ANTHROPOLOGY NEWS DIARY

(AND)

29.06.2021

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. Dragon Man

- A near-perfectly preserved ancient human fossil known as the Harbin cranium sits in the Geoscience Museum in Hebei GEO University. The largest of known Homo skulls, scientists now say this skull represents a newly discovered human species named Homo longi or "Dragon Man."

- The Homo longi lineage may be our closest relatives--and has the potential to reshape our understanding of human evolution.

- The Harbin fossil is one of the most complete human cranial fossils in the world. This fossil preserved many morphological details that are critical for understanding the evolution of the Homo genus and the origin of Homo sapiens.

- The cranium was reportedly discovered in the 1930s in Harbin City of the Heilongjiang province of China.

- The massive skull could hold a brain comparable in size to modern humans' but had larger, almost square eye sockets, thick brow ridges, a wide mouth, and oversized teeth.

- While it shows typical archaic human features, the Harbin cranium presents a mosaic combination of primitive and derived characters setting itself apart from all the other previously-named Homo species.

- Scientists believe the cranium came from a male individual, approximately 50 years old, living in a forested, floodplain environment as part of a small community.

- Looking farther back in time, the researchers also find that Homo longi is one of our closest hominin relatives, even more closely related to us than Neanderthals.

- It is widely believed that the Neanderthal belongs to an extinct lineage that is the closest relative of our own species. However, our discovery suggests that the new lineage we identified that includes Homo longi is the actual sister group of H. sapiens.

- Their reconstruction of the human tree of life also suggests that the common ancestor we share with Neanderthals existed even further back in time.

- The divergence time between H. sapiens and the Neanderthals may be even deeper in evolutionary history than generally believed, over one million years.

- The researchers say that findings gathered from the Harbin cranium have the potential to rewrite major elements of human evolution. Their analysis into the life history of Homo longi suggest they were strong, robust humans whose potential interactions with Homo sapiens may have shaped our history in turn.

Reference:
https://www.eurekalert.org/pub_releases/2021-06/cp-mf061721.php
2. ABO blood group

- The most well-known and medically important blood types are in the ABO group.
- They were discovered in 1900 and 1901 at the University of Vienna by Karl Landsteiner in the process of trying to learn why blood transfusions sometimes cause death and at other times save a patient. In 1930, he belatedly received the Nobel Prize for his discovery of blood types. All humans and many other primates can be typed for the ABO blood group. There are four principal types: A, B, AB, and O.
- There are two antigens and two antibodies that are mostly responsible for the ABO types. The specific combination of these four components determines an individual's type in most cases.
- People with type A blood will have the A antigen on the surface of their red cells (as shown in the table below). As a result, anti-A antibodies will not be produced by them because they would cause the destruction of their own blood. However, if B type blood is injected into their systems, anti-B antibodies in their plasma will recognize it as alien and burst or agglutinate the introduced red cells in order to cleanse the blood of alien protein.
- Individuals with type O blood do not produce ABO antigens. Therefore, their blood normally will not be rejected when it is given to others with different ABO types. As a result, type O people are universal donors for transfusions, but they can receive only type O blood themselves.
- Those who have type AB blood do not make any ABO antibodies. Their blood does not discriminate against any other ABO type. Consequently, they are universal receivers for transfusions, but their blood will be agglutinated when given to people with every other type because they produce both kinds of antigens.
- It is easy and inexpensive to determine an individual's ABO type from a few drops of blood. A serum containing anti-A antibodies is mixed with some of the blood. Another serum with anti-B antibodies is mixed with the remaining sample. Whether or not agglutination occurs in either sample indicates the ABO type. It is a simple process of elimination of the possibilities. For instance, if an individual's blood sample is agglutinated by the anti-A antibody, but not the anti-B antibody, it means that the A antigen is present but not the B antigen. Therefore, the blood type is A.

Reference:
https://www2.palomar.edu/anthro/blood/abo_system.htm

3. Lemur Genome Sequencing

- Using an unusually well-preserved subfossil jawbone, a team of researchers has sequenced for the first time the nuclear genome of the koala lemur (Megaladapis edwardsi), one of the largest of the 17 or so giant lemur species that went extinct on the island of Madagascar between about 500 and 2,000 years ago.
● More than 100 species of lemurs live on Madagascar today, but in recent history, the diversity of these animals was even greater.
● From skeletal remains and radiocarbon dating, we know that at least 17 species of lemurs have gone extinct, and that these extinctions happened relatively recently.
● While many nuclear genomes of extinct animals have now been sequenced since the first extinct animal -- the woolly mammoth -- had its nuclear genome sequenced at Penn State in 2008, relatively few of these species have been from warmer climates due to faster DNA degradation in these conditions.
● Part of the collection of the Laboratory of Primatology and Paleontology at the University of Antananarivo, the jawbone that the team used in its study.
● Carbon-14 dating, a commonly used method for determining the age of archeological artifacts of a biological origin, revealed that the M. edwardsi jawbone was about 1,475 years old.
● The team used a fragment of the jawbone to sequence the nuclear genome of M. edwardsi. Nuclear DNA contains information about both parents, whereas mitochondrial DNA, which is also used to study extinct species, only contains information about the mother.
● Previous studies based on skull and teeth comparisons suggested that M. edwardsi was closely related to L. mustelinus. However, the new genetic analyses revealed that M. edwardsi is more closely related to E. rufifrons.
● In addition to extant lemur species, the team also compared M. edwardsi's genome to the genomes of dozens of more distantly related species, including golden snub-nosed colobine monkeys, which are folivores, and horses, which are herbivores.
● Specifically, the researchers identified similarities between M. edwardsi and the golden snub-nosed monkey across genes with hydrolase activity functions, and between M. edwardsi and horse across genes with brush border functions.

Reference:
https://www.sciencedaily.com/releases/2021/06/210624114340.htm

B. ARCHAEOLOGICAL ANTHROPOLOGY
1. Underwater Stone Artefacts
● Underwater archaeologists have been studying 9,000-year-old stone tool artifacts discovered in Lake Huron that originated from an obsidian quarry more than 2,000 miles away in central Oregon. The obsidian flakes from the underwater archaeological site represent the oldest and farthest east confirmed specimens of western obsidian ever found in the continental United States.
● The artifacts found below the Great Lakes come from a geological source in Oregon, 4,000 kilometers away -- making it one of the longest distances recorded for obsidian artifacts anywhere in the world.
● Because the site was underwater and undisturbed, researchers systematically and scientifically recovered the obsidian, a form of volcanic glass that was used and traded widely throughout much of human history as a prized material for making sharp tools.

● The find in Lake Huron is part of a broader study to understand the social and economic organization of caribou hunters at the end of the last ice age. Water levels were much lower then; scientists have found, for example, ancient sites like stone walls and hunting blinds that are now 100 feet underwater.

● The preservation of ancient underwater sites is unparalleled on land, and these places have given us a great opportunity to learn more about past peoples.

Reference:
https://www.sciencedaily.com/releases/2021/06/210616094106.htm

2. Bihar Site & Erosion

● Chirand, an archaeological site located on the banks of the river Ganga in Bihar’s Saran district, is once again under the threat of erosion and losing its existence as the water level in the river is rising due to heavy rains.

● “A big chunk of the archaeological site has already been eroded and devoured by the Ganga in the past few days. And during a visit to the site on Ganga Dussehra on June 21, we found that it’s under threat again. River Ganga is swelling up and might inundate riverbanks any day,” said Sriram Tiwari, secretary of the Chirand Vikas Parishad.

● Chirand site is considered rare among the archaeological sites across the country because of the rare pieces of evidence related to the growth of human civilization there.

● The mound located at the site contains archaeological evidence of a step-by-step evolution of civilization from the Neolithic age to the Pala age.

Reference:
UPSC Previous year questions based on today’s concept:

1. New Archaeology (20 Marks - 2010)
2. ABO & Rh blood group distribution in human populations (S.N. - 2008)

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. Blood groups as genetic marker. 15 Marks