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Coca leaves first chewed 8,000 years ago, says research



Peruvian foraging societies were already chewing coca leaves 8,000 years ago, archaeological evidence has shown.

Ruins beneath house floors in the northwestern Peru showed evidence of chewed coca and calcium-rich rocks.

Such rocks would have been burned to create lime, chewed with coca to release more of its active chemicals.

Writing [in the journal *Antiquity*, an international team said](#) the discovery pushed back the first known coca use by at least 3,000 years.

Coca leaves contain a range of chemical compounds known as alkaloids. In modern times, the most notable among them is cocaine, extracted and purified by complex chemical means.

But the chewing of coca leaves for medicinal purposes has long been known to be a pastime at least as old as the Inca civilisation.

Other alkaloids within the leaves have mildly stimulating effects, can reduce hunger and aid digestion, and can mitigate the effects of high-altitude, low-oxygen environments.

Evidence of the chewing of the leaves has been found from around 3,000 years ago, but the addition of calcium-rich substances - which draw out far more of the alkaloids - was seen to be a much more recent development.

Now, Tom Dillehay of Vanderbilt University in the US and his colleagues have found evidence both of chewed leaves and calcium-rich rocks that were burned and scraped to supply ash for chewing.



The modern coca plant has ancestors with the same chemical properties

The evidence was found beneath the buried floors of the homes of foraging peoples from northwestern Peru, where the conditions were favourable to preserve what is normally a fleeting, organic remnant of a bygone civilisation.

The samples were dated to about 8,000 years, but Dr Dillehay told BBC News that a further surprise was the distribution of the finds.

"We found it not so much in a household context, as if it was something that was heavily used by a lot of people, but rather... restricted to certain households of individuals and produced in a sort of public context - not individualised," he explained.

"The evidence we have suggests that unlike in Western societies - where if you've got the economic means you can have access to medicinal plants - that seems not to be the case back then."

More than providing an archaeological perspective on the ancient civilisation, however, the find provides evidence that feeds into a current debate.

International moves are being made to curb coca production in the Andes because of its association with cocaine, but Dr Dillehay argues there is far more to the plant.

"Some have argued that (coca chewing) is a fairly recent historical tradition - meaning the last several centuries or a thousand years - but it's a deeply-rooted economic, social and even religious tradition in the Andes."

Peter Houghton of King's College London, editor of the Journal of Ethnopharmacology, told BBC News that the finds were "significant" in terms of pushing the date back for the first known coca chewing - in particular finding both leaves and calcium-bearing rocks in the same place.

That the consumption appears to have been restricted to few would not be surprising, he told BBC News.

"The evidence is that the widespread use amongst the people in that part of Peru and Bolivia is a comparatively recent thing; before then it was restricted to a privileged class."