EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

SENCKENBERG
world of biodiversity

Pressemitteilung

The Most Recent European Great Ape Discovered

Based on a hominid molar, scientists from Germany, Bulgaria and France have documented that great apes survived in Europe in savannah-like landscapes until seven million years ago.

Tübingen, den 11.01.2012

Hochschulkommunikation

Myriam Hönig
Leitung

Michael Seifert
Abteilung Presse, Forschungsberichterstattung, Information
Telefon +49 7071 29-76789
Telefax +49 7071 29-5566
Michael.seifert@uni-tuebingen.de
www.uni-tuebingen.de/aktuell

Wir bitten um Zusendung von Belegexemplaren! Danke.

A seven million year old pre-molar of a hominid discovered near the Bulgarian town of Chirpan documents that great apes survived longer in Europe than previously believed. An international team of scientists from the Bulgarian Academy of Science, the French Centre National de la Recherche Scientifique, and Madelaine Böhme from the Senckenberg Center for Human Evolution and Paleoenvironment at the University of Tübingen was involved in the project. The new discovery may cause a revision in our understanding of some major steps in hominid evolution. To date scientists have assumed that great apes went extinct in Europe at least 9 million years ago because of changing climatic and environmental conditions.

Under the direction of Nikolai Spassov from the National Museum of Natural Science in Sofia, Bulgaria, the molar was discovered in Upper Miocene fluvial sediments near Chirpan. The morphology and the great thickness of the tooth enamel point to a hominid fossil. The age of the fossiliferous sands at 7 million years reveals the fossil to be most recent known great ape from continental Europe.

Until now, the most recent fossil was that of a 9.2 million year old specimen of *Ouranopithecus macedonensis* from Greece. Hominids therefore were thought to have disappeared from Europe prior to 9 million years ago. At this time, European terrestrial ecosystems had been changed from mostly evergreen and lush forests to savannah-like landscapes with a seasonal climate. It had been thought that great apes, which typically consume fruits, were unable to survive this change due to a seasonal deficiency of fruits.

The scientists found animals typical of a savannah in the fossil-bearing layer: several species of elephants, giraffes, gazelles, antelopes, rhinos, and saber-toothed cats. This discovery suggests that European hominids were able to adapt to the seasonal climate of a savannah-like ecosystem. This conclusion is further corroborated by electron microscope analysis of the tooth's masticatory surface, which reveals that the Bulgarian hominid had consumed hard and abrasive objects like grass, seeds, and nuts. In this respect, the feeding behavior of this animal re-

sembles that of later African hominids from about 4 million years ago (e.g. australopithecids like 'Lucy').
„We now also need to rethink where the origin of humans took place," says Professor Madelaine Böhme of the University of Tübingen. So far, most scientists believe that human evolution happened exclusively in Africa and that humans migrated from Africa to other continents. "There is increasing evidence, however, that a significant part of human evolution happened outside Africa, in Europe and western Asia".

That migration plays a major role in early hominid evolution was documented by paleontologists from the Senckenberg Center for Human Evolution and Paleoenvironment in June 2011, when they presented an early Eurasian hominid. A further piece to the puzzle had furthermore been an isolated molar tooth excavated southwest of Sigmaringen, Germany, and dated to 17 million years ago. The Tübingen group of paleoclimatologists led by Böhme reconstructed the climate at this time and demonstrated that great apes dispersed at this time under a tropical-subtropical and humid climate from Africa into Europe. Together, both investigations document an at least 10 million year lasting population of great apes in Europe and a significant evolution from fruit-eaters to harder object feeders.

Publication: SPASSOV, N., GERAADS, D., HRISTOVA, L., MARKOV, G.N., MERCERON, G., TZANKOV, T., STOYANOV, K., BÖHME, M., DIMITROVA, A. (2012): A hominid tooth from Bulgaria: the last pre-human hominid of continental Europe. Journal of Human Evolution 62 (1): 138-145.

Contact:

Prof. Dr. Madelaine Böhme
Universität Tübingen
Mathematisch-Naturwissenschaftliche Fakultät
Fachbereich Geowissenschaften
Senckenberg Center for Human Evolution and Palaeoecology (HEP)
Telefon +49 7071 29-73191
m.boehme[at]ifg.uni-tuebingen.de

Prof. Madelaine Böhme (right) and geologist Philipe Havlik at the excavation site near Chirpan/Bulgaria. Foto: Prof. Böhme

Geologist Philipe Havlik working on a seven million years old elephant tusk.
Foto: Prof. Böhme

Die SENCKENBERG Gesellschaft für Naturforschung
Die Erforschung von Lebensformen in ihrer Vielfalt und ihren Ökosystemen, Klimaforschung und Geologie, die Suche nach vergangenem Leben und letztlich das Verständnis des gesamten Systems Erde-Leben – dafür arbeitet die SENCKENBERG Gesellschaft für Naturforschung. Ausstellungen und Museen sind die Schaufenster der Naturforschung, durch die Senckenberg aktuelle wissenschaftliche Ergebnisse mit den Menschen teilt und Einblick in vergangene Zeitalter sowie die Vielfalt der Natur vermittelt. Mehr Informationen unter www.senckenberg.de.

Die Universität Tübingen
> Die Forschungsschwerpunkte der im Jahr 1477 gegründeten Universität Tübingen sind: Integrative Neurowissenschaften; Translationale Immunologie und Krebsforschung; Mikrobiologie und Infektionsforschung; Molekularbiologie; Sprache und Kognition; Medien und Bildung; Geo- und Umweltforschung; Archäologie und Anthropologie.
> An der Universität Tübingen sind derzeit knapp 26.000 Studierende aus dem In- und Ausland eingeschrieben. 400 Professoren und mehr als 4.000 Wissenschaftler lehren und forschen an sieben Fakultäten.
> Derzeit sind fünf Sonderforschungsbereiche, sechs Sonderforschungsbereiche Transregio, fünf Graduiertenkollegs und das Exzellenzcluster: Werner-Reichardt-Centrum für Integrative Neurowissenschaften (CIN) an der Universität Tübingen angesiedelt.