Part I — Reading Comprehension

Seeking Medical Secrets in the Rain Forest

by Jo Yohay

In the film Medicine Man, *Sean Connery found a cure for cancer in the rain forests of South America, only to be defeated in the end by clear-cutters who destroyed the forest. Some critics said this scenario was alarmist and fanciful. But now real-life scientists are in a race against time to identify and save medicinal plants in a rapidly disappearing ecosystem. Read about these medicine men and women in the following article from the April/May 1992 issue of* National Wildlife *magazine. Then answer the questions that follow.*

An old, wrinkled bush doctor sits in a tiny cinder-block clinic near the Macal River in Belize. A Mayan named Don Elijio, he tends his patients amid burlap sacks filled with medicinal herbs gathered from the surrounding rain forest. Reaching into a bag, he withdraws a handful of crackling leaves and begins preparing a mixture for a patient's lesion. From other bags he takes seeds, bark and twisted roots.

Two thousand miles away in Maryland, a National Cancer Institute (NCI) scientist scoops through samples of those same roots and leaves, getting ready to put them through a rigorous chemical analysis. But how did Don Elijio's dusty herbs get to this gleaming medical laboratory?

The answer is a story of scientists racing against time, in history's most extensive search for healing agents in wild plants. Native healers on three continents are a vital part of that quest, which has been launched by the NCI.

The number of plant-based medicines in use by physicians today barely hints at the untapped potential of nature's pharmacopeia. "Of more than 250,000 known plant species, less than 1 percent have been thoroughly tested for medical applications," says Michael Balick, director of the New York Botanical Garden's Institute of Economic Botany. "Yet out of this tiny portion have come 25 percent of our prescription medicines."

But if chemists had to collect and analyze tens of thousands of wild plants, they would never finish the task. Tropical deforestation ensures that many plant species will disappear before they can be identified, let alone tested, by science.

Part of NCI's strategy is to have ethnobotanists (scientists who study the relationship between plants and people) seek out plants that native healers have found effective as local medicines. Ethnobotanist Balick travels to Central American rain forests searching for bush doctors who appear to treat diseases successfully with specific herbs. Botanists from the University of Illinois and Missouri Botanical Garden do similar work for NCI elsewhere.

Balick collects plants recommended by healers in the form of seeds, leaves, bark, roots and stems. He sends samples to NCI scientists, who test extracts against cancer cells and the AIDS virus. Plants with promise are tried in experiments with mice. Several years into the process, some may end up in human drug trials.

Skeptics argue that native lore is mere superstition. But Balick says, "The traditional lore of Central America is built on more than 200 generations of trial and error experimentation with local plants. A very specific pharmacopeia has been developed and been refined into an advanced system of medicine."

A number of today's drugs have long been part of native lore. Curare, the dart poison

favored by Amazon Indians, is used as a muscle relaxant in surgery. Reserpine, now used to treat hypertension, has a centuries-old history as a tranquilizer. For NCI and its ethnobotanical explorers, the search for such traditional knowledge is urgent. Tests of the most promising plants will require that larger quantities be collected from the wild. But Balick warns, "Plants are disappearing so fast that they may not be there when we go back for more." Further, the healers themselves are aging. Don Elijio is 93 years old; much of his knowledge will die with him.

Ethnobotanists see the door to the rain forest medicine chest swinging shut. "Because the species—and the people who know their uses—are disappearing so quickly," says Balick, "we have just 10 to 15 years to do this work."

1. Which ***best*** describes the author's tone in this article?

   A philosophical

   B satirical

   C optimistic

   D concerned

2. Which ***best*** describes NCI's strategy of using ethnobotanists to collect rain forest plants?

   A focusing on the past

   B exploring the exotic

   C benefiting from experience

   D depending upon tradition

3. In which endeavor would an ethnobotanist be ***least*** useful?

   A defending the rights of animals

   B discovering new edible plants

   C searching for nontoxic pesticides

   D protecting endangered wildflowers

4. Which is the ***best*** evidence that native lore about healing plants is not mere superstition?

   A Native lore is based on 200 years of experimentation.

   B Native healers have developed a very specific pharmacopeia.

   C Plants are the source for one-fourth of our prescription medicines.

   D Some of the drugs we use today have long been a part of native lore.

5. Which is the chief antagonist in this story of scientists racing against time?

A isolated habitats

B tropical deforestation

C scientific skepticism

D native superstition

6. What literary technique is used in the sentence, "Ethnobotanists see the door to the rain forest medicine chest swinging shut"?

A metaphor

B personification

C symbolism

D onomatopoeia

7. Which ***best*** describes the main purpose of the first two paragraphs in this article?

A to describe the setting of the article

B to state the main idea of the article

C to appeal to the reader's curiosity

D to introduce the main characters

"Seeking Medical Secrets in the Rain Forest" Key

1. D
2. C
3. A
4. D
5. B
6. A
7. C