ANTHROPOLOGY NEWS DIARY

(AND)

10.05.2021

FOR UPSC CSE MAINS

This series provides compilation of daily CURRENT AFFAIRS of Anthropology.

It is aimed at addressing the requirement of aspirants to add contemporary aspects of the subject to the answers.

It also helps in understanding the trends of anthropology across India and the world.

**NOTE:** Please attempt the questions given at the end of the document and can upload on the **telegram channel: Sosin for Anthropology Q&A, for peer review**
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Note - For convenience, the respective reference links have been dropped at the end of every topic.
A. BIOLOGICAL ANTHROPOLOGY

1. Bacterial Evolution

Context:
The findings, published in the journal *Science*, demonstrate how integrating vertical descent and horizontal gene transfer can be used to infer the root of the bacterial tree and the nature of the last bacterial common ancestor.

**Highlights:**
- Bacteria comprise a very diverse domain of single-celled organisms that can be found almost everywhere on Earth. All Bacteria are related and derive from a common ancestral Bacterial cell. Until now, the shape of the bacterial tree of life and the placement of its root has been contested, but is necessary to shed light on the early evolution of life on our planet.
- Just as in plants and animals, the genomes of Bacteria are home to many different genes.
- However, Bacterial genes are not only inherited vertically from mother to daughter, but are also frequently exchanged horizontally between potentially distant family members.
- Amongst its many functions, horizontal gene sharing drives the rapid spread of antibiotic resistance amongst pathogenic Bacteria.
- The team used phylogenetic methods that simultaneously consider the vertical and horizontal transmission of genes and found that, on average, genes travel vertically two-thirds of the time, suggesting that a tree provides a meaningful framework for interpreting bacterial evolution.
- The analysis predicts a root between two major clades, the Terrabacteria (mostly Bacteria with single-membranes such as Bacillus) and the Gracilicutes (mostly Bacteria with a double-membrane such as E. coli). This contrasts with recent proposals placing the Candidate Phyla Radiation (CPR) at the base of the tree. CPR are unusual ultrasmall Bacteria reliant on other host cells for survival.
- Bacteria can have one or two cell membranes, and one of the big questions in early evolution is how these two kinds of cells are related to each other. The analysis suggests that the common ancestor of all living Bacteria already had two membranes, so the question now is how apparently simpler single-membrane cells evolved from double-membraned cells, and how many times this has occurred during evolution.
- The research team believes that their approach to integrating vertical and horizontal gene transmission holds promise for answering this and many other open questions in evolutionary biology.
Reference:
https://www.sciencedaily.com/releases/2021/05/210506142140.htm

2. Oat Crops and Genes
Context:
Researchers have traced the remaining last steps of the biological pathway that gives oats resistance to the deadly crop disease take-all.

Highlights:
● The discovery creates opportunities for new ways of defending wheat and other cereals against the soil-borne root disease.
● The research by CEPAMS -- a collaboration between the John Innes Centre and the Chinese Academy of Sciences -- delivered fresh insights into the mechanisms that shape genome architecture and adaptive evolution in plants.
● Avenacins are antimicrobial compounds synthesised in the roots of oats where they offer protection against soil-borne diseases such as take-all. This fungal pathogen causes huge yield losses in wheat and there is no effective means of control.
● Wheat and other cereals and grasses do not make these compounds but a better understanding of how they are produced in oat will give crop scientists knowledge they need to create disease resistant lines of wheat using modern technologies.
● Here, using a genomics-driven approach, with sequencing carried out by Professor Bin Han's group at the Chinese Academy of Sciences, the team elucidated the complete pathway, encoded by 12 genes.
● They found that genes are clustered next to each other in the genome like beads on a string and organised along the chromosome approximately in the same order as the biosynthetic pathway.
● The avenacin gene cluster is located very close to the end of one arm of chromosome 1 of oat. It is arranged such that the early pathway genes are closer to the end of the chromosome (the telomere) and the late pathway genes are further in.
● The study offers the latest example of plant biosynthetic gene clusters for different types of compounds including drugs.
Reference:
https://www.sciencedaily.com/releases/2021/05/210507093755.htm

3. Molecular Study & Evolution
Context:
Massive molecular study uncovers clues to the evolution and diversification of essential plant family

Highlights:
- The most comprehensive study of the family tree for legumes, the plant family that includes beans, soybeans, peanuts, and many other economically important crop plants, reveals a history of whole-genome duplications.
- The study also helps to uncover the evolution of genes involved in nitrogen fixation—a key trait likely important in the evolutionary spread and diversification of legumes and vital for their use as "green manure" in agriculture.
- To reconstruct the family tree, researchers compared the DNA sequence of more than 1500 genes from 463 different legume species, including 391 newly sequenced species that span the diversity of this large plant family.
- In addition to helping researchers understand the evolution and diversification of legumes, the new legume family tree helps to clarify the relationship between crop plants and their wild relatives.
- The two largest subfamilies account for over 17,000 legume species and include all of the species with the ability to fix nitrogen. Nitrogen is an important plant nutrient—most commercial fertilizers contain a mix of nitrogen, phosphorus and potassium—so the symbiotic relationship between some legumes and the microorganisms that allow them to assimilate nitrogen from the atmosphere using root nodules has spurred their success by allowing them to colonize areas with less fertile soil.
- The data supports the idea that nodulation and nitrogen fixation originated a single time early in the history of legumes and other related nitrogen-fixing plants and the whole-genome duplication event at the origin of legumes might have been crucial for the evolution of this process.
- In addition to this duplication event, the researchers were also able to see gene loss in plants that do not have the ability to nodulate, and evolutionary changes in genes that contributed to their role in nodulation.

Reference:
B. TRIBAL AFFAIRS

1. Assam Tribes & Mining Issues

Context:
One of India’s most important rainforests, Dehing Patkai Wildlife Sanctuary in Assam, has become a battleground for the local tribes trying to save their habitat from the coal mining that has led to environmental degradation & displacement.

Highlights:
- The foothills of Dehing Patkai on the eastern fringes of Assam are home to the Khamti, Singpho, Sema Nagas, Tangsa, Tai-Phake, Syam, Aitom, Nocte, and other communities who have been impacted by mining and deforestation that displaced them from lands that traditionally belonged to them for generations.
- Some of these tribes are very small, with less than 5000 members, says Raju Deori, a legal advisor to the Tirap Autonomous District Council who also campaigns for tribal rights. He says mining has widened the income gap in communities between those dependent on the forests and those lured by illegal mining and logging activities, which are mainly done by outsiders as the local population has been dwindling.
- Coal mining started in the land held by indigenous tribes. Forest department claims that they have leased their land to the mines. On the other hand, the foothills of Dehing Patkai were never surveyed. The land ownership always remained with the communities.
- The IASST researchers found cadmium and zinc levels in the water samples of Tipong colliery which were above permissible levels set by the World Health Organisation (WHO).
- Along with smaller communities, even the bigger communities such as Moran-Motok have been impacted by indiscriminate coal mining and led to an increase in human-animal conflict cases.
- Paanbari, a forest village close to the Digboi town on the southwestern end of Dehing Patkai has been facing conflict with herds of elephants that are trying to cross from one end of the sanctuary to another.
- However, neither the NECL officials nor Assam government, has so far estimated the amount of coal being illicitly mined from the foothills of Dehing Patkai. According to the locals, last year in November about 3,000 trucks were ferrying coal from the area in one week.
Reference:
https://mediaindia.eu/environment/assams-coal-mining/

2. Tribal Rituals

Context:
A German art historian and a Gujarati cultural anthropologist document the tribal rituals of South Gujarat villages.

Highlights:
- Eberhard Fischer, a German art historian and Haku Shah, Gujarati Cultural Anthropologist, have published their ‘newest’ book, ‘Art for Tribal Rituals in South Gujarat, India’.
- The two researchers — Eberhard Fischer as a trained anthropologist who had worked earlier with tribal art and culture in Africa and Haku Shah, one deeply rooted in Gujarati culture and immersed in the study of tribal arts — began with describing the land and people of the former Surat district.
- They further moved into the life and beliefs of the ‘tribals inquiring into their knowledge of ‘Supernatural and Divine Powers’, of the ‘Human soul and the spirits of the Dead’; delving into the world of the ‘Bhagats’ who are specialists for rituals, oracles, and healing; watching terracotta horses being offered to Himariya dev and the dana Oracle; witnessing the whispered world of ‘Death and contacts with the Dead’.
- The researchers observed and documented the making of Icons for the Dead, including the soul-stone, Khatru; the wooden vetra figures with sculpted heads; the Khamba (pillars) and the stone memorial slabs. The highly revered wooden Mogra dev — crocodile deity — swung into their view, and sacred sites were explored.
Placing the soul on a stone (khatru mokavenu) All photographs were taken by Eberhard Fischer during field-work in 1969

A Chaudhari woman in traditional costume
Bhagatai ritual performed by Kakadia Bhagat at Ranveri

Mogra dev: Sculpted figure of the tribal crocodile-god installed in the open.

Reference:

3. Misrepresented Adivasi Culture

Context:
The exoticisation of the Bhagoria festival is a case in point, with almost all mainstream media reports missing the mark in their ‘interpretations’ of it.

Highlights:
- Locally known as Bhagoria or Bhangoria, the indigenous harvest festival celebrated by central India’s Bhil tribes and subtribes is often incorrectly branded as the “fest of gulaal, paan and elopement” by the Indian media.
- For almost half a century, Indian anthropologists and journalists have been decoding and writing about Madhya Pradesh’s Adivasi culture and marriage customs to associate it with the Bhagoria festival.
- Between anthropological papers and media reports, the Hindi-speaking population conveniently associated the festival name with the Hindi term “bhag gaya”, or eloped, while the equivalent in Bhili language is “dhaas diya”, which changes across Bhili regions.
Near the Gujarat-Madhya Pradesh border, where Bhagoria is widely celebrated, the tribal expression for eloping is “naahi ja”.

Almost all narratives of the origin of Bhagoria among non-Adivasis are related to eloping or myths of eloping.

Today, Bhagoria, also called Bhangoria, is celebrated in multiple districts of the Malwa region, up to the borders of Gujarat and Rajasthan.

Members of the tribe insist that the act of eloping is an exception punishable in their society, and not “the traditional way of marriage” as depicted in the media.

After working hard for months on the farm, harvesting, storing and selling the yield by January-February, Adivasis used to meet their relatives and friends once in a year at the Bhagoria haat.

While most marriages here happen with the family’s consent, only a minority of youth elope, as is the case with the urban diaspora too. According to the community, only about 10 percent of their youth elope.

In instances of elopement, family disputes are common and sometimes last for months and years. To end these disputes, or “jhagda todna”, and customarily validate these elopements, the groom’s family is imposed with a pecuniary fine to be paid to the bride’s family.

This fine, or “dand”, is much higher than the bride-price (dahej) paid in arranged marriages, meaning that eloping is a punishable social offense and not a convention.

Urbanism and the misrepresentation of Bhagoria in the media has drastically changed the culture of the festival. For close to 10 years, tribal activists and organisations in the state have been trying to correct the misrepresentations but Indian mainstream media seems to pay no heed to the practitioners of the culture it writes about.
Reference:
https://www.newslaundry.com/2021/05/08/how-non-adi-si-journalists-trivialise-and-misrepresent-adi-si-culture

UPSC Previous year questions based on today’s concept:
1. Genome Sequencing  
   (S.N. - 2004)
2. Tribal Displacement  
   (15 Marks - 2010)

DAILY PRACTICE QUESTION/S FOR MAINS 2021.
Pl do not forget to upload your answer sheet for a peer review on the telegram channel:  
Sosin for Anthropology Q&A
1. Bring an account of tribes of India that are affected by mining projects.  
   (20 marks)