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. ARCHAEOLOGY ANTHROPOLOGY

1. Bronze Age Farmers

- Meat and dairy played a more significant role in human diets in Bronze Age China than previously thought.
- A new analysis also suggests that farmers and herders tended to sheep and goats differently than they did their cows, unlike in other parts of the world -- keeping cows closer to home and feeding them the byproducts of grains that they were growing for their own consumption, like the grass stalks from millet plants.
- The study published in *Scientific Reports* integrates new and previously published data from nine sites along the Hexi Corridor, a key region between the Gobi Desert and Tibetan Plateau that facilitated the movement of ancient crops between Central and East Asia.
- Using the method of stable isotope analysis, the researchers looked at the diets of the local herbivores that were managed in the Bronze Age Hexi Corridor of northwestern China.
- The results showed that cattle and sheep or goats were managed distinctly in the different ecological niches across the study region. We propose that this was a result of varying management choices made by the local farmers, who aimed to strike a balance between tradition and innovation.
- In previous research, this method has been applied to understanding the nature of human diets, and the role of different domesticates in it.
- While sheep and goats seem to have eaten naturally available vegetation by grazing in the vicinity of the villages, the scientists found evidence that cattle were both grazed and fed.
- The cattle bones that the researchers analyzed exhibited a higher input of plants that are more adapted to arid conditions in places where these plants contributed little to the natural vegetation. This group of crops includes millet, which was originally cultivated in Eastern Asia.
- These findings suggest that cattle diets were more influenced by human provisioning and that cattle may therefore have been reared closer to the human settlements than sheep and goats.
- In locations with limited grazing lands suitable for pasturing of cattle, people adapted the local pig-rearing economy towards cattle stall-feeding.
- Understanding past farming and dietary conditions can help us with some of the challenges we face in today's world.


2. Bronze Age Cemetery

- Ancient urn graves contain a wealth of information about a high-ranking woman and her Bronze Age Vatya community, according to a new study.
- People of the Vatya culture that flourished during the Hungarian Early and Middle Bronze Ages (approximately 2200-1450 BCE) customarily cremated the deceased -- making the human remains difficult to analyze from a bioarchaeological perspective.
- In this study, the authors used new osteological sampling strategies to learn more about the people buried in the urnfield cemetery at one of the largest Middle Bronze Age urn cemeteries in Central Hungary.
For the majority of sampled graves, each contained the remains of a single individual and simple grave goods made of ceramic or bronze; however, gravesite 241 was of special interest: this grave contained an urn with the cremated remains of an adult woman and two fetuses, buried alongside prestigious grave goods including a golden hair-ring, a bronze neck-ring, and two bone hairpin ornaments.

Though the three inhumed individuals were poorly preserved, the authors were able to confirm these had been adults, though they couldn't determine the sex. Of the 26 cremated individuals, seven appeared to be adult males, 11 adult females, and two appeared to be adults whose sex couldn't be determined.

Thanks to a wide spectrum of new bioarchaeological methods, techniques and sampling strategies, it is now possible to reconstruct the life-histories of cremated people of the Bronze Age. In this case, the authors investigate the movements and the tragic events of a high-status woman's life, settled along the Danube 4000 years ago, in the territory of modern-day Hungary.

Reference: https://www.sciencedaily.com/releases/2021/07/210729121814.htm

3. Paleolithic Cave Paintings

Archaeologists have discovered cave paintings in a rocky and forested corner of Haryana, not far from the national capital, that they believe belong to the Upper Palaeolithic age, which could potentially make them one of the oldest cave arts in the country.

The caves are nestled amid a maze of quartzite rocks in the Aravalli mountain ranges, just outside the national capital, and a stone's throw from the region's only surviving patch of primary forest, a holy grove called Mangar Bani.

While the residents of Manger village, and adjoining villages such as Selakhari, say generations have been aware of the paintings, it is only recently that the Haryana government's museum and archaeology department took note of them.

The paintings are yet to be dated but at least some of them belong to the Upper Palaeolithic period in all likelihood. We are viewing the paintings in continuation with the Soanian culture which has been found in Shivalik hills, Narmada and Aravallis.

The team encountered cave paintings comprising images of human figurines, animals, foliage, and geometric, some that have paled over time, but others that are still very visible.

It also encountered rock art and open-air ceremonial sites. While some could be spotted in the open air, a majority of them are on the ceilings of the rock shelters.

Most prehistoric sites have been traced in the Aravalli region. The paintings are yet to be dated but at least some of them belong to the Upper Palaeolithic period in all likelihood. We are viewing the paintings in continuation with the Soanian culture which has been found in Shivalik hills, Narmada and Aravallis.
B. BIOLOGICAL ANTHROPOLOGY

1. Inherited Genes Revelation

Context:

Using neural networks, researchers have developed a new method to search the human genome for beneficial mutations from Neanderthals and other archaic humans. These humans are known to have interbred with modern humans, but the overall fate of the genetic material inherited from them is still largely unknown. Among others, the researchers found previously unreported mutations involved in core pathways in metabolism, blood-related diseases and immunity.

Highlights:

● Thousands of years ago, archaic humans such as Neanderthals and Denisovans went extinct. But before that, they interbred with the ancestors of present-day humans, who still to this day carry genetic mutations from the extinct species.

● Over 40 percent of the Neanderthal genome is thought to have survived in different present-day humans of non-African descent, but spread out so that any individual genome is only composed of up to two percent Neanderthal material.

● Some human populations also carry genetic material from Denisovans -- a mysterious group of archaic humans that may have lived in Eastern Eurasia and Oceania thousands of years ago.

● The introduction of beneficial genetic material into our gene pool, a process known as adaptive introgression, often happened because it was advantageous to humans after they expanded across the globe.

Reference:
To name a few examples, scientists believe some of the mutations affected skin development and metabolism. But many mutations are still undiscovered.

The researchers developed a deep learning method called 'genomatnn' that jointly models introgression, which is the transfer of genetic information between species, and natural selection. The model was developed in order to identify regions in the human genome where this introgression could have happened.

The new method is based on a so-called convolutional neural network (CNN), which is a type of deep learning framework commonly used in image and video recognition.

Using hundreds of thousands of simulations, the researchers at the University of Copenhagen trained the CNN to identify patterns in images of the genome that would be produced by adaptive introgression with archaic humans.

In European genomes, the researchers found two strong candidates for adaptive introgression from Neanderthals in regions of the genome that affect phenotypes related to blood, including blood cell counts. In Melanesian genomes, the researchers found candidate variants introgressed from Denisovans that potentially affected a wide range of traits, such as blood-related diseases, tumor suppression, skin development, metabolism, and various neurological diseases.

It’s not clear how such traits are affected in present-day carriers of the archaic variants, e.g. neutrally, positively or negatively, although historically the introgressed genetic material is assumed to have had a positive effect on those individuals carrying them.

The next stage for the research team is to adapt the method to more complex demographic and selection scenarios to understand the overall fate of Neanderthal genetic material.

Future work could also involve developing a CNN that can detect adaptive introgression from a ghost population, for cases in which genomic data from the source is unavailable.

Reference:
https://www.sciencedaily.com/releases/2021/06/210617115536.htm

2. DNA modifications in IVF babies

Context:
Compared to newborns conceived traditionally, newborns conceived through in vitro fertilization (IVF) are more likely to have certain chemical modifications to their DNA, according to a new study.

Highlights:

- The study found only small differences in DNA methylation at birth and these were not seen in early childhood.
- The changes involve DNA methylation -- the binding of compounds known as methyl groups to DNA -- which can alter gene activity. Only one of the modifications was seen by the time the children were 9 years old.
- IVF consists of collecting eggs and sperm, fertilizing the eggs in a lab, and then transferring the resulting embryo or embryos into the uterus.
- When methyl groups are added to a gene, the gene is switched off and does not produce a protein. Methyl groups are added and removed from DNA throughout life, as genes are alternately switched on and off.
- Changes in methylation may occur in any step of IVF.
● Newborns conceived with IVF were more likely to have lower methylation levels in some parts of their DNA.
● The researchers did not find any methylation changes for newborns conceived by ovulation induction or intrauterine insemination.

Reference:
https://docs.google.com/document/d/1mJtSIzCBBv9qwnBwWwvGQxIBT1r5IUCfRce7LhE__I/edit

UPSC Previous year questions based on today’s concept:
  1. Discuss the factors affecting growth and development in human beings (20 Marks - 2016)
  2. Paleolithic Era (S.N. - 1987)

I. 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. Write a note on Palaeolithic art with a special focus on Indian Palaeolithic. (20 Marks)