

Anthropology Case Studies

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IMPROVED PRIME EDITING SYSTEM MAKES GENE-SIZED EDITS IN HUMAN CELLS AT THERAPEUTIC LEVELS

Source: <https://phys.org/>

Dated: June 10, 2024

Area of Focus:

Anthro: Recombinant DNA Technologies

GS: Science & Tech



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Bombay Blood Group, Heard about it? To learn more, *scan the code*



The New Method

Scientists at MIT and Harvard have improved a gene-editing technology that is now capable of inserting or substituting entire genes in the genome in human cells efficiently enough to be potentially useful for therapeutic applications.

How it works?

The new method uses a combination of prime editing, which can directly make a wide range of edits up to about 100 or 200 base pairs, and newly developed recombinase enzymes that efficiently insert large pieces of DNA thousands of base pairs in length at specific sites in the genome. This system is called eePASSIGE.

This is one of the first examples of programmable targeted gene integration in mammalian cells that satisfies the main criteria for potential therapeutic relevance.

The resulting newly evolved and engineered Bxb1 variant (eeBxb1) improved the eePASSIGE method to integrate an average of 30% of gene-sized cargo in mouse and human cells, four times more than the original technique and about 16 times more than another recently published method called PASTE.

DOES THE BUDGET TALK ABOUT DALITS AND TRIBALS?

Source: www.justicenews.co.in/

Dated: Feb 14, 2024

Area of Focus:

Anthro: Budget expenditure for SCs & STs

GS: Social Issues



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To learn more about Budget & PVTG's welfare, *scan the code*



Union Budget 2024-25

Budget Allocations	2024-25 (in crores)	2023-24 (in crores)
Total Estimated Expenditure	51,08,780	49,90,842
SCs	1,65,598	1,59,162
STs	1,21,023	1,19,509

Reduced allocations in 26 of the 37 core welfare schemes covering health, education, rural development and addressing marginalized communities

President Draupadi Murmu said in Parliament:

Enrollment in Higher Education of

- SC students has increased by 44 %
- ST students increased by 65 %
- OBC students increased by 44 %.

Claims the reason for the low dropout rate has been scholarships.

Decreased spending on Education

Scholarship	FY 2023-24 (in Rs)	FY 2022-23 (in Rs)
Pre-matric	433 crores	1,425 crores
Skill development schemes	3.4 crores	332.91 crores
Research schemes for minorities	20 crores	41 crores

ARCHAEOLOGISTS, SANSKRIT SCHOLARS TIE UP TO DECIPHER RIGVEDA TEXT

Source: The Hindu

Dated: June 05, 2024

Area of Focus:

Anthropology: Archeology, Language & Communication

GS: Indus Valley Civilization, Vedic Culture



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To learn more about the this news, *scan the code*



Vasant Shinde, VC(Retd.), Deccan College says a clear understanding of Rigveda is important to corelate archeological evidences found in Rakhigarhi, Banawali, Kalibanga and Dhoulavira.

Shinde focused on the hypothesis that Harappan & Vedic people are same.

Evidence of vedic ritual platform and fire alters found in Rakhigarhi.

He said, around 2/3rd, atleast 1,200 of Harappan sites are found near river *Saraswati*, which is menentioned 71 times in Rigveda

Shinde believes the date of Rigveda to be at least as far back as 4,500 years ago or longer.

Shinde's group found genetic similarities between Indian women's DNA and Harappan women's skelton.

DOOR TO A HOUSING SCHEME, TRIBALS FIND HARD TO OPEN

Source: The Hindu

Dated: May 27, 2024

Area of Focus:

Anthro: History of administration of tribal areas, tribal policies, plans programmes of tribal development and their implementation, PVTGs.

GS: Social Issues



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To understand the real status of Tribals in India,
scan the code



- 75 Particularly Vulnerable Tribal Groups (PVTGs) are recognized in India.
- The PM JANMAN initiative aims to deliver essential services such as safe housing, clean drinking water, and sanitation to PVTGs through 11 critical interventions.
- The Government of India launched the Pradhan Mantri PVTG Development Mission in 2023-24 to enhance the living conditions of PVTGs.

Challenges in the Implementation of PM-JANMAN Housing Scheme

- **App is in-apt:** Awaas+ app & the MGNREGA Management Information System (MIS) have no consistency amongst each other. There are a lot of omissions in the app like IPPB.
- Data mismatch and ineligibility issues; discrepancies in Data Collection Systems, App Usability and Confusion, Geo-tagging and network issues; financial inclusion barriers

GENE REGULATION MIGHT BE THE KEY TO A LONGER LIFESPAN

Source: www.ncbi.nlm.nih.gov

Dated: Oct 13, 2023

Area of Focus:

Anthro: Human Genetics: D.N.A. technology

GS: Science & Tech



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To learn about the social aspects of increasing age, *scan the code*



Biologists at the University of Rochester suggests that the secret to a longer lifespan lies in the mechanisms that control gene expression.

Two crucial regulatory networks, **circadian and pluripotency networks**, act as key players in longevity, offering valuable insights into how longevity arise.

The study reveals that long-lived species typically exhibit:

- Low expression of genes involved in energy metabolism and inflammation.
- High expression of genes involved in DNA repair, RNA transport, and cellular skeleton (microtubule) organization.

Conversely, short-lived species tend to show:

- High expression of genes related to energy metabolism and inflammation.
- Low expression of genes associated with DNA repair, RNA transport, and microtubule organization.

Role of Circadian Networks: Energy metabolism and inflammation; referred to as negative lifespan genes.

Role of Pluripotency Networks: Critical role in reprogramming somatic cells (non-reproductive cells) into embryonic-like cells. These reprogrammed cells can rejuvenate and regenerate more effectively by reorganizing DNA that becomes disordered with age.

EVIDENCE OF A NEOLITHIC 'SKULL CULT' FOUND IN TURKEY

Source: American Association for
the Advancement of Science

Dated: June 28, 2017

Area of Focus:

Anthro: Fossil Evidence, Archeology

GS: Prehistory



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To learn how to select
the relevant news for
archeology, *scan the code*



Researchers have uncovered three carved skull fragments at a Neolithic dig site in Turkey: *first evidence of a possible 'skull cult'*

- Discovered by: Julia Gresky and team
- Where: Göbekli Tepe
- Modification: Each skull had deep incisions along the sagittal axis

This intentional modification(carved using lithic tools) of skulls points to ritualistic practices, support the idea of a 'skull cult' where skulls were venerated or used in ceremonial contexts.

The discovery at Göbekli Tepe adds a new dimension to our understanding of Neolithic rituals and the cultural significance of skulls in early human societies.

Students should note that all Case Studies not necessarily be long, sometimes you can refer to a case study in a single sentence.

ANCIENT DNA STILL PRESENT IN HUMAN GENOME LINKED TO MAJOR PSYCHIATRIC DISORDERS

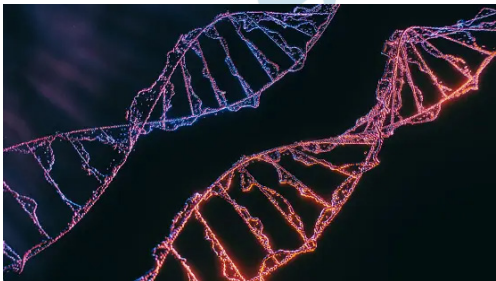
Source: ndtv.in

Dated: June 3rd, 2024

Area of Focus:

Anthro: Human Genetics- Methods and Application

GS: Science & Tech



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Finding Genetics tough? To
learn the basic terminology,
scan the code



Ancient DNA sequences, specifically Human Endogenous Retroviruses (HERVs), (which make up about 8% of human DNA) are linked to major psychiatric disorders such as *depression, schizophrenia, and bipolar disorder*.

Previously considered “junk DNA,” these HERVs are now recognized for their potential significant role in mental health.

Researchers from King's College London found that specific HERV expression profiles correlate with increased susceptibility to certain psychiatric disorders.

Understanding these ancient viruses could revolutionize mental health research and treatment, although further research is needed to elucidate the exact functions of most HERVs.

ODISHA: DONGRIA KONDH TRIBALS TAKE ON CORPORATE GOLIATHS TO SAVE FORESTS

Source: <https://vikalpsangam.org/>

Dated: Oct 13, 2023

Area of Focus:

Anthro: Developmental Projects and their impacts on tribal displacements and rehabilitation

GS: Social Issues, Essay



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To learn more about Tribals
and Forest Rights, *scan the
code*



- The Dongria Kondh tribals in Odisha revere Niyamgiri Hill as the seat of their god Niyam Raja for Milenia.
- The Dongria Kondh, one of India's poorest tribe, previously halted Vedanta's bauxite mining plans.
- **Recent Development:** Amendments to the Forest Conservation Act 1980 through The Forest Conservation Amendment Act 2023 and the Forest Conservation Rules 2022
- **How its against the tribes:** By diluting the term 'forest' to exclude deemed forests, **no gram sabha consent** will be required to commence mining and other "development" activities in these Scheduled Areas.
- **Action taken by Dongaria Kondh:** The Niyamgiri Suraksha Samiti and the MSS are demanding the immediate recognition of Community Forest Rights and Individual Forest Rights of tribals to their forests, as mandated under the Forest Right Act 2006.