

Beneficial Insects: A Blessing to the Ecosystem

Aryaman Modak and Yendrebam K. Devi^{1*}

¹B.Sc. (Agri) Scholar, Department of Entomology, Lovely Professional University,
Jalandhar-Delhi G.T. Road (NH-1) Phagwara-144411 India

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Insects play an important role in our ecology. These are invertebrates belonging to the Insecta class. Mosquitoes, flies, grasshoppers, leafhoppers, and other insects are harmful to humans and agriculture. There are, on the other hand, numerous that are helpful to humans and agriculture. Predators (lady bird beetles, yellow jacket wasps, lacewings), parasitoids (*Trichopodapennipes*, *Cotesia* wasps, *Tiphia* wasps), and pollinators (bees, butterflies, moths, beetles) are the three primary types of helpful insects. As a result, we must keep in mind that our survival is dependent on them, and we must value their presence.

1. Ant

Location- Jalpaiguri, West Bengal.

Benefits of ant are-

- a. **They aerate the soil by digging tunnels.** These tunnels help moisture and air retention in the soil so that the roots of plants can soak them up more easily.
- b. Ants often use decaying foliage to build their nests as a result of which nutrients are added to the soil and nearby plants receive fertilization.
- c. **They act as pollinators in many plants.**
- d. They act as predators to many insect pests.



Figure 1: Ant

2. Butterfly (Figure 2)

Location- Jalpaiguri, West Bengal.

Benefits of butterfly-

- a. They act as pollinators.
- b. They can act as an ecological indicator i.e. when the environment is clean and healthy, their population increases in that place and vice versa.
- c. Act as food to many organisms such as birds, amphibians, insects etc.



Figure 2: Butterflies

3. Moth (Figure 3)

Location- Jalpaiguri, West Bengal.

Benefits of moths-

- a. They act as pollinators.
- b. They can act as an ecological indicator i.e. when the environment is clean and healthy, their population increases in that place and vice versa.
- c. Act as food to many organisms such as birds, amphibians, insects etc.



Figure 3: Moth

4. Carpenter bee (Figure 4)

Location- Jalpaiguri, West Bengal.

Benefits of carpenter bee-

They act as pollinators to many plant species.



Figure 4: Carpenter bee

5. Dragonfly (Figure 5)

Location- Jalpaiguri, West Bengal.

Benefits of dragonfly-

- a. Dragonflies act as predators to insect pests such as mosquitoes.
- b. Dragonflies are an important environmental indicator as they rely on healthy aquatic ecosystems and healthy food chains.



Figure5: Dragonfly

6. Firefly (Figure 6)

Location- Jalpaiguri, West Bengal.

Benefits of firefly-

- a. The larvae of most species of fireflies are specialized predators and feed on other insect larvae, snails and slugs.
- b. Adults of some species are predatory.
- c. They contain two rare chemicals viz. luciferin and luciferase which are used in research on cancer, multiple sclerosis, cystic fibrosis and heart disease.
- d. They also act as pollinators to some species of plants.



Figure6: Firefly

7. Honey bee (Figure 7)

Location- Jalpaiguri, West Bengal.

Benefits of honey bee-

Honey bees are the most important pollinators in the world and they contribute to 73% of pollination.



Figure 7: Honey bee

8. Yellow oriental paper wasp (Genus: *Polistes*) (Figure 9)

Location- Jalpaiguri, West Bengal.

Benefits of yellow oriental paper wasp-

- a. They prey on many pests of crop plant
- b. They are an important pollinator to many crops.



Figure8: Greater banded hornet

9. Yellow oriental paper wasp (Genus: *Polistes*) (Figure 9)

Location- Jalpaiguri, West Bengal.

Benefits of yellow oriental paper wasp-

- a. They prey on many pests of crop plant
- b. They are an important pollinator to many crops.



Figure 9: Yellow oriental paper wasps

10. Paper wasp (Genus: *Ropalidia*) (Figure 10)

Location- Jalpaiguri, West Bengal.

Benefits of paper wasp-

- a. They prey on many pests of crop plant and feed on caterpillars.
- b. They are an important pollinator to many crops.



Figure 10: Paper wasp

11. Ladybird beetles (Figure 11)

Location- Jalpaiguri, West Bengal.

Benefits of ladybird beetles-

They act as bio control agents to many insect pests such as aphids.



Figure 11: Ladybird beetle
(Photograph by Aryaman Modak,
Jalpaiguri, West Bengal)