# Good things in small packages: Survey and inventory of Kenyan insects

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## INTRODUCTION

In developed countries, a complete inventory of plants and animals is considered an integral part of the national heritage, as is the naming of new, undescribed species. In contrast, results-based research to improve the human condition has, understandably, dominated the development of the biological sciences throughout sub-Saharan Africa. Recently however, many countries in the region, including Kenya, have experienced substantial economic growth, and the desire to discover and name their biological riches has become part of the national conversation. Our project aims to play a significant role in that discovery process.

## OBJECTIVES

- To make substantial collections of insects in diverse habitats and elevations across Kenya.
- To prepare museum-quality specimens, pinned or pointed, and with geo-referenced labels.
- To identify and sort specimens at least to the family level.
- To build a network of taxonomists who desire to work on taxa in their areas of expertise.
- To distribute specimens to these colleagues to identify previously described species and to describe new ones.
- To repatriate types and identified species for deposit in the National Museums of Kenya (NMK) type collection, and in *icipe*'s growing collection.

## METHODS

- Malaise trap collections were made in 66 sites across Kenya from near sea level to 3200 masl.
- Wild fruits and the insects reared from them were sampled in the Taita Hills, Kenya, the northernmost block of the ancient Eastern Arc Mountains.
- We contacted taxonomists specialised in particular taxa, who identified or described new species in their groups of interest.

## RESULTS

To date, our survey and inventory project has produced six new genera and 125 newly described species. Families and genera of some of the new species shown here are, from left to right;

**Row 1**: Torymidae: *Megastigmus,* Chrysididae*: Anachrysis,* Tephritidae: *Ceratitis.*

**Row 2**: Tephritidae: *Taomyia,* Figitidae*: Muhaka gen. nov.,* Scelionidae: *Calotelea.*

**Row 3**: Dryinidae: *Gonatopus,* Sapygidae*: Sapygina,* Scelionidae: *Dvivarnus.*

**Row 4**: Liopteridae: *Tessmannella,* Heterogynaeidae*: Heterogyna,* Evaniidae: *Trissevania.*

## RESULTS (cont.)

## IMPACT

- We have repatriated the new species to Kenya, and deposited specimens in the type collection of insects in the National Museums of Kenya (NMK), increasing its importance as an international reference collection for East African insects.
- We have enlarged *icipe*'s insect collection, which is now recognised as an important repository of targeted groups, particularly parasitic Hymenoptera.
- The identified and newly described species provide important material for biogeographical studies by establishing taxonomic connections between the faunas of East Africa, southern Africa, Asia, Madagascar, and the Arabian peninsula.

## REFERENCES

Buffington M.L. and Copeland R.S. (2015) *Muhaka icipe*, an enigmatic new genus and species of Kleidotomini (Hymenoptera: Figitidae: Eucoilinae) from an East African coastal forest. *Journal of Natural History* 49, 2597–2607.

Olmi M., Copeland R.S. and Guglielmino A. (2015) An updated checklist of Dryinidae, Embolemidae and Sclerogibbidae (Hymenoptera) of Kenya and Burundi, with descriptions of thirteen new species. *Acta Entomologica Musei Nationalis Pragae* 55, 333–380.

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