

# Bee Enemies

**Q. Who are the enemies of bees? Q. How will you protect honeybee colony from enemies?**

## **Greater Wax Moth (*Galleria mellonella*)**

(i) This moth is found all over the world and is abundant during July-October.

(ii) Adults are brownish and have a wing span of about 3 cm. Males are slightly smaller than females and have a deep indentation on the outer margin of fore wings.

(iii) Larva tunnels into the wax comb and ingests wax and debris. Damage is more to the stored combs but often also occurs in active hives, particularly when the colonies become weak and bees cannot cover the entire combs.

(iv) Moths are nocturnal and have a fecundity of about 300 eggs per female. Eggs are deposited outside the hive in cracks or crevices, where they hatch in about a week's time and tiny whitish larvae wriggle through the cracks into the hive and bore into the wax combs. Larva ingests wax and derives nourishment from the organic debris in the wax and when fully grown measures about 2 cm. Larval period is about a month but may extend up to 5 months in winter.

(v) Larva pupates inside a dense rough silken cocoon that is attached to some solid support. Pupal period in summer is about 8 days. Hibernation also takes place in pupal stage. This species is smaller than the Greater wax moth, otherwise similar in appearance.

(vi) Larvae inflict damage to the combs in similar fashion as the greater wax moth. Honey oozes out of the damaged combs and sometimes the weakened comb falls down. Strong colonies easily defend against the wax moth larvae, which are quickly located and stung and removed from the hive. Therefore, strong colonies should be maintained and the hive should be kept clean.

(vii) Chemicals cannot be used inside the hives but stored combs can be fumigated **with Paradichlorobenzene and Ethylene dibromide**. Keeping combs at a temperature of 46 degrees for 80 minutes also kills the larvae.

## **Wasps**

Bee hunter wasps are predators of honey bee workers that they capture in flight and carry to their nests to feed them to larvae. Sometimes they take away bees even from the alighting boards of hives. The following species of wasps are destructive to bees in India:

*Vespa cincta*, The yellow banded hornet is a black wasp with reddish-brown head and a yellow transverse band on the abdomen. It is social wasp that constructs papery wax nests in hollow spaces.

*Vespa tropica*, Greater banded hornet is 3.0 cm long black wasp with an orange band on second tergite and body covered by stiff hairs. The nest is underground or in tree holes. It hunts bees for its larvae.

*Vespa auraria* (-*Vespa velutina*), The golden wasp has black body with margins of first three abdominal segments yellowish. Body covered with velvety hairs giving it golden shine. Wings are brownish hyaline.

*Vespa magnifica*, The large black wasp has orange brown head and brownish tinge on wings. Cup shaped nest is made on the branches of tall trees *Polarus orientalis*, Bee hunter wasp is blackish brown in colour with third and fourth tergites of abdomen yellow. It makes underground nest in which it keeps stung bees as larval food.

*Philanthus ramakrishnae*, is called burrowing bee wolf that has black body with yellow bands on abdomen. They dig tunnels in the ground to nest and carry bees to their nests as food for larvae. To prevent damage to the bees, adult wasps should be collected by net and destroyed in and around the apiary. Nests of wasps should be located within one km of the apiary and destroyed.

## **Ants**

Species of ant genera *Camponotus*, *Monomorium*, *Dorylus* etc. enter bee hives particularly those of weak colonies and take away honey, pollen and larvae. Strong colonies defend successfully against invading ants but weak colonies suffer the loss. Ant pans or sticky bands on the legs of stands can effectively keep the ants away from hives. Termite also damages the wooden parts of the hives.