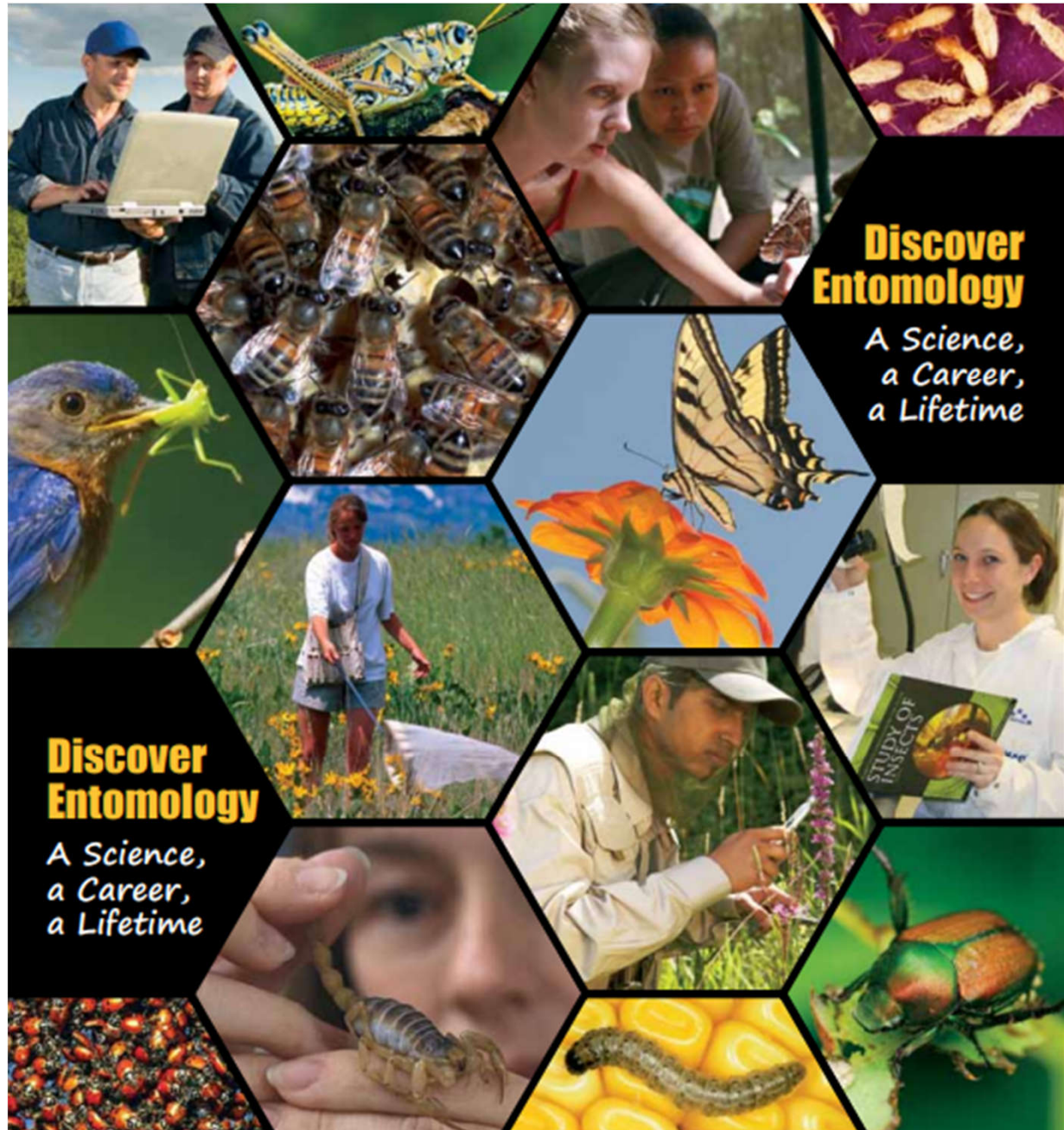


# **Introductory Entomology**

**ENT-201**

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**Discover  
Entomology**

*A Science,  
a Career,  
a Lifetime*

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# Definition of Entomology

**Entomology** is the study of insects.

**Entomologists** study bees, ants, beetles, termites, mosquitoes, and other insects, as well as other related animals (known as **arthropods**), such as spiders and scorpions



# Why Study Insects

- Insects are all around us. There are more species of insects than of any other group of animals, and many have not even been discovered yet.
- Insects affect many aspects of human life, from food production to housing.
- While some insects harm us by spreading disease, destroying plants, or damaging our homes, others help us by pollinating our crops, eating other insects, and recycling nutrients in nature.

# Why Study Insects

- Insects are also used to advance knowledge in many scientific fields, such as ecology, molecular biology, medical research, forensics, even robotics!
- Studying entomology teaches us which insects are harmful and which are helpful, and how we can deal with them to make our lives better

# Why Study Insects

1. Growing food
2. Saving Lives
3. Helping animals
4. Understanding nature
5. Discovering species
6. Fighting crimes
7. Saving our forests
8. Protecting quality of life

# 1. Growing Food

- Bees and other insects are essential for pollinating fruits, vegetables, and nuts.
- At the same time, other insects destroy millions of tons of food and fiber crops each year.
- Some attack crops in farmers' fields or during storage, and others spread diseases that reduce plant yields.
- **Agricultural entomologists** work with farmers to find ways to manage insect pests and protect their crops while simultaneously protecting beneficial insects.

# Growing Food

- In addition to the insect pollinators, other beneficial insects such as ladybugs, praying mantises, and parasitic wasps attack insect pests, reducing the need for pesticides.
- In many parts of the world, people even eat certain insects as a source of protein, vitamins, and minerals.
- Studying entomology teaches us how to produce more food in an environmentally sound way



## 2. Saving Lives

- Each year millions of people die from diseases that are spread by insects.
- According to the World Health Organization, a child dies every minute from malaria, which is spread by mosquitoes, and many others suffer from yellow fever, encephalitis, West Nile virus, and dengue. Lice, fleas, flies, and other insects and arthropods can also spread diseases.

# Saving Lives

- **Medical entomologists** find ways to prevent insects from spreading diseases, and they work with doctors to develop methods for treating people after they are infected.
- Studying entomology teaches us how to save lives by preventing diseases and infections, and by helping to discover new medicines and cures.

# 3. Helping Animals

- Ticks, fleas, and flies can harm cats and dogs, animals in zoos, farm animals, and creatures found in the wilderness.
- Bites from insects annoy the animals and can make them sick or even kill them by spreading diseases.
- Mosquitoes can infect dogs, cats, and other animals with heartworms, a parasite that can be deadly.
- Ticks can give them Lyme disease and Ehrlichia.
- Fleas can bite them, making them uncomfortable and itchy.

# Helping Animals

- **Veterinary entomologists** work with zookeepers, ranchers, forest rangers, and veterinarians to help them protect animals from dangerous insects.
- Studying entomology teaches us how to prevent insect damage to pets, livestock, and other animals

## 4. Understanding Nature

- Many animals, such as birds, fish, and snakes, eat insects, so they are an important part of the food chain.
- And without insect pollinators, global vegetation would largely collapse.
- At the same time, other insects are important decomposers — they eat dead plants and animals, which releases nutrients back into the soil so that new plants and animals can grow.

# Understanding Nature

- Still other insects are parasites or predators, and they help control the populations of other species. Entomologists study insects and other animals in their habitats, which teaches us how to preserve and restore natural ecosystems
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## 5. Discovering Species

- While it has been estimated that there are as many as 30 million species of insects on the planet Earth, only about one million have actually been discovered and described.
- **Taxonomic entomologists** conduct field studies to discover new insects, especially in the tropical regions of Asia, Africa, and South America. In fact, about half of all plant and animal species are found in tropical rain forests.

## 6. Fighting Crime

- When the police find bodies of dead people, they must determine how and when they died.
- **Forensic entomologists** help the police by examining the bodies to find insects, which may provide clues about the time of death and whether or not the bodies have been moved.
- Some entomologists teach courses to train the police on how to find insect clues themselves. Studying entomology teaches us how to help solve crimes.



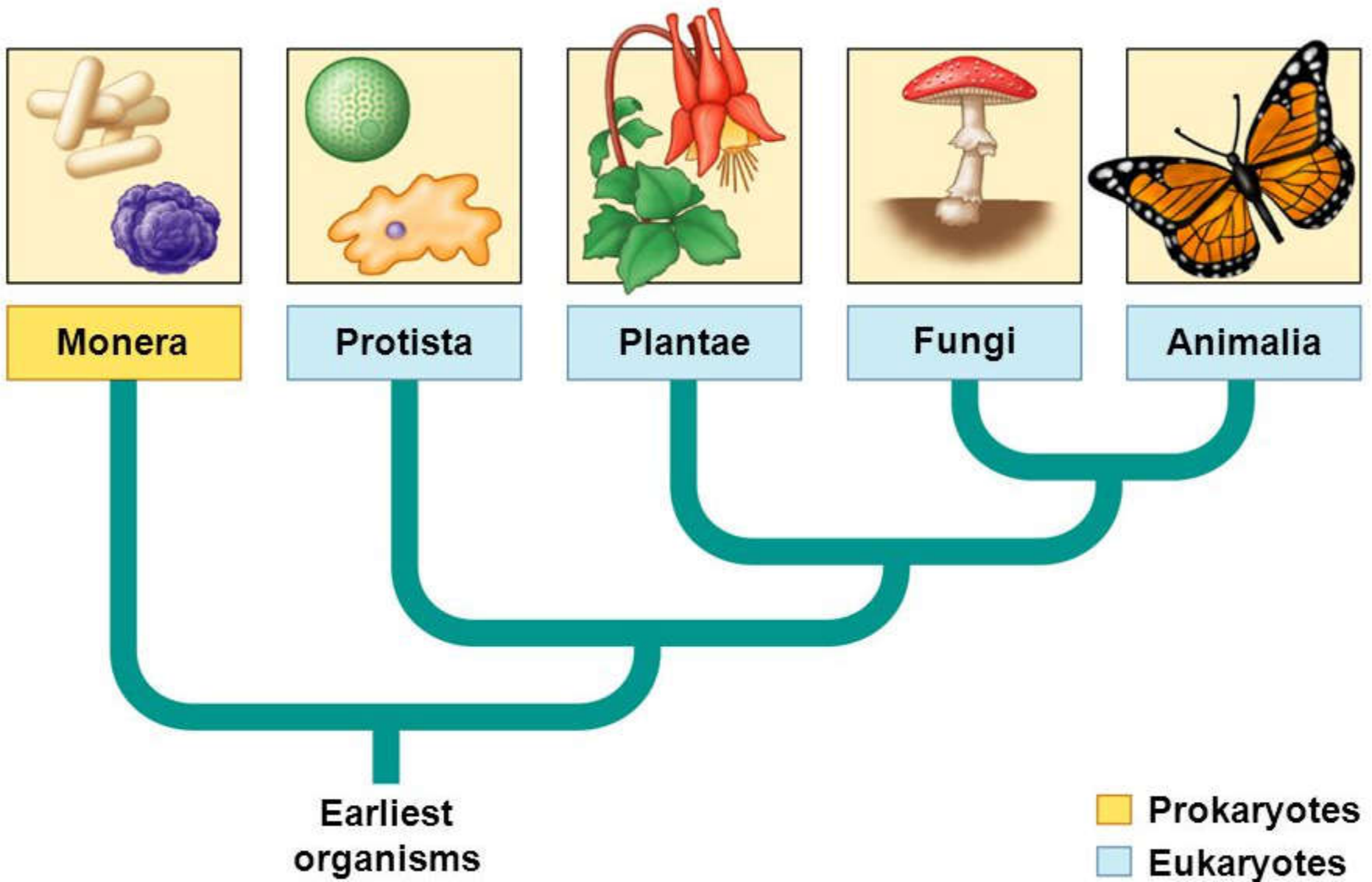
# 7. Saving our Forests

- While some insects are helpful to trees, shrubs, and bushes, others may harm them.
- Some insects eat trees, and others spread plant viruses and diseases.
- Some insects introduced from other parts of the world, called “invasive species,” do millions of dollars’ worth of damage to forests each year.
- **Forest entomologists** specialize in insects that harm wild plants and forests and study ways to prevent and control them.
- Studying entomology teaches us how to keep our forests healthy

## 8. Protecting Quality of Life

- Some insects, like ants, cockroaches, or flies, find their ways into houses, schools, and hospitals.
- These insect pests are annoying and unsanitary. Other insects, such as termites, can destroy homes and businesses by eating the wood that these buildings are made of.
- **Structural entomologists** study and discover ways to keep insects out of buildings, and ways to get rid of them if they do get in.
- Studying entomology teaches us how to keep our homes, schools, hospitals, and recreational areas free from pests

# Classification of Living things



# Classification of Insects

Kingdom:	<a href="#">Animalia</a>
Phylum:	<a href="#">Arthropoda</a>
Class:	<a href="#">Insecta</a>
Order:	<a href="#">Diptera</a>
Section:	<a href="#">Schizophora</a>
Family:	<a href="#">Muscidae</a>
Genus:	<a href="#">Musca</a>
Species:	<i>M. domestica</i>

