

*Nomia* bees are true bees just like honey bees but do not make honey that people can harvest. They are solid looking small-medium sized (7-12 mm in length) bees with light sometimes glossy stripes on the abdomen. This factsheet intends to provide information about these bees to aid farmers in understanding them, protecting them and ensuring their crops get the best pollinator at times of flowering period. Please enjoy reading and enlighten other people of these different bees. They have been domesticated in western countries for pollination of high value crops. This is possible through improved technologies that aid in increasing the number of bees for effective pollination during bloom period. *Nomia* bees are not aggressive, have a mild sting that is much less painful than that of a honey bee, and is only used when they are handled.

## Scientific Classification

**Kingdom:** Animal  
**Phylum:** Arthropoda  
**Class:** Insecta  
**Order:** Hymenoptera  
**Family:** Halictidae  
**Subfamily:** Nomiinae  
**Genus:** *Nomia* Latreille 1804



## Species in the Genus

*Nomia* bee species are a genus of sweat bees in the family Halictidae with over 130 named species which are found in most parts of the world.

## Representative Species in East Africa

About 20 Afrotropical *Nomia* species have been recorded in East Africa - Rwanda, Burundi, Kenya, Tanzania, Uganda (Eardley & Urban 2010). It is likely that more species will be found as a comprehensive list of *Nomia* species occurring in East Africa has yet to be produced. Three of the most common species in the Region are *Nomia lutea*, *N. maculate* and *N. theryi*.

## Description

*Nomia* bees are not known by local people in East Africa as bees. They are small – medium sized (7-12 mm in length) solid looking hairy bees. *Nomia* bees vary in colour but are mostly dark with contrasting bands on the abdomen which can be glossy.

## Economic / Ecological importance

These bees are important pollinators of crops and plants where they effect pollination while collecting their food resources. In so doing, they enhance productivity of crops, which in turns provides farmers with more income from commodity sales. In addition, farmers have enough to eat, both quantity and quality wise. At ecological level, 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 insect species look like large *Nomia* bees: These are other Halictidae (*Lipotriches*, *Halictus*) and some Ceratininae bees. These are easy to confuse with other species frequently encountered on flowering plants during peak blooming periods. The pale bands on the abdomen of *Nomia* bees are distinctive but there can still be confusion which can only resolved with certainty by an expert.

## Documented Distribution in Kenya, Tanzania, Uganda

*Nomia* bees are found in most Districts/Regions of Uganda, Kenya and Tanzania (Eardley et al. 2009).

## Habitats

*Nomia* 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

Although characterized by a variety of nesting behaviours, these bees are solitary, ground-nesting bees (Michener 2007). In Uganda *Nomia* bees are commonly found nesting in termite mounds in shaded and dry places in different semi-natural habitats.

## Crops Visited

*Nomia* bees in East Africa are polylectic; i.e. they collect nectar and pollen from various flowering crop species belonging to different plant families. These bees are efficient pollinators of crops such as coffee, water melon, cucurbits, beans, cowpeas and simsim (sesame).

## Other Plants Visited

In East Africa, *Nomia* bees visit various plant species, notably those in the Fabaceae, Malvaceae, Rubiaceae and Asteraceae families. In East Africa, *Ceratina* are wild bees that visit various wild plant species (trees, shrubs, herbs, weeds, lianas) found in different habitats. These bees preferably visit plant species with small yellow, white, green, milk-cream and purple coloured flowers. These bees are characterized by high species constancy.

## Threats

*Nomia* bees and other bees are threatened by factors such as habitat degradation, and agricultural intensification (e.g., misuse of pesticides, tillage practices, hedgerow management). 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 these soil-nesting species. 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 the people in East Africa has been gathered and there have been no scientific or farmer efforts to conserve them. 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. 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, 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, Gikungu MW and Schwarz MP (2009) Bee conservation in Sub-Saharan Africa and Madagascar: diversity, status and threats. *Apidologie*, 40: 355–366.
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