

CLASSROOM ACTIVITY

Seeking Spiders: Biodiversity on a Different Scale

Recognizing the tiny species of any ecosystem is hugely important for defining its overall diversity. But miniscule forms of life are often invisible to conservation efforts because they have yet to be described in detail. Dr. Norman Platnick of the American Museum of Natural History is leading an important initiative to discover biodiversity on a smaller scale. Having devoted decades to the study of spiders, Dr. Platnick now leads a team of 45 investigators from 10 countries in the largest-ever research project on spiders, identifying members of the goblin spider family. This group of spiders is widely distributed but largely unknown, primarily due to their small size—at 1.2-3mm, they measure one-half to one-third the length of the average spider. This video follows Dr. Platnick's team into the Ecuadorian jungle as they collect and identify scores of unrecognized goblin spiders, showing how little we know about the full breadth of global biodiversity.

CLASS DISCUSSION

Establish Prior Knowledge

Call on students to share what they know about biodiversity. Elicit that biodiversity includes plants, animals, microorganisms, as well as the different ecosystems on Earth. Ask students why biodiversity is important. (*Answers may include: Biodiversity is important to ecosystems because each species has an important role to play. Species, including humans, depend on other species.*) Explain that in the video they are about to see students will learn about the work of one scientist who is leading an important initiative to discover and describe tiny goblin spiders, a little known family of spiders, in a remote area of Ecuador.

Exploration

Have students watch the video and take notes. Use the following questions to guide a class discussion.

- Why are goblin spiders largely unknown?
(*Answer: They are not well known because of their small size, which is 1/2 to 1/3 the length of an average spider.*)
- Why do biologists want to be able to identify even these very tiny species?
(*Answers may include: Larger known species make up only about 3% of the species on Earth. Biologists want to learn about these smaller species so that they are better positioned to conserve the most biodiversity as possible.*)
- How does the electron microscope help biologists identify species?
(*Answers may include: The microscope is able to enlarge the specimen so that every detail can be seen, and scientists can determine when they have a new species.*)
- Every species of goblin spider the team found in Ecuador turned out to be a new species. Why is finding these goblin spiders in that particular area of Ecuador and nowhere else significant?
(*Answers may include: It indicates that the area is an important one or save since it is home to a large number of species that may occur nowhere else on Earth.*)

Wrap-Up

Dr. Platnick stated, "Conservation decisions are always judgments. Obviously we can't save everything on the planet. We have a triage situation. We have to decide what is most important to save." What do you think is most important to save? Why? (*Responses will vary.*)