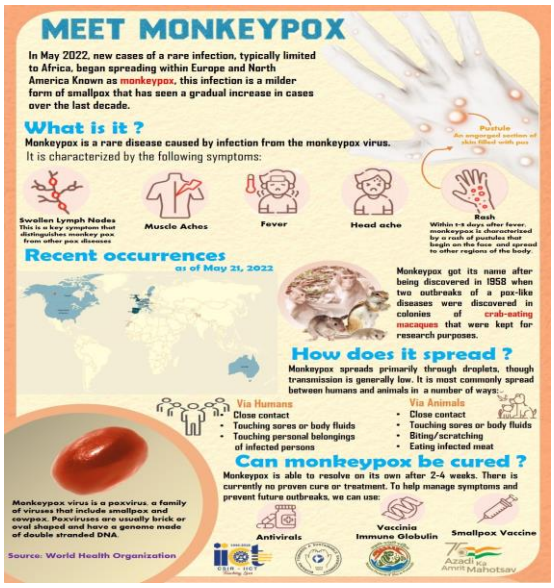
MM POX

A new analysis shows that the monkey pox, or mpox, virus is rapidly diverging into several lineages characterized by mutations resulting from continued interaction with the human immune system, suggesting that the virus has been circulating in humans since 2016.

The sustained transmission among people marks a fundamental shift in monkey pox epidemiology as a zoonosis, “highlight the need for revising public health messaging around monkey pox and outbreak management and control



Mpox (monkey pox) is an infectious disease caused by the monkey pox virus. It can cause a painful rash, enlarged lymph nodes and fever. Most people fully recover, but some get very sick.

Anyone can get mpox. It spreads from contact with infected:

Persons, through touch, kissing, or sex

Animals, when hunting, skinning, or cooking them

Materials, such as contaminated sheets, clothes or needles

Pregnant persons, who may pass the virus on to their unborn baby.

- The Hindu

Herbivory

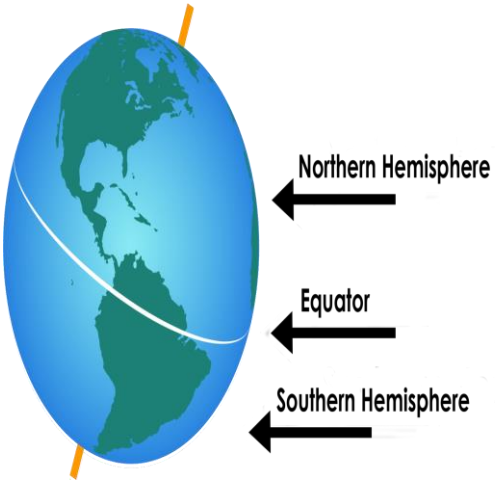
Excluding herbivores or reintroducing their predators may increase vegetation abundance by an average of 93 and 158% at natural regeneration and planted restoration sites, and introducing predators increased abundance by 138 and 372% at natural

regeneration and planted restoration sites.

The meta analysis looked at more than 600 global studies. Herbivory on restoration sites had an overall negative effect on plant abundance and diversity, particularly at sites where restoration was actively promoted.

The Hindu

Decline in water availability



- Accounts for more than 95% of the recent decline in global water availability, according to a new study.
- Global land water availability has varied due to climate change and increased human water use.
- The water availability across the Southern hemisphere decreased across the study period. In the Northern hemisphere, there is negligible change in land water availability.

The Hindu

Water evaporation

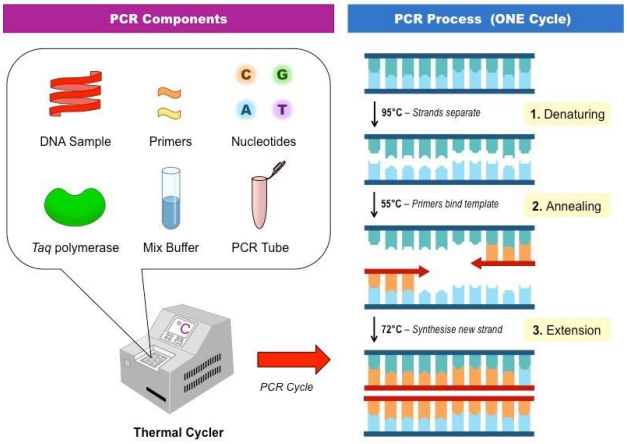
- Researchers have been puzzled upon finding that water in their experiments, which was held in a sponge like material known as a hydrogel, was evaporating at a higher rate than could be explained by the amount of heat, or thermal energy, that the water was receiving.
- At the interface where water meets air, light can directly bring about evaporation without the need for heat, and it actually does so even more efficiently than heat.
- In this, the water was held in a hydrogel material, but the researchers suggest that the phenomenon may occur under other conditions as well.

- The phenomenon might play a role in the formation and evolution of fog and clouds, and thus would be important to incorporate into climate models to improve their accuracy, the researchers say.

The Hindu

PCR and (H. pylori) bacteria

- PCRbased assay of a small region of the Helicobacter pylori (H. pylori) bacteria can help detect H. pylori infection and also identify clarithromycin in resistant bacteria and those which are drug sensitive in six seven hours has been developed by a team of researchers from the National Institute of Cholera and Enteric Diseases (ICMRNICED), Kolkata.



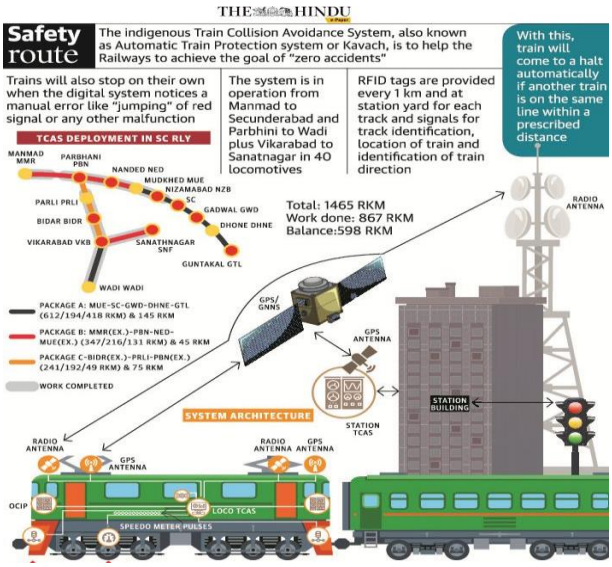
- Since H. pylori bacteria grow slowly, it takes about a week to culture the bacteria and a couple of more weeks to test for drug sensitivity, which the new diagnostic assay bypasses.

- The molecular based assay has been found to have 100% sensitivity and specificity.

- There is an increasing trend of clarithromycin in resistant H. pylori bacteria in India leading to a decreasing success rate in treating the infection.

The Hindu

- KAVACH



What is TCAS Kavach?

- Kavach is a cab signalling train control system with anti-collision features. Simply put, it plays the role of a watchdog over the existing signalling system.

- It was developed over a period of 10 years, starting in 2012, by the

Indian Railways Research Designs and Standards Organisation (RDSO).

- Kavach is designed to give out warnings to the loco pilot in case he does not notice the 'red signal,' and instead of stopping, is going to overshoot the signal.

How is the Kavach system deployed?

- In the Kavach setup, the railway stations along the route where this tech is sanctioned to be deployed are provided with three components.
- First is Radio Frequency Identification (RFID) technology in the tracks. RFID tech uses radio waves to identify people or objects. It uses electromagnetic fields to automatically identify and read information contained in a wireless device from a distance without making physical contact or requiring a line of sight.
- Secondly, the locomotive, which is the driver's cabin, is provided with RFID readers, computer, and brake interface equipment. And finally, radio infrastructure which are towers and modems are installed at railway stations.