

Along the shores of Africa's Lake Victoria in Kenya roughly 2.9 million years ago, early human ancestors used some of the oldest stone tools ever found to butcher hippos and pound plant material, according to new research (Science). Though multiple lines of evidence suggest the artifacts are likely to be about 2.9 million years old, the artifacts can be dated to between 2.6 and 3 million years old. The study presents what are likely to be the oldest examples of a hugely important stone age innovation known to scientists as the Oldowan toolkit, as well as the oldest evidence of hominins consuming very large animals.

Excavations at the site, named Nyayanga and located in western Kenya, produced a pair of massive molars belonging to the human species' close evolutionary relative, Paranthropus. The teeth are the oldest fossilised Paranthropus remains yet found, and their presence at a site loaded with stone tools raises intriguing questions about which human ancestor made those tools.

On August 17, 2022, a meteorite streaked over India, breaking apart as it descended through the air, to scatter over two villages in Banaskantha, Gujarat. One piece struck a neem tree in Rantila village and shattered into several pieces. Another landed on the porch of a house in Ravel village, 10 km away, and met a similar fate. 'A rare specimen' The meteorite is a "rare, unique specimen" of aubrite, analysis by a group at the Physical Research Laboratory (PRL), Ahmedabad, has revealed. Hundreds of meteorites have crashed in India, but this is only the second recorded crash of an aubrite.

The last was in 1852 in Basti, Uttar Pradesh. Worldwide, aubrites have crashed in at least 12 locations since 1836, including six in the U.S. According to one 2003 definition, aubrites are "igneous rocks" that form in oxygen poor conditions, and thus "contain a variety of exotic minerals that are not found on Earth". For example, the mineral heideite was first described in the Basti meteorite.

Post whaling increases in eastern Australian humpback whale numbers may have led to males shifting their mating tactics from singing to physically competing with other males (Communications Biology), highlighting how humpback whales have adapted their social behaviours as their populations have recovered. Male eastern Australian humpback whales may be less likely to use singing as a mating tactic when the population size is larger in order to avoid attracting males to their potential mate.

A new insight into how tsetse flies mate could bolster the arsenal of tools to manage the spread of disease by these insects. Tsetse flies transmit trypanosomes. The insects produce volatile pheromones that control their mating behaviour (Science). The study discovered several volatile compounds that promoted rapid mating behaviour in the tsetse flies. Infection of female flies by trypanosomes alters both the pheromone profile and mating behaviour,

INDIA FINALISES ACTIVITIES FOR TRADING OF CARBON CREDITS UNDER ARTICLE 6.2 MECHANISM OF PARIS AGREEMENT

1. Union government has finalised a list activity to facilitate transfer of emerging technologies and mobilise international finance in India. Earlier, National Designated Authority for Implementation of Paris Agreement (NDAIAPA) was notified. NDAIAPA is mandated to decide type of projects that may take part in international carbon market under Article 6 mechanisms.
2. Article 6 of Paris Agreement allows countries to voluntarily cooperate with each other to achieve emission reduction targets set out in their Nationally Determined Contributions (NDCs). Under this, countries will be able to transfer carbon credits earned from reduction of greenhouse gases (GHG) emissions to help countries meet climate targets.
3. Article 6.2 creates basis for trading in GHG emission reductions. Carbon trading is a market-based system of buying and selling permits and credits that allow permit holder to emit carbon dioxide. An overall cap is placed on amount of emissions that are allowed from sources, including power industry, automotive etc.
4. Governments then issue permits. If a company curbs its own carbon significantly it can trade excess permits for cash. Carbon trading started formally in 1997 under Kyoto Protocol.

RBI ISSUES DRAFT NORMS FOR LENDING AND BORROWING OF GOVERNMENT SECURITIES(G-SECS)

1. Aim is to facilitate wider participation in Government Securities Lending (GSL) Market.
2. **Key highlights of draft norms-Eligibility:** G-Secs issued by Centre (except treasury bills (T-bills)) are eligible for lending and trading in GSL, whereas G-Sec of both Centre and States (including T-bills) shall be used as collateral under a GSL. Eligible Participants: Entities eligible to undertake Repo transactions and those approved by RBI. Tenure: Minimum one day and a maximum of ninety days.
3. Securities borrowed under a GSL transaction shall be eligible for Statutory Liquidity Ratio (SLR) for borrower (not for lender). G-Sec is a tradeable instrument issued by Central or state Governments. It acknowledges government's debt obligation. Such securities are short term (usually called T-Bills, with maturities of less than one year) or long term (usually called Government bonds or dated securities with maturity of one year or more).
4. Central Government issues both, T-bills and bonds or dated securities while State Governments issue only bonds or dated securities, called State Development Loans (SDL). G-Secs carry practically no risk of default and, hence, are called risk-free gilt-edged instruments.

INDIA SETTING UP \$4 BILLION FUND TO AID CORPORATE DEBT MARKET

1. Aim is to provide liquidity to corporate debt market during bouts of stress and to help stem panic selling and ease redemption (repayment). Government will provide 90% of the money for fund, and other asset managers would contribute the rest. It will be administered by SBI Mutual Fund, a unit of State Bank of India.
2. Corporate bonds are issued by private and public corporations to raise money for various purposes, such as building a new plant, purchasing equipment, or growing the business. Size of Indian corporate bond market is around \$471 billion and remains small compared to other major Asian emerging markets such as Malaysia, Korea, and China.
3. Significance of corporate debt market-Supplement the banking system in meeting the requirements of the corporate sector for long term capital investment and asset creation. Provide institutional investors such as insurance companies and provident and pension funds with long-term financial assets. Provides an alternative source of finance to infrastructure sector; lower the cost of long-term funding.
4. **Challenges Faced**-Retail participation remains low and dominated by domestic institutions like insurance companies. Crowding out by issuance of G-Secs.

SOUTH AFRICA TRANSLOCATES 12 CHEETAHS TO INDIA

1. India and South Africa signed a MoU on Cooperation on Re-introduction of Cheetah to India with an aim to expand cheetah meta-population and to reintroduce cheetahs to a former range state. Cheetahs were made available by Phinda Game Reserve, Tswalu Kalahari Reserve, Waterberg Biosphere, Kwandwe Game Reserve and

and has the effect of reducing mating receptivity in females.

Ball milling “ordinary” ice at low temperatures — a process that involves vigorously shaking a cryogenically cooled container full of ice and steel balls — creates an amorphous form with a density close to liquid water (Science). The finding suggests that water is more complex at low temperatures than previously recognised. Frozen water can take many forms. There are 20 known crystalline phases of water ice and at least two families of amorphous form.

The world’s largest northern gannet colony at the Bass Rock, an island off the coast of North Berwick, Scotland has been recently decimated by avian influenza (H5N1) or bird flu. H5N1 has caused unprecedented loss of tens of thousands of birds in the U.K. The annual congregations on breeding grounds quickly turned into a super spreader event as highly pathogenic H5N1 ripped through bird colonies, leaving many lying dead on the beaches or remote islands. The impact of this disease is very serious for bird conservationists. Recently, intra-mammal transmission of H5N1 in captivity in mink farms was recorded, posing a bigger concern in relation to zoonotic potential.

On February 14, Nature News reported that the World Health Organization (WHO) has “shelved the second phase” of COVID-19 origin investigation “citing ongoing challenges over attempts to conduct crucial studies in China”. Two years after the WHO’s visit to China to investigate the origin of COVID-19, the WHO has “abandoned” the second phase of the investigation, it said and quoted WHO’s Technical Lead for COVID-19, Dr. Maria Van Kerkhove saying that “there is no phase two”. Nature News went on to say that though “WHO planned for work to be done in phases, the plan has changed.”

The Darjeeling and Sikkim Himalayas are home to more than one-third of all types of rhododendrons found in India, reveals the latest publication of the Botanical Survey of India (BSI). The publication, titled Rhododendrons of Sikkim and Darjeeling Himalaya — An Illustrated Account, lists 45 taxa of rhododendrons (36 species, one subspecies, two variety and seven natural hybrids). There are 132 taxa (80 species, 25 subspecies and 27 varieties) of rhododendrons found in India.

Mapesu Game Reserve and will join Cheetahs relocated to Kuno National Park in Madhya Pradesh (from Namibia).

2. Plan is to translocate a further 12 annually for next 8 to 10 years. South Africa plays an active role in providing founders for population and range expansion of iconic species such as cheetahs.
3. Cheetah was declared extinct in India in 1952 due to over hunting and loss of habitat. Translocation is being made under ‘Project Cheetah’, world’s first inter-continental large wild carnivore translocation project. National Tiger Conservation Authority (NTCA) is nodal agency for project.
4. Cheetah, world’s fastest mammal, is a keystone species (organism that helps define an entire ecosystem) of dry forests, scrub forests, and savannahs. Protected under Appendix 1 of CITES. IUCN status: African Cheetah (Vulnerable); Asiatic Cheetah (Critically endangered).

SUPREME COURT (SC) ORDERS DELHI MAYOR POLLS, SAYS NOMINATED CANNOT VOTE

1. SC, mentioning Article 243R and Delhi Municipal Corporation Act, 1957, stated that nominated members (or aldermen), by Lieutenant Governor, of Municipal Corporation of Delhi (MCD) cannot vote in mayoral polls. SC also held that nominated members cannot vote in elections for Deputy Mayor and Standing Committees.
2. Mayor of Urban Local Bodies (ULBs) is the ceremonial head while the administrative head is Municipal Commissioner. 74th Constitutional Amendment has not prescribed the mode of election or tenure of mayors.
3. In most states mayors are elected by city councillors who themselves are directly elected by urban voters. However, several states – Madhya Pradesh, Uttar Pradesh, Tamil Nadu etc – have mayors who are elected directly.
4. **Issues with office of Mayor-Short tenure:** Reports suggest that often a Mayor’s tenure at a corporation is less than one year. Lacks executive authority: Mayors assume a largely titular position with government-appointed municipal commissioner holding executive power. Restricted executive powers to mayors is seen as one of the major reasons for inefficiency and mismanagement in urban governance.

ELECTION COMMISSION OF INDIA (ECI) DECIDES ON PARTY NAME AND SYMBOL

1. Article 324 read with Election Symbols (Reservation and Allotment) Order, 1968 empowers ECI to recognise political parties and allot symbols. Under the Order, ECI can decide disputes among rival groups or sections of a recognised political party staking claim to its name and symbol. In Sadiq Ali Case (1971), Supreme Court upheld ECI’s authority to decide issues on a dispute or a merger and prescribed 3 tests to arrive at a decision: Test of Aims and Objectives of the Party Constitution.
2. Test of party constitution Test of Majority In line with Sec 29A of Representation of the People Act, 1951 and Election Symbols Order, 1968, ECI recognizes a Political Party and allocates symbol to it. Recognised National Parties: These parties are allocated with a symbol, which can be used across the country in all elections.
3. No other parties can use them. Recognised State Parties: These parties are allocated with an exclusive symbol within the state. Independent Candidates: They can choose 3 Symbols in order of their preference (other than national and state party’s symbol).



“I know there will be a day when gravity will win. But I get up every day and I would have defeated her every single day of my life.”

DR. KHAN
(KSG)