

PRESS RELEASE

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New evidence of interaction between human groups and ancient relatives of elephants in Chile dating back 13,000 years is discovered

These large mammals could weigh more than 4 tons and reach 3 meters in height; the team thinks they were hunted by human groups that inhabited the region

Tarragona, November 28th, 2022. Between September 12th and 26th, the fourth consecutive archaeological excavation campaign was carried out at the Taguatagua 3 site (San Vicente de Taguatagua, Central Chile). This excavation campaign is a Chilean-Spanish scientific project led by researchers from the Pontifical Catholic University of Chile, the Institute of Engineering Sciences (O'Higgins University), and the Catalan Institute of Human Paleoecology and Social Evolution (IPHES-CERCA).



General view of the excavation process of the Taguatagua 3 deposit. Photo: IPHES-CERCA

This international cooperation has been carried out since 2019. It has turned the Taguatagua 3 site into a global benchmark for studying the first human populations in South America, the last of the continents to be occupied by our species.



Accumulation of fossil remains of gomphotheres discovered during the excavation process of the Taguatagua 3 site. Photo: IPHES-CERCA

More than a hundred fossil remains of gomphotheres have been found, an extinct relative of current elephants, which were killed and processed by human groups of hunter-gatherers more than 12,000 years ago. In addition, the lithic tools used for these activities have been recovered. These stone instruments show a high degree of sophistication in their production and the use of high-quality raw materials, some obtained with stones from hundreds of kilometers from the site. These findings, together with those of previous years and the documentation of bonfires associated with these camps, make the Taguatagua 3 site an obligatory reference to explain the first human occupation of Chile, and in context, of South America.

This campaign's objective was to continue excavation works on the site. Currently, the works have made it possible to excavate 20 m² of extension, although the full extension of the deposit is unknown and could reach several hundred meters.

During previous campaigns, fossil remains of gomphotheres, American horses, deer, and thousands of remains of minor fauna have been recovered: from birds to small mammals, as well as amphibians, fish, and reptiles that have been preserved thanks to the slow dynamics of lagoon deposition of the reservoir.

Much of the fossil remains show evidence of the use of fire for cooking and subsequent consumption. The site's preservation and, specifically, the conservation

of organic remains (fauna and flora remains) has been favored because it is the setting of an ancient lake.



Gomphothere molar tooth recovered at the Tagua-Tagua 3 site, after restoration work. Photo: Elena Moreno & Maria Maria Dolores Guillen / IPHES-CERCA

A highlight of this year's discoveries is the remains of ancient elephant bones with marks made with sharp instruments. These documented marks on the bones are the product of the processing and fleshing of the deceased animals.

The gomphotheres are an extinct species of relatives of elephants that lived in South America until precisely 12,000-10,000 years ago, when they disappeared from the record throughout the continent, coinciding with the colonization and dispersal of the human species in this part of the world. The gomphotheres could weigh more than 4 tons and reach 3 meters in height, being one of the largest land mammals that inhabited this place and time. The Taguatagua 3 site shows how systematic the exploitation of this species was upon the arrival of the first humans, enriching the debate on whether the human species was the causal agent, or a simple observer, of the extinction of one of the most surprising animals that inhabited South America



Cut marks on the transverse fin of a gomphothere caudal vertebra recovered at the Tagua-tagua 3 site. Photo: Elena Moreno & Maria Maria Dolors Guillen / IPHES-CERCA

The excavation work has had the participation of an international team of more than 20 people linked to universities and high-performance research centers in archeology and paleontology. In addition to archaeologists and paleontologists specialized in the recovery of large fossil remains, specialists in the fields of geology and genetics have worked dating sedimentary deposits and remains for their environmental characterization. The recovery, conservation, and restoration work on the giant elephant remains have been coordinated by the IPHES-CERCA Restoration Unit that currently operates at the Atapuerca sites.

Funding

The intervention at the Taguatagua 3 site has been possible thanks to the Palarrq Foundation and the funded project 'First human steps in South America: walking among Gomphotheres' led by Dr. Carlos Tornero (IPHES-CERCA), Dr. Rafael Labarca (Pontifical Catholic University of Chile) and Dr. Erwin González (O'Higgins University). The research work also receives the support of the Municipality of San Vicente de Tagua-Tagua, the PUC's Stable Isotopes Laboratory, and the Local NGO Añañuca.