## **Unit 15 - Medical Entomology**

#### **Unit Objectives**

- 1. Describe the different types of medically related problems caused by arthropods.
- 2. Define the terms associated with disease transmission
- 3. Describe the general characteristics of the diseases covered.
  - -Type of disease -Vector -Where it is a problem -Disease symptoms -How it is treated and controlled

## Introduction Direct Medical Effects

- 1. How is annoyance a direct medical effect to humans?
- 2. What organisms can cause dermatosis and dermatitis?
- 3. What is myiasis?
- 4. Define envenomization:
- 5. Give three different insect examples of envenomization.
- 6. 37% of the people allergic to chocolate were not actually allergic to cocoa but to what?
- 7. Do you have delusory parasitosis?

#### **Indirect effects**

- 1. What is the primary indirect medical effect of insects?
- 2. Define vector:
- 3. Define pathogen:
- 4. Define reservoir:
- 5. Define resistance:

- 6. Define virulence:
- 7. What are the differences between bacteria, protozoans and viruses?
- 8. How do protozoans cause disease?
- 9. What is an arbovirus?

Table 1 - Insect Transmitted Diseases						
Disease	1. Yellow Fever	2. Plague	3. Typhus	4. Dengue		
Name				Fever		
Pathogen	Virus					
Vector	Mosquito					
Where is it a	Tropical Africa					
problem?	Central & South					
	America					
Symptoms	fever, headache,					
	muscle pain,					
	jaundice,					
	vomiting black					
	material and fluid.					
Control and	Mosquito control					
treatment	and vaccine					

# Fill out the following information. Table 1 - Insect Transmitted Diseases

# Table 2 - Continued

Disease	5a.	5b.	6. Encephalitis	7. Malaria
Name	Trympanosomiasis	Trympanosomiasis		
	(African Sleeping	Chagas' Disease		
	Sickness)	-		
	·			
Pathogen				
Vector				
Where is it				
a problem?				
Symptoms				
Control and				
treatment				

In summary, which of the insect transmitted diseases are: a.Viral diseases:

b. Bacterial diseases:

c. Protozoan diseases:

Distinguish between a reservoir and a secondary host. How is the severity of infection different for each?

What role do Lepidopteran larvae play in medical entomology?

What are some of the many challenges of malaria control?

Why is it important to be able to determine which *Plasmodium* species has infected a person?

Why is the uncertain taxonomy of Anopheles gambiae a challenge with malaria control?

Explain how the feeding preferences of a vector affect disease transmission rates.

What role does the sylvan cycle of pathogens play in human diseases?

What is transovarial transmission and why is it important in disease management?

How is plague affected by rodent populations? What factors favor the transfer of the pathogen to humans?

How do the changes of an exposed corpse affect the insect fauna that feed on the flesh? What insects appear at each stage of decay?

Is forensic entomology an exact science? What factors can confound estimates of the time of death?

## **Case Studies**

Case study 1

Which disease do you think Mrs. Bush has? Why? What symptoms is she exhibiting (see points)?

Case study 2 Which disease do you think Mr. Muschamp has? Why? What are his symptoms? Where had he been travelling? Case study 3 Which disease do you think Mr. Rivera has? Why? Where had he been travelling?

Case Study Answers can be found on the conclusion slide.

This is the last unit. Good luck on the final exam and have a great break!