

References

Anthropologie

MUSSI 2023

Margherita Mussi & Eduardo Méndez-Quintas et al., *Early Homo erectus lived at high altitudes and produced both Oldowan and Acheulean tools*. [science](#) **382** (2023), 713–718.

s382-0713-Supplement.pdf

In Africa, the scarcity of hominin remains found in direct association with stone tools has hindered attempts to link *Homo habilis* and *Homo erectus* with particular lithic industries. The infant mandible discovered in level E at Garba IV (Melka Kunture) on the highlands of Ethiopia is critical to this issue because of its direct association with an Oldowan lithic industry. Here, we used synchrotron imaging to examine the internal morphology of the unerupted permanent dentition and confirmed its identification as *H. erectus*. Additionally, we used revised paleomagnetic ages to show that (i) the mandible in level E is ≈ 2 million years old and represents one of the earliest *H. erectus* fossils and that (ii) overlying level D, ≈ 1.95 million years old, contains the earliest known Acheulean assemblage.

Margherita Mussi, Matthew M. Skinner, Rita T. Melis, Joaquín Panera, Susana Rubio-Jara, Thomas W. Davies, Denis Geraads, Hervé Bocherens, Giuseppe Britatico, Adeline Le Cabec, Jean-Jacques Hublin, Agness Gidna, Raymonde Bonnefille, Luca Di Bianco & Eduardo Méndez-Quintas

Bibel

AMZALLAG 2009

Nissim Amzallag, *Yahweh, the Canaanite God of Metallurgy?* [Journal for the Study of the Old Testament](#) **33** (2009), iv, 387–404.

In antiquity, south-eastern Canaan was a very important centre for copper smelting. While it is likely that there existed a patron deity of metallurgy, the identity of the Canaanite god of smelting remains unknown. Although some biblical writings suggest a south Canaanite origin of Yahweh, no details are provided concerning his worship prior to him becoming the god of Israel. This study explores whether Yahweh was formerly the Canaanite god of metallurgy. The following observations corroborate this hypothesis: (1) Yahweh was worshiped by the Edomites, and especially by the Kenites, a small tribe regarded as the Canaanite smelters; (2) the Israelite cult of Yahweh was associated with copper and with a bronze serpent, a typical symbol of metallurgy; (3) the melting of copper is considered in Exodus 4 as the specific sign of Yahweh; (4) a parallel exists between Yahweh and the god of metallurgy worshiped in Egypt (Ptah), Mesopotamia (Ea/Enki) and Elam (Napisir), all of them being a mysterious lonely deity; (5) fighting the (other) gods is common to Yahwism and to ancient metallurgical traditions. These data suggest that, before becoming publicly worshipped in Israel, Yahweh was formerly the god of the Canaanite guild of metallurgists.

Keywords: Cain | copper smelting | Yahweh | Edom | Kenite | origin of monotheism.

MARAIS 2023

Isak Lukas Marais, *The Exodus Route of the Israelites from Egypt, with special reference to the locations of Mount Sinai, and of Kadesh Meribah (as opposed to Kadesh Barnea) and Rephidim.* (Online 2023). <<http://www.academia.edu/97694392/>> (2023-11-11).

The purpose of this work is simple: Thousands of publications on this topic have caused confusion and incredulity to the extent that God's Word has been put in discredit. The purpose of this document is to demonstrate that what is stated in the Bible is in fact true and accurate. What has gone wrong is that few researchers have properly studied and analysed the contents of the Bible in the first instance, and most have paid more attention to what others have said, whilst desiring to table new, startling flights of fancy in order to attract attention.

REIF 1971

S. C. Reif, *What Enraged Phinehas? A Study of Numbers 25:8.* *Journal of Biblical Literature* **90** (1971), 200–206.

Zimri, a tribal chief, had the audacity to bring a woman from one of the noblest families of Midian into the Israelite camp. His crime was not that he had sexual relations with her, although this is by no means precluded in our explanation, but that he installed her in a qubbah next to his tent, possibly engaging her as a diviner in an attempt to find the means of placating the deity responsible for the plague, or simply to receive the advice of the oracle in this time of crisis, i.e., to engage in some forbidden cultic activity. Phinehas, offended at the usurpation of his priestly rights and at this further act of apostasy from Yhwh, followed Zimri into the qubbah and dispatched both him and the woman in her qubbah. The narrator concludes that this course of action, as distinct from that adopted by Zimri, was successful in effecting a cessation of the plague.

In accordance with the above remarks, a suitable English translation of Num 25:8 would run: "Following the Israelite into the shrine, he ran them both through, the Israelite and the woman in her shrine."

SHIKI-Y-MICHAELS 2013

Sheila Shiki-y-Michaels, *Blessed of Women in Tents, Biblical Priestesses, Tents & the Midianite-Kenite Hypothesis.* Online 2013, Aug. 12. <<http://www.academia.edu/5355993/>> (2023-11-11).

Biblical Lands and Peoples in Archaeology and Text: Society of Biblical Literature Annual Meeting, Baltimore, 24 November 2013

ZERBST 2005

UWE ZERBST & PETER VAN DER VEEN (Hrsg.), *Keine Posaunen vor Jericho? Beiträge zur Archäologie der Landnahme.* (Holzgerlingen 42022).

Biologie

EDITORIAL 2023

Brain and body are more intertwined than we knew. *nature* **623** (2023), 223–224.

A host of disorders once thought to be nothing to do with the brain are, in fact, tightly coupled to nervous-system activity.

SEGUREL 2020

Laure Segurel et al., *Why and when was lactase persistence selected for? Insights from Central Asian herders and ancient DNA*. [PLoS Biology 18 \(2020\), e3000742](#). DOI:10.1371/journal.pbio.3000742.

The genetic adaptation of humans to the consumption of milk from dairying animals is one of the most emblematic cases of recent human evolution. While the phenotypic change under selection, lactase persistence (LP), is known, the evolutionary advantage conferred to persistent individuals remains obscure. One informative but underappreciated observation is that not all populations whose ancestors had access to milk genetically adapted to become lactase persistent. Indeed, Central Asian herders are mostly lactase nonpersistent, despite their significant dietary reliance on dairy products. Investigating the temporal dynamic of the -13.910:C>T Eurasian mutation associated with LP, we found that, after its emergence in Ukraine 5,960 before present (BP), the T allele spread between 4,000 BP and 3,500 BP throughout Eurasia, from Spain to Kazakhstan. The timing and geographical progression of the mutation coincides well with the migration of steppe populations across and outside of Europe. After 3,000 BP, the mutation strongly increased in frequency in Europe, but not in Asia. We propose that Central Asian herders have adapted to milk consumption culturally, by fermentation, and/or by colonic adaptation, rather than genetically. Given the possibility of a nongenetic adaptation to avoid intestinal symptoms when consuming dairy products, the puzzle then becomes this: why has LP been selected for at all?

Laure Segurel, Perle Guarino-Vignon, Nina Marchi, Sophie Lafosse, Romain Laurent, Céline Bon, Alexandre Fabre, Tatyana Hegay & Evelyne Heyer

Energie

BOURZAC 2023

Katherine Bourzac, *Carbon-free fuels could have a climatic dark side*. [science 382 \(2023\), 752](#).

As nations push for green hydrogen and ammonia, researchers warn of side effects.

These potential side effects are too often overlooked, says Paul Wolfram, a researcher at the Joint Global Change Research Institute. “The focus is almost solely on [carbon dioxide] emissions,” he says.

Today, hydrogen and ammonia mainly come from energy-intensive, polluting processes. But they can also be made cleanly, with renewable electricity, resulting in a green fuel.

CHO 2023

Adrian Cho, *Deal to build pint-size nuclear reactors is canceled*. [science 382 \(2023\), 749–750](#).

NuScale Power’s small modular reactors promised cheaper nuclear power, but costs soared and utilities balked.

In January, an analysis revealed that the cost had increased by another \$3 billion and suggested power from the plant would cost \$89 per megawatt-hour, roughly three times as much as power from wind or utility-scale solar.

HOWARTH 2023

Robert W. Howarth, *The Greenhouse Gas Footprint of Liquefied Natural Gas (LNG) Exported from the United States*. [unknown \(2023\), preprint, 1–24](#). .

Before 2016, the export of liquefied natural gas (LNG) from the United States was banned, but since that time exports have risen rapidly, fueled in part by the rapid growth in shale gas production. Today the United States is the largest exporter of LNG. This paper presents a full lifecycle assessment for greenhouse gas emissions from LNG. These emissions depend on the type of tanker used to transport the LNG, with emissions far larger when LNG is transported by older, steam-powered tankers burning heavy fuel oil. The largest source of emissions in this case is from venting of methane lost by evaporation from the storage tanks, called boil off. More modern tankers, whether powered by steam or 4-stroke or 2-stroke engines, can capture this boil-off methane and use it for their power, thereby greatly lowering methane emissions. For scenarios for LNG that is transported by more modern tankers, the single largest source of emissions in the full lifecycle are those from the production, processing, storage, and transport of the natural gas that comprises the feedstock for LNG. Fugitive emissions of unburned methane are particularly important, but so are the carbon dioxide emissions from the energy intensive processes behind modern shale gas extraction. In all of the scenarios considered, across all types of tankers used to transport LNG, methane emissions exceed emissions of carbon dioxide from the final combustion of LNG. Carbon dioxide emissions other than from this final combustion are significant, but smaller than the carbon dioxide from the final combustion. While some proponents of LNG have argued it has a climate benefit by replacing coal, the analysis presented here disproves this. Across all scenarios considered, total greenhouse gas emissions from LNG are larger than those from coal, ranging from 24 % to 274 % greater.

Keywords: methane | methane emissions | fugitive emissions | methane slippage | boil off | LNG tanker | liquefaction | lifecycle analysis | global warming potential | GWP | GWP20

Grabung

LOUD 1939

Gordon Loud, *The Megiddo Ivories*. University of Chicago Oriental Institute Publications 52 ([Chicago 1939](#)).

Klima

BUTT 2023

Edward W. Butt, Jessica C. A. Baker & Dominick V. Spracklen et al., *Amazon deforestation causes strong regional warming*. [PNAS 120 \(2023\), e2309123120](#).

[pnas120-e2309123120-Supplement.pdf](#)

Tropical deforestation impacts the climate through complex land–atmosphere interactions causing local and regional warming. However, whilst the impacts of deforestation on local temperature are well understood, the regional (nonlocal) response is poorly quantified. Here, we used remote-sensed observations of forest loss and dry season land–surface temperature during the period 2001 to 2020 to demonstrate that deforestation of the Amazon caused strong warming at distances up to 100 km away from the forest loss. We apply a machine learning approach to show nonlocal warming due to forest loss at 2–100 km length scales increases the warming due to deforestation by more than a factor 4, from 0.16 K to 0.71 K for each 10- percentage points of forest loss. We estimate that rapid future

deforestation under a strong inequality scenario could cause dry season warming of 0.96 K across Mato Grosso state in southern Brazil over the period 2020 to 2050. Reducing deforestation could reduce future warming caused by forest loss to 0.4 K. Our results demonstrate the contribution of tropical deforestation to regional climate warming and the potential for reduced deforestation to deliver regional climate adaptation and resilience with important implications for sustainable management of the Amazon.

Keywords: deforestation | temperature | climate

Edward W. Butt, Jessica C. A. Baker, Francisco G. Silva Bezerra, Celso von Randow, Ana P. D. Aguiar & Dominick V. Spracklen

Significance: Tropical deforestation warms the climate with negative impacts on people living nearby. Most previous studies have focused on the local warming caused by deforestation and less is known about how deforestation impacts surrounding areas. Our study used satellite data to show that deforestation in the Amazon caused substantial warming up to 100 km away from the location of forest loss. We show that this nonlocal warming increased deforestation-induced warming by a factor of four. We estimate that reducing deforestation in the Brazilian Amazon could reduce future warming in the southern Amazon by 0.56 °C. These findings highlight the role of deforestation in regional climate change and emphasize the importance of reducing deforestation for climate adaptation and resilience in the Amazon.

Politik

SPRENGHOLZ 2023

Philipp Sprengholz, Luca Henkel, Robert Böhm & Cornelia Betsch, *Historical narratives about the COVID-19 pandemic are motivationally biased*. *nature* **623** (2023), 588–593.

How people recall the SARS-CoV-2 pandemic is likely to prove crucial in future societal debates on pandemic preparedness and appropriate political action. Beyond simple forgetting, previous research suggests that recall may be distorted by strong motivations and anchoring perceptions on the current situation^{1–6}. Here, using 4 studies across 11 countries (total $n = 10,776$), we show that recall of perceived risk, trust in institutions and protective behaviours depended strongly on current evaluations. Although both vaccinated and unvaccinated individuals were affected by this bias, people who identified strongly with their vaccination status—whether vaccinated or unvaccinated—tended to exhibit greater and, notably, opposite distortions of recall. Biased recall was not reduced by providing information about common recall errors or small monetary incentives for accurate recall, but was partially reduced by high incentives. Thus, it seems that motivation and identity influence the direction in which the recall of the past is distorted. Biased recall was further related to the evaluation of past political action and future behavioural intent, including adhering to regulations during a future pandemic or punishing politicians and scientists. Together, the findings indicate that historical narratives about the COVID-19 pandemic are motivationally biased, sustain societal polarization and affect preparation for future pandemics. Consequently, future measures must look beyond immediate public-health implications to the longer-term consequences for societal cohesion and trust.