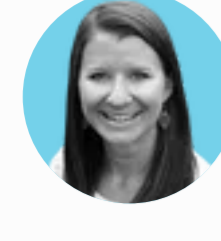


Humans May Have Transported Live Parrots Over the Andes Mountains Along Sophisticated Trade Routes Before the Rise of the Inca Empire

Archaeologists were puzzled when they found parrot feathers in a pre-Inca burial in coastal Peru. A new study suggests that the birds were captured in the wild and kept alive over lengthy journeys



Sarah Kuta | Daily Correspondent
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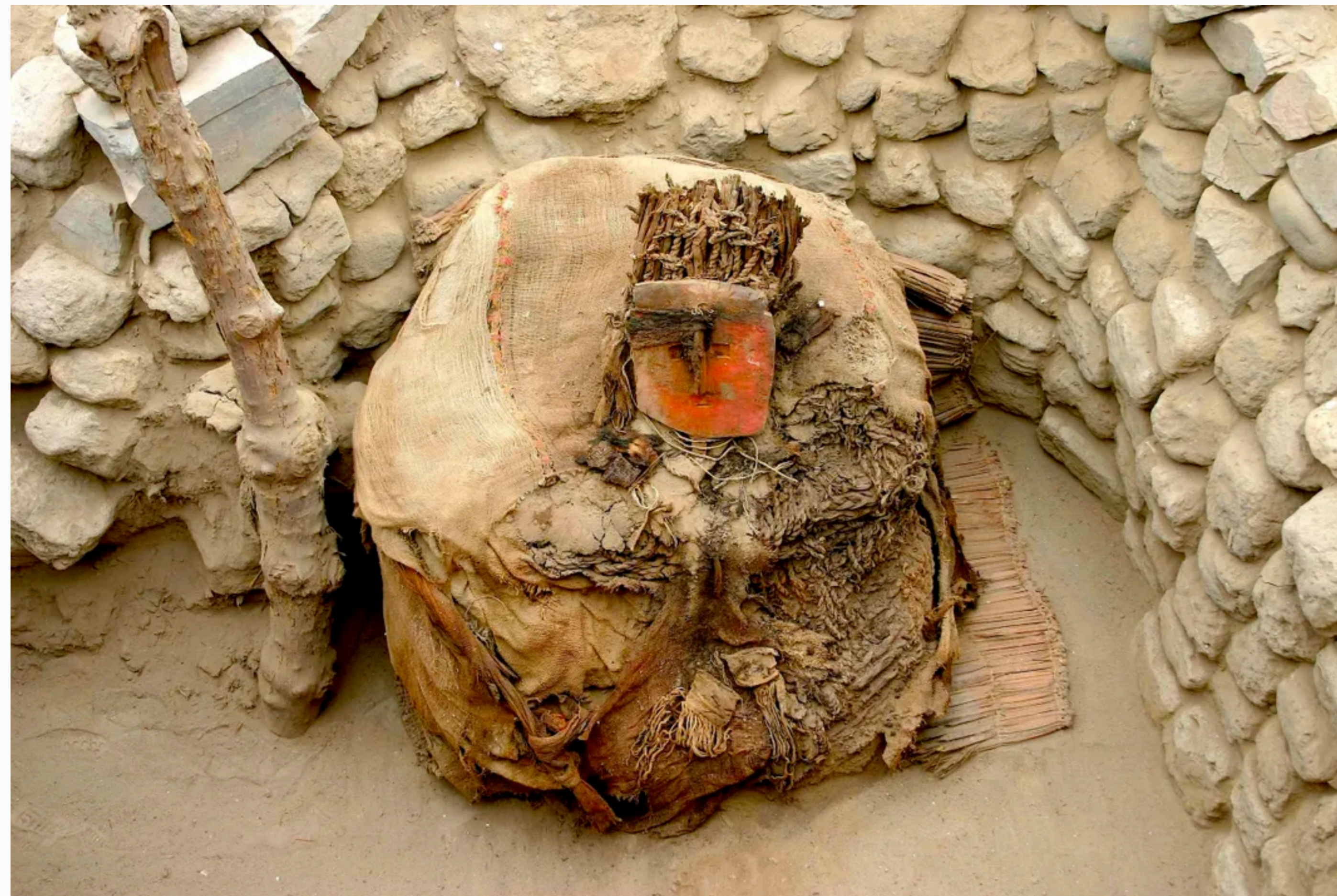
The feathers belonged to birds from four large parrot species, according to researchers. George Olah

In 2005, archaeologists discovered a 600- to 1,000-year-old tomb filled with painted wooden masks and headdresses decorated with parrot feathers. These elaborate decorations created “false heads” that were buried alongside high-status individuals living in the Andes mountains of Peru before the rise of the [Inca](#).

But what were feathers from tropical, rainforest-dwelling birds doing in the dry, coastal desert environment? The discovery was perplexing, because parrots that live in the Amazon do not usually fly over the mountains; their natural home range spans roughly 90 miles.

Researchers speculated that humans must have been involved somehow. Now, they say they’ve confirmed that hunch.

Reconstructing the “complete journey” of the feathers points to the existence of a sophisticated trade network, the researchers write in a new paper published in the journal *Nature Communications*. This discovery, in turn, “fundamentally challenges the view of this era as a period of frequent conflicts and regionalism,” they add.



Researchers think the feathers were used to create headdresses which, along with painted masks, created “false heads.” Izumi Shimada

Researchers recovered the feathers from an intact tomb on the central coast of Peru, at a religious site known as [Pachacamac](#). It contained 34 funerary bundles, including five adorned with “brilliant” parrot feathers, they write in the paper. Archaeologists think the tomb belonged to the Ychsma culture, a pre-Inca civilization that flourished from roughly 1000 to 1470 C.E.

Brightly colored parrot feathers were among the most prestigious status symbols in the region at that time, yet acquiring them meant “traversing the formidable Andean mountain range,” the researchers write.

“It’s extraordinary the effort people went to, to obtain these prestigious objects that didn’t have anything to do with food or subsistence,” says [Calogero Santoro](#), an archaeologist at the University of Tarapacá in Chile who was not involved with the research, to *Science’s* Christina Larson.

The scientists used numerous techniques to study the feathers and come up with potential trade routes, including ancient DNA sequencing, stable isotope analyses, and species distribution and landscape resistance modeling.



Carbon dating suggests the oldest feather dated to between 1100 to 1225 C.E. George Olah

[Mitochondrial DNA](#) indicates the feathers belonged to at least four large species: the scarlet macaw, the blue-and-yellow macaw, the red-and-green macaw and the mealy Amazon. Those birds lived in the lowland tropical forests east of the Andes, hundreds of miles away from the arid coastal desert region on the west side of the mountains. Carbon dating suggests the oldest feather dated to between 1100 and 1225 C.E.

The scientists also discovered high levels of genetic diversity in the DNA, which suggests the feathers were plucked from parrots that had been born in the wild. If the birds had been bred in captivity, researchers would have expected to find lower levels of genetic diversity as a result of inbreeding.

An analysis of the isotopes in the feathers indicated the birds ate a largely coastal diet. Researchers think live parrots were captured in the rainforest, transported across the Andes and kept in captivity at least long enough to grow new feathers, a process that usually takes about a year. The birds were probably kept for their prized plumage.

“A bird is like a proverbial hen that lays golden eggs,” says [José Capriles](#), an anthropologist at Penn State who was not involved with the research, to the *New York Times’s* Alexa Robles-Gil. “But instead of laying golden eggs, it simply grows feathers.”

Quick facts: A Ychsma burial in Peru

- In 2023, archaeologists announced the discovery of a [1,000-year-old mummy](#) in Lima, Peru.
- The mummy, found with long locks of brown hair, was associated with the Ychsma culture.

The researchers also used landscape modeling to identify two highly plausible trade routes: a northern path and a more direct central passage. No matter which route traders took, “it would have taken several weeks, if not months, to transport parrots along these mountain routes,” Capriles tells *Science*.

Archaeologists haven’t discovered any skeletons, eggshells or other evidence to suggest the birds were kept at Pachacamac itself. Instead, they think the birds might have been reared farther north, perhaps “in the Chimú Empire, who then traded the harvested feathers south to the Ychsma,” lead author [George Olah](#), a conservation ecologist at the Australian National University, tells *Live Science’s* Kenna Hughes-Castleberry.

The findings suggest that civilizations like the Ychsma, the Chimú and others were working closely together before the establishment of the Inca Empire. These cultures must have been interconnected enough to negotiate and maintain complex trade agreements, which defies the long-held assumption that pre-Inca societies were “isolated or fragmented,” Olah says in a [statement](#).

“Instead, we see evidence of organized exchange, ecological knowledge and logistical planning that connected vastly different environments long before imperial roads formalized these connections,” he adds.

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Sarah Kuta is a writer and editor based in Longmont, Colorado. She covers history, science, travel, food and beverage, sustainability, economics and other topics.

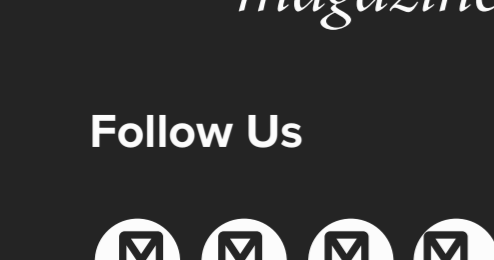
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