THE INSECT WORLD: HIDDEN LIVES IN CENTRAL ILLINOIS

FACILITATOR

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Session 4 Questions – if you don't have the book, there is a WWW

Chapter 7: Reproduction

Insects utilize an incredible array of sensory signals—including chemical pheromones, auditory vibrations, and visual light displays—to locate and choose mates in dense environments. When observing insects in central Illinois, what are some distinct behaviors or physiological adaptations you have observed that signal a readiness to mate? Think of one specific insect order (e.g., Coleoptera, Odonata, or Orthoptera) and explain how its environmental niche influences its primary courtship method.

Chapter 7 explores the concept of parthenogenesis (asexual reproduction where offspring develop from unfertilized eggs) alongside traditional sexual reproduction. From an evolutionary perspective, what are the distinct advantages and trade-offs of using parthenogenesis (as seen in insects like aphids or some stick insects) versus sexual reproduction? How does an insect's ability to switch between these strategies throughout a single season affect its population dynamics and impact on local plant communities?

Chapter 8: Eggs and Larvae

How does the physiological transition from incomplete (hemimetabolous) to complete (holometabolous) metamorphosis alter an insect species' ecological vulnerability and resource competition? When observing local insects, look at a hemimetabolous species (like a dragonfly nymph and adult) versus a holometabolous species (like a caterpillar and butterfly). Compare how their distinct life stages utilize resources in the same habitat. What are the evolutionary advantages and survival risks of having larvae and adults that occupy completely different ecological niches versus sharing the same environment?

Chapter 9: Metamorphosis

Many insect species exhibit wing dimorphism or polymorphism (where individuals within the same species have fully developed wings, stunted wings, or no wings at all). What ecological pressures and resource trade-offs drive a population to retain flightless individuals alongside capable flyers?