

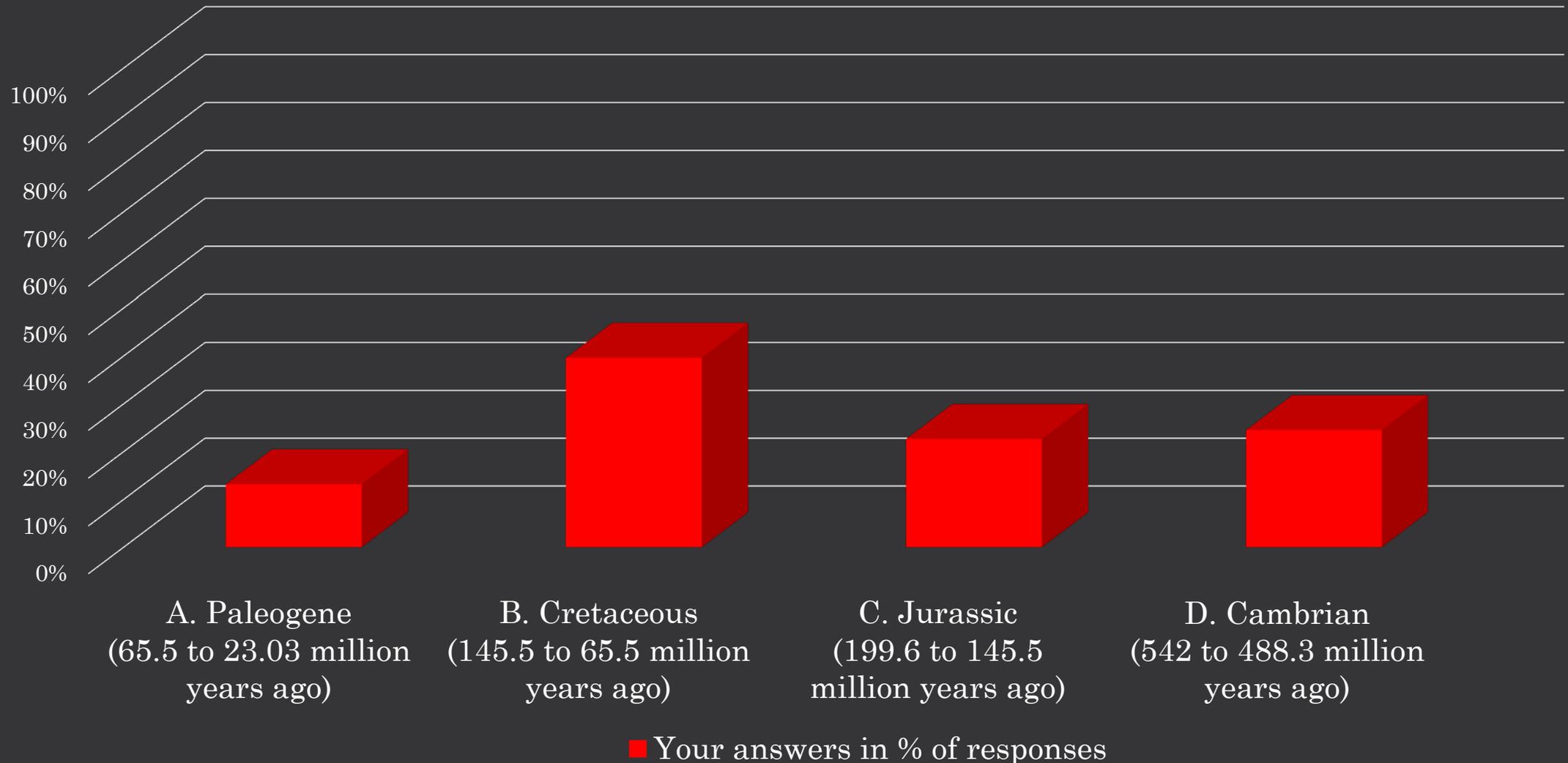
2019 Talking Science Trivia Poll

Let's See What You Ant-swered!

January 12, 2019

Poll Results:

According to a 2006 genetic analysis, ants first arose in what geological time period?



Correct Answer: B) Cretaceous

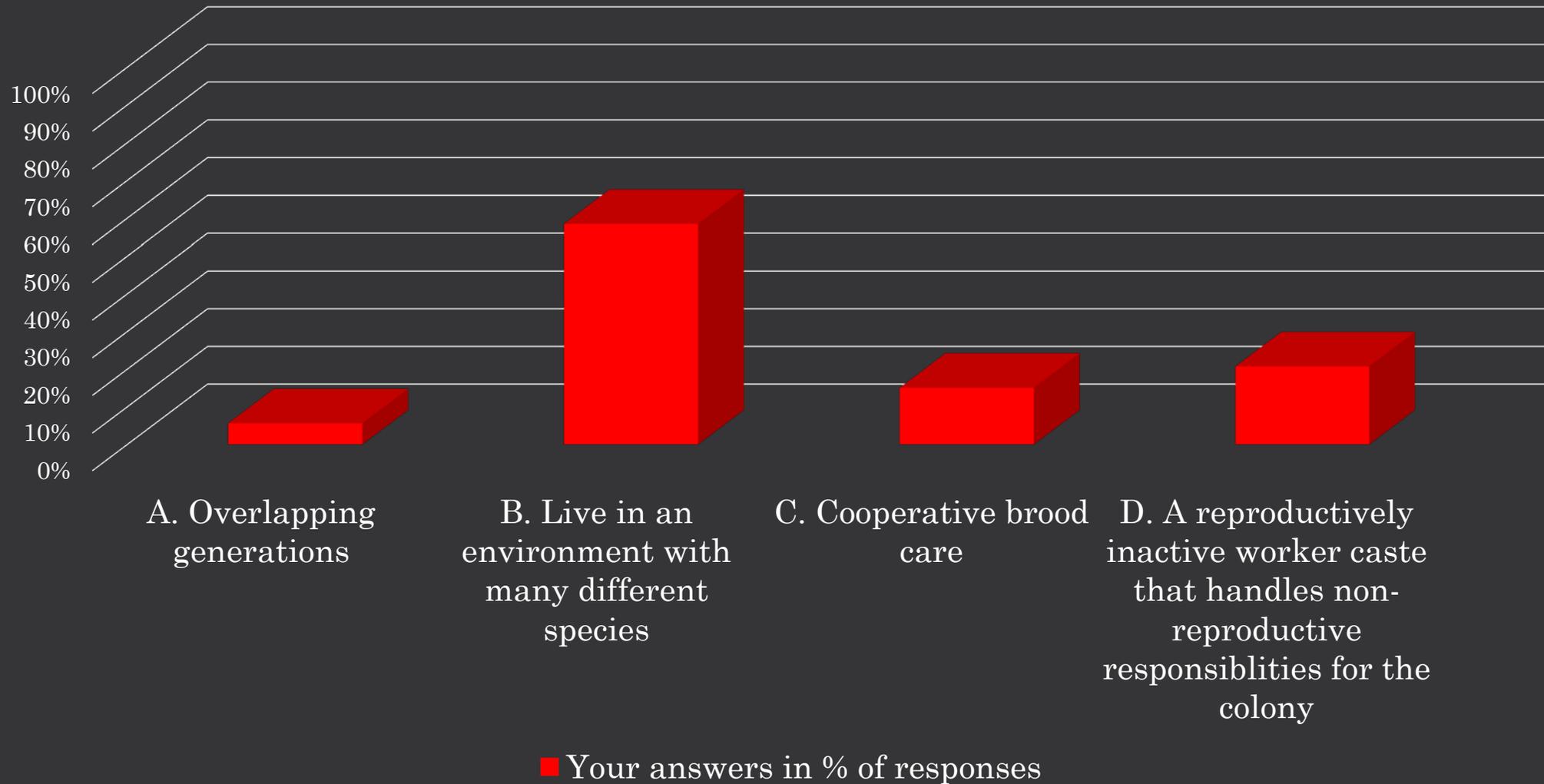


Photo Credit: WANG Bo

- Many modern insects began to arise during this time period, like grasshoppers, butterflies, and bees
- This was the last of the “Age of Dinosaurs,” as this period ended with their mass extinction
- With the threat of dinosaurs gone, many modern species, especially mammals and birds, rapidly expanded in number

Poll Results:

Ants are eusocial, the highest form of sociality among insects.
Which of these is not a characteristic of eusocial insects?



Correct Answer: B) Live in a environment with many different species

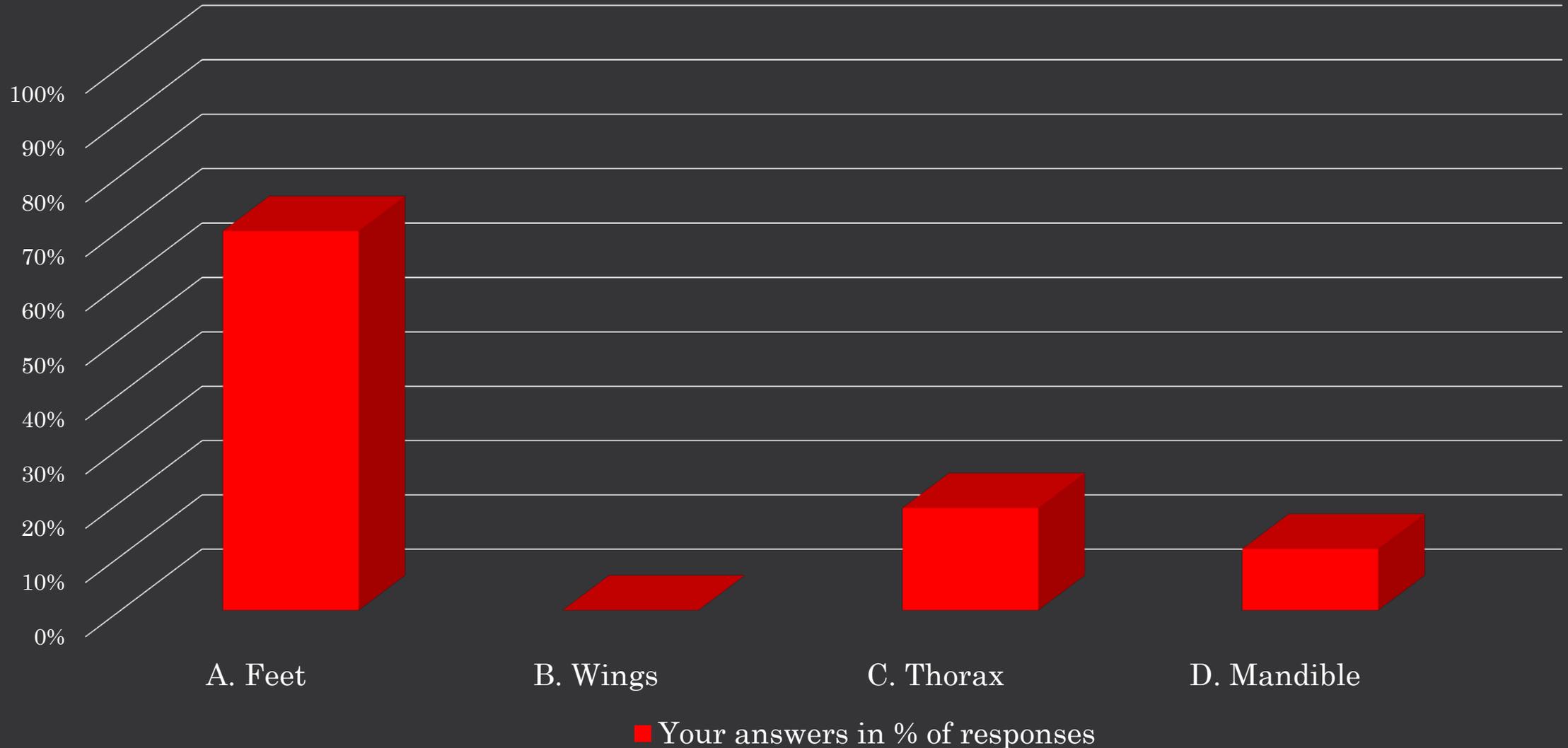


Photo Credit: Pavel Krásenský

- In eusocial species, the social behavior is more complex than in other animals
- A small number of the colony take care of reproduction and the rest are responsible for all other work
- This division of labor allows the whole group of insects to thrive where they otherwise would not be able to survive on their own

Poll Results:

While ants do not have ears, they can sense vibrations around them using what body part?



Correct Answer: A) Feet

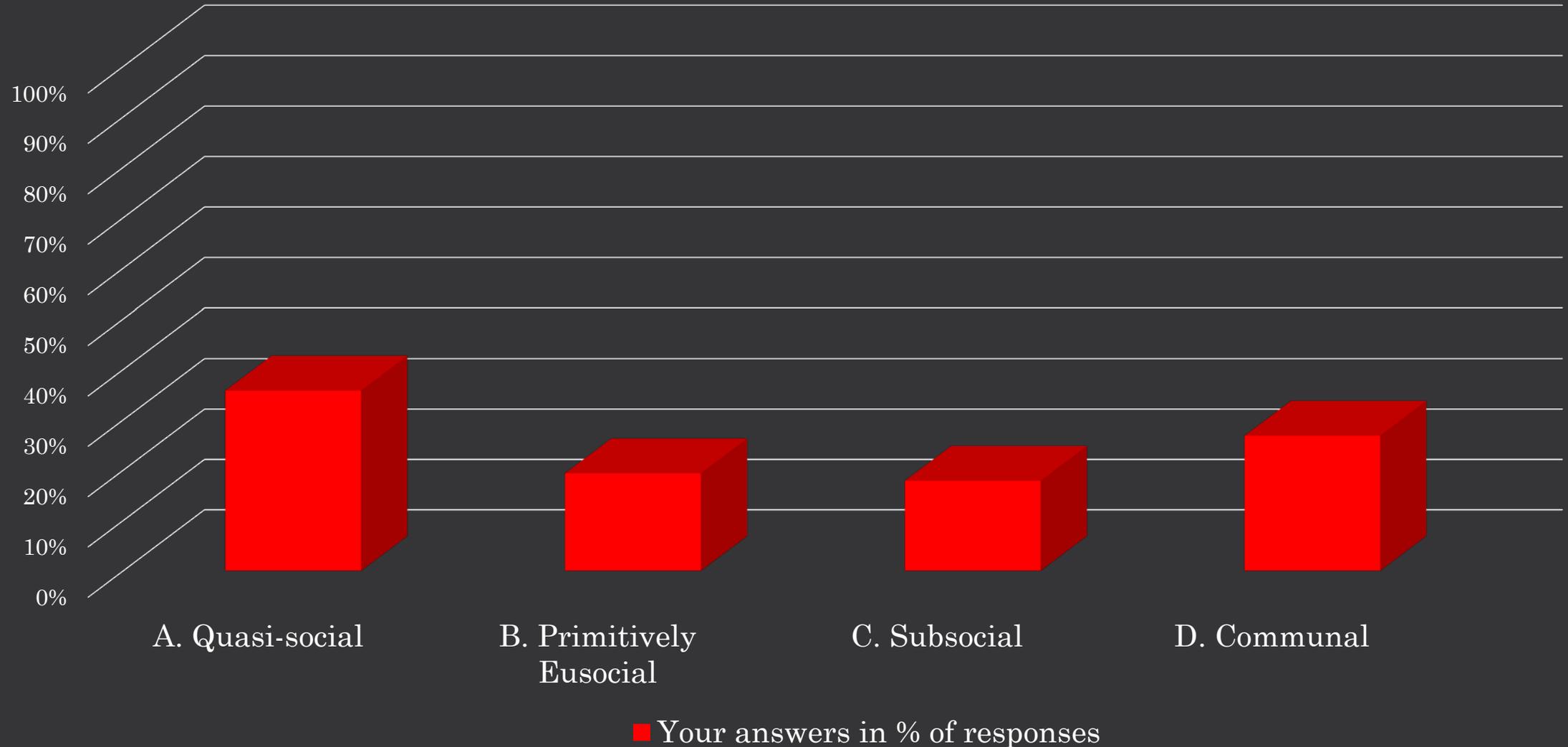


Photo Credit: Nanogigapan

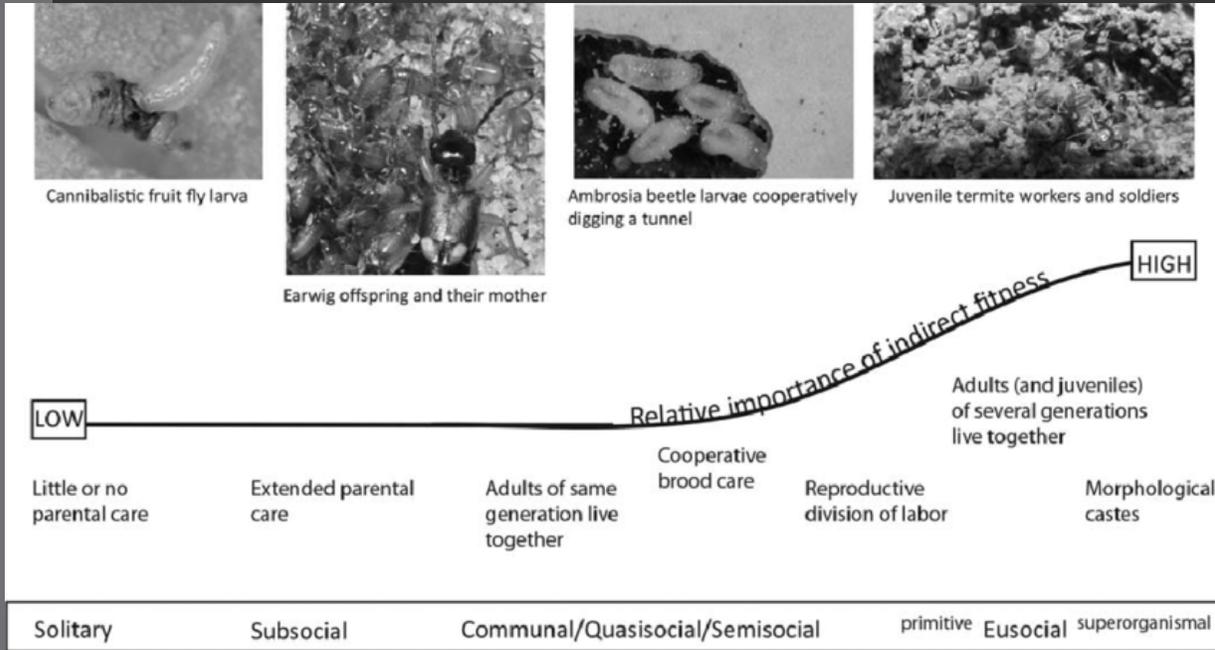
- Ants' feet can sense vibrations in the ground, allowing them to feel other organisms moving nearby
- Ants can make vibrations to communicate with other members of the colony

Poll Results:

Some insect species share a nest site but do not share in caring for offspring. These types of insects are called _____ insects.



Correct Answer: D) Communal

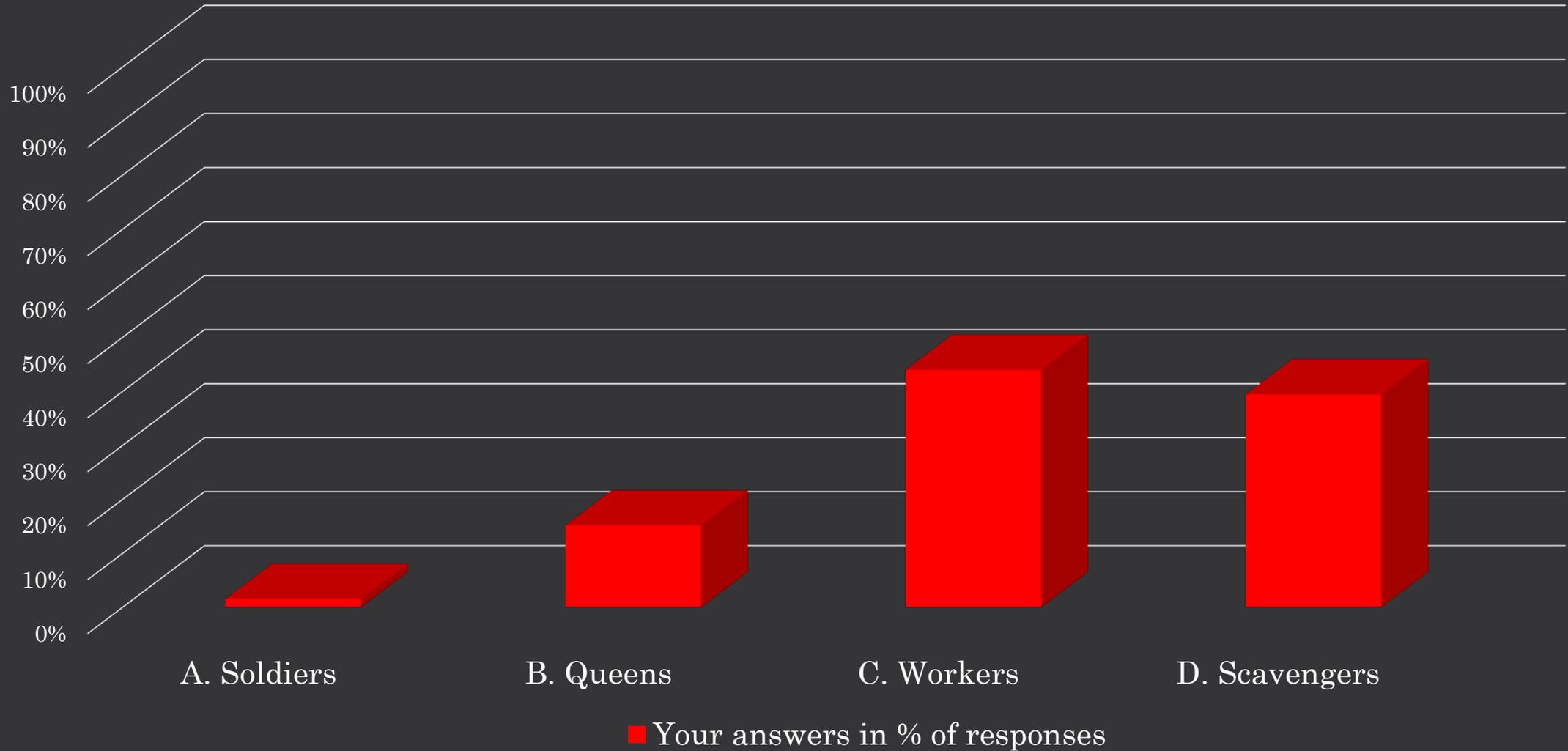


- Communal species only assist each other in building a nest site, not in any kind of child rearing
- This separates them from less social species where adults and offspring do not always cohabit

Photo Credit: Eva Schultner

Poll Results:

In termite colonies, which caste handles feeding all other members of the colony?



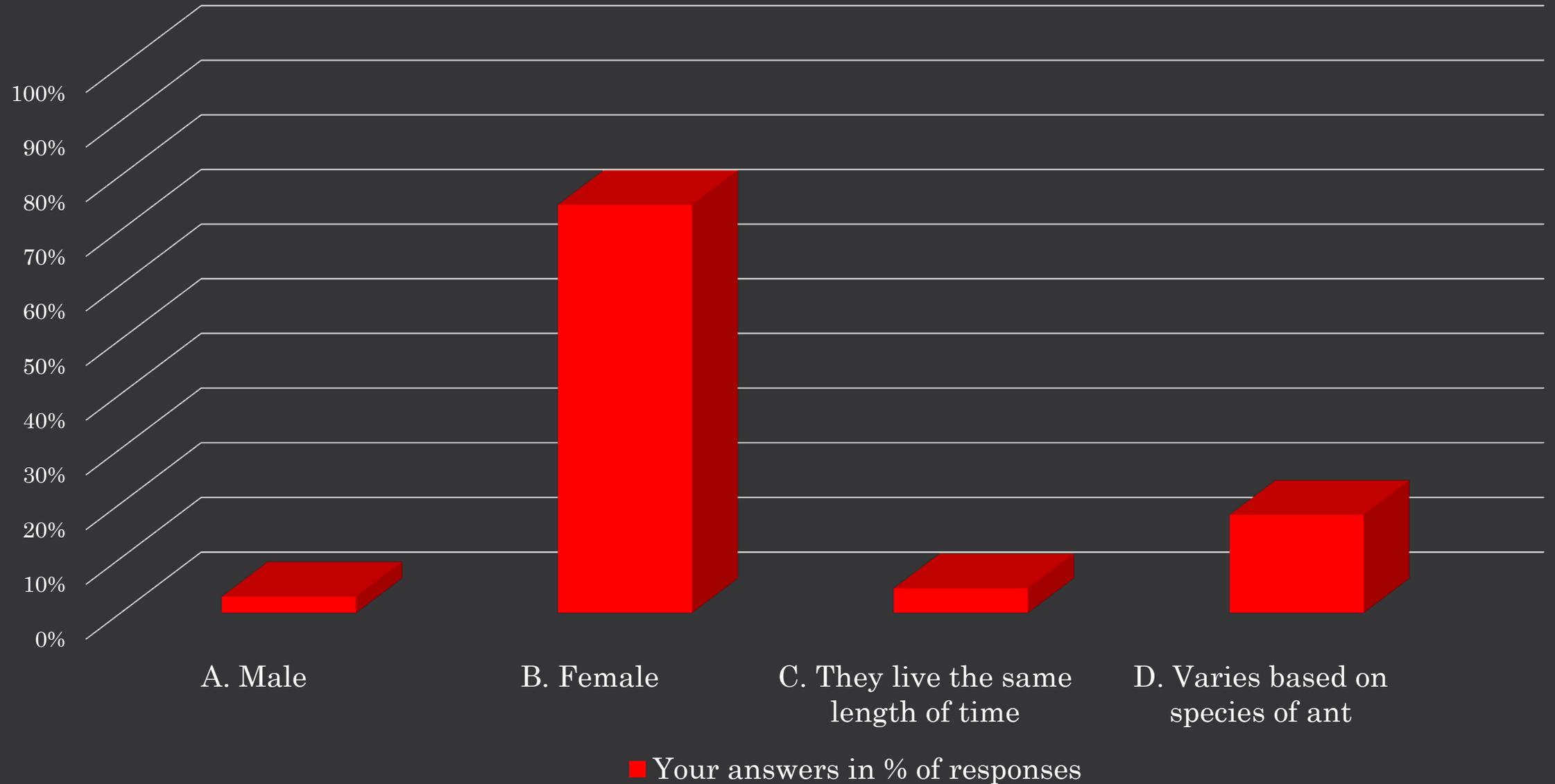
Correct Answer: C) Workers



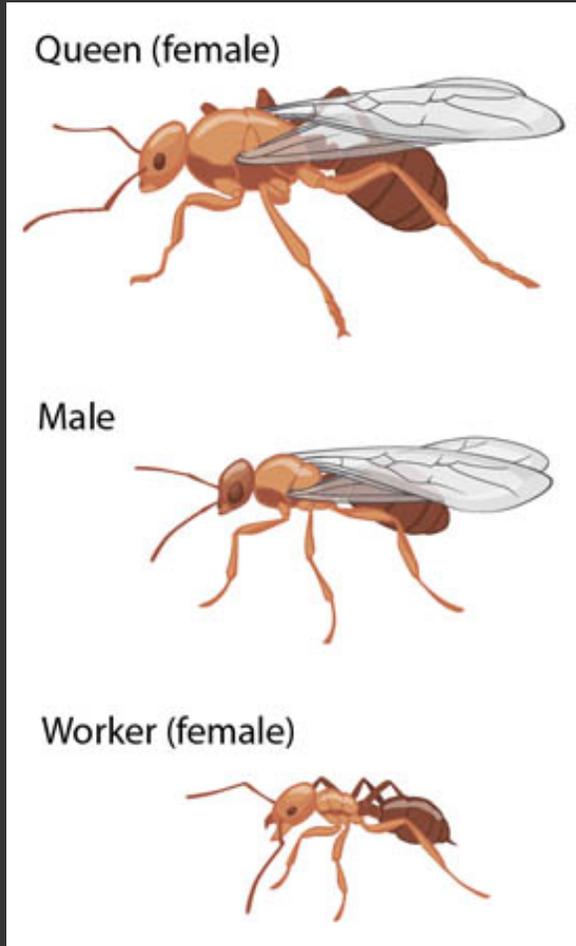
- Termite workers are adults, but they are smaller than their king or queen
- They also build and maintain mud tubes and nests for termite colonies
- Termite workers can be male or female

Poll Results:

Which biological sex of ant lives longer?



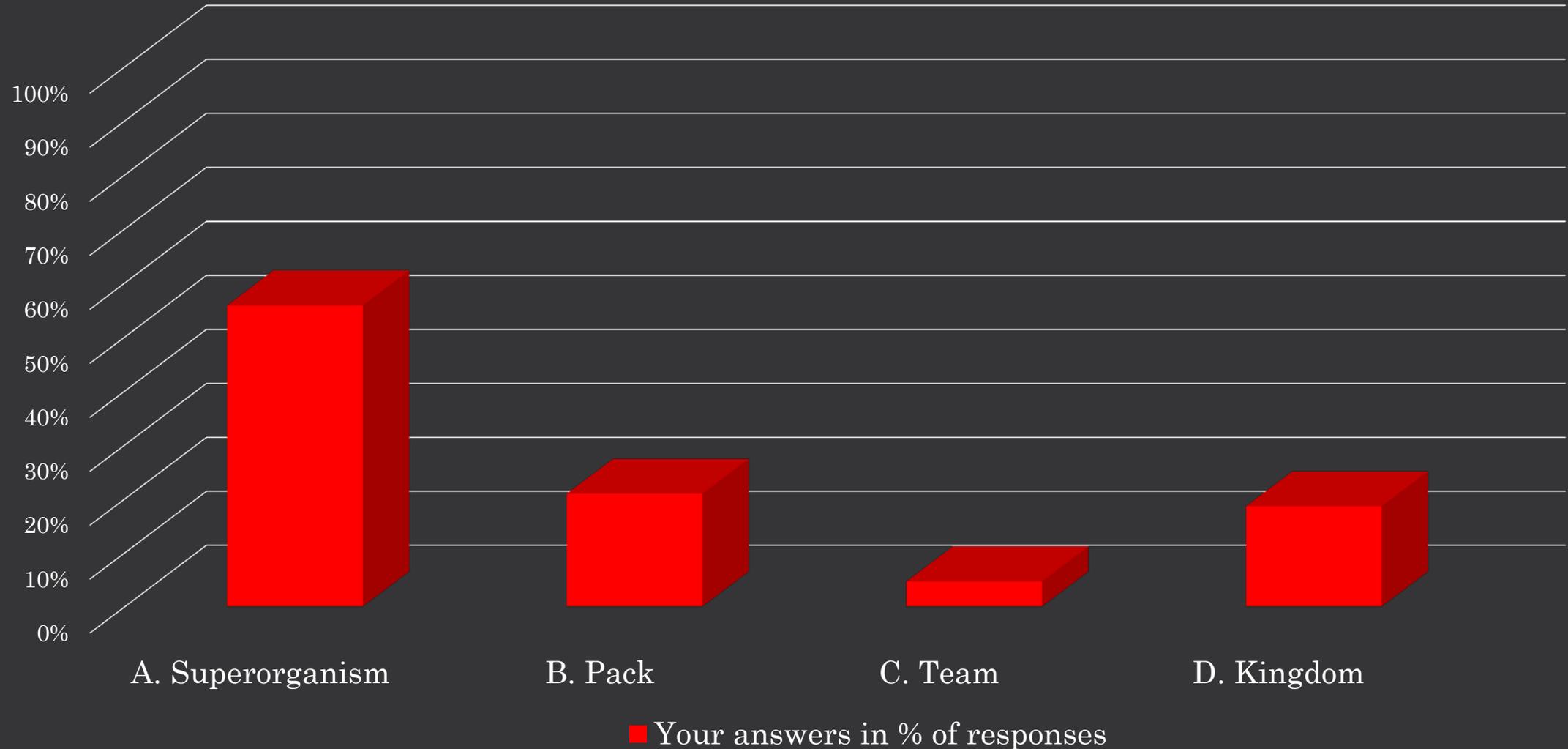
Correct Answer: B) Female



- Male ants only live for a few weeks
- Female worker ants typically survive for several months and queens can live for decades
- Males do not do any work in the nest. They have wings and fly to mate with queens before they die.

Poll Results:

When an entire colony of insects work together to survive, grow, and reproduce, the group is called a _____



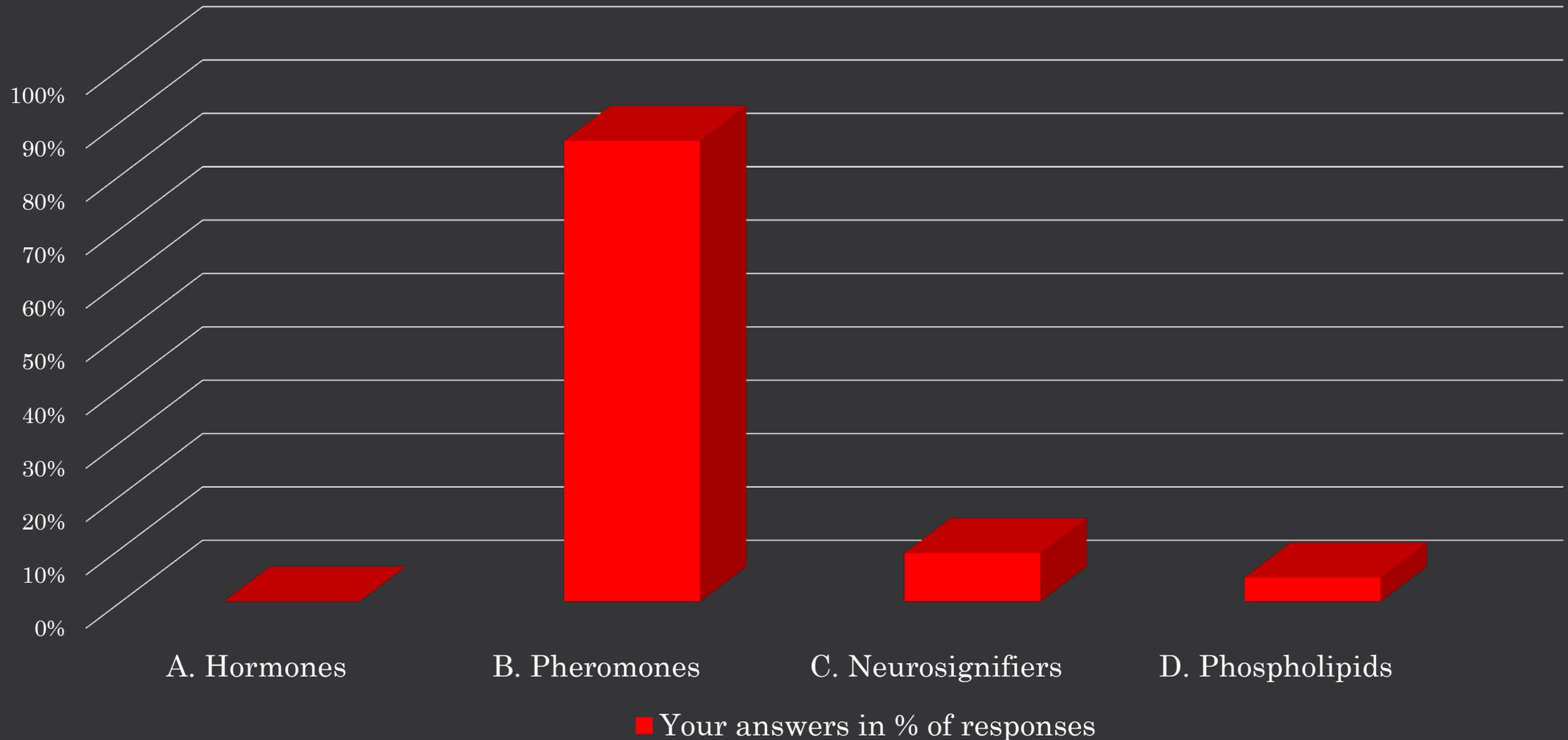
Correct Answer: A) Superorganism



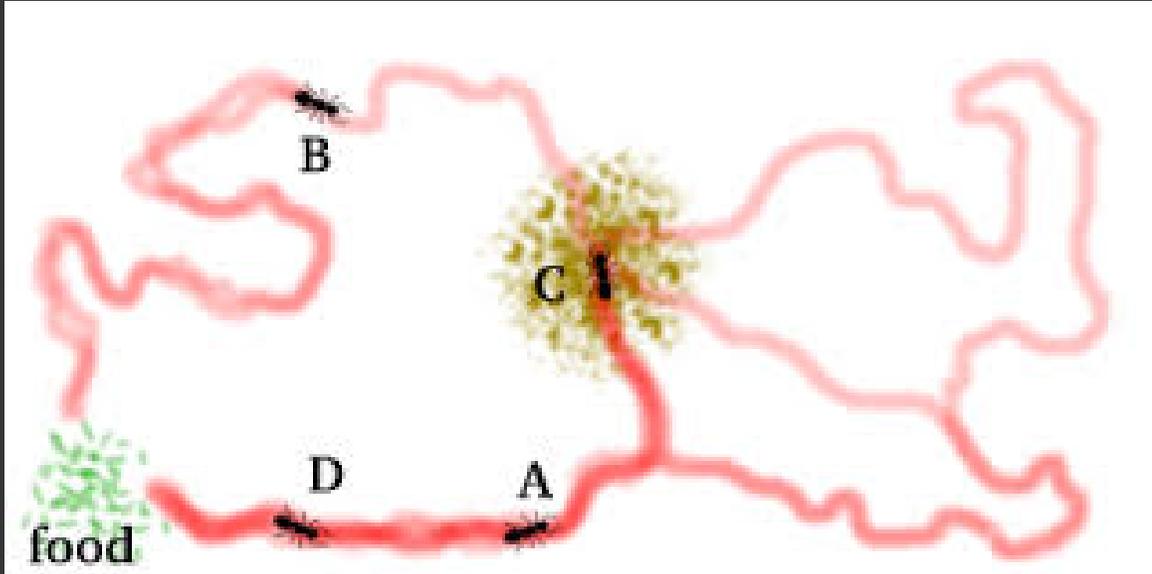
- Superorganism is the name for a unit of eusocial animals
- The word was first coined by James Hutton about the Earth itself, describing all its elements working together to sustain life on the planet
- Because eusocial animals work so much in concert and likely cannot survive individually for extended periods, their actions are often described as a unit (“superorganism”) instead of as many individuals

Poll Results:

Worker ants are able to communicate with each other by sending out chemicals called what?



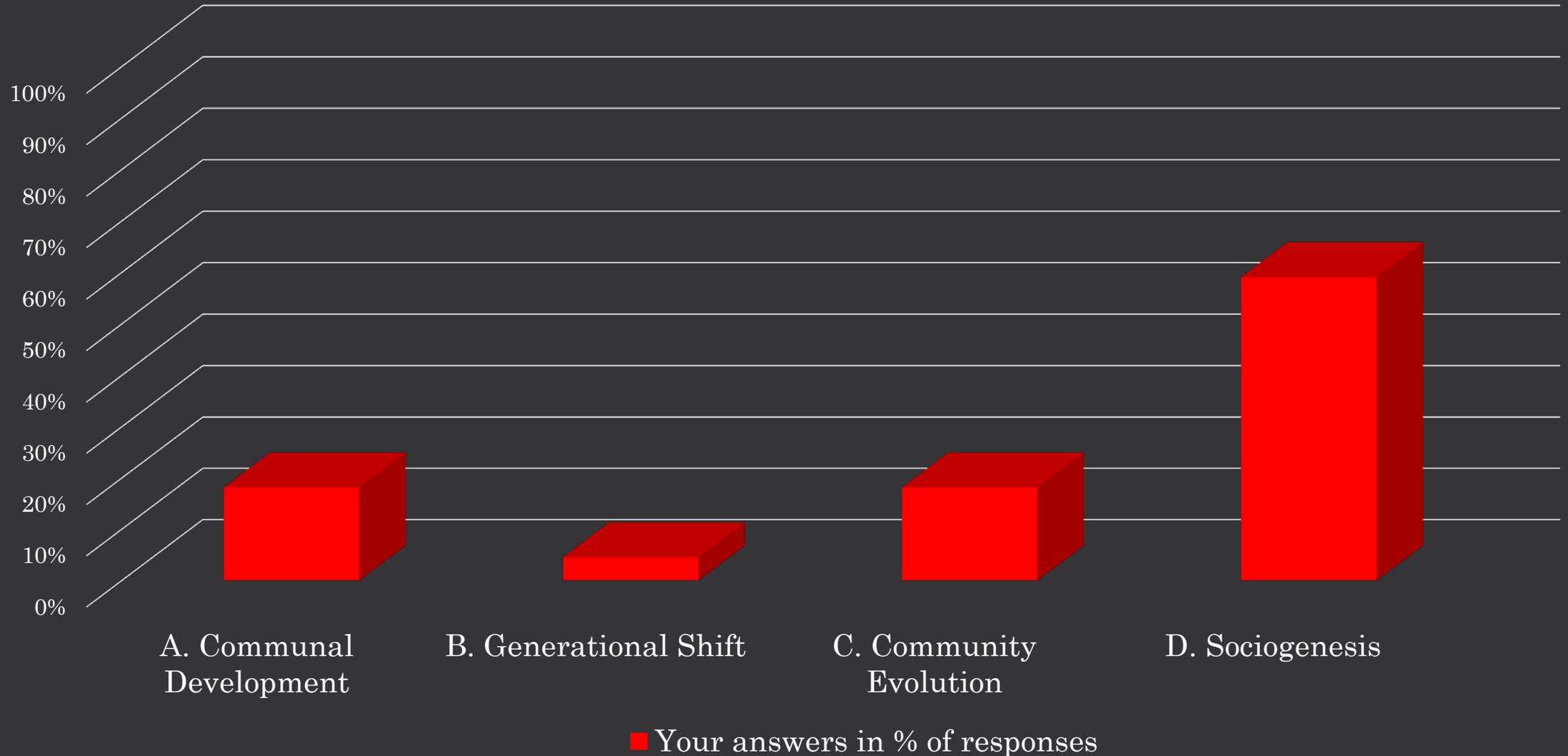
Correct Answer: B) Pheromones



- Pheromones are chemical substances released into the environment by animals as a way to communicate
- When worker ants find food sources, they can leave a pheromone trail so that other workers can find their way to it
- Pheromones can also be used to signal danger or by queens to attract males to them

Poll Results:

What scientific term is used to describe the development of social organization among insects?



Correct Answer: D) Sociogenesis

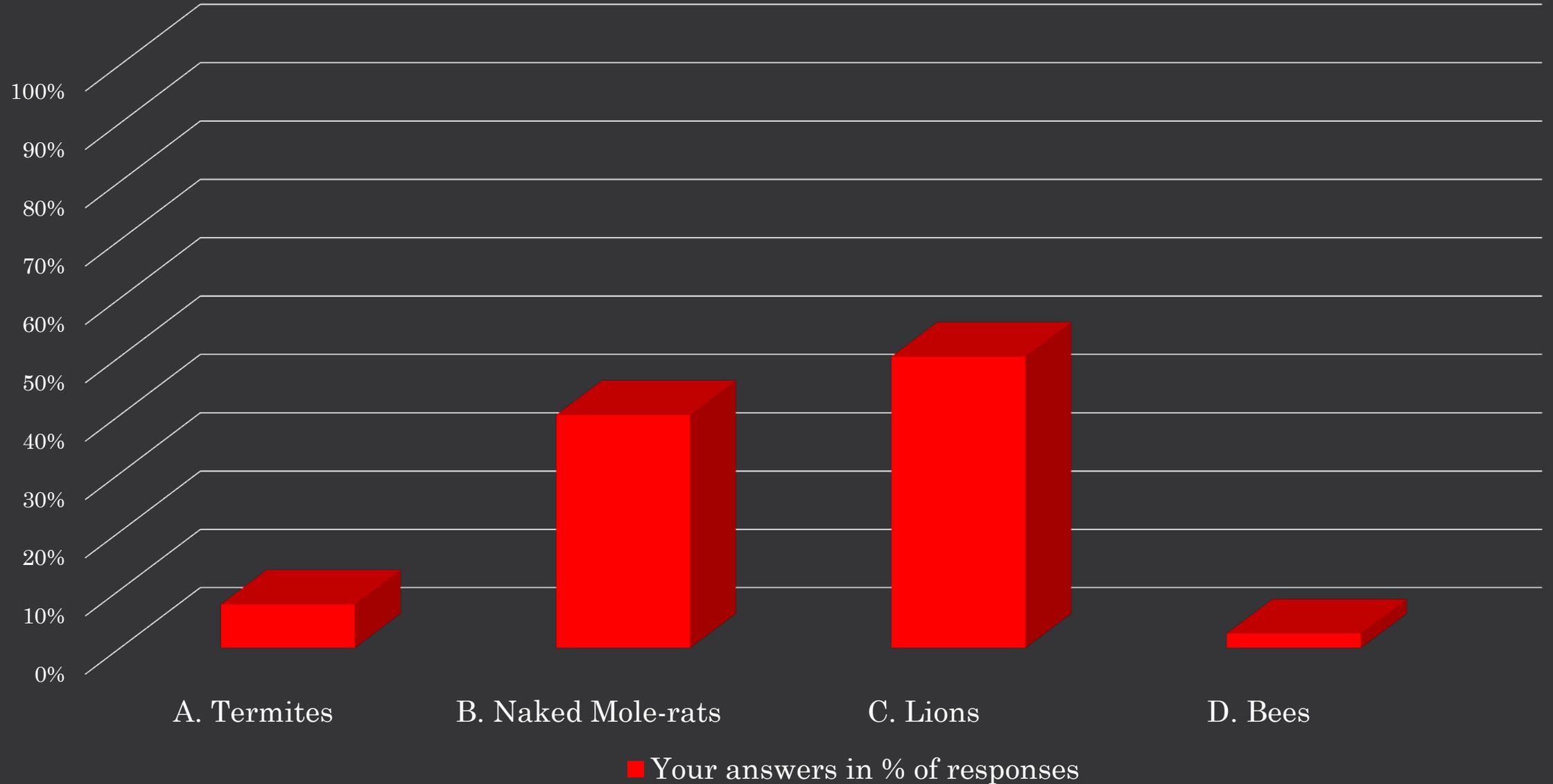


Photo Credit: Melanie Couture and Dominic Ouellette

- Sociogenesis is the process by which colony members undergo changes in caste, behavior, and physical location due to colonial development
- Colonies of social animals change over time in response to environmental factors and the needs of the colony
- Workers in ant colonies, over time, start to differentiate in duties. Larger worker ants can pick up bigger food and better defend the colony, while smaller worker ants can tend to larvae and handle smaller food

Poll Results:

Which of these animals is not eusocial?



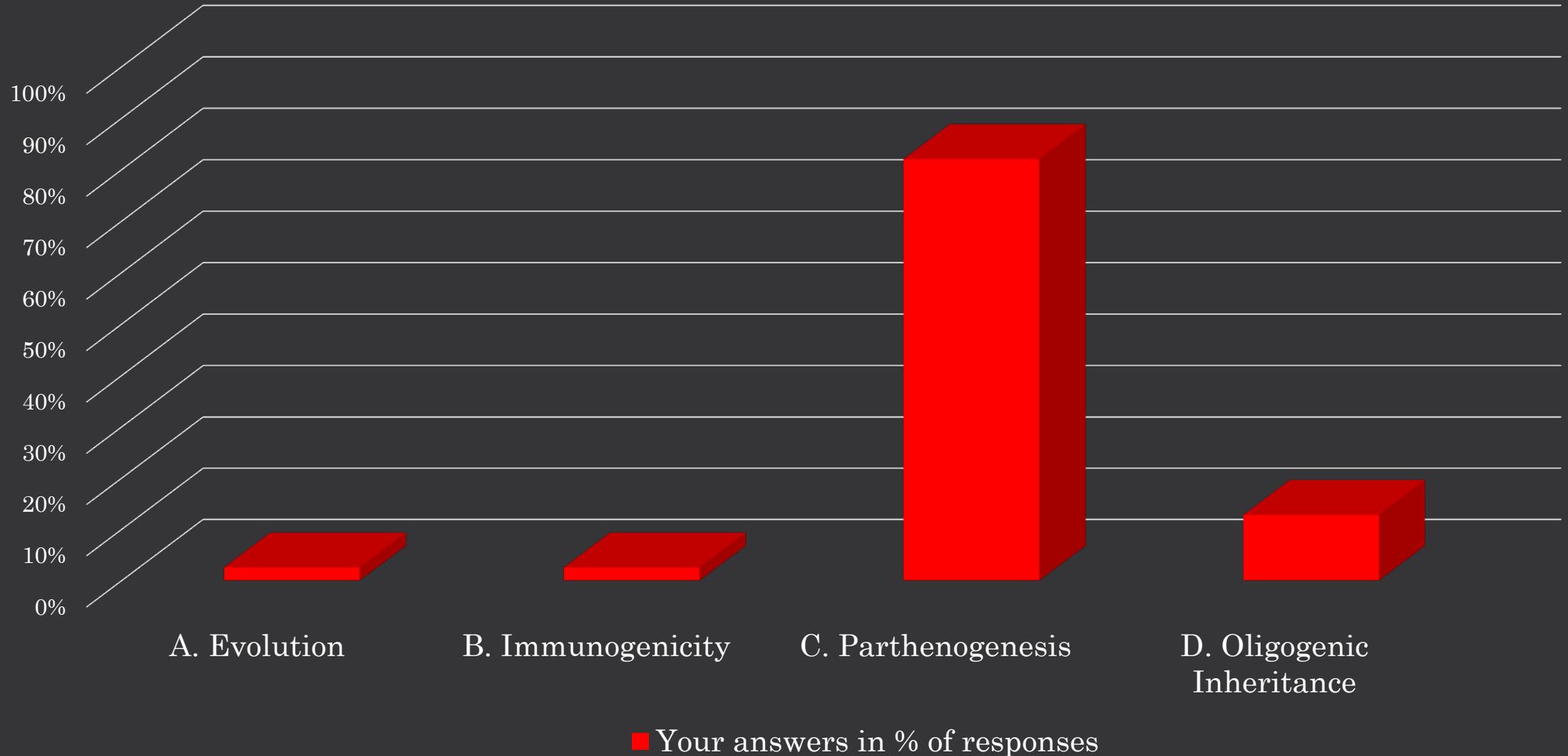
Correct Answer: C) Lions



- Termites, naked mole-rats, and bees are all eusocial animals
- While lions do take care of their young and travel in groups called prides, they do not have distinct caste systems, division of labor in reproduction, or overlapping adult generations
- Lions also do not have any single reproductive queen

Poll Results:

Embryos of clonal raider ants grow and develop without fertilization. This process is called _____.



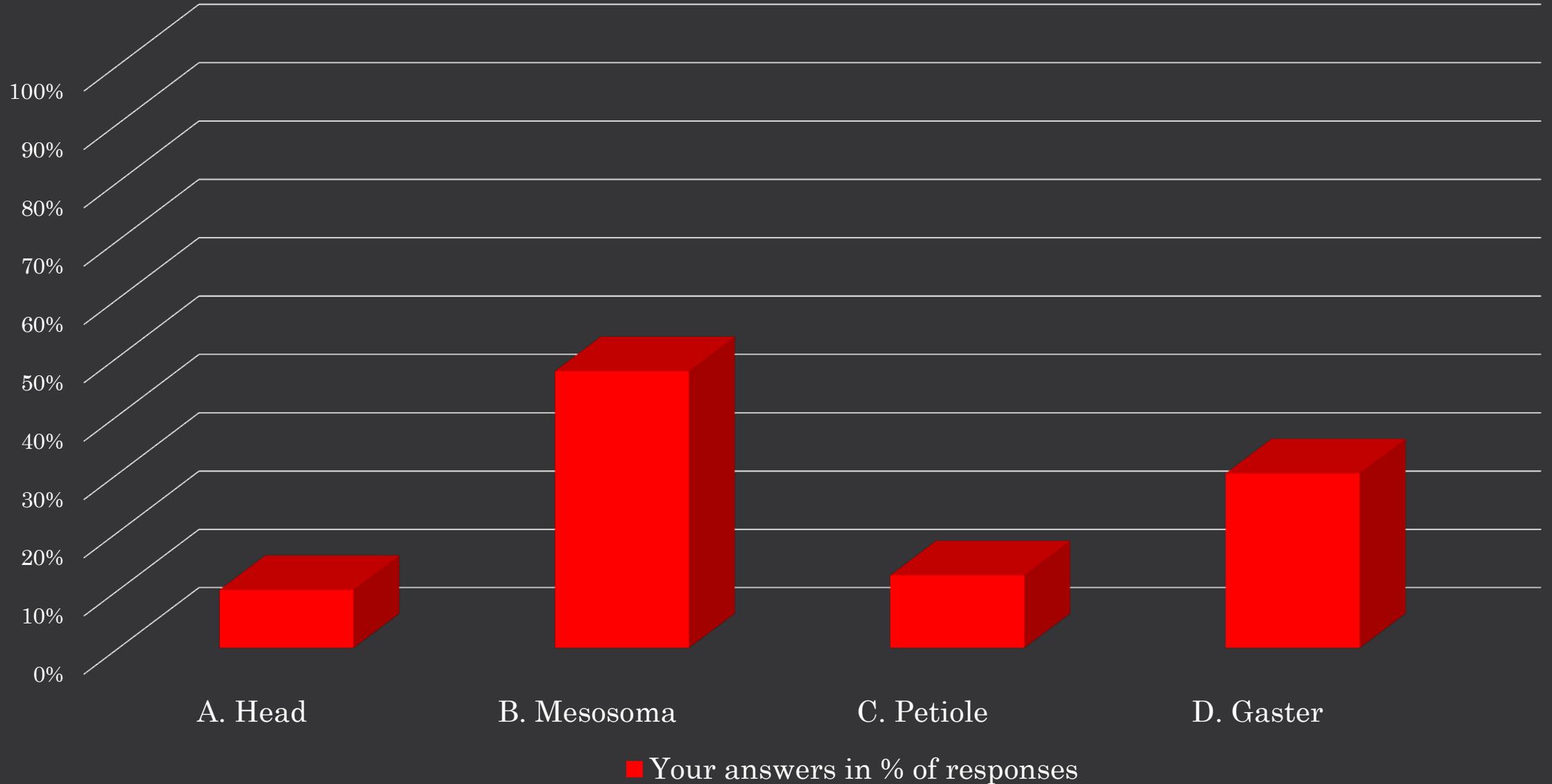
Correct Answer: C) Parthenogenesis



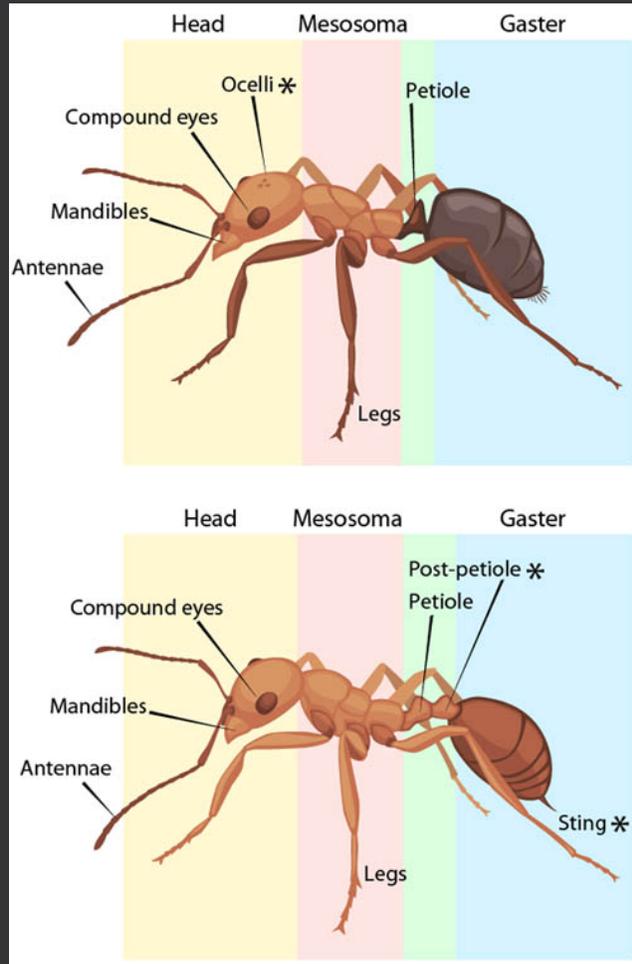
- Parthenogenesis is a type of asexual reproduction in which a female gamete, or egg cell, develops into an individual without fertilization from a sperm
- Because there is no sperm involved, it almost always produces females, though males can happen sporadically
- The Kronauer lab here at Rockefeller mainly studies clonal raider ants

Poll Results:

In what segment of an ant's body would you find the heart?



Correct Answer: D) Gaster



- The gaster is the back section of the ant, furthest from its head
- It contains the ant's heart, digestive system, and “chemical weaponry”
- The “chemical weaponry” can include a stinger at the end to inject venom into enemies or an opening at the end of the gaster to spray acid