ANTHROPOLOGY NEWS DIARY

(HAND)

15.09.2021

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. ARCHAEOLOGY
1. Evolution & Thirst

- Humans have evolved to use less water than chimps and other apes, despite our greater sweating ability, as new research by Herman Pontzer of Duke University and his colleagues has shown.

- Yet our greater reliance on plain water as opposed to water from food means that we must work hard to stay hydrated. Exactly how much water is healthy differs between populations and even from person to person, however.

- Currently there are two different recommendations for water intake, which includes water from food. The first, from the U.S. National Academy of Medicine, recommends 3.7 liters of water a day for men and 2.7 liters for women, while advising pregnant and lactating women to increase their intake by 300 and 700 milliliters, respectively.

- The second, from the European Food Safety Authority, recommends 2.5 and 2.0 liters a day for men and women, respectively, with the same increases for pregnant and lactating women. Men need more water than women do because their bodies are larger and have more muscle on average.

- These are not hard-and-fast recommendations. They were calculated from population averages based on surveys and studies of people in specific regions. They are intended to fulfill the majority of water needs for moderately active, healthy people living in temperate and often climate-controlled environments. Some people may need more or less water depending on factors that include life habits, climate, activity level and age.

- In fact, water intake varies widely even in relatively water-secure locations such as the U.S. Most men consume between 1.2 and 6.3 liters on a given day and women between 1.0 and 5.1 liters. Throughout human evolution our ancestors' water intake probably also varied substantially based on activity level, temperature, and exposure to wind and solar radiation, along with body size and water availability.

Reference:
https://www.scientificamerican.com/article/human-evolution-led-to-an-extreme-thirst-for-water/

2. Insulin control Smartwatch

- Many modern fitness trackers and smartwatches feature integrated LEDs. The green light emitted, whether continuous or pulsed, penetrates the skin and can be used to measure the wearer’s heart rate during physical activity or while at rest.

- A team of ETH researchers now wants to capitalize on that popularity by using the LEDs to control genes and change the behavior of cells through the skin.

- The ETH professor and his colleagues ultimately developed a molecular switch that, once implanted, can be activated by the green light of a smartwatch.
The switch is linked to a gene network that the researchers introduced into human cells. As is customary, they used HEK 293 cells for the prototype. Depending on the configuration of this network — in other words, the genes it contains — it can produce insulin or other substances as soon as the cells are exposed to green light. Turning the light off inactivates the switch and halts the process.

As they used the standard smartwatch software, there was no need for the researchers to develop dedicated programs. During their tests, they turned the green light on by starting the running app.

The molecular switch is more complicated, however. A molecule complex was integrated into the membrane of the cells and linked to a connecting piece, similar to the coupling of a railway carriage. As soon as green light is emitted, the component that projects into the cell becomes detached and is transported to the cell nucleus where it triggers an insulin-producing gene. When the green light is extinguished, the detached piece reconnects with its counterpart embedded in the membrane.

According to Fussenegger, however, it seems unlikely that this technology will enter clinical practice for at least another ten years. The cells used in this prototype would have to be replaced by the user’s own cells.

Reference:

3. Fossils
Context:
The old cousins of the common woodlice were crawling on Irish land as long as 360 million years ago, according to new analysis of a fossil found in Kilkenny, Ireland.

Highlights:
- Lead researcher Dr Ninon Robin, a postdoctoral researcher at University College Cork's (UCC) School of Biological, Earth and Environmental Sciences said that their work advances science's understanding of when land-dwelling species of crustaceans roamed the earth, and what they looked like.
- Woodlice, and their relatives form a group of crustaceans named peracarids that are as species-rich as the more famous group comprising krill, crabs and shrimps named eucarids. From their ancestral marine habitat some peracarids have, unlike eucarids, evolved fully terrestrial ground-crawling ecologies, inhabiting even commonly our gardens, for example pillbugs and sowbugs, which are very common in Ireland.
- Using new modern imaging techniques, we determined that Oxyuropoda was actually a peracarid crustacean, even the oldest known one; which supports the theory that woodlice cousins were already crawling on Irish lands at that very early time, 360 million years ago.
- From previous genomic and molecular studies, scientists had suggested that this group of crustaceans must have appeared around 450 million years ago. However their fossils were very rare in the Paleozoic era, which was 560-250 million years ago, so we had no idea at all how they looked at that time, nor if they were marine or yet terrestrial.
The fossil that formed the basis of this research was found in 1908 in a quarry at Kiltorcan, Co Kilkenny. The site has been internationally known since the mid 19th-century as the location of a number of plant, freshwater bivalve, fish, and crustacean fossils.

Reference:
https://www.sciencedaily.com/releases/2021/06/210616093800.htm

B. ARCHAEOLOGICAL ANTHROPOLOGY

1. Neolithic Stone Tools

A team of archaeology buffs led by Dr G Mohan Gandhi, professor of Tamil, Sacred Heart College, Tirupathur, recently stumbled upon several stone axes in tribal hamlets.

Stone axes were the key tools in the Neolithic period, during which people moved from hunting to agro-pastoral production.

Such tools are found in big numbers outside small temples and under trees in tribal hamlets atop Jawadhu Hills in Tirupathur district.

The tools are either kept in a row under a tree outside temples or placed upon sand lumps in burial places. Even without realising the archaeological and cultural value of the stone axes, the tribals consider them sacred and worship them.

The stone axes, belonging to the Neolithic period, are abundant in tribal villages of Jawadhu Hills in Tirupathur district. We have noticed them kept outside temples and under trees by the local tribesmen.

In some places, the tribals apply ‘viboothi’ and ‘bindi’ on the tools to worship them. Even though they may not be aware of the archaeological and cultural values of such tools, they keep them safe.

The local tribesmen found the stone tools on streams and agricultural fields and collected them before piling them up outside temples.

Dr Sivanandam, Deputy Director (DD) of the State Department of Archaeology, noted that Neolithic tools are found in several places in northern parts of Tamil Nadu including Vellore, Villupuram, Tiruvannamalai, Krishnagiri and Dharmapuri.

The stone tools are evidence for the presence of people belonging to the Neolithic period in these regions.

Reference:

2. Neolithic Pottery

A fragment of Neolithic pottery reveals the clay vessel was made by three individuals, two of which were males ranging in age from 13 to 22.

The artifact, discovered by a team at the University of the Highlands Islands and Archaeology, was first uncovered in April at the Orkney's Ness of Brodgar site in Scotland.

Three fingerprints, dating back 5,000 years, were spotted on the fragment, but only two had enough details for a further analysis.

Using digital imagery, experts determined the prints were left by two young males, one aged between 13 and 20 and the other 15 and 22.

The clay fragment was initially believed to bear a single print that was identified using photographs that were analyzed with computer software.
The prints, examined by Prof Kent Fowler, director of the University of Manitoba's Ceramic Technology Laboratory in Winnipeg, Canada, were left on the clay when it was still soft. 'Ethnographic and experimental accounts of hand-building techniques indicate that hands are normally only placed within closed-form vessels when fashioning roughouts and while manipulating the object to modify the exterior; wiping, smoothing, burnishing, etc. In this instance, it is most likely that there were two printmakers and the interior print was left by the potter. At this stage we cannot determine whether the older or younger potter was responsible for shaping operations.

Reference:
https://www.dailymail.co.uk/sciencetech/article-9693455/5-000-year-old-fingerprints-Neolithic-pottery-reveals-two-young-males.html

UPSC Previous year questions based on today’s concept:
2. Biological Anthropology. (S.N. 1994)

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. Neolithic tool typology and technology. (20 Marks)