

CHAPTER 28 ARTHROPODS AND ECHINODERMS SECTION REVIEW 1

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What adaptation in the exoskeleton of terrestrial arthropods prevents water loss? In most terrestrial arthropods, such as insects and spiders, the epicuticle contains waxes that aid in reducing evaporative water loss.

How does a spider use the two modified appendages near its mouth for feeding? The first pair of appendages, called chelicerae (chih LIH suh ree), is located near the mouth. Chelicerae are often modified into pincers or fangs. Pincers are used to hold food, and fangs inject prey with poison.

How has the number of body segments in arthropods changed during the course of evolution? This early body plan was modified gradually. Body segments were lost or fused over time. Most living arthropods, such as spiders and insects, have only two or three body segments. Arthropod appendages also evolved into different forms that have different functions.

What is a tough external covering of the body? An exoskeleton is a hard, protective covering located on the exterior of an animal.

What prevents water loss in arthropods? The arthropod exoskeleton consists of several layers of cuticle. The exoskeleton prevents water loss and gives support and protection. It also acts as a counterforce for the contraction of muscles.

What adaptations to the exoskeleton allowed arthropods to leave the water and live on land? Answer and Explanation: An exoskeleton helps arthropods live on land by giving them structural support for their bodies. On arthropods, the exoskeleton is connected to the muscles of the body similarly to how muscles attach

to bones in animals with endoskeletons.

Do spiders feel pain? There is evidence consistent with the idea of pain in crustaceans, insects and, to a lesser extent, spiders. There is little evidence of pain in millipedes, centipedes, scorpions, and horseshoe crabs but there have been few investigations of these groups.

How do some spiders deal with prey that they cannot physically tear apart using their chelicerae? In species that do not have chelicerae strong enough to masticate their prey, they usually secrete digestive enzymes to carry out external digestion. Once the prey has been sufficiently liquefied, the spider can then feed by sucking the liquid into its mouth.

What is the process of dramatically changing form at different stages of life in arthropods called? Metamorphosis refers to a major change of form or structure during development. One of the most dramatic forms of metamorphosis is the change from the immature insect into the adult form.

What is the advantage of having jointed appendages? Jointed appendages allow the animal much greater flexibility and range of movement. Imagine walking without bending your knees. It would be possible but very awkward and inefficient. Diagrams of uniramous and biramous arthropod limbs are shown in Figure below.

What are two ways the legs of arthropods are adapted for different purposes? Bees have legs adapted for carrying pollen. Lice have legs adapted for grasping hair. A centipede's first pair of legs is modified into large poison fangs. Many spiders have legs well-suited to grasping delicate webs.

What are the advantages and disadvantages of going through the process of molting? For arthropods, molting is both a vital and vulnerable time. Advantage: Ecdysis helps in the regeneration of damaged tissue. Also, missing limbs regenerate or re-form through the ecdysis process. Disadvantage: During ecdysis, arthropods' bodies are soft, making them highly vulnerable.

What do most arthropods have tough outer body covering called? Final answer: The body of arthropods is covered by a hard outer covering called exoskeleton.

What is an exoskeleton made of? Insects have exoskeletons made of a substance called chitin. The exoskeletons of crabs, lobsters, shrimp, spiders, ticks, mites, scorpions, and related animals are also made of chitin. While exoskeletons are hard and stiff, they also have joints, or bendable sections. These joints allow the animals to move easily.

What is a hard skeleton on the outside of the body called? Exoskeleton. An exoskeleton is an external skeleton that consists of a hard encasement on the surface of an organism. For example, the shells of crabs and insects are exoskeletons (Figure 38.1).

What is the adaptation of exoskeleton in arthropods? Arthropods' muscles attach to the inside of their exoskeleton. Their jointed, segmented bodies with muscles attached to the exoskeleton give them the ability to move about their environment, capture prey, eat, and mate. A crab is an arthropod because it has an exoskeleton, jointed appendages, and bilateral symmetry.

What are the adaptations of terrestrial arthropods? The phylum also includes spiders, centipedes, and crustaceans. The arthropod body consists of three segments with a hard exoskeleton and jointed appendages. Terrestrial arthropods have adaptations for life on land, such as trachea or book lungs for breathing air. The earliest arthropods were trilobites.

Do exoskeletons prevent water loss? The arthropod exoskeleton is an important mechanism for control of water loss. Larger, more heavily sclerotized arthropods are less susceptible to desiccation than are smaller, more delicate species (Alstad et al., 1982; Kharboutli and Mack, 1993). Nevertheless, many insects are vulnerable to dehydration.

Which structure helps terrestrial arthropods maintain water balance? Not dissolving wastes in water helps these organisms to conserve water; this is especially important for life in dry environments. Malpighian tubules of insects and other terrestrial arthropods remove nitrogenous wastes and other solutes from the hemolymph.

The Steroid Bible: A Q&A Guide

What are steroids?

Steroids are synthetic substances similar to the male hormone testosterone. They promote muscle growth, reduce inflammation, and increase strength. However, they can also have severe side effects such as liver damage, heart disease, and mood swings.

Why do people use steroids?

People use steroids to improve athletic performance or enhance their physical appearance. Athletes may use them to increase muscle mass and strength, while bodybuilders use them to develop larger, more defined muscles.

Are steroids safe?

No, steroids are not safe. The risks associated with steroid use outweigh the potential benefits. Side effects can range from mild to severe and can include liver damage, heart disease, mood swings, acne, and gynecomastia (breast enlargement in men).

How can I avoid the risks of steroid use?

The best way to avoid the risks of steroid use is to not use them. If you are considering using steroids, talk to your doctor first. They can help you weigh the risks and benefits and decide if steroids are right for you.

Where can I get more information about steroids?

There are many resources available to learn more about steroids. The National Institute on Drug Abuse (NIDA) has a website with information on steroids, their side effects, and how to get help. You can also talk to your doctor or pharmacist.

The People of Paper: A Literary Exploration by Salvador Plascencia

Q: Who wrote the novel "The People of Paper"? A: Salvador Plascencia

Q: What is the novel's significance? A: It is a highly acclaimed work that explores themes of identity, race, and immigration in contemporary America.

Q: What is the plot of the novel? A: It follows the intertwined lives of three characters: a Mexican-American writer, a white suburban family, and a group of undocumented immigrants.

Q: What are some of the novel's most notable literary devices? A: Plascencia employs experimental narrative techniques, such as fragmented storytelling, multiple perspectives, and metafiction, to challenge conventional notions of identity and history.

Q: What is the novel's legacy? A: "The People of Paper" has received critical praise for its innovative storytelling and its insights into the complex social and racial dynamics of American society. It has solidified Plascencia's reputation as a significant voice in contemporary American literature, known for its powerful and thought-provoking works.

The Road to Jerusalem: Unveiling the Knight Templar's Secret Path

1. What is "The Road to Jerusalem"?

"The Road to Jerusalem" is a thrilling historical mystery novel by renowned Swedish author Jan Guillou. Set in the 14th century, it follows the journey of Arn Magnusson, a young knight from Sweden, as he embarks on a dangerous pilgrimage to the Holy Land. Along the way, he uncovers a secret society and a conspiracy that threatens the very fabric of Christendom.

2. Who are the Knight Templars?

The Knight Templars were a legendary order of warrior-monks founded in the 12th century. Their main mission was to protect Christian pilgrims traveling to the Holy Land. They were known for their courage, piety, and secrecy, and their enigmatic legacy has inspired countless tales and legends.

3. What is the significance of the year 1?

The novel is set in the year 1300, a time of great turmoil and transition in Europe. The Crusades were winding down, and the papacy was in decline. It was a period when old beliefs and institutions were being challenged, and new ideas were

emerging.

4. What is the secret that Arn discovers?

As Arn progresses on his pilgrimage, he encounters a group of secretive individuals who reveal to him the existence of an ancient and powerful organization known as the Order of the Holy Grail. This order is said to possess a sacred relic that could change the course of history.

5. How does this novel relate to the real world?

"The Road to Jerusalem" is a historical novel, but it also sheds light on contemporary issues. Jan Guillou explores themes such as religious extremism, the search for truth, and the consequences of blind faith. The novel serves as a reminder that the past can have a profound impact on the present, and that the pursuit of knowledge can be both dangerous and exhilarating.

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