

Guide for identification of the bee genera visiting Cucurbit crops in Tanzania

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Apis



Dactylurina



Ceratina



Xylocopa



Ipomalictus

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Honeybee (*Apis mellifera*)

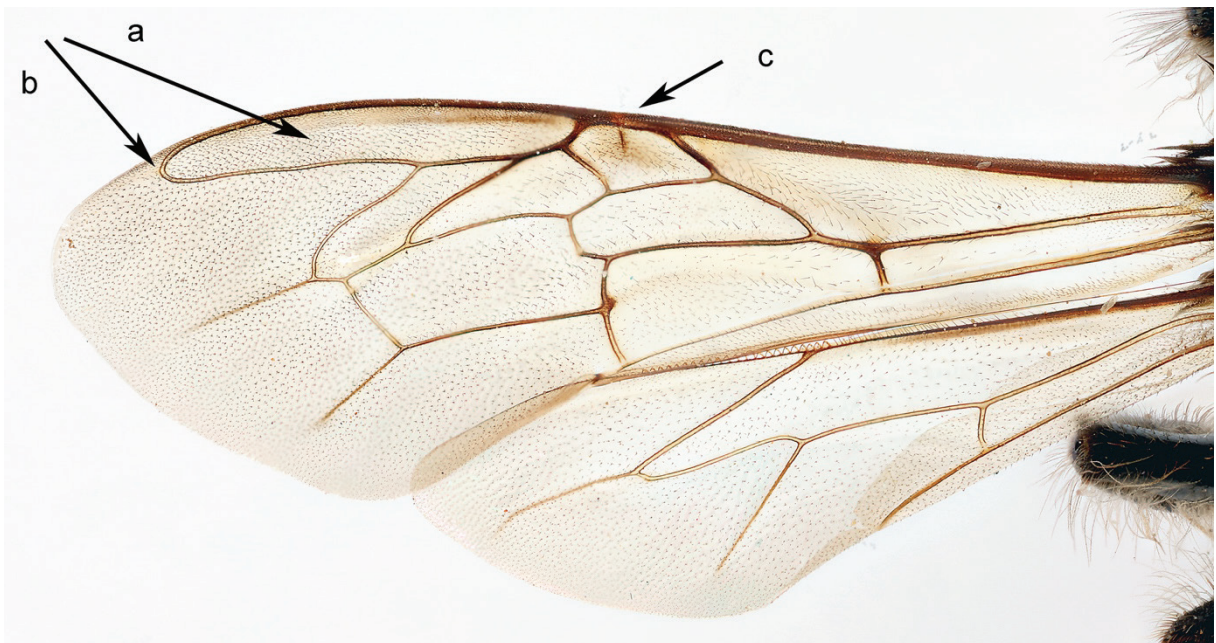


Apis mellifera with pollen load in baskets (corbiculae)

Honeybees, are easily identified from other bees by the long marginal cell and reduced stigma of the forewing, and the corbicula to collect pollen on the hind legs. Honeybees are foraging a very large number of plant families. On Cucurbit flowers, they are especially attracted by nectar and if the large pollen of Cucurbit is not easily collected in the baskets of the hind legs (as it is in the specimen above), it is accidentally glued on the body and transported flowers to flowers (see specimen below).



Apis mellifera with large pollen of zucchini sticking on the body



Wings of honeybee, arrows show the characteristic long marginal cell (four times as long as as distance between marginal cell and distal end of forewing) (a), its rounded apex (b), and the reduced stigma (c)



Honeybees collecting nectar in squash flower



Honeybees collecting nectar in squash flower

Stingless bees (*Meliponini*)



Dactylurina schmidtii



Plebeina armata



Arboreal nest of *Dactylurina*



Small chimneys at the entrance of a nest of *Plebeina armata* constructed in the ground of a termite nest



Nest of *Dactylurina schmidtii* artificially translocated on a branch



Artificial nest for stingless bees nesting in the ground (*Plebeina armata*)

Stingless bees (*Meliponini*) are social bees producing honey. Like honeybees, they are generalists and visit a large number of plant families, especially flowers on the trees. They are xx species in Tanzania but only two are common on Cucurbit crops in Morogoro Region. *Dactylurina staudingeri* (Stadelmann, 1895) construct aerial nest in the trees while *Plebeina armata* (Magretti, 1895) construct nests in the ground, particularly in termite mounds. Stingless bees differ from other bees by the reduced venation of the forewing.

Carpenter bees (*Xylocopa* sp.)



Xylocopa caffra



Xylocopa flavicollis

Diagnose. These bees are mostly large (15 – 30 mm), among the biggest bees in Africa. They construct nest in old logs or bamboo stems. They are efficient pollinators of beans, passion fruits, tomatoes, egg plants, guava and cucurbits. Around 20 valid species are recorded from Tanzania. *Xylocopa caffra* (Linné, 1767) and *Xylocopa flavicollis* (De Geer, 1778), are two species frequently observed on Cucurbit flowers in Morogoro Region.

Small Carpenter Bees (*Ceratina* sp.)



Ceratina are small carpenter bees (5– 9 mm). Most of the species have a white spot on the head. They differ from *Braunsapis* and *Macrogalea* by three submarginal cells in the forewing. Species are black or colored with metallic reflections. They are nesting in pithy stems (for example *Lantana camara*). They are common visitors on Cucurbits and other crops like strawberries, raspberries, but their favorite plants belong to the family Lamiaceae. Around 20 species of *Ceratina* are recorded from Tanzania.

Allodapine Bees (Braunsapis sp.)



Allodapine bees like *Braunsapis* are minute bees (4-7 mm) similar to *Ceratina* by a white spot on the head but they differ by having only two submarginal cells on the forewings. Unlike *Ceratina*, they mostly do not have separate cells in their nests and feed their larvae progressively. They are commonly found on Cucurbit flowers but their favorite plants belong to families Lamiaceae and Asteraceae. Around 12 species of *Braunsapis* are recorded from Tanzania.



Artificial nesting site for *Ceratina*, *Braunsapis* and *Xylocopa*:
bamboo stem, dead wood with hollows and pithy stems of *Lantana camara*.

Macrogalea candida



Macrogalea are close relatives to *Braunsapis* but are more robust (7-10 mm) and a hairy bees. They have a long tongue. Only one species, *Macrogalea candida*, is common and largely distributed in Tanzania. It forages on a large number of plant families but are commonly found on Cucurbit flowers and are potential pollinator. In the field we may confuse them with *Ipomalictus*. They differ by only two submarginal cells in the forewing and a white spot on the head.



Nests of bees in pithy stems: *Macrogalea*, *Braunsapis*, *Ceratina* and *Megachile*

Sweet bees (*Lasioglossum (Ipomalictus)* sp.)



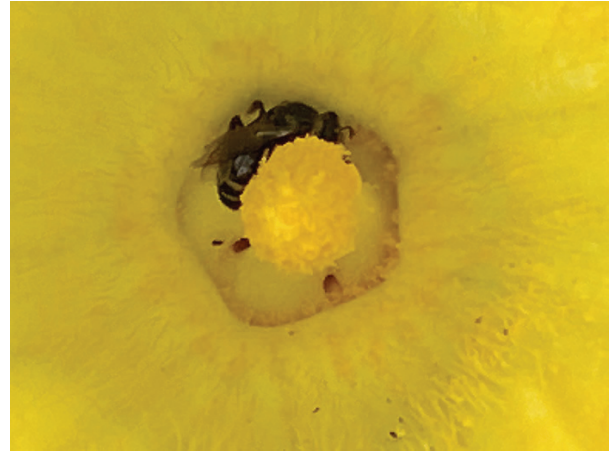
Lasioglossum (Ipomalictus) sp.



Lasioglossum (Ipomalictus) sp. with pollen of squash (*Cucurbita maxima*)



Nest entrance of *Ipomalictus* in the ground



Ipomalictus in a flower of squash



Female of *Lasioglossum* (*Ipomalictus*) *bowkeri* showing its long tongue © Nicolas Vereecken

Sweet bees or halictine bees of the genus *Lasioglossum*, subgenus *Ipomalictus*, are specialist in the collect of large, spinose and sticky pollen of Cucurbitaceae, Convolvulaceae and Malvaceae. Moreover, most species are characterized by a very long tongue ("glossa") well adapted to collect nectar in deep corolla. Over 40 species occur in Africa, and around 20 are currently recorded from Tanzania. All the species of the subgenus are endemic to Africa excepted one species endemic to South India. All *Lasioglossum* are ground nesting bees.

Remark: Although *Ipomalictus* have a long tongue, they belong to the family group of "short tongued bees" because only the glossa is elongated, not the labial palpi.