California’s newly discovered cave creatures hold clues to monitoring changes in the environment.

Inside the dark, damp underground caves of two national parks in central California, scientists made an amazing discovery. They found 27 previously unknown species of spiders, centipedes, millipedes, and scorpion-like creatures. The scientists explored 34 of 238 known caves in Sequoia and Kings Canyon national parks over three years and recently released their findings.

The cave dwellers are all invertebrates, or animals without backbones. The discoveries included a tiny pill bug that is translucent, or almost clear. Its internal organs are visible—even its bright-yellow liver! There was also a daddy-longlegs with a jaw larger than its body, as well as a little, bright-orange spider. Some creatures were so tiny that scientists had to use the fine hairs of a paintbrush to collect them.

"We thought we might find a handful of new species," says Joel Despain, a cave expert for the parks. "It was amazing to find 27."

Cool Cave Mysteries

Why had the cave creatures gone undetected? Though it is rare to find unknown animal species on Earth’s surface, the same is not true for

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1 species: a group of animals that are the same kind with the same name
2 translucent: something that cannot be seen through but is clear enough to allow light to pass through it
caves. Like the deep sea, caves are difficult to reach and haven’t been explored as thoroughly as the Earth’s surface.

Discovering so many unknown species was thrilling for Jean Krejca. She is a scientist with Zara Environmental, the Texas-based group that led the project. "You get the feeling that you’re Lewis and Clark charting undiscovered territory," says Krejca. "Caves are one of the last frontiers."

Adapting to Cave Life

The creatures are unique, not only because they are found just in caves, but also because some are found in only a single cave or a specific part of a cave. "There are usually more creatures at the cave’s entrance because there is more food there," scientist Rob Myers of Zara Environmental told Weekly Reader. "The farther back in a cave, the more you find creatures have adapted to cave life. What you find is more and more strange. The creatures are often blind and have no pigment." Pigment is a substance that gives color.

A creature such as the pill bug, for example, doesn’t need pigment in its skin, because it doesn’t have to protect itself from the sun. And the daddy-longlegs probably developed such big jaws to quickly grab prey, which is scarce inside caves.

Classifying the Creatures

The next task is to name the new species. Specialists called taxonomists\(^3\) are working to classify and name the creatures.

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\(^3\) taxonomist: a scientist that groups plants and animals according to their natural relationships
Scientists will also study the new species to determine whether their populations are healthy. Cave animals can teach scientists a lot about the environment, because the creatures are sensitive to changes in the ecosystem. An ecosystem is a community of plants and animals that interacts with the environment. If cave creatures decline, it could signal problems or changes in the environment.

The recent discoveries have led park officials to plan to protect the caves and the newly found species. "Now that we know the species are there, we can use them to learn more about cave ecosystems and life on this planet," says Myers.

Exploring Caves

What do you call someone who explores and studies caves? A spelunker! "Caves are absolutely dark," Rob Myers of Zara Environmental told Weekly Reader. "They are darker than your bedroom gets at night. There is zero light in a cave, so you can’t see a hand in front of your face."

When a spelunker heads into a cave, he or she wears a helmet with a headlamp and carries an extra flashlight. The cave explorer also wears elbow pads and kneepads to crawl along the rocky floor. Many caves are underground, so the explorer slides down on ropes connected to special harnesses.

While there, a spelunker might see the magnificent cone-shaped formations of stalagmites (stuh-LAG-mights) and stalactites (stuh-LAK-tights). They form when water with calcium drips, and the mineral hardens and builds up over time.

Stalagmites rise from the ground. Stalactites resemble icicles and hang from a cave’s ceiling. When they meet, they form a column. What is an easy way to remember the difference between the words? Stalactite has a c for ceiling, and stalagmite has a g for ground.

4 stalagmites: a deposit of calcium on the floor of a cave caused by dripping water
5 stalactites: a deposit of calcium on the roof of a cave caused by dripping water
1. All of the following describe the tiny pill bug scientists discovered EXCEPT

A it is almost clear  
B it has a bright yellow liver  
C it has a backbone  
D its internal organs are visible

2. Read the following two sentences: “You get the feeling that you’re Lewis and Clark charting undiscovered territory,” says Krejca. ‘Caves are one of the last frontiers.”

Why might the author have included these sentences in the article?

A To describe the steps for how scientists explore caves.  
B To communicate the thrill of cave exploration.  
C To explain why Lewis and Clark became explorers.  
D To describe why some strange creatures live in caves.

3. As described in the article, why might spelunkers (cave explorers) wear so much gear?

A so they don’t disturb insects and other tiny cave creatures  
B to help them study stalagmite and stalactite formations  
C to be prepared in case they come across a big animal  
D so they stay safe and can see in the dark

4. Read the following sentence from the passage: “The next task is to name the species.”

In this sentence, the word task means

A bug  
B job  
C cave  
D scientist

5. Which statement best supports the main idea of this passage?

A Few creatures live in the back of caves.  
B New cave creatures were discovered.  
C The most unusual creatures are found toward the back of caves.  
D Exploring caves is dangerous work.
6. What are stalagmites and stalactites, and how do they form?

______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

7. Based on the article, do you think that creatures that live in the back of caves can survive outside caves? Why or why not? Cite specific examples from the story to explain your answer.

______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

_____ , scientists will study the new creatures to learn more about them.

   A  Previously
   B  Earlier
   C  Next
   D  Before
9. Answer the following questions based on the sentence below.

In California, scientists discovered 27 amazing new creatures over three years by exploring two underground caves.

Who? _________________________________________________________________

(did) What? discovered 27 amazing new creatures

When? __________________________________________________________________

Where? __________________________________________________________________

How? ___________________________________________________________________

10. **Vocabulary Word**: decline: to get smaller.

Use the vocabulary word in a sentence: ______________________________________
________________________________________________________________________
________________________________________________________________________
Teacher Guide and Answers

Passage Reading Level: Lexile 980

Featured Text Structure: Descriptive – the writer explains, defines, or illustrates a concept or topic

Passage Summary: “Creepy Cave Crawlers” describes the amazing discovery of 27 new creatures that scientists made while exploring underground caves in California’s Sequoia and Kings Canyon national parks. The passage looks at why the creatures had gone undetected, how they adapted to cave life, and what scientists can learn about the environment from them.

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   B it has a bright yellow liver
   C it has a backbone
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2. Read the following two sentences: “‘You get the feeling that you’re Lewis and Clark charting undiscovered territory,’ says Krejca. ‘Caves are one of the last frontiers.’”

   Why might the author have included these sentences in the article?
   A To describe the steps for how scientists explore caves.
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   C to be prepared in case they come across a big animal
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5. Which statement best supports the main idea of this passage?
   A Few creatures live in the back of caves.
   B New cave creatures were discovered.
   C The most unusual creatures are found toward the back of caves.
   D Exploring caves is dangerous work.
6. What are stalagmites and stalactites, and how do they form?

**Suggested answer:** Stalagmites and stalactites are cone-shaped formations found in caves. Stalagmites rise from the ground. Stalactites resemble icicles and hang from the cave’s ceiling. They form when water with calcium drips, and the mineral hardens and builds up over time. [paragraphs 13 and 14]

7. Based on the article, do you think that creatures that live in the back of caves can survive outside caves? Why or why not? Cite specific examples from the story to explain your answer.

**Suggested answer:** It is unlikely that creatures from the back of a cave can survive outside. In the passage, scientist Rob Myers explains that the farther back you go in a cave, the more you find creatures that have adapted to life in the cave. Many of those creatures are blind or have no pigment in their skin. They don’t need to see because it is pitch black. Some creatures, like the pill bug, don’t have pigment because they don’t need to protect themselves from the sun. If the pill bug went outside, it probably wouldn’t survive the sun’s rays. [paragraphs 6 and 7]

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

_____ scientists will study the new creatures to learn more about them.

A. Previously  
B. Earlier  
C. Next  
D. Before

9. Answer the following questions based on the sentence below.

In California, scientists discovered 27 amazing new creatures over three years by exploring two underground caves.

Who? **scientists**

(did) What? discovered 27 amazing new creatures

When? **over three years**

Where? **in California**

How? **by exploring two underground caves**

10. **Vocabulary Word:** decline: to get smaller.

Use the vocabulary word in a sentence: answers may vary.