

'Himalayan Viagra' under threat from climate change: researchers

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The fungus known in Asia as "Himalayan Viagra"—seen here—has no scientifically proven benefits, but people believe it cures everything from impotence to cancer

A prized caterpillar fungus that is more valuable than gold and is

nicknamed "Himalayan Viagra" in Asia, where it is seen as a wonder drug, is becoming harder to find due to climate change, researchers said Monday.

People in China and Nepal have been killed in clashes over the years over the elusive fungus "yarchagumba," known formally as *Ophiocordyceps sinensis*.

Although it has no scientifically proven benefits, people who boil yarchagumba in water to make tea or add it to soups and stews believe it cures everything from impotence to cancer.

It is "one of the world's most valuable biological commodities, providing a crucial source of income for hundreds of thousands of collectors," said the report in the *Proceedings of the National Academy of Sciences*, a peer-reviewed US journal.

In recent decades, the fungus has skyrocketed in popularity and prices have soared—it can fetch up to three times the price of gold in Beijing, researchers say.

While many have suspected overharvesting was the reason for its scarcity, researchers wanted to find out more.

So they interviewed around four dozen harvesters, collectors and traders of the prized fungus.

They also examined previously published scientific literature, including interviews with more than 800 people in Nepal, Bhutan, India and China, in order to understand its apparent decline.

Weather patterns, geographic factors and environmental conditions were also analyzed to create a map of yarchagumba production in the region.

"Using data spanning nearly two decades and four countries, (we) revealed that caterpillar fungus production is declining throughout much of its range," said the report.

The finding "is important because it calls attention to how highly valuable species, like caterpillar fungus, are susceptible not only to overharvesting, as is often the focus, but also to climate change," lead study author Kelly Hopping told AFP.

"This means that even if people start reducing the amount that they harvest, production will likely continue to dwindle as a result of ongoing climate change," said Hopping, who conducted the work while a postdoctoral research fellow at Stanford University and is currently assistant professor in Human-Environment Systems at Boise State University.



The prized caterpillar fungus is a hot commodity across Asia—here, it is sold in the Chinese city of Gannan, in Gansu province, in June 2013

Researchers were unable to tell which factor—overharvesting or climate change—had a larger impact on the fungus.

"To do so would require access to better harvest records, but monitoring of it is very limited throughout most of the areas where it grows," Hopping said.

Particular temperatures

The cone-shaped fungus is only found above an elevation of 9,800 feet (3,000 meters), and forms when the parasitic fungus lodges itself in a caterpillar, slowly killing it.

To grow, it needs a specific climate with winter temperatures below freezing but where the soil is not permanently frozen.

"Such conditions are typically present at the margin of permafrost areas," said the PNAS report.

"Given that winter temperatures have warmed significantly from 1979 to 2013 across much of its range, and especially in Bhutan, its populations are likely to have been negatively affected."

The warming trend has particularly affected Bhutan, with average winter temperatures "increasing by 3.5-4 degrees Celsius across most of its predicted habitat (+1.1 Celsius per decade, on average)," added the study.

Researchers have previously found that vegetation on the Tibetan plateau "did not shift upward in response to climate warming from 2000 to 2014," suggesting that the caterpillar fungus will be unable to simply move up the mountain to colder habitats as the climate warms.

This spells trouble for harvesters who sell the fungus in order to survive, according to Hopping.

"Communities throughout the Himalayan region have become very financially dependent on collecting and selling caterpillar fungus, and so this study could serve as a warning of what many harvesters already realize," she said.

"That decreasing availability of this fungus will be devastating to local economies, and that these communities need other viable livelihood options."

More information: Kelly A. Hopping et al., "The demise of caterpillar fungus in the Himalayan region due to climate change and overharvesting," *PNAS* (2018).

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