

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Abstract

We report the results of two surveys targeting praying mantises in four localities in Rwanda, specifically Akagera National Park, Nyungwe National Park, Volcanoes National Park, and the Arboretum de Ruhande at the National University of Rwanda. Using an assortment of collecting techniques, including metal halide light traps, sweep netting vegetation and general searching, we obtained 387 adult and 352 juvenile specimens, representing 41 species. A total of 28 novel species records for Rwanda are added to the 18 previously recorded species for the country, in addition to 20 novel species records for the broader region, including neighbouring Uganda and Burundi. This study provides high resolution images of the dorsal habitus of both sexes of representative species, both pinned and living. Species distribution records are presented and discussed. With a 155% increase in species recorded from Rwanda, this survey illustrates the need for further taxonomic work in the region.

Key words: Mantodea, praying mantises, Rwanda, Eastern Africa, taxonomy, checklist

Introduction

We conducted an expedition to Rwanda in May of 2013 to survey the praying mantis (Mantodea) diversity in three national parks including Akagera National Park (ANP), Nyungwe National Park (NNP), and Volcanoes National Park (VNP). In addition, we sampled a college campus adjacent to NNP, the Kitabi College of Conservation and Environmental Management (KCCEM), and the Arboretum de Ruhande at the National University of Rwanda (ADR) in Butare. The following year (2014), an additional sampling trip was conducted in ANP and NNP from June to July.

Our survey was the first to focus on praying mantises within the region. Our expectations of taxon discovery relied on previous species records within Rwanda, Uganda, Burundi, the Democratic Republic of Congo, and Tanzania as well as the habitat descriptions (see below) available in the literature and on the Internet. Rwanda, with a size of 26,338 km^2, had 18 species recorded prior to this study. Based on the species records and sizes for the two neighbouring countries, Uganda (236,040 km²) with 77 species and Burundi (27,834 km^2) with 14, we expected to document new species records. Further, we emphasized work within Nyungwe National Park based on its unique and diverse habitats (see below). This study provides a preliminary sample for the praying mantis diversity within Rwanda that will likely be expanded in coming years with more targeted sampling.

Material and methods

Collection and preparation. We employed visual inspection of vegetation in various microhabitats for general sampling. Telescoping insect nets (http://www.roseentomology.com) were used to sweep vegetation, catch flying

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