

New Pleistocene Localities with *Cuvieronius* (Mammalia: Gomphotheriidae) Remains in the State of Veracruz, México

Jair Peña-Serrano and Gerardo Carbot-Chanona

► **Keywords:** Gomphotheres, late Pleistocene, Veracruz

The bunodont gomphothere *Cuvieronius* is endemic to the New World. It had a wide distribution, from the south of the U.S. to the south of Chile (Casamiquela et al. 1996; Kurtén and Anderson 1980). In Mexico the record of this genus is extensive; it has been found in the states of Sonora, Chihuahua, Colima, San Luis Potosí, Jalisco, Guerrero, Estado de México, Puebla, Morelia, Aguascalientes, Oaxaca, Michoacán, Yucatán, Chiapas, and Veracruz (Alberdi and Corona 2005, Arroyo-Cabrales et al. 2007). In Veracruz only three records had ever been reported, in the localities of Papantla, Tecolutla, and Acultzingo (Pichardo del Barrio 1960, Silva-Bárcenas 1969, Wilkerson 1975). However, in recent years new records of the gomphothere *Cuvieronius* have been added to the State of Veracruz from 10 localities: Atoyac, Ixtaczoquitlán, Acayucan, Alvarado, San Andrés Tuxtla, Catemaco, Isla, Nogales, Maltrata, and Actopan (Figure 1). In all localities outcrop fluvial sediments formed by sand, sandy clay, and clay, and only on the Maltrata and Atoyac localities is observed volcanic ash not yet dated.

In the locality of Maltrata, *Cuvieronius* has been found in association with *Mammuthus columbi*, *Eremotherium laurillardi*, *Equus conversidens*, and *Bison* remains (Serrano and Lira 2005). In the locality of Atoyac, *Cuvieronius* has been found in association with *Eremotherium laurillardi*, *Trachemys scripta*, *Claudius angustatus*, and *Crocodylus* sp. In both localities a Rancholabrean age is assigned to the faunal association. In the rest of the localities only *Cuvieronius* remains have been found, and the age assigned is only Pleistocene owing to the absence of potential indicators such as index taxa, stratigraphy, and radiometric data.

Isolated molars were recovered at Atoyac, Actopan, Alvarado, San Andrés Tuxtla, Catemaco, Isla, Nogales, and Maltrata. At Acayucan one lower jaw with both m2 and m3 was recovered; at Ixtaczoquitlán incomplete upper tusk appendicular elements and isolated vertebrae were recovered. The molars show the typical morphology of the genus; they have 4–4.5 lophs/lophids and usually have relatively simple crowns in which there is a trefoil on the pretrite cusps/cuspids but no trefoil on the posttrite cusps/cuspids. The upper tusks

Jair Peña-Serrano, Proyecto Orizaba IIA-UNAM. Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México. Ciudad Universitaria, Coyoacán, México, C.P. 04510; e-mail: dinosaurio3@yahoo.com.mx

Gerardo Carbot-Chanona, Museo de Paleontología "Eliseo Palacios Aguilera", Dirección de Paleontología, Secretaría de Medio Ambiente, Vivienda e Historia Natural. Calzada de Los Hombres Ilustres s/n. Tuxtla Gutiérrez, Chiapas, México; e-mail: carbotsaurus@yahoo.com

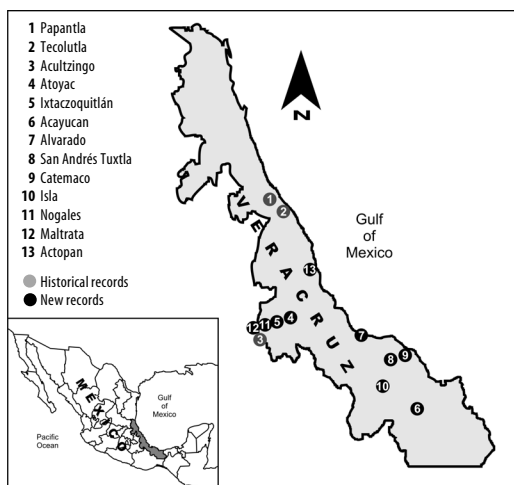


Figure 1. Map showing the distribution of *Cuvieronius* in the State of Veracruz.

collected on Ixtaczoquitlán have the spiral enamel band typical in *Cuvieronius*. The morphology of the molars and upper tusk identifies them as *Cuvieronius hyodon*. The fossil material of gomphotheres from the new localities in Veracruz is housed in private and institutional collections.

These findings provide a glimpse of the ecological context of these organisms in the State of Veracruz. In North America, *Cuvieronius* was a mixed-feeder genus with Neotropical distribution and generally is associated with open-woodland habitats as well as tropical lowland habitats farther to the south (Graham 2001). The presence of *Cuvieronius* and associated fauna in Veracruz might indicate habitats similar to those proposed for other areas of North America.

References Cited

- Alberdi, M. T., and E. Corona-M. 2005 Revisión de los Gonfoterios en el Cenozoico de México. *Revista Mexicana de Ciencias Geológicas* 22(2):246–60.
- Arroyo-Cabral, J., O. J. Polaco, C. Laurito, E. Johnson, M. T. Alberdi, and A. L. Valerio Zamora 2007 The Proboscideans (Mammalia) from Mesoamerica. *Quaternary International* 169-170:12–23.
- Casamiquela, R. M., J. Shoshani, and T. D. Dillehay 1996 South American Proboscideans: General Introduction and Reflections on Pleistocene Extinctions. In *The Proboscidea, Evolution and Palaeoecology of Elephants and Their Relatives*, edited by J. Shoshani, P. Tassy, pp. 316–20. Oxford University Press, New York.
- Graham, R. W. 2001 Late Quaternary Biogeography and Extinction of Proboscideans in North America. Paper present in The World of Elephants, International Congress, Rome.
- Kurtén, B., and E. Anderson 1980 *Pleistocene Mammals of North America*. Columbia University Press, New York.
- Pichardo del Barrio, M. 1960 *Proboscídeos Fósiles de México, Una Revisión*. Instituto Nacional de Antropología e Historia, México.
- Serrano Sánchez, L., and Y. Lira López 2005 El Mamut de Maltrata, Veracruz. Un Rescate en la

Barranca Apiaxco. Instituto de Investigaciones Antropológicas IIA-UNAM e Instituto de Antropología Universidad Veracruzana 1-63.

Silva-Bárcenas, A. 1969 Localidades de Vertebrados Fósiles en la República Mexicana. *Bol. 28 Instituto de Geología U.N.A.M.*, p. 26.

Wilkerson, J. K. 1975 Resultados Preliminares del Estudio de Ecología Cultural en el Norte-Central de Veracruz Durante 1973. Paper presented on the II mesa redonda, Xalapa, Sociedad Mexicana de Antropología, México.