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Homenaje a Guillem Colom  
Casasnovas (1900-1993)**



**Libro de Resúmenes**

**Jau-Chyn LIAO,  
José Antonio GÁMEZ VINTANED,  
José Ignacio VALENZUELA-RÍOS  
y Anna GARCÍA-FORNER (eds.)**

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## New *Theropithecus* remains from the early Pleistocene site of Cueva Victoria (Cartagena, south-eastern Spain)

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**Key words:** *Theropithecus*, *Cueva Victoria*, *early Pleistocene*, *faunal dispersal*

Cueva Victoria is a karstic site of early Pleistocene age in the south-east of the Iberian Peninsula. GIBERT *et al.* (1995) reported the presence of *Theropithecus* in Cueva Victoria from a single remain, a lower second molar, referred to *T. oswaldi*. The biogeographical range of this African species was thus extended to Europe.

Here we report new remains of *T. oswaldi* from Cueva Victoria. Four new teeth were found during excavations in 2008-2011: a left P4, a right P4, a left M3, and a fragmented left M2.

The upper premolar are somewhat molariform with some of the enamel complexity seen in the molars, wider than longer in occlusal view, and with a large talon. The molars are large, the M3 being longer and broader than the M2, with enamel forming complex transverse folds. The measurements of the teeth show a large size, only reached by *T. oswaldi*, that confirms the assignation to this species (GIBERT *et al.*, 1995).

The teeth were found in the same fossiliferous breccia although in different locations inside the cave. As shown by the different dental wear, the five teeth belong to individuals of different age. They include a decidual molar (the already published right M2), one juvenile teeth (left P4), and two left molars (M2 and M3) and a right P4 with advanced state of dental wear. The two new molars were found some centimeters apart one from the other and most probably belong to the same individual. Thus, a minimum of two individuals can be estimated.

*Theropithecus* at Cueva Victoria is associated with fauna typical of the early Pleistocene of Europe (GIBERT *et al.*, 1999, 2006), somewhat younger than that from Venta Micena dated at 1.3Ma (SCOTT *et al.*, 2007). The available paleomagnetic data place the fauna from Cueva Victoria in a magnetically reverse zone, below a speleothem that shows normal polarity (GIBERT *et al.*, 2006). This reversal was interpreted as Jaramillo chron in GIBERT *et al.*, 2006, placing the fauna at about 1.1 Ma.

*Theropithecus oswaldi*, a terrestrial specialized granivorous cercopithecoid, is the most geographically widespread species of this genus. It is known from Pliocene and Pleistocene deposits in south, east, and north Africa. It has also been identified from Pleistocene sites outside of Africa, in India and Spain (GUPTA & SAHNI, 1981; DELSON, 1993; GIBERT *et al.*, 1995). *T. oswaldi* was reported from the

Late Villafranchian site of Pirro Nord (southern Italy) by Rook *et al.* (2004). Also, a cercopithecine calcaneus from 'Ubeidiya (Israel), dated as ca. 1.6 Ma was assigned to *Theropithecus* sp. (BELMAKER, 2010). These authors suggested an early dispersal of *Theropithecus* out of Africa around 1.3-1.6 Ma, following a circum-Mediterranean route. However, the Pirro Nord remains, three cervical vertebrae, have been questioned and probably belong to *Paradolichopithecus*, known from late Villafranchian deposits in Spain, France, and Romania (PATEL *et al.*, 2007).

Thus, Cueva Victoria is nowadays the only European site with *Theropithecus* remains. The presence of human remains in Cueva Victoria (GIBERT *et al.*, 1999, 2002; GIBERT, GIBERT *et al.*, 2008), together with *Theropithecus* suggest that these two genera followed a dispersal route out of Africa through the Straits of Gibraltar (GIBERT, 2004; GIBERT *et al.*, 2003; GIBERT, SÁNCHEZ *et al.*, 2008). This is supported also by the presence of human remains and lithic artifacts, together with other African fauna, such as *Hipopotamus antiquus*, in other early Pleistocene sites in the SE of the Iberian Peninsula, Venta Micena, Barranco León, and Fuentenueva 3 in the Orce region (GIBERT, 2004; GIBERT *et al.*, 1998, 1999, 2002, 2003; GIBERT, SÁNCHEZ *et al.*, 2008).

### Aknowledgements

Alejandro Gallardo restored the teeth. Thanks are due to Consorcio Sierra Minera, Ayuntamiento de Cartagena, Servicio de Patrimonio de la Comunidad de Murcia, which facilitated the excavations. This is a contribution to Grupo de Investigación Consolidado «Geología Sedimentaria» (2009 SGR 1451).

### References

- BELMAKER, M. 2010. The presence of large cercopithecine (cf. *Theropithecus* sp.) in the 'Ubeidiya formation (Early Pleistocene, Israel). *Journal of Human Evolution*, **58**, 79-89.
- DELSON, E. 1993. *Theropithecus* fossils from Africa and India and the taxonomy of the genus. In: *Theropithecus: The Rise and Fall of a Primate Genus* (ed. JABLONSKI, N.G.). Cambridge University Press, Cambridge, 157-189.
- GIBERT, J. 2004. Cueva Victoria: Puerta de Europa. *Memorias de Arqueología, Región de Murcia*, **12**, 29-36.
- GIBERT, J., CAMPILLO, D., EISENMANN, V., GARCÍA OLIVARES, E., MALGOSA, A., ROE, D.A., WALKER, M.J., BORJA, C., SÁNCHEZ, F., RIBOT, F., GIBERT, L., ALBADALEJO, S., IGLESIAS, A., FERRÁNDEZ, C. & MAESTRO, E. 1999. Spanish late Pliocene and early Pleistocene hominid, paleolithic and faunal finds from Orce (Granada) and Cueva Victoria (Murcia). *Human Evolution*, **14**, 29-46.
- GIBERT, J., GIBERT, L., FERRÁNDEZ, C., RIBOT, F., IGLESIAS, A. & GIBERT, P. 2006. Cueva Victoria: Geología, Paleontología, restos humanos y edades. *Memorias de Arqueología Región de Murcia*, **14** (1999), 37-62.
- GIBERT, J., GIBERT, L.L. & IGLESIAS, A. 1998. Two «Oldowan» assemblages in the Plio-Pleistocene deposits of the Orce region, southeast Spain. *Antiquity*, **72**, pp. 7-25.
- GIBERT, J., GIBERT, L. & IGLESIAS, A. 2003. The Gibraltar Strait: A Pleistocene door of Europe? *Human Evolution*, **18** (3-4), 147-160.
- GIBERT, J., GIBERT, L.L., RIBOT, F., FERRÁNDEZ, C., IGLESIAS, A. & WALKER, M. 2008. CV-0, an early Pleistocene human phalanx from Cueva Victoria (Cartagena, Spain). *Journal of Human Evolution*, **54** (1), 150-156.

- GIBERT, J., RIBOT, F., GIBERT, L., LEAKEY, M., ARRIBAS, A. & MARTÍNEZ, B. 1995. Presence of the cercopithecoid genus *Theropithecus* in Cueva Victoria (Murcia, Spain). *Journal of Human Evolution*, **28**, 487-493.
- GIBERT, J., SÁNCHEZ, F., RIBOT, F., GIBERT, L., FERRÁNDEZ, C., IGLESIAS, A., GIBERT, P. & GONZÁLEZ, F. 2002. Restes humaines dans les sédiments du Pleistocène inférieur de la région d'Orce et de Cueva Victoria (au sud-est de l'Espagne). *L'Antropologie*, **106**, 669-683.
- GIBERT, J., SÁNCHEZ, F., RIBOT, F., GIBERT, L., IGLESIAS, A. & EL HAMOUTI, N. 2008. Dispersion du genre *Homo* au sud d'Ibérie et au Maghreb. Nouvelles données à propos des fossiles VM-1960 et BL-0. *L'Anthropologie*, **112**, 48-73.
- GUPTA, V.L. & SAHNI, A. 1981. *Theropithecus delsoni*, a new cercopithecine species from the Upper Siwaliks of India. *Bulletin of the Indian Geological Association*, **14**, 69-71.
- PATEL, B.A., GILBERT, C.C. & ERICSON, K.E. 2007. Cercopithecoid cervical vertebral morphology and implications for the presence of *Theropithecus* in early Pleistocene Europe. *Journal of Human Evolution*, **52**, 113-129.
- ROOK, L., MARTÍNEZ-NAVARRO, B. & HOWELL, F.C. 2004. Occurrence of *Theropithecus* sp. in the Late Villafranchian of Southern Italy and implication for Early Pleistocene «out of Africa» dispersals. *Journal of Human Evolution*, **47**, 267-277.
- SCOTT, G., GIBERT, L. & GIBERT, J. 2007. Magnetostratigraphy of the Orce region (Baza Basin), SE Spain: new chronologies for Early Pleistocene faunas and hominids occupation sites. *Quaternary Sciences Review*, **26**, 415-435.

# New *Theropithecus* remains from the early Pleistocene site of Cueva Victoria (Cartagena, south-eastern Spain)

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*Theropithecus oswaldi*



*Theropithecus oswaldi* molar

Cueva Victoria is a karstic site of early Pleistocene age in the south-east of the Iberian Peninsula. Gibert et al. (1995) reported the presence of *Theropithecus* in Cueva Victoria from a single remain, a lower second molar, referred to *T. oswaldi* (Figure 1). The biogeographical range of this African species was thus extended to Europe.

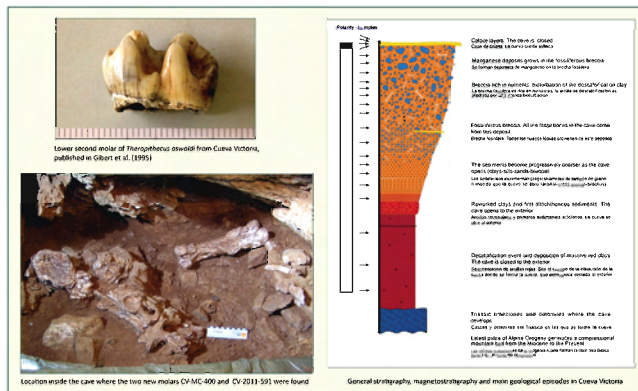
Here we report new remains of *T. oswaldi* from Cueva Victoria. Four new teeth were found during excavations in 2008–2011: a left P<sub>4</sub>, a right P<sub>4</sub>, a left M<sub>2</sub>, and a fragmented left M<sub>2</sub>.

The upper premolar are somewhat molariform with some of the enamel complexity seen in the molars, wider than longer in occlusal view, and with a large talon. The molars are large, the M<sub>2</sub> being longer and broader than the M<sub>3</sub>, with enamel forming complex transverse folds. The measurements of the teeth show a large size, only reached in *Theropithecus* in *T. oswaldi*, that confirms the assignation to this species (Gibert et al., 1995).

The teeth were found in the same fossiliferous breccia although in different locations inside the cave. As shown by the different dental wear, the five teeth belong to individuals of different age. They include a deciduous molar (the already published right M<sub>2</sub>), one juvenile teeth (left P<sub>4</sub>), two left molars (M<sub>2</sub> and M<sub>3</sub>), and a right P<sub>4</sub> with advanced state of dental wear.

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## References

- Belmaker, M. 2010. The presence of large cercopithecid (cf. *Theropithecus* sp.) in the 'Ubeidiya formation (Early Pleistocene, Israel) and Human Evolution, 58, 79–89.
- Delson, E. 1993. *Theropithecus* fossils from Africa and India and the taxonomy of the genus. In: *Theropithecus: The Rise and Fall of a Primate Genus*, ed. J. A. J. Ross, N. G. I. Cambridge University Press, Cambridge, 157–189.
- Gibert, J. (2004) Cueva Victoria. Puerta de Europa. *Memorias de Arqueología*, (Región de Murcia), 12, 29–36.
- Gibert, J., Campillo, D., Eisenmann, V., García-Oliveras, F., Málaga, A., Roe, D. A., Walker, M. J., Borja, C., Sánchez, F., Ribot, F., Gibert, L., Albaladejo, S., Iglesias, A., Ferrández, C. & Martínez, B. 1999. Spanish late Pleistocene and early Pleistocene hominid, paleolithic, and faunal finds from Orce (Granada) and Cueva Victoria (Murcia). *Human Evolution*, 14, 79–95.
- Gibert, J., Gibert, L., Ferrández, C., Ribot, F., Iglesias, A., & Gibert, P. 2006. Cueva Victoria Geología. Paleontología, restos humanos y ciudades. *Memorias de Arqueología-Región de Murcia*, 14 (1999), 37–62.
- Gibert, J., Gibert, L., & Iglesias, A. 1992. Two "Gibertian" assemblages in the Pleistocene deposits of the Orce region, southeast Spain. *Antiquity*, 72, pp. 7–25.
- Gibert, J., Gibert, L. & Iglesias, A. 2003. The Gibraltar Strait: A Pleistocene door of Europe? *Human Evolution*, 18(1–4), 147–150.
- Gibert, J., Gibert, L., Ribot, F., Ferrández, C., Iglesias, A. & Walker, M. 2008a. CV-0, an early Pleistocene human phalanx from Cueva Victoria (Cartagena, Spain). *Journal of Human Evolution*, 54(1), 150–156.
- Gibert, J., Ribot, F., Gibert, L., Leskey, M., Arribas, A. & Martínez, B. 1995. Presence of the cercopithecid genus *Theropithecus* in Cueva Victoria (Murcia, Spain). *Journal of Human Evolution*, 28, 487–493.
- Gibert, J., Sánchez, F., Ribot, F., Gibert, L., Ferrández, C., Iglesias, A., Gibert, P. & González, F. (2003). Restos humanos en los sedimentos del Pleistoceno inferior de la región d'Orce y de Cueva Victoria. En: *El sustrato de la España* (L'Antropologia), 106, 669–683.
- Gibert, J., Sánchez, F., Ribot, F., Gibert, L., Iglesias, A. & El Hamoui, N. 2008b. Dispersión del género *Homo* al sud d'Àfrica i al Magreb: Noves dades a propòsit dels fòssils VM-1950 i BL-0. *L'Antropologia*, 112, 48–75.
- Gupta, V. I. & Sahni, A. 1981. *Theropithecus delsoni*, a new cercopithecid species from the Upper Siwaliks of India. *Bulletin of the Indian Geological Association*, 14, 69–71.
- Patel, B. A., Gibert, C. C. & Erickson, K. E. 2007. Cercopithecid cervical vertebra morphology and implications for the presence of *Theropithecus* in early Pleistocene Europe. *Journal of Human Evolution*, 52, 113–129.
- Rook, L., Martínez-Navarro, B., & Howell, F. C. 2004. Occurrence of *Theropithecus* sp. in the Late Villafranchian of Southern Italy and implication for Early Pleistocene "out of Africa" dispersals. *Journal of Human Evolution*, 47, 263–277.
- Scott, G., Gibert, L. & Gibert, J. 2007. Magnetotectonography of the Orce region (Baza Basin), SE Spain: new chronologies for Early Pleistocene faunas and hominid occupation sites. *Quaternary Science Review*, 26, 415–435.

