

Macrogalea bees are insects just like honey bees but they do not make honey. These bees are found only in sub-Saharan Africa. They do not make honey and for long people have perceived them as just insects and not bees. This factsheet intends to provide information about these bees so that the public can familiarize themselves with the bees. The public should also be aware that honey bees are some of bees and there are other kind of bees, like these described here, that do not make honey but are important for other aspects of human wellbeing. Please enjoy reading and enlighten other people of these different bees.

Scientific Classification

Kingdom: Animal
Phylum: Arthropoda
Class: Insecta
Order: Hymenoptera
Family: Apidae
Subfamily: Xylocopinae
Tribe: Allodapini
Genus: *Macrogalea* Cockerell, 1930



Species in the Genus

Current knowledge about *Macrogalea* shows that bees in this genus are restricted to sub-Saharan Africa. There are ten known species (Eardley and Urban 2010).

Representative Species in East Africa

Four species of *Macrogalea* have been reported from East Africa - Rwanda, Burundi, Kenya, Tanzania and Uganda (Eardley, Kuhlmann and Pauly 2010) These include one species known to be social parasite (i.e. it occupies the nests of other species).

Description

Macrogalea bees are medium-sized, mostly less than 1 cm with most areas of the body covered in hairs.

Economic / Ecological importance

These bees are important pollinators of crops and plants. In so doing, they enhance productivity of crops, which in turn provides farmers with more income from commodity sales. In addition, farmers have enough to eat, both quantity and quality wise. Ecologically, they pollinate shrubs and plants and ensure their reproductive success. Some of the shrubs are important in erosion control and are source of food to animals and wildlife. Their presence is a good indicator of ecosystem.

Similar Taxa/Possible Causes of Confusion

Macrogalea bees be confused with *Braunsapis* bees. It is possible to distinguish these bees since *Macrogalea* bees are more hairy and slightly larger.

Documented Distribution in Kenya, Tanzania, Uganda

There is little information about their distribution in different parts of Kenya, Uganda and Tanzania. However, it is likely that they are found in most Districts/Regions of these countries.

Habitats

Macrogalea bees can live in different ecological zones so long as these can support their nesting and food requirements.

Nesting Sites

Macrogalea bees construct their nests in plant cavities particularly dead stems with holes. There has been no reports of these bees making their own holes but mostly occupy empty plant cavities.

Crops Visited

The authors could find no reported information on crops visited

Other Plants Visited

The authors could find no reported information other plants visited.

Threats

In East Africa, *Macrogalea* bees, just like other bees, are threatened by factors such as habitat degradation, agricultural intensification and the misuse of pesticides. Information about the effects of their pests and diseases is lacking though these play important ecological role in regulation of population dynamics of species. The lack of knowledge of about these bees and their economic importance by the farmers is far the most serious threat to their existence. This is because conservation and management practices implemented at farm level depend to a large extent upon the value that farmers attach to the bees.

Conservation and Management Practices

Little information exists on the usefulness of these bees to the lives of the people in East Africa. Information is now being sought and best practices for conservation and management of these bees will be developed and utilised for improving crop productivity. Theoretically, bee conservation and management is inexpensive and adopted activities can also improve the aesthetic value of the landscape. Such practices involve setting land aside (e.g. a 1-metre strip) in the farmland to host all year round food resources for the bees, as well as safer sites for nesting, mating, resting and hiding from natural enemies. During flowering, farmers should manage pesticide usage carefully to avoid poisoning flower-visiting bees. Farmers should also minimise pesticide drift from the field to adjacent areas. KARI (the Kenya Agricultural Research Institute) is developing protocols for mass rearing of different species of solitary bees. Any successful results from this research will be freely communicated to the public. In addition, KARI is collaborating with other stakeholders to ensure in situ conservation and management of bees for pollination purposes. Much of the work of conserving native bees will be underpinned by raising public awareness of the importance of these species.

Legislation (National and International)

There is not yet any legislation in East Africa that explicitly addresses pollinators. However, there is scattered legislation for the protection of biodiversity particularly that covering environmental protection, protection of wildlife and heritage sites, protection of forests and natural resources such as water catchments. In addition, laws governing registration and use of plant protection products also indirectly play a major role in the protection of pollinators. Such legislation, together with market standards such as the Good Agricultural Practices (GAPs) codes, standards and regulations may help to protect bees albeit incidentally. Farmers should lobby their governments to develop Integrated Pest Management policies that would protect bees and other useful insects of importance in agriculture.

Sources of Further Information and Links

1. Eardley CD, Kuhlmann M and Pauly A. (2010) The Bee Genera and Subgenera of sub-Saharan Africa. *Abc Taxa* vol 7: i-vi, 138 pp. <http://www.abctaxa.be/volumes/vol-7-bees>
2. Eardley CD and Urban R (2010). Catalogue of Afrotropical bees (Hymenoptera: Apoidea: Apiformes). *Zootaxa*, 2455: 1–548.
3. Michener, CD (1974) *The Social Behavior of the Bees*, Harvard University Press, pp. 307–309

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