

H5N1

- A study published recently has found that the H5N1 virus (clade 2.3.4.4b), which spread among wild birds across 30 countries or territories across continents by February 2022 collected different combinations of genes through reassortment with viruses circulating in wild birds in North America.
 - The reassortant A (H5N1) viruses are Genetically and phenotypically diverse, with many causing severe disease with dramatic neurologic involvement in mammals.
 - The viruses have distinct in vitro characteristics including increased virus replication rates and the ability to cause severe disease outcomes with dramatic neurologic involvement in mammalian animal models
 - In December 2021, A (H5N1) viruses were detected in poultry and a gull in Eastern Canada.
 - Zoonotic transmission potential of these viruses. So far human-to-human transmission has not been reported.
- Between 2002 and 2022, about 95% of India's groundwater depletion occurred in north India.
 - Groundwater use and summer monsoon rainfall variability are the two main drivers of groundwater storage. Climate change can throw new challenges for the sustainability of groundwater due to increased groundwater pumping to meet irrigation demands for crops.
 - Also, a warming climate will increase the frequency of hydroclimate extremes floods, and droughts.
 - A less discussed aspect is the role of increased evapotranspiration due to a warming climate, which will limit water availability for groundwater recovery.
 - The projected increase in summer monsoon due to climate change notwithstanding, recovery of the depleted groundwater in north India will be insufficient if there is the continued use of groundwater at current levels for irrigation.
 - Excessive pumping from non-renewable groundwater storage will aggravate groundwater loss.
 - While most of the current observation wells are in the shallow aquifer, pumping of groundwater for irrigation in the Indo Gangetic Plain is predominantly from deeper aquifers

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Groundwater depletion

- Rapid depletion of groundwater in north India has become a norm during the last few decades.

Butterfly

- The work revealed that butterflies originated in the Americas in the late Cretaceous, about 100 million years after the origin of flowering plants.
- While butterflies dispersed from North America to Europe relatively quickly about 75 million years ago due to the landmass then being nearly contiguous, the dispersal from North America to Asia was through colder northern regions and happened around 60 million years ago
- Despite being its place of origin, North America largely being a temperate region has far less diversity compared with the tropical region in South America and Asia.

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AI Ask - CAIS

- The Centre for AI Safety (CAIS) issued a terse statement aimed at opening the discussion around possible existential risks arising out of artificial intelligence (AI).
- “Mitigating the risk of extinction from AI should be a global priority alongside other societal scale risks such as pandemics and nuclear war,” the one-sentence statement said

What is CAIS and how is it funded?

- The CAIS is a not-for-profit based out of San Francisco, California.

- The organization is largely funded by Facebook co-founder Dustin Moskovitz’s Open Philanthropy, a grant-making foundation.
- The organization makes grants based on the principles of effective altruism a philosophy that urges followers to channel their wealth to causes that are often backed by data.

What cause does CAIS support and how?

- The CAIS aims to mitigate existential risks arising from AI systems that could affect society at large.
- The organization does research and publishes papers on AI safety, and also provides funding and technical infrastructure to other researchers to run and train their LLMs in the field of AI safety
- Narrating this incident at a summit hosted by the Royal Aeronautical Society, Colonel Tucker Hamilton, head of the U.S. Air Force’s AI Test and Operations, warned that AI can behave in unpredictable and dangerous ways.

Why is safety important in Machine Learning (ML) and AI development?

- In one simulation, an amenable military drone was programmed to identify an enemy’s surface-to-air missiles (SAM). Once it spots the SAM site, a human agent was supposed to sign off on the strike.

- But the AI decided to blow up the site instead of listening to the human command.
- Not just in the military, but AI and ML are used in diverse industries.
- Medical science is a major area where AI is used to train large datasets to diagnose health conditions.
- Car manufacturers deploy advanced driver assistance systems (ADAS) to give drivers automated driving experiences.

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Anaemia-to be dropped from NFHS

- Questions related to anemia are slated to be dropped from the National Family Health Survey (NFHS-6) scheduled to begin on July 6.
- The omission comes after health experts questioned the efficacy of the method being used to estimate hemoglobin levels.
- India's anemia burden has grown alarmingly with NFHS-5 (2019-21) finding that 57% of women in the age group 15-49 and 67% of children between six months and 59 months are anemic (from the corresponding 53% and 58.6% respectively in NFHS-4/2015-16)

What causes anemia?

- According to the World Health Organization (WHO), anemia is a condition in which the number of red blood cells or the hemoglobin concentration within them is lower than normal.
- Haemoglobin is needed to carry oxygen and if there are too few red blood cells or not enough hemoglobin, there will be a decreased capacity of the blood to carry oxygen to the body's tissues, resulting in symptoms such as fatigue, weakness, dizziness and shortness of breath among others

- According to the Health Ministry, assessment of anemia in India is being shifted to the new Diet and Biomarkers Survey in India (DABS-I), launched last year to map diet, nutrition, and health status and provide the correct estimate of anemia among the rural and urban population

Will a dietary survey help?

- The Health Ministry says DABS-I is a comprehensive national-level dietary survey, which will define food and nutrient adequacy by collecting individual dietary intake data of different age-groups of people from all States and UTs across the country.
- The study will also provide nutrient composition data on cooked and

uncooked foods from various regions of the country for the first time.

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