

## GREEN SAHARA

The Sahara sets a standard for dry land. It's the world's largest desert. Relative humidity can drop into the low single digits. There are places where it rains only about once a century. There are people who reach the end of their lives without ever seeing water from the sky.

Yet beneath the Sahara are vast aquifers of fresh water, enough liquid to fill a small sea. It's fossil water, a treasure laid down in prehistoric times, some of it possibly a million years old. Just 6,000 years ago the Sahara was a much different place. It was green. Prehistoric rock art in the Sahara at that time shows something surprising: hippopotamuses, which need year-round water. "We don't have much evidence of a tropical paradise out there, but we had something perfectly livable", says Jennifer Smith, a geologist at Washington University in St Louis.

The green Sahara was the product of the migration of the paleomonsoons. In the same way that ice ages come and go, so too do monsoons migrate north and south. The dynamics of the Earth's motion are responsible for this. The tilt\* of the Earth's axis varies in a regular cycle –sometimes the planet is more tilted toward the sun, sometimes less so. The axis wobbles\* like a spinning top.\* The date of Earth's perihelion –its closest approach to the sun– varies in a cycle as well.

At times when the Northern Hemisphere tilts sharply toward the sun and the planet makes its closest approach, the increased blast\* of sunlight during the north's summer months can cause the African monsoon (which currently occurs between the Equator and roughly 17°N latitude) to shift to the north as it did 10,000 years ago, inundating North Africa.

Around 5,000 years ago the monsoon shifted dramatically southward again. The prehistoric inhabitants of the Sahara discovered that their relatively green surroundings were undergoing something worse than a dry period (and perhaps they migrated toward the Nile Valley, where Egyptian culture began to flourish at around the same time).

"We're learning, and only in recent years, that some climate changes in the past have been as rapid as anything under way today", says Robert Giegengack, a University of Pennsylvania geologist.

As the land dried out and vegetation decreased, the soil lost its ability to hold water when it did rain. Fewer clouds formed from evaporation. When it rained, the water washed away and evaporated quickly. There was a kind of runaway drying effect. By 4,000 years ago the Sahara had become what it is today.

No one knows how human-driven climate change may alter the Sahara in the future. It's something scientists can ponder\* while sipping bottled fossil water pumped from underground. "It's the best water in Egypt", said Robert Giegengack. "Clean, refreshing mineral water. If you want to drink something good, try the ancient buried treasure of the Sahara."

*From the press. Adapted*

*tilt*: inclinació / inclinación

*wobble*: balancejar-se, moure's amb indecisió / tambalearse

*spinning top*: baldufa / peonza

*blast*: onada, ràfega / oleada, ráfaga

*ponder*: ponderar, meditar, sospesar / ponderar, meditar, sospesar

Série 3 - A

PART ONE: READING COMPREHENSION

Choose the best answer according to the text.

[0,5 points each correct answer]

[wrong answers will be penalized (-0,16)]

1. Relative humidity in the Sahara Desert can be...
  - a) 100%.
  - b) less than 10%.
  - c) over 50%.
  - d) under 90%.
  
2. Prehistoric rock art in the Sahara...
  - a) shows fossil water on it.
  - b) is one million years old.
  - c) is about 6,000 years old.
  - d) needed water all the year round.
  
3. The Earth's motion and perihelion...
  - a) show variation within a cycle.
  - b) changed after the ice ages.
  - c) are the consequences of old monsoons.
  - d) dance when they approach the axis of the sun.
  
4. African monsoons 10,000 years ago...
  - a) only happened between Equator and 17° N latitude.
  - b) increased the blasts of sunlight all around the earth.
  - c) did not bring a lot of heavy rain.
  - d) did not happen in the Southern Hemisphere.
  
5. The prehistoric inhabitants of the Sahara migrated toward the Nile Valley because...
  - a) the monsoon weather lasted all the year there.
  - b) their land was no longer livable.
  - c) the Egyptian culture was flourishing.
  - d) 5,000 years ago there was only green land in the south of Africa.
  
6. According to a famous American scientist, climate changes in the past...
  - a) have taken place very quickly.
  - b) have been studied only in recent years.
  - c) are still under way.
  - d) have produced tropical paradises of geological beauty all over the world.
  
7. The soil can't hold water when it rains if...
  - a) there is too much vegetation.
  - b) the drying effect goes away.
  - c) the soil washes away as it did 4,000 years ago.
  - d) the land is dry and there is very little vegetation.
  
8. In the last paragraph Robert Giegengack speaks like...
  - a) a clever scientist.
  - b) an Egyptian geologist.
  - c) a good advertiser.
  - d) a prophet.