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ETHIOPIAN HERITAGE AUTHORITY



INVESTIGATING PALEOECOSYSTEMS & PREHISTORIC CULTURES IN ETHIOPIA

Workshop held on September 29th and 30th, 2026 at the Ethiopian Heritage Authority (Small Auditorium, basement of the National Museum of Ethiopia) at the occasion of the official launch of PALÆTHIOPS, CNRS & EHA International Research Laboratory.

Organized by Jean-Renaud Boissérie and Tomas Getachew Bedane.

➤ Tuesday 29th – chaired by Dr. ETAGEGNEHU ASRES (Ethiopian Heritage Authority)

BRIDONNEAU M. & BOISSERIE J.-R.

11:00 – Paleocord, research and heritage in the Turkana Depression p. 2

NUTZ A.

11:15 – Sedimentary evolution of the Turkana p. 2

BARBONI D.

11:30 – Plio-Pleistocene biomes of the Horn of Africa p. 3

MELAKU S., KELLY M. *et al.*

11:45 – Fossil record, ecosystems and biochronology of the Turkana p. 3

MARCHAL F., REED D. & PRAT S.

12:00 – Turkana hominin fossil record p. 4

DAVER G.

12:15 – Postcranial evolution of Plio-Pleistocene hominins p. 4

MERCERON G., LOUAIL M. *et al.*

12:30 – Niche partitioning of Plio-Pleistocene primates from Omo p. 5

➤ Wednesday 30th – chaired by Dr. Françoise GOURMELON (CNRS Ecology & Environment)

REDAE B. E., ARAYA B. *et al.*

13:45 – Plio-Pleistocene trophic interactions in the Omo p. 5

HABTE B., WOLDETSADIK M. G. *et al.*

14:00 – The prehistory of Ethiopia: an overview p. 6

CAULIEZ J. & HABTE B.

14:15 – Early food production societies in eastern African Rift p. 6

SOURON A., LOUAIL M. *et al.*

14:30 – Plio-Pleistocene evolution and adaptations of Turkana suids p. 7

LOUAIL M., SOURON A. *et al.*

14:45 – Plio-Pleistocene ecology of Turkana suids p. 7

BEDANE T. G.

15:00 – Plio-Pleistocene proboscideans of the northern Rift and beyond p. 8

HAILU H. B., MERCERON G. & BOISSERIE J.-R.

15:15 – Spatial dynamics of large herbivores in the Horn of Africa p. 8

BOISSERIE J.-R., BIBI F. *et al.*

15:30 – Plio-Quaternary large semiaquatic herbivores p. 9

LIKIUS A., BEDANE T. G. & BOISSERIE J.-R.

15:45 – Integration of paleoresearch efforts in Africa (Chad and Ethiopia) p. 9

Paleorecord, research and heritage in the Turkana Depression: an interdisciplinary perspective

Bridonneau Marie¹ & Jean-Renaud Boisserie^{2,1,3}

¹ CFEE, CNRS & Ministry of Europe and Foreign Affairs, Ethiopia; ² PALÆTHIOPS, CNRS & Ethiopian Heritage Authority, Ethiopia; ³ PALEVOPRIM, CNRS & University of Poitiers, France

This communication aims to introduce an interdisciplinary research project currently under development. Focusing on a common field of observation and investigation — the Turkana Depression and its numerous paleontological and prehistoric sites — we aim to bring together social and natural scientists in order to better connect research practices, knowledge production, and the making of heritage in the region.



Excavation in the Shungura Formation, July 2018.

Sedimentary evolution and environmental controls in the Turkana Depression, with a particular focus on the Lower Omo Valley

Alexis Nutz¹

¹ CEREGE, Aix-Marseille Université & CNRS, France

The Lower Omo Valley (Ethiopia), north of Lake Turkana, is a crucial sector of the Turkana Depression as it forms its axial system. In this talk, I will present the evolution of paleoenvironments in the Lower Omo River valley for the last 4 million years, based on sedimentary records from the Shungura Formation.



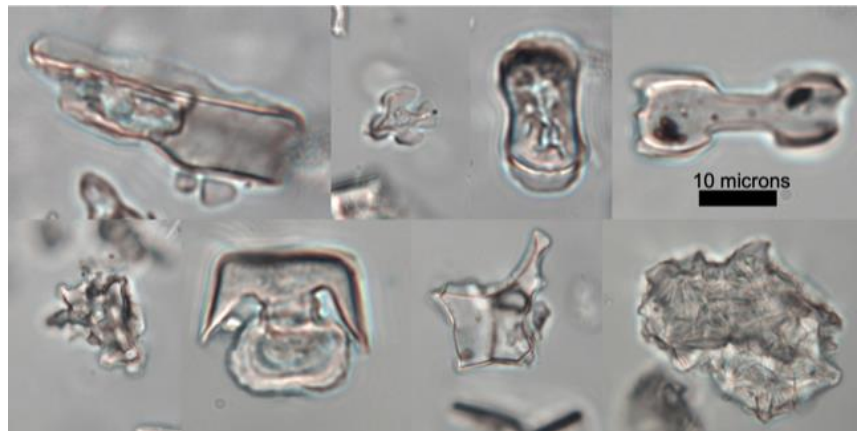
View of the lower sequence of the Shungura Formation.

Evolution of African biomes in the Plio-Pleistocene: insights from the Horn of Africa

Doris Barboni¹

¹ CEREGE, Aix-Marseille Université & CNRS, France

In this key region for paleoanthropology, plant fossils provide a rough idea of what the vegetation looked like in the past. While my phytolith samples are still waiting for a complete study, where do we stand today? What do we know about the evolution of vegetation in the Horn of Africa over the past 6 million years?



Phytoliths from the present-day riparian forest along the Omo River. The first row shows phytoliths from grasses (Poaceae). The second row shows phytoliths produced by woody plants, which unfortunately cannot be distinguished as trees or shrubs.

Fossil Record of the Omo–Turkana Basin: paleoecosystems, regional biochronological implications, and recent advances

Sahleselasie Melaku¹, Madeleine Kelly², Ignacio A. Lazagabaster³, Sharon Kuo⁴, Matthew M. Skinner⁵, Rahab Kinyanjui⁶, Dan V. Palcu Rolier⁷, David R. Braun^{5,8}, Emmanuel K. Ndiema⁶

¹ PALÆTHIOPS, Ethiopian Heritage Authority & CNRS, Ethiopia; ² University of Chicago, USA; ³ CENIEH, Spain; ⁴ University of Minnesota, USA; ⁵ Max Planck Institute for Evolutionary Anthropology, Germany; ⁶ National Museums of Kenya, Kenya; ⁷ University of São Paulo, Brazil; ⁸ George Washington University, USA

The Omo-Turkana Basin preserves an exceptional Plio-Pleistocene fossil record (ca. 4.2 Ma-0.7 Ma), documenting faunal, environmental, and evolutionary change. This scoping synthesis integrates comprehensive fossil assemblage datasets from the Lower Omo valley of southern Ethiopia and the Turkana Basin of northern Kenya, combining hominin and non-hominin vertebrates to examine patterns of faunal diversity, past ecosystems, and regional biochronology. It highlights recent advances from ongoing paleontological data collection in both regions, refining faunal turnover, environmental dynamics, and the regional chronological framework of eastern Africa.



Plio-Pleistocene landscape from the Turkana Basin.

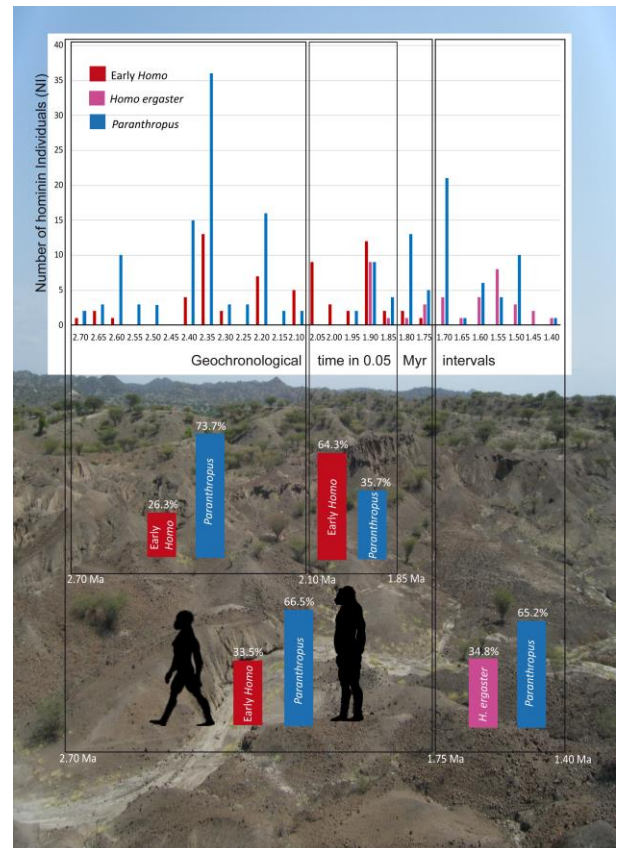
The Omo-Turkana Basin hominin fossil record with a focus on Ethiopian side and its perspective

François Marchal¹, Denne Reed² & Sandrine Prat³

¹ ADES, CNRS & Aix-Marseille Université & Établissements Français du Sang, France; ² Department of Anthropology, University of Texas at Austin, USA; ³ HNHP, CNRS & MNHN & Université Perpignan Via Domitia, France

The Omo-Turkana Basin is one of the three main sources of hominin fossils in Africa, accounting for about one-third of the available fossil record. The main characteristics (such as anatomical, chronological, and taxonomic distribution) of this hominin fossil record are presented, and prospects for the Ethiopian portion of the basin are illustrated using the Fejej area as an example.

Numbers and proportions of hominin individuals and taxa through time in the Turkana Depression.



New postcranial remains from the Shungura Formation (Lower Omo Valley, Ethiopia) suggest divergent locomotor trends between *Paranthropus boisei* and early *Homo*

Guillaume Daver¹, Gilles Berillon², Alicia Blasi-Toccaceli^{1,3}, Laurent Pallas², Jérôme Surault¹, Tomas Getachew Bedane^{4,5,1}, Blade Engda Redae^{5,6}, Jean-Renaud Boissérie^{4,5,1}

¹ PALEVOPRIM, CNRS & University of Poitiers, France; ² HNHP, CNRS & National Museum of Natural History, France; ³ D^{re} of Anatomy, Midwestern University, USA; ⁴ PALÆTHIOPS, Ethiopian Heritage Authority & CNRS, Ethiopia; ⁵ CFEE, CNRS & Ministry of Europe and Foreign Affairs, Ethiopia; ⁶ Institute of Human Origins and School of Human Evolution and Social Change, Arizona State University, USA

Since the OGRE resumed fieldwork in 2006 in the Omo, 16 additional hominin postcranial specimens have been recovered from the Shungura Formation, bringing the total to 30. Our analyses of the foot, forearm and hand (locality OMO 323), shoulder, ribcage, and cervical skeleton (OMO VE 3) reveal strong locomotor diversity between 2.3 and 1.8 Ma, including evidence for retained climbing and suspensory behaviors in australopiths and reduced locomotor constraints on the forelimb in *Homo erectus*.

Recently published postcranial remains of hominines from the Shungura Formation, Lower Omo Valley.

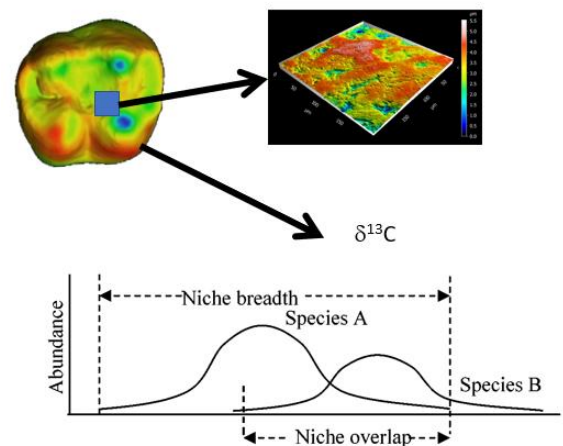


Reconstructing dietary niche partitioning in Plio-Pleistocene primates: evidence from the Shungura Formation

Gildas Merceron¹, Margot Louail^{2,1}, Kevin Uno³, J  r  my E. Martin⁴, Vincent Balter⁴, Tomas Getachew Bedane^{5,6,1}, Blade Engda Redae^{6,7} & Jean-Renaud Boisserie^{5,6,1}

¹ PALEVOPRIM, CNRS & University of Poitiers, France; ² D  pt of Human Evolutionary Biology & American School of Prehistoric Research, Harvard University, USA; ³ D  pt of Human Evolutionary Biology & D  pt of Earth and Planetary Sciences, Harvard University, USA; ⁴ LGL TPE, CNRS & ENS & University of Lyon Biology, France; ⁵ PAL  ETHIOPS, Ethiopian Heritage Authority & CNRS, Ethiopia; ⁶ CFEE, CNRS & Ministry of Europe and Foreign Affairs, Ethiopia; ⁷ Institute of Human Origins and School of Human Evolution and Social Change, Arizona State University, USA

The African fossil record of primates is rich. Although numerous cercopithecoid and hominid fossils are found in close association, these taxa did not necessarily share the same habitats. By combining dietary proxies capturing different aspects of feeding behavior, we aim to assess species' dietary niche breadth, ecological overlap, and how these patterns were affected by regional climate variations.



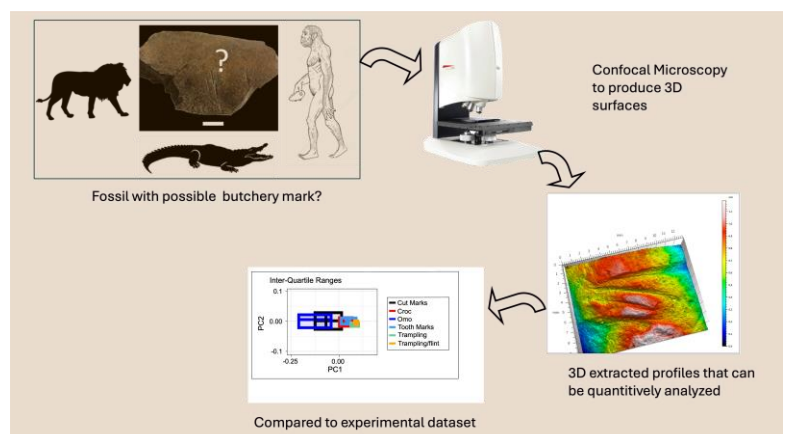
Top: from tooth to microwear and isotopic ecological signals; bottom: interpretation of these signals in terms of niche partitioning.

Trophic interactions in the Plio-Pleistocene of the Lower Omo Valley compared at regional scale

Blade Redae^{1,2}, Bisrat Araya³, Antoine Souron³; Tomas Getachew^{4,2,5}, Jean-Renaud Boisserie^{4,2,5}

¹ Institute of Human Origins and School of Human Evolution and Social Change, Arizona State University, USA; ² CFEE, CNRS & Ministry of Europe and Foreign Affairs, Ethiopia; ³ PACEA, University of Bordeaux & CNRS, France; ⁴ PAL  ETHIOPS, Ethiopian Heritage Authority & CNRS, Ethiopia; ⁵ PALEVOPRIM, CNRS & University of Poitiers, France

Fossil bones bearing stone tool and carnivore bite marks are rare but valuable indicators of trophic interactions, including hominin dietary habits and competition (e.g., between hominins and other carnivores). The OGRE zooarchaeological component examines these aspects in the Lower Omo Valley during the Plio-Pleistocene (3.75 Ma-ca. 1 Ma). Here, we present rare and new findings that highlight ongoing work.



Analysing bone surface modifications to identify the agents of predation.

Prehistory of Ethiopia: an overview with a particular focus on Lower Omo Valley

Behailu Habte ^{1,2}, Misganaw Gebremichael Woldetsadik ^{1,3}, Aline Galland ³, Anne-Delagnes ³, Tomas Getachew Bedane ^{1,2,4}, Blade Engda Redae ^{2,5} & Jean-Renaud Boissarie ^{1,2,4}

¹ PALÆTHIOPS, Ethiopian Heritage Authority & CNRS, Ethiopia; ² CFEE, CNRS & Ministry of Europe and Foreign Affairs, Ethiopia; ³ PACEA, University of Bordeaux & CNRS, France; ⁴ PALEVOPRIM, CNRS & University of Poitiers, France; ⁵ Institute of Human Origins and School of Human Evolution and Social Change, Arizona State University, USA

The Great Ethiopian Rift yields several key prehistoric sites in Africa, offering critical insight into the origins of human beings and their culture. Likewise, the Lower Omo Valley contains vital prehistoric sites for the understanding of the same. In this talk, we explore the emergence of stone tool technologies in the Lower Omo Valley, highlighting trends from pioneering prehistoric studies to current research trends.



Excavation of the newly discovered Middle Stone Age site of OMO 396 in 2024.

Lacustrine systems and the transition to early food production societies in the eastern African Rift: what role for southern Ethiopia and northern Lake Turkana? Rationale for the new PSPCA Programme—Objectives: Turkana

Jessie Cauliez ¹ & Behailu Habte ^{2,3}

¹ TRACES, CNRS & Université Toulouse Jean Jaurès, France; ² PALÆTHIOPS, Ethiopian Heritage Authority & CNRS, Ethiopia; ³ CFEE, CNRS & Ministry of Europe and Foreign Affairs, Ethiopia

Since the end of the Pleistocene, the Horn of Africa has experienced cyclical climatic fluctuations that had an impact on ancient societies, including the African Humid Period, interrupted by arid episodes. Northern Turkana offers a key setting for studying the transition from hunter-gatherer-fisher societies to pastoralism. This paper reviews regional evidence and outlines a future research programme in the Omo region.



*Antakari 3 (Djibouti): Necropolis of the first herders in the Horn of Africa;
View of an individual associated with their obsidian lithic tools –
5th millenium cal BP – PSPCA Programme.*

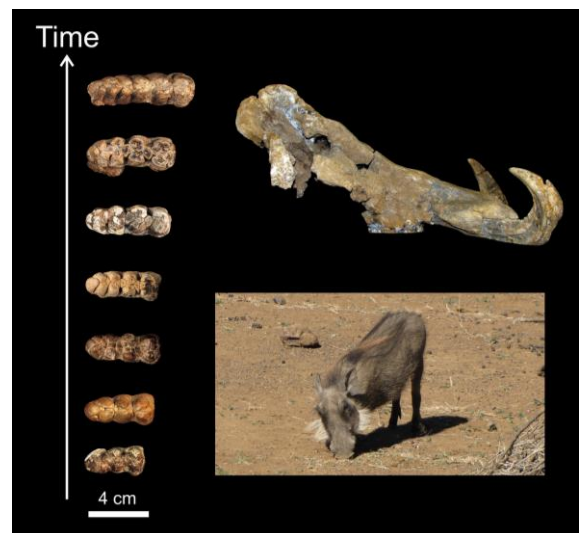
Plio-Pleistocene suid evolution and adaptations, with a focus on the Turkana Depression

Antoine Souron¹, Margot Louail^{2,3}, Deming Yang⁴, Gildas Merceron³, Kevin Uno⁵, Tomas Getachew Bedane^{6,7,3}, Blade Engda Redae⁷ & Jean-Renaud Boisserie^{6,7,3}

¹ PACEA, University of Bordeaux & CNRS, France; ² D^{pt} of Human Evolutionary Biology & American School of Prehistoric Research, Harvard University, USA; ³ PALEVOPRIM, CNRS & University of Poitiers, France; ⁴ Department of Anatomy, Midwestern University, USA; ⁵ D^{pt} of Human Evolutionary Biology & D^{pt} of Earth and Planetary Sciences, Harvard University, USA; ⁶ PALÆTHIOPS, Ethiopian Heritage Authority & CNRS, Ethiopia; ⁷ CFEE, CNRS & Ministry of Europe and Foreign Affairs, Ethiopia; ⁸ Institute of Human Origins and School of Human Evolution and Social Change, Arizona State University, USA

Wild pigs (Suidae) are represented by a rich Plio-Pleistocene fossil record in Africa, including the Turkana Depression, where they are co-occurring with hominids. A large variability in diets (omnivory-herbivory) and fast rates of morphological changes make them an ideal case study to investigate the evolutionary mechanisms controlling adaptations to new environments and reconstruct the context of human evolution.

Left: dental evolution (third lower molars) of genus Kolpochoerus in the Turkana Depression; top right: lateral view of a cranium of Kolpochoerus from Shungura (Omo, Ethiopia); bottom right: an extant warthog (Phacochoerus).



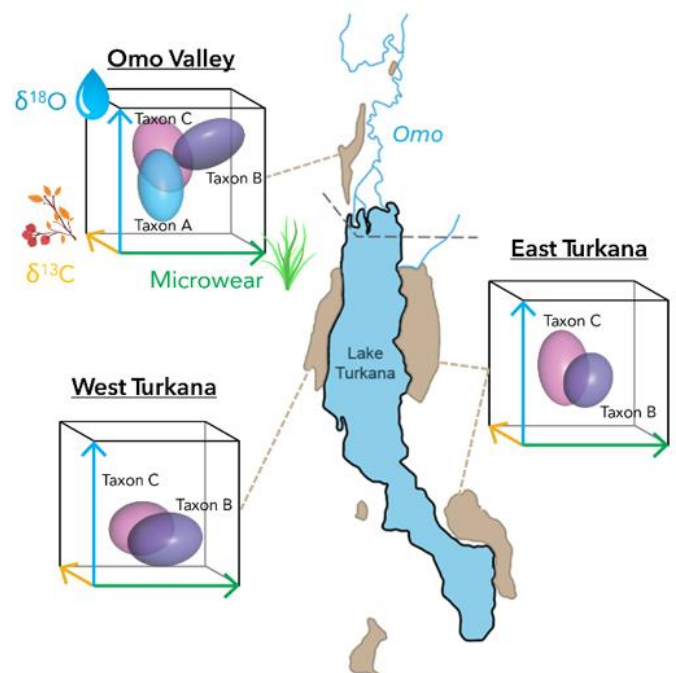
Ecology of Plio-Pleistocene suids in the Turkana Depression and adjacent sites

Margot Louail^{1,2}, Antoine Souron³, Jean-Renaud Boisserie^{4,5,2}, Gildas Merceron⁴, Blade Engda Redae^{5,6}, Tomas Getachew Bedane^{4,5,2} & Kevin Uno⁷

¹ D^{pt} of Human Evolutionary Biology & American School of Prehistoric Research, Harvard University, USA; ² PALEVOPRIM, CNRS & University of Poitiers, France; ³ PACEA, University of Bordeaux & CNRS, France; ⁴ PALÆTHIOPS, CNRS & Ethiopian Heritage Authority, Ethiopia; ⁵ CFEE, CNRS & Ministry of Europe and Foreign Affairs, Ethiopia; ⁶ Institute of Human Origins and School of Human Evolution and Social Change, Arizona State University, USA; ⁷ D^{pt} of Human Evolutionary Biology & D^{pt} of Earth and Planetary Sciences, Harvard University, USA

Plio-Pleistocene suids provide a relevant model for documenting the ecosystems in which hominins lived and for better understanding the adaptive responses of taxa undergoing a transition towards increased herbivory. An integrative approach combining enamel biogeochemistry, dental microwear and spatio-temporal distributions provides new insights into suid paleoecology in Turkana and adjacent sites and ecological dynamics at local and regional scales.

Modelling suid ecology through multiproxy analyses of Turkana suid collections.



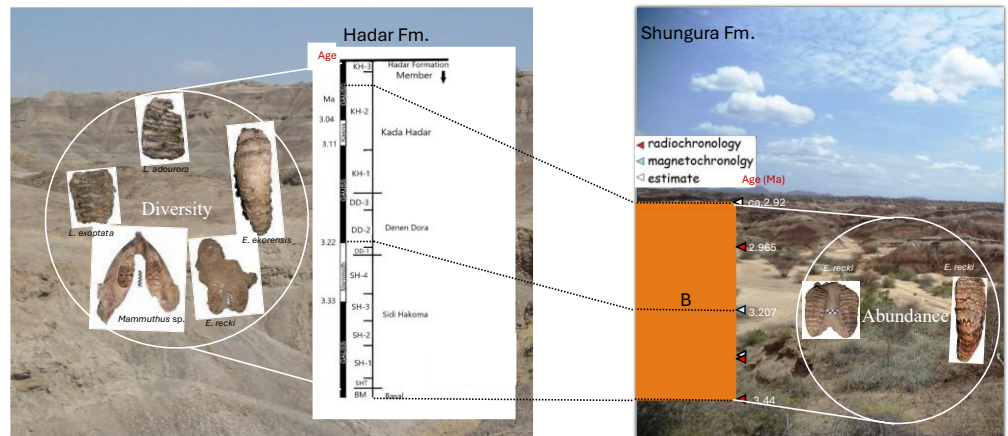
Plio-Pleistocene proboscideans of the northern Rift and beyond

Tomas Getachew Bedane ^{1,2,3}, Hassane Taïso Mackaye ^{4,5} & Jean-Renaud Boisserie ^{1,2,3}

¹ PALÆTHIOPS, Ethiopian Heritage Authority & CNRS, Ethiopia; ² CFEE, CNRS & Ministry of Europe and Foreign Affairs, Ethiopia; ³ PALEVOPRIM, CNRS & University of Poitiers, France; ⁴ Université Polytechnique de Mongo, Tchad; ⁵ Département de Paléontologie, University of N'Djamena, Chad

This study compares the Plio-Pleistocene proboscidean assemblages of the Hadar and Shungura formations in the eastern African rift. Although their stratigraphic members can be broadly correlated, the Hadar Formation preserves a more diverse proboscidean assemblage including *Elephas ekorensis*, *E. recki*, *Loxodonta adaurora*, and *L. exoptata*, whereas Shungura is dominated by *E. recki*. The study examines differences in taxonomic composition and dietary ecology, providing insights into proboscidean diversity and environmental change in the northern Rift.

Comparing elephantid abundance and diversity in the northern Rift.



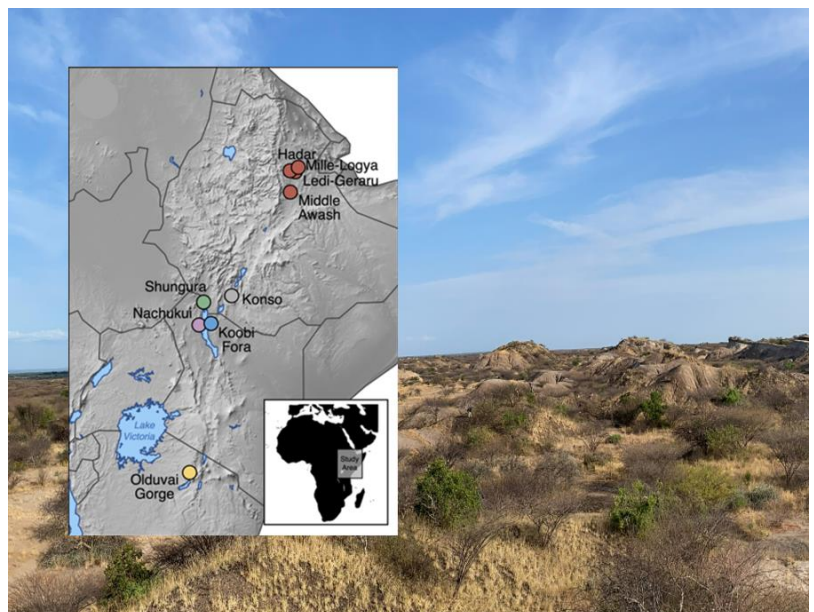
Spatial dynamics of large herbivores in the Horn of Africa, with focus on the Lower Omo Valley

Haregwine Hailu ¹, Gildas Merceron ¹, Jean-Renaud Boisserie ^{2,3,1}

¹ PALEVOPRIM, CNRS & University of Poitiers, France; ² PALÆTHIOPS, CNRS & Ethiopian Heritage Authority, Ethiopia; ³ CFEE, CNRS & Ministry of Europe and Foreign Affairs, Ethiopia

The Plio-Pleistocene deposits of the Turkana Depression, the Main Ethiopian Rift, and the Afar Depression preserve a major archive of the paleo-community while also differing in environmental history, patterns of faunal and hominin evolution. We study large herbivores from these regions to examine how global climatic trends and local environment influenced the bio-geography and ecology of mammalian communities through time.

Studied sites from Afar, Turkana, Main Ethiopian Rift and Ngorongoro Conservation Area, and a view from the Shungura Formation.



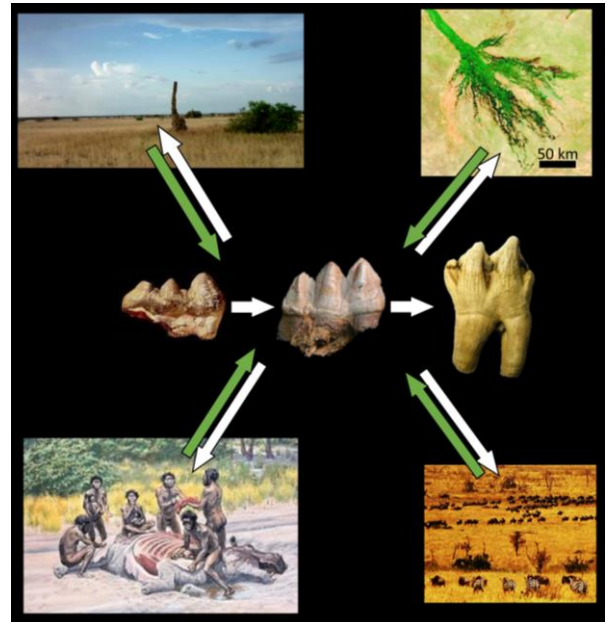
Large semiaquatic herbivores and the evolution of the Plio-Quaternary biota in Africa

Jean-Renaud Boisserie ^{1,2,3}, Faysal Bibi ⁴, Darío Fidalgo ⁴, Axelle Gardin ⁵, Gildas Merceron ³, Naomi Levin ⁶ & Kevin Uno ⁷

¹ PALÆTHIOPS, CNRS & Ethiopian Heritage Authority, Ethiopia; ² CFEE, CNRS & Ministry of Europe and Foreign Affairs, Ethiopia; ³ PALEVOPRIM, CNRS & University of Poitiers, France; ⁴ Museum für Naturkunde, Berlin; ⁵ ISEM, University of Montpellier, France; ⁶ Earth & Environmental Sciences, University of Michigan, USA; ⁷ D^{pt} of Human Evolutionary Biology & D^{pt} of Earth and Planetary Sciences, Harvard University, USA

The Plio-Quaternary representatives of this ecological guild, the Hippopotamidae, are major ecosystem engineers in African wet environments. This presentation will briefly explore major questions about their Plio-Pleistocene ecology and biogeography, notably in the Turkana Depression. It will demonstrate that particular evolutionary trajectories do not necessarily align with climate dynamics, and at the same time display interesting parallelism with the evolution of hominids.

Dental evolution of hippopotamids and factors at play (biome changes, climate, hydrography, herbivore communities, predation).



Towards integration of African research efforts in paleosciences: developing international collaborations between Chad and Ethiopia

Andossa Likius ¹, Tomas Getachew Bedane ^{2,3,4}, Jean-Renaud Boisserie ^{2,3,4}

¹ Département de Paléontologie, University of N'Djamena, Chad; ² PALÆTHIOPS, Ethiopian Heritage Authority & CNRS, Ethiopia; ³ CFEE, CNRS & Ministry of Europe and Foreign Affairs, Ethiopia; ⁴ PALEVOPRIM, CNRS & University of Poitiers, France

Sub-Saharan Africa experienced a paleontological revolution since the 1970s, but local paleosciences remained dependent on foreign fundings guided by research priorities of Global North teams. Ethiopia, Chad and Kenya, however, have the potential to create a new deal, thanks to well-trained PhDs, advanced technical knowledge, exceptional sites and collections, and virtuous partnerships with North research institutions. Stronger inter-African collaborations will further strengthen African research. We promote joint actions by our teams in Ethiopia and Chad to initiate a South-South and South-North scientific network in paleosciences.

Ethiopian and Chadian paleontologists collaborating to revise the evolution of African elephantids, N'Djamena, September 2025.



Main partners

