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Special Issue

June (Week 4)

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All about the study on bat viruses in Nagaland

(Source: The Hindu)

Context: *In December 2019, the Union Ministry of Health began an inquiry into the study as it felt that appropriate permissions had not been taken by the National Centre for Biological Sciences (NCBS) and the Tata Institute of Fundamental Research (TIFR) from the Indian Council for Medical Research (ICMR) before accepting foreign funding and collaborations for the study. The study, published in October 2019, was funded by "a United States Department of Defense, Defense Threat Reduction Agency, Broad Agency Announcement grant for the project 'Bat harvesting in India: Detection, characterization and mitigation of emerging infectious disease risk'", the Biological Defense Research Directorate of the U.S. Naval Medical Research Center, as well as the Indian Department of Atomic Energy (DAE).*

What did the NCBS claim?

- The NCBS denied all the charges in a statement in February 2020. Recently, its director, Satyajit Mayor, told that he had no knowledge of any lapses. He had earlier said the government had given NCBS an "all-clear".
- The NCBS also said that it had received its clearances from the DAE, although the government's 1987 rules on funding collaborations give the Health Ministry and the ICMR the final say.
- The NCBS also denied that the contribution of Shi Zhengli, known as China's 'Bat Woman' for her studies on virus transmissions, was anything more than the supply of "chemical reagents".
- However, the study lists Dr. Shi as having "reviewed writing and editing" of the paper.

Is there a Wuhan connection to the Indian study?

- No, say both officials and scientists. The Indian study looked at filoviruses (such as Ebola and Marburg), while the Wuhan studies, which originally collaborated with the U.S. University of North Carolina (UNC) and were funded by the National Institutes of Health (NIH), looked at coronaviruses SARS and MERS.
- However, as demands grow for more transparency in collaborations with the Wuhan Institute, which was inspected as part of the World Health Organization's study into the origins of the pandemic, there is a renewed focus on the NCBS-TIFR study.
- In the U.S., Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases under the NIH, was questioned at a Congressional hearing in May this year about the NIH funding and the Wuhan-UNC studies.
- In an interview Dr. Shi denied that any regulations had been flouted at her labs, saying there was "no evidence" for theories of an accidental release of the SARS-CoV-2.
- The WHO study also concluded that the "lab-leak" theory was unlikely, but required more study. U.S. President Joseph Biden has ordered intelligence agencies to provide a conclusive finding by the end of August on whether the COVID-19 pandemic was caused by natural transmission or a lab-leak.
- Earlier this month, Canada's Parliament voted to have their Public Health Agency (PHAC) release documents on the collaboration between its National Microbiology Lab in Winnipeg and the Wuhan Institute of Virology, on Ebola and Henipah viruses.

What next?

- Significantly, the Centre has not pursued its questioning on the U.S. funding and the Wuhan collaboration in the case of the Nagaland study with NCBS-TIFR without ICMR approval, and has confined its inquiry to the storage of samples.
- However, the ongoing pandemic with new variations is expected to trigger more public scrutiny into future research.

- Some scientists have voiced concerns about a "chilling effect" in the name of bio-security, on much needed scientific freedoms for research, which involves the collection of possibly infectious samples and studies on mutations. As long as the issue of the origin of the virus that was first detected in Wuhan remains unresolved, questions will linger.

All about the periodical cicadas

(Source: The Hindu)

Context: *The latest phenomenon that has taken America by storm is the song of the cicadas. Billions of cicadas have emerged across eastern parts of the United States. Periodical cicadas, so called because of their 13- or 17-year life cycle, most of which is spent underground, emerge from their earthy digs to romance, reproduce and retire. This year is the year of the Brood X periodical cicadas. Here, X stands for the Roman numeral and refers to the sequence of emergence. Certain questions arise in the research on cicadas — how do they grow underground, what do they eat during their 13- or 17-year nymph stages spent burrowed in, or how do they know it is time to emerge?*

When was this phenomenon first recorded?

- Periodical cicadas of the genus Magicicadae have intrigued entomologists since they were noticed.
- Though Native Americans in the east of America knew about them earlier, the earliest recorded mention of these insects was in 1633 (there is some doubt whether this was in 1631 or 1634) by William Bradford, the governor of Plymouth Colony in America, according to Gene Kritsky's article in American Entomologist in 2001.
- This area later developed into the town of Plymouth, Massachusetts. The next mention was in 1666 by an unsigned note published by Henry Oldenberg where he referred to "swarms" of "locusts". However, these insects are neither locusts nor do they swarm.

How did the evolution of lineages take place?

- As species, periodical cicadas are older than the forests they inhabit, writes Chris Simon in an article in
- The Conversation. Molecular analysis has shown that about 4 million years ago, the ancestor of the current Magicicada species split into two lineages.
- Some 1.5 million years later, one of those lineages split again.
- The resulting three lineages are the basis of the modern periodical cicada species groups, Decim, Cassini and Decula. Each of these three species has 13-year and 17-year broods.

Why is the present emergent population called Brood X?

- The term 'brood' is used to refer to all periodical cicadas that emerge the same year and occupy a geographically contiguous area.
- Charles Marlatt assigned roman numerals to designate their year of emergence, and the sequence started arbitrarily in 1893.
- The brood with the 17-year cycle that emerged in 1893 was denoted Brood I, and so on. So, the 17-year broods were designated I to XVII, and the 13-year broods were designated XVIII to XXX.

Why are they called 'periodical' cicadas?

- These cicadas spend most of their lives underground. They grow burrowed in their earthy homes by feeding on root xylem for 13 or 17 years.

- During this time, they complete five developmental stages, known as "instars", entirely underground. The fifth-instar nymphs emerge from the ground by making holes and then transform into adults, only to perish approximately four weeks later.
- As adults, they gather in so-called chorus groups, where the males sing to woo the females. After mating, the female lays eggs in thin twiggy branches of trees, and then dies.
- The eggs hatch and the nymphs drop into the earth like rain, burrowing into it. About 95% of the nymphs die, and the ones that are left feed on root sap and remain underground, till it is time to emerge.
- This is described in an article by Kathy S. Williams and Chris Simon in Annual Review of Entomology (1995).

How does climate impact them?

- In any given place, they come out only once every 13 or 17 years. Occasionally, part of a population will come out four years early and part four years late.
- With climate warming, we are seeing more four-year early emergences in larger numbers.
- For instance, the Brood X periodical cicadas were documented in 2017 too, according to an article in the Washington Post.

Are there periodical cicadas in India?

- There are three species of cicadas found in the Indian subcontinent — Chremistica mixta (found in Sri Lanka), C. seminiger (found in the Nilgiri hills) and C. ribhoi (discovered in Ri-Bhoi district of Meghalaya).
- Mass emergence has been noticed only in the case of Chremistica ribhoi. The emergence takes place after dusk and once in four years.
- The phenomenon is well-known among villagers, who refer to the insect in the local Khasi language as 'niangtaser' (niang stands for "insect" and taser is believed to be derived from the name of the village "Iewsier", which refers to the area in which the phenomenon occurs, and the forest region around it).
- This periodical cicada is used as food and fish bait and has been observed in May 2006 and in May 2010, according to a 2013 article in Zootaxa by Sudhanya Ray Hajong and Salmah Yaakop.

All about recusal of Judges

(Source: Indian Expres)

Context: *Recently, two Supreme Court judges — Justice Indira Banerjee and Justice Aniruddha Bose — have recused themselves from hearing cases relating to West Bengal. On June 21, Delhi High Court judge Anup Bhambhani recused himself from hearing a plea by digital media houses challenging the validity of the IT rules regulating intermediaries.*

Why does a judge recuse?

- When there is a conflict of interest, a judge can withdraw from hearing a case to prevent creating a perception that she carried a bias while deciding the case.
- The conflict of interest can be in many ways — from holding shares in a company that is a litigant to having a prior or personal association with a party involved in the case.
- The practice stems from the cardinal principle of due process of law that nobody can be a judge in her own case.
- Any interest or conflict of interest would be a ground to withdraw from a case since a judge has a duty to act fair. Another instance for recusal is when an appeal is filed in the Supreme Court against a judgement of a High Court that may have been delivered by the SC judge when she was in the HC.

What is the process for recusal?

- The decision to recuse generally comes from the judge herself as it rests on the conscience and discretion of the judge to disclose any potential conflict of interest.
- In some circumstances, lawyers or parties in the case bring it up before the judge. If a judge recuses, the case is listed before the Chief Justice for allotment to a fresh Bench.
- There are no formal rules governing recusals, although several Supreme Court judgments have dealt with the issue.
- In Ranjit Thakur v Union of India (1987), the Supreme Court held that the tests of the likelihood of bias is the reasonableness of the apprehension in the mind of the party. "The proper approach for the Judge is not to look at his own mind and ask himself, however honestly, "Am I biased?" but to look at the mind of the party before him," the court had held. "A Judge shall not hear and decide a matter in a company in which he holds shares… unless he has disclosed his interest and no objection to his hearing and deciding the matter is raised," states the 1999 charter 'Restatement of Values in Judicial Life', a code of ethics adopted by the Supreme Court.

Can a judge refuse to recuse?

- Once a request is made for recusal, the decision to recuse or not rests with the judge.
- While there are some instances where judges have recused even if they do not see a conflict but only because such an apprehension was cast, there have also been several cases where judges have refused to withdraw from a case.
- For instance, in 2019, Justice Arun Mishra had controversially refused to recuse himself from a Constitution Bench set up to re-examine a judgement he had delivered previously, despite several requests from the parties.
- Justice Mishra had reasoned that the request for recusal was really an excuse for "forum shopping" and agreeing could compromise the independence of the judiciary.
- In the Ayodhya-Ramjanmabhoomi case, Justice U U Lalit recused himself from the Constitution Bench after parties brought to his attention that he had appeared as a lawyer in a criminal case relating to the case.

Do judges record reasons for recusal?

- Since there are no formal rules governing the process, it is often left to individual judges to record reasons for recusal. Some judges disclose the reasons in open court; in some cases, the reasons are apparent.
- The two Supreme Court judges who have recused from cases relating to West Bengal had been Calcutta High Court judges. The cases they have recused from relate to post-poll violence in the state and the Narada scam, which have become political battles between the state and Centre in court.
- In a landmark verdict in 2015 holding that the National Judicial Appointments Commission as unconstitutional, Justice Kurian Joseph and Justice Madan Lokur had referred to the need for judges to give reasons for recusal to build transparency and help frame rules to govern the process.