

Anthophora bees are insects like honey bees but they do not make honey. 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 familiarize themselves with these. 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. *Anthophora* bees can sting when squeezed e.g. with hand or when trapped on a clothing and a friction occurs. The intensity of the sting is not documented but may not be as painful as that of a honey bee. Please enjoy reading and enlighten other people of these different bees.

Scientific Classification

Kingdom: Animal

Phylum: Arthropoda

Class: Insecta

Order: Hymenoptera

Family: Apidae

Subfamily: Apinae

Tribe: Anthophorini

Genus: *Anthophora* Latreille, 1802

Species in the Genus

Anthophora is one of the largest genera in the bee family (Apidae), with over 450 known species worldwide. They are most abundant and diverse in the northern temperate and African regions.

Representative Species in East Africa

The bee species belonging to the genus *Anthophora* are widespread in sub-Saharan Africa. A comprehensive list of species for East Africa is yet to be established. However, it is likely that more than 15 described Afrotropical *Anthophora* species (Eardley & Urban 2010, Eardley and Brooks 1989) will be found to occur in East Africa (Rwanda, Burundi, Kenya, Tanzania, Uganda).

Description

In East Africa *Anthophora* species are not known by local people as bees. Information about the experience of farmers with these bees is not documented. However, these large, heavy and beautiful bees can be easily identified by their size and colour characteristics. Most *Anthophora* species have yellow facial markings though some have black faces. In Uganda, the bodies of commonly encountered bees in the field are yellow-white or blue-white in colour.

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

Some other bee groups look like *Anthophora* bees: These are large *Xylocopa*, *Megachile*, *Tetraloniella*, *Tetralonia*, *Amegilla* and *Melitta*. While foraging of various plant species, males of *Xylocopa* can some times look like Anthophorinae bees. *Anthophora* individuals can be distinguished from the very similar genus *Amegilla* by the possession of an arolium between the tarsal claws.

Documented Distribution in Kenya, Tanzania, Uganda

Anthophora bees are found in most Districts/Regions of Uganda, Kenya and Tanzania (Eardley and Daly 2007; Eardley et al. 2009).

Habitats

Anthophora bees can be found in various habitats (land-uses) in East Africa such as grasslands, natural forests, wetlands, marshlands, open habitats, protected areas, farmlands, rangelands, woodlands, woodlots (forest plantations), riparian areas.

Nesting Sites

All *Anthophora* species are solitary, though nests may be found close together. Many species make nests in the soil. In Uganda, these bees are observed nesting in branches of living and dead branches and stumps of trees found in the ground in recently cut forests. In Uganda, these bees have been observed nesting in stumps and dry wood materials piled in field margins in sites that are dry and shaded.

Crops Visited

Most *Anthophora* species appear to collect nectar and pollen from a wide range of flowering crop species belonging to different plant families although a few species appear to be specialized, mostly visiting plant species from one family. These bees are efficient pollinators of crops such as eggplant, cucurbits, water melon, coffee, beans, cowpeas, bambara nuts, sim-sim, passion fruits, tomato and apples.

Other Plants Visited

In East Africa, *Anthophora* bees visit various plant species, notably those in the Fabaceae, Rubiaceae and Asteraceae families. In East Africa, *Anthophora* are wild bees (not yet domesticated) that visit various wild plant species (trees, shrubs, herbs, weeds, lianas) found in different habitats. These bees visit preferably plant species with large to medium flowers of yellow, white, milk-cream and purple colours.

Threats

Like other bees *Anthophora* bees are threatened by factors such as habitat degradation, agricultural intensification and 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. Trampling by people and livestock can affect soil nests. The lack of knowledge 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 East Africa people. However, 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. Wood collection should be managed to conserve the nesting sites wood-nesting species and trampling by people and livestock and tilling should be managed to conserve the nesting sites of soil-nesting species. 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, laws governing registration and use of plant protection products also indirectly play a major role in the protection of pollinators. 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 regulations 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

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Factsheet series

- 01 Pachyanthidium bees
- 02 Afranthidium bees
- 03 Allodapula bees
- 04 Ceratina bees
- 05 *Anthophora* bees**
- 06 Tetralioniella bees
- 07 Macrogalea bees
- 08 Melitta bees
- 09 Hypotrigona bees
- 10 Liotrigona bees
- 11 Meliponula bees
- 12 Pseudapis bees
- 13 Nomia bees
- 14 Lipotriches bees
- 15 Amegila bees
- 16 Apis (Honey) bees
- 17 Halictus bees
- 18 Lasioglossum bees
- 19 Megachile bees
- 20 Xylocopa bees