

SCIENCE CENTRE NEWS LETTER

April 2022
Issue 73



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SCIENCE CENTRE

Volume 7, Issue 1

WHAT'S NEW IN SCIENCE

Ancient DNA reveals the world's oldest Family Tree

Analysis of ancient DNA from one of the best-preserved Neolithic tombs in Britain has revealed that most of the people buried there were from five continuous generations of a single extended family. By analysing DNA extracted from the bones and teeth of 35 individuals entombed at Hazleton North long cairn in the Cotswolds-Severn region, the research team was able to detect that 27 of them were close biological relatives. The group lived approximately 5700 years ago.

The cairn at Hazleton North included two L-shaped chambered areas which were located north and south of the main 'spine' of the linear structure. After they had died, individuals were buried inside these two chambered areas and the research findings indicate that men were generally buried with their father and brothers, suggesting that descent were patrilineal with later generations buried at the tomb connected to the first generation entirely through male relatives. While two of the daughters of the lineage who died in childhood were buried in the tomb, the complete absence of adult daughters suggests that their remains were placed either in

the tombs of male partners with whom they had children, or elsewhere.

Although the right to use the tomb ran through patrilineal ties, the choice of whether individuals were buried in the north or south chambered area initially depended on the first-generation woman, from whom they were descended, suggesting that these first-generation women were socially significant in the memories of this community.

Dr Chris Fowler of Newcastle University, the first author and leading archaeologist of the study, said: "This study gives us an unprecedented insight into kinship in a Neolithic community. The tomb at Hazleton

North has two separate chambered areas, one accessed via a northern entrance and the other from a southern entrance, and just one extraordinary finding is that initially each of the two halves of the tomb were used to place the remains of the dead from one of two branches of the same family. This is of wider importance because it suggests that the architectural layout of other Neolithic tombs might tell us about how kinship operated at those tombs."

Courtesy: Joyous English School





Timings

Tuesday to Sunday
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SCIENCE FACTS APRIL 2022

1 April 1962	Decimal weight measurement system was made compulsory in India.
2 April	World Autism Awareness Day. (UN)
2 April 1618	Mathematician and Physicist, Francisco M. Grimaldi (discoverer of light diffraction) was born.
3 April 1984	Indian Astronaut Mr.Rakesh Sharma traveled into Space.
7 April	World Health Day (WHO) (UN)
12 April	International Day of Human Space Flight (UN)
12 April 1961	First Russian Astronaut Yuri Gagarin traveled into Space.
16 April 1853	First Indian Steam Engine train was started from Mumbai to Thane.
16 April 1867	Wilbur Wright (co-inventor of the first manned aeroplane) was born.
19 April 1912	American Chemist, Glen T. Seaborg (discoverer of plutonium) was born.
19 April 1971	Russia had launched world's first unmanned Space research station "Salyut-1" in Space.
19 April 1975	India entered in Space Era. "Aryabhatt" Satellite was launched from Soviet Union.
22 April	International Earth Day.
22 April 1799	Jean Poiseuille (discoverer of blood pressure) was born.
23 April	World Book & Copyright Day (UNESCO)
23 April 1858	German Physicist, Max Planck (who formulated the Planck Constant) was born.
25 April	World Malaria Day (WHO)
25 April 1874	The great Scientist Mr. Marconi (inventor of Radio) was born.
27 April 1791	Mr. Semual Morse (inventor of Postal Service & Telegram) was born
28 April	World Day for Safety & Health at Work
30 April 1895	French Scientist Mr. Rontgen discovered X-rays.
U. N. : United Nations	
WHO : World Health Organization	
UNESCO : United Nation Educational Scientific and Cultural Organization	

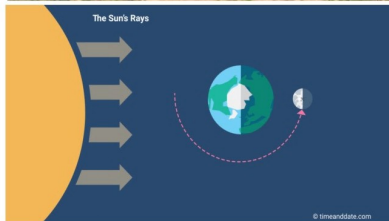
Ans:- 1. C, 2. D, 3. A, 4. C, 5.D, 6. C, 7. A

SCIENTIFIC QUESTION

Why does the Moon appear in the Daytime?

The moon does not produce its own light. We can only see the moon, when light coming from the sun is reflected off from its surface. This means that whenever the moon reflects the sun's rays we can see it even in the day time.

The visibility of the moon during the daytime also depends on its angle and its distance from Earth. When the moon and the sun are on the same side of Earth, the moon is visible during the day; when the moon and the sun are on opposite sides of the Earth, the moon is not visible during the day, as the Earth is blocking sunlight from reaching the moon's surface



A full moon only happens when the sun shines on the face of the moon unobstructed by the Earth. Thus, you cannot see a full moon during the day. If there is daylight, at least part of the sun's light is shining upon the Earth, which would mean that entire surface of the moon's face would not be illuminated.

A day on the moon is equal to 29.5 Earth days. This means from sunrise to sunset on the moon, 29.5 Earth days would pass.

Courtesy: Joyous English School

SCIENTIST OF THE MONTH

Nautam Bhagwanlal Bhatt

Nautam Bhagwanlal Bhatt was born on 10 April 1909 in Jamnagar, Gujarat. He received his B.A. degree from the Gujarat College in Ahmadabad. He then received his MSc degree in Physics under the guidance of Nobel Laureate, C. V. Raman, at the Indian Institute of Science (IISc), Bangalore. Following a year of teaching at Samaldas College, Bhavnagar Bhatt was awarded a fellowship by the Maharaja of Bhavnagar to pursue the doctorate program at Massachusetts Institute of Technology where he earned his Ph.D. degree in Physics in 1939.

After Indian Independence he started to work for country and founded "Defence Science Laboratory, Delhi" and worked for the development of Defence Technologies. His Major Contributions for Science and Technology are:

-Development and deployment of the VT (Variable Time) Fuse for the Department of Defence in the mid-1960s.

-He designed the Acoustics of several moderate sized concert halls specifically for Indian Classical Music for

a more natural sound.

-He established the Solid State Physics Laboratory in Delhi and was its founding Director.

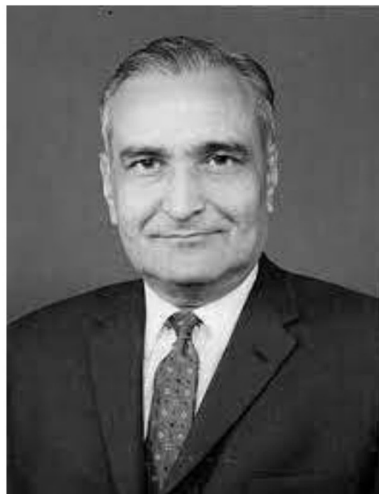
-He established the Central Electronics Engineering Research Institute (CEERI), Pilani.

-He founded the Electrical Communications Engineering Department at Indian Institute of Science, Bangalore.

-Dr. Bhatt designed the Acoustics for several Theatres and Auditoriums in India, including the Odeon and Sheila Cinemas in New Delhi and the Legislative Assembly Hall in

Gandhinagar, Gujarat.

In 1969 he was awarded the prestigious Padma Shri Award by Indian President Zakir Hussain for his great work in the field of "Science and Engineering". He died on 6 July 2005.



Courtesy: Joyous English School

KNOW THE ENTERING INTO SPACE GALLERY EXHIBIT

Mankind into Space

This Exhibit is situated at “Entering Space Gallery” between Fun Science Gallery and Power of Play Gallery at the first floor of Science Centre.

“Mankind will migrate into space and will cross the airless Saharas which separate planet from planet and sun from sun” Winwood Reade, 1872.

Humans have always been explorers. When ancient people stumbled upon unknown lands or seas, they were compelled to explore the places. They were driven by a desire to dare and conquer new frontiers and a thirst for knowledge, wealth and prestige. These are the same motivations that drove people of the twentieth century to venture into space.

By definition space begins at the edge of Earth's atmosphere, just beyond the protective blanket of air and heat that surrounds our planet. This blanket is thick and dense near the Earth's surface and light and wispy farther away from the planet. About sixty-two miles above Earth the atmosphere becomes quite thin. This altitude is considered the first feathery edge of outer space.

The very idea of space exploration has a sense of mystery and excitement about it. Americans call their space explorers astronauts. Astronaut is a combination of two Greek words, astron (meaning star) and nautes (meaning sailor). Thus, astronauts are those that sail amongst the stars. This romantic imagery adds to the allure of space travel.

The truth is that space holds many dangers to humans. Space is an inhospitable environment, devoid of air, food or water. Everywhere it is either too hot or too cold for human life.



Potentially harmful radiation flows in the form of cosmic rays from deep space and electromagnetic waves that emanate from the sun and other stars. Tiny bits of rock and ice hurtle around in space at high velocities, like miniature missiles.

Space is not readily accessible. It takes a tremendous amount of power and thrust to hurt something off the surface of Earth. It is a fight against the force of Earth's gravity and heavy drag of an air-filled atmosphere.

Getting into space is not easy, and getting back to Earth safely is even tougher. Returning to Earth from space requires conquering another mighty force—friction. Any object penetrating Earth's atmosphere from space encounters layers and layers of dense molecules. Travelling at high speed and rubbing against those molecules produces a fiery blaze that can rip apart most objects.

It was not until 1950s that the proper combination of skills and technology existed to overcome the obstacles of space travel. The political situation was also just right. Two rich and powerful nations (The Union of Soviet Socialist Republics and the United States) devoted their resources to besting one another in space instead of the battlefield. It was this spirit of competition that pushed humans off the planet and onto the Moon in 1969.

Once the race was over, space priorities changed. Today, computerized machines do most of the exploring. They investigate planets, asteroids, comets and the Sun. Humans explorers stay much closer to Earth. They visit and live aboard a space station in orbit 200 miles above the planet. On Earth people dream of longer journeys because most of space is still an unknown sea just waiting to be explored.

SCIENCE QUIZ

- Which of the following phenomena would increase on raising the temperature?
(a) Diffusion, Evaporation, Compression of gases
(b) Evaporation, Compression of gases, Solubility
(c) Evaporation, Diffusion, Expansion of gases
(d) Evaporation, Solubility, Diffusion, Compression of gases.
- During summer, water kept in an earthen pot becomes cool because of which phenomenon?
(a) Diffusion (b) Transpiration (c) Osmosis (d) Evaporation
- Which condition out of the following will increase the evaporation of Water?
(a) Increase in temperature of Water (b) Decrease in temperature of Water
(c) Less exposed surface area of Water (d) Adding common salt to Water
- What is the boiling point of Water at sea level?
(a) 0 C (b) 273 K (c) 373 K (d) 273 C
- What is Dry ice?
(a) Water in solid state (b) Water in gaseous state
(c) CO₂ in liquid state (d) CO₂ in solid state
- Which one of the following is not a viral disease?
(a) Dengue (b) AIDS (c) Typhoid (d) Influenza
- Which one of the following diseases is caused by protozoans?
(a) Malaria (b) Influenza (c) AIDS (d) Cholera