IPB University
Bogor Indonesia

## Research project of counterparts funded at IPB University

| Name | Counterpart | Title |
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| **Purnama Hidayat** | **Z02** | Canopy spiders and bees of Jambi Province:<br>A photographic field guide |

### Research summary

Arthropods are the most numerous and diverse group of animals. Tropical rainforests are important habitats that ensure the existence of a wide variety of arthropods. Spiders belong to a large category of animals called Arthropoda, which all have an outer exoskeleton that covers their segmented bodies and jointed legs. This canopy spiders field guide addresses the spider fauna of rainforest canopies in Jambi Province, Sumatra – Indonesia, and closes a critical gap in the literature. Up to now, there was no guide to one of the most diverse but understudied tropical spider communities that comprise many new species and genera that await discovery and scientific description. Since the rainforests of Sumatra are under immense anthropogenic pressure, it is safe to assume that many species might be lost before they can be documented. These specimens that we have in Z02 group belong to 445 morphospecies in 95 genera and 36 families which is a very high number for such a specialized habitat and the size of the area. This guide provides a baseline for monitoring the largely undescribed spider community of the lowlands of Sumatra, especially regarding jungle rubber, rubber, and oil palm.


**Picture 1.** Cover of "A Photographic Field Guide to Spiders of Jambi Sumatra (Indonesia)".

Bees are part of pollinating insects that provide important ecosystem services in the pollination process. Bees are in the order Hymenoptera and superfamily Apoidea (James & PittsSinger, 2008). They have erect and plumose hair on their bodies. An estimated about 20.000 to 30.000 species of bees have been described worldwide (Michener, 2007), however little is found on information about bee species and their distribution in Jambi, Sumatra, Indonesia. A Field Guide to the Bees of Jambi Province provides a detailed introduction to the estimated 63 species of Sumatran bees, Jambi particularly. This book is designed to introduce the bees in Jambi, including their description, distribution, and identifying features. Illustrated with stunning photographs, it describes the form and function of bees and also contains systematic accounts of the five families. We hope that this book will help amateur naturalists, entomologists, and bees enthusiast in the effort of bee identification and further may support bee diversity restoration and conservation.

Within the framework of the EFForTS project, we collected bees using insect nets and traps, and spiders from the canopy in a nested design in four land-use systems in Jambi Province, Sumatra. Studies on bees and spiders' diversity and responses to land use change in forest areas are still limited, so more research is needed on a regular basis to document photographs. Based on this study, we made two field guides for spiders (Spiders of Jambi: A photo guide to the EFForTS collection) and bees (An Illustrated Guide to 62 Types of Bees in Jambi, Sumatra). All of those guides are a collection of the results of collaborative research through the EFForTS project and focused as a guide that can provide information about the important value of photography and illustration of spider and bee diversity.

### References

James, RR., and Pitts-Singer, TL. 2008. Bee Pollination in Agricultural Ecosytems. New York (USA): Oxford University Press.

Michener, CD. 2007. The Bees of the World. 2nd Edition. Baltimore, United State. Johns Hopkins

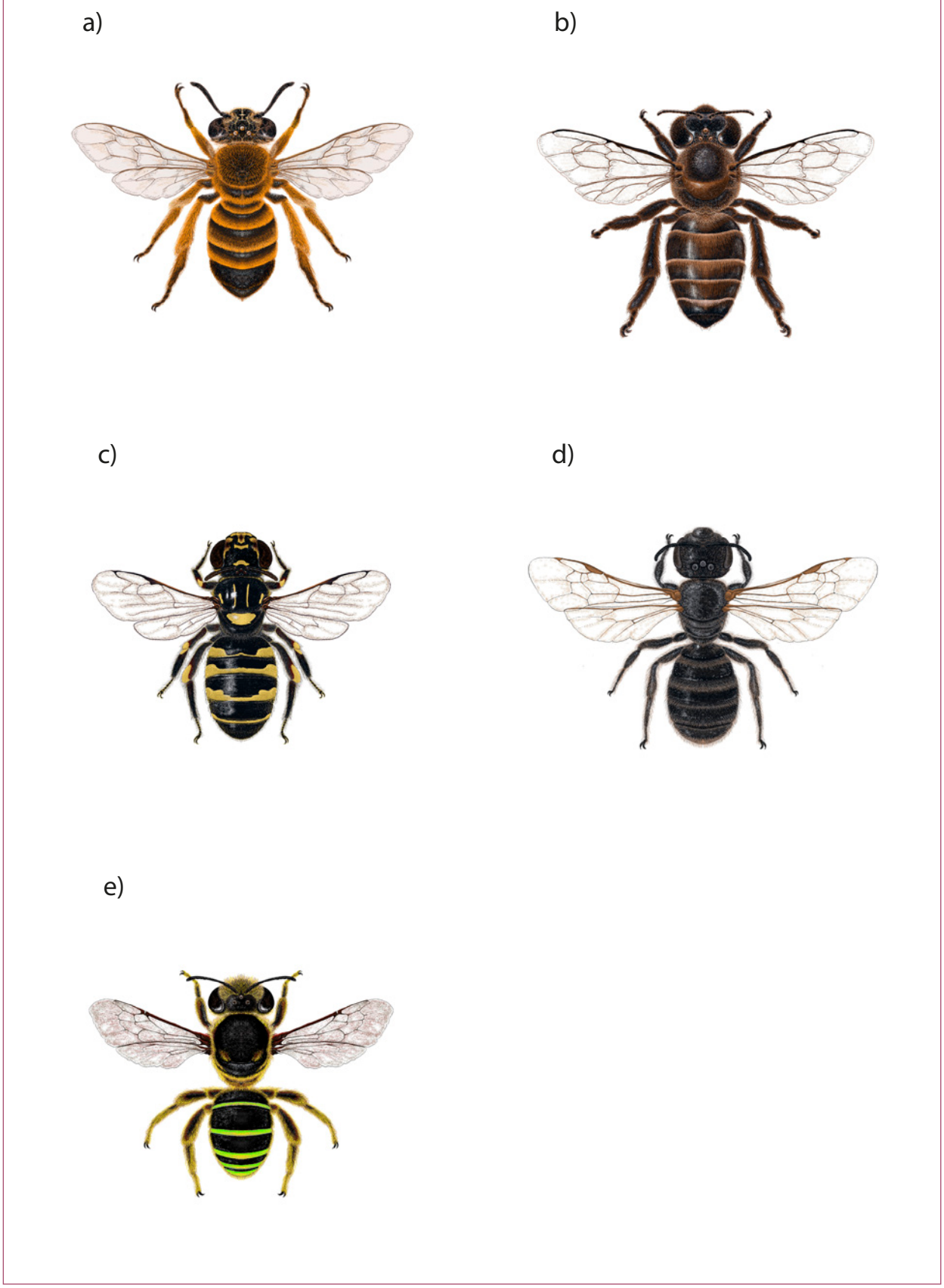


**Figure 1.** Selection of illustrated bees in Jambi: **a)** Amegilla insularis, **b)** Apis cerana, **c)** Ceratina liftiencky, **d)** Halictus sp, **e)** Nomia strigata.