

**WISE WORDS >>**

It is impossible to predict the time and progress of revolution. It is governed by its own more or less mysterious laws.

VLADIMIR LENIN

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**LOCKDOWN EFFECT**

## EARTH'S CRUST SHAKING LESS

Indo-Asian News service

**LONDON:** The novel coronavirus disease (Covid-19) lockdowns globally have not only made air breathable or rivers clean but have also resulted in the way our Earth moves, as researchers now report a drop in seismic noise (the hum of vibrations in the planet's crust) because transport networks, real estate and other human activities have been shut down.

According to an article in the journal Nature, efforts to curb the spread of coronavirus mean that the planet itself is moving a little less, which could "allow detectors to spot smaller earthquakes and boost efforts to monitor volcanic activity and other seismic events".

Vibrations caused by moving vehicles and industrial machinery produce background noise, which reduces seismologists' ability to detect other signals occurring at the same frequency.

"A noise reduction of this magnitude is usually only experienced briefly around Christmas," said Thomas Lecocq, a seismologist with the Royal Observatory of Belgium in Brussels which has

observed the drop in seismic noise.

Data from a seismometer at the observatory show that measures to curb the spread of Covid-19 in Brussels caused human-induced seismic noise to fall by about one-third. In Belgium, scientists report at least a 30% reduction in that amount of ambient human noise since lockdown began there.

The current drop has boosted the sensitivity of the observatory's equipment, improving its ability to detect waves in the same high frequency range as the noise, said the Nature. Not all seismic monitoring stations, however, will see an effect as pronounced as the one observed in Brussels.

Emily Wolin, geologist at the US Geological Survey in Albuquerque, New Mexico, said that many stations are located in remote areas to avoid human noise. "These should see a smaller decrease, or no change at all, in the level of high-frequency noise they record," she was quoted as saying.

The fall in noise could also benefit seismologists who use naturally occurring background vibrations, such as those from crashing ocean waves, to probe Earth's crust.

**OFF THE SPORTS ARENA**

## 'Chats with son, wife are main joys'

With sporting events suspended, and training centres and national camps shut, what are athletes doing with their forced leisure time? Everyday a top athlete will write about her or his experience of dealing with the Covid-19 pandemic. This is Viswanathan Anand, India's multiple-time world chess champion, who is in Germany since the last few weeks.

I came to Germany in February to play in the Chess Bundesliga for my team OSG Baden-Baden but the games got cancelled because of the Covid-19 outbreak. Before returning to India, I decided to voluntarily isolate myself for some days as a precaution and to be socially distant, in my apartment near Frankfurt. But by then the travel restrictions (by the Indian government) were in place, so it made sense to follow them rather than put yourself as well as your family at risk.

This is a very unusual experience. I do keep in touch with my family and have a video chat with my son Akhil and wife Aruna daily. We try to get some happiness in these difficult times by talking to each other. I have been playing chess with Akhil too. Aruna tells me to play "as a dad!" Basically I am staying indoors. To keep myself fit, I do a lot of exercises like yoga and stretching. Plus, once in a day I go out for a walk just down the

block. I avoid going to places where people congregate. If I need to buy a few things, I visit the nearby grocery store but for the rest of the time, I stay indoors.

One thing that keeps me busy in the evenings is the online commentary I am doing for a chess website for the Candidates that is currently going on in Russia. I am connecting with people from the website from Germany for commentary. This is a new experience (most other times, I have been involved as a participant).

As far as returning to India is concerned, we are following the travel advisories by governments of India and Germany. As of now, flights have been cancelled till March 28, so we will have to see post that what the scenario is.

This is a global issue and no cure has been found. So all we can do is follow the advisories by the government and implement social distancing as much as possible. My wife always reminds me to keep indoors as much as possible and wash my hands at regular intervals — asking me to

follow the dos and don'ts. Everybody has to follow what the authorities are saying so that we don't contribute in the spread of the outbreak. Let's all be safe and healthy.

(As told to B Shrikant)



Chess grandmaster Viswanathan Anand HT PHOTO

**IN THE NEWS**

Dear Reader, Hindustan Times is coming to you in this new avatar at a time when our normal lives and activities have been disrupted by the challenge posed by the Coronavirus disease (Covid-19). You have been reading the HT School Edition in your classrooms. Now, with schools closed and a lockdown in place, we have created this specially curated e-paper to cater to your varied interests and your appetite for knowledge. A special feature of this new e-paper will be the "You" section, dedicated to your experiences during the lockdown, and how you're spending these unusual days. Apart from the contributions from students, insights from teachers and principals will also be featured in these columns. As you engage with this special edition, we request you to keep sharing your views on it. Let us know what you like and what you don't, and what else you would like to read. Your feedback will help us fine-tune this offering so that it better reflects exactly what you want. We at HT believe that the readers of today are the leaders of tomorrow. So let us begin this journey together.

## Covid-19: Bronx Zoo tiger tests positive

**NEW YORK:** A tiger at the Bronx Zoo in New York City has tested positive for the respiratory disease caused by the novel coronavirus, in the first known case of a human infecting an animal and making it sick, the zoo's chief veterinarian said on Sunday. Nadia, the 4-year-old Malayan tiger that tested positive, was screened for the Covid-19 disease after developing a dry cough along with three other tigers and three lions, the Wildlife Conservation Society, which manages the zoo, said in a statement. All of the cats are expected to recover, it said.

The virus that causes Covid-19 is believed to have spread from animals to humans and a handful of animals have tested positive in Hong Kong.

But officials believe this is a unique case because Nadia became sick after exposure to an asymptomatic zoo employee, Paul Calle, chief veterinarian at the Bronx Zoo, told Reuters. Calle said they did not know which employee infected the tiger. "This is the first time that any of us know of anywhere in the world that a person infected the animal and the animal got sick," Calle said, adding that they planned to share the findings



Nadia, the 4-year-old Malayan tiger that tested positive inside of the Bronx Zoo in New York City, US, on Sunday REUTERS

with other zoos and institutions. "Hopefully we will all have a better understanding as a result."

While the other tigers and lions were also exhibiting symptoms, the zoo decided to test only Nadia because she was the sickest and had started to lose her appetite, Calle said. "The tigers and lions weren't terribly sick," he said. REUTERS

## Antarctica once boasted warm, swampy rainforests

**WASHINGTON:** Antarctica is now a harsh land of ice and snow, but has not always been that way. Earth's southernmost continent long ago was home to temperate, swampy rainforests teeming with life, scientists said on Wednesday based on pristinely preserved forest soil they retrieved by drilling under the seafloor off Antarctica's coast. The sediment core obtained by scientists working aboard the research icebreaker RV Polarstern in the Amundsen Sea near the Pine Island Glacier dated to about 90 million years ago during the Cretaceous Period when dinosaurs were the dominant land animals.

The researchers estimated based on the soil content that this location, 900 km from the South Pole, experienced average annual temperatures of about 12-13 Celsius and average temperatures during the warmest summer months of about 20-25 Celsius. REUTERS



A glacier in Half Moon Bay, Antarctica REUTERS FILE

## HRD: Decision on reopening schools, colleges on April 14

Press Trust of India

**NEW DELHI:** The government will take a decision on reopening of schools and colleges on April 14 after reviewing the coronavirus situation in the country, Union HRD minister Ramesh Pokhriyal 'Nishank' said. In an interview, he said the safety of students and teachers is of utmost importance to the government and that his ministry is prepared to ensure there is no academic loss to students if educational institutions needed to remain shut beyond April 14, when the ongoing 21-day lockdown is slated to end.

"It is difficult to take a decision at the moment. We will review the situation on April 14 and depending upon the circumstances, a decision will be taken on whether schools and colleges can be reopened now or have to be closed for some more time," Pokhriyal said.

"There are 34 crore students in the country. They are our biggest treasure. Safety of students and teachers is of utmost importance to the government," he added.

## DRDO designs full body disinfection chamber, face mask

**NEW DELHI:** Joining efforts to fight Covid-19, the Defence Research and Development Organisation (DRDO) has designed a full body disinfection chamber and a special face protection mask for healthcare professionals, officials said.

The special chamber called 'PSE' has been designed by Vehicle Research Development Establishment, Ahmednagar, a DRDO laboratory.

The walk through enclosure is designed for personnel decontamination, one person at a time. PTI



On entering the chamber, an electrically-operated pump creates a disinfectant mist of hypo sodium chloride for disinfecting ANI

# WHAT, PRECISELY, ARE VIRUSES?

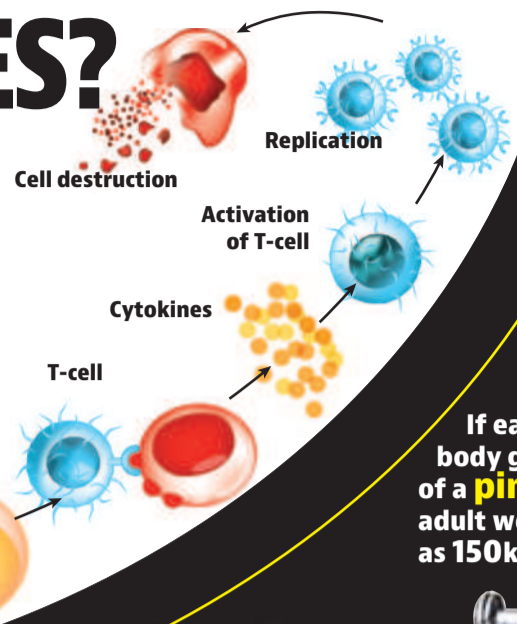
Viruses are as old as life itself but scientists cannot say for sure if they are alive. Written into our DNA, they shape the human saga through mutation and resilience.

*What do numbers reveal about viruses?*

- Many scientists don't consider them to be alive since they don't have cells. They also do not produce energy through respiration, which is a key definition of living organisms
- Viruses are best thought of as 'molecular packages'
- These packages are small enough to fit inside a cell to cause infection

Yet, as soon as they enter a host, viruses spring into activity in ways rarely seen in nature, hacking cells with new genetic instructions to replicate at dizzying speed

They are the most diverse organisms on our planet. There are more of them than anything else and we still know hardly anything about them.



More than 800 million viruses settle on each square metre of the Earth every single day.

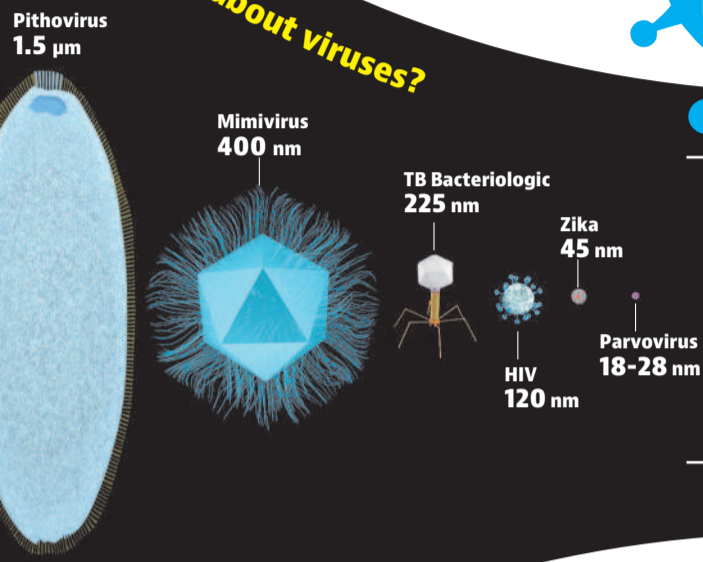
If each virus in a human body grew to the size of a pinhead, the average adult would be as tall as 150km!

In a tablespoon of seawater, there are typically more viruses than there are people in Europe.

## Blood cell

A typical human red blood cell has a disk diameter of approximately 6.2-8.2 µm

About 250 red blood cells could fit on a pinhead



A nanometer is a billionth of a metre

## Approx. no. of viruses on Earth

1 × 10 to the power 31 (more than one quintillion or 1 followed by 31 zeros)

1000

Placed end to end, viruses would stretch 100 million light years or 1,000 times the breadth of the Milky Way.

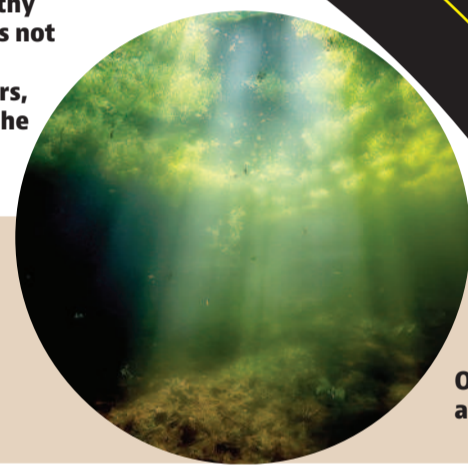


## ARE THEY ALL BAD?

- Nearly all viruses are, in fact, harmless to humans.
- Most viruses come to our attention because they make us sick.
- Many viruses benefit human beings as they infect other organisms that could otherwise harm us.
- Another benefit: The carbon uptake of ocean algae, which helps purify the air we breathe, is greatly accelerated by viruses
- They also have widespread healthcare applications. Besides vaccines derived from weakened viruses, an emerging area of treatment, known as virology, is developing new ways to treat chronic diseases such as cancer.
- "These viruses replicate in cancer cells but not healthy cells. So this treatment is not as toxic as classic cancer therapies," said Teri Shors, professor of biology at the University of Wisconsin Oshkosh

## FUZZY ORIGIN

- While the origin of viruses is uncertain, they have surely left an imprint on nearly all life on Earth, including humans beings.
- Around 8% of the human genome is of viral origin, that is remnants of ancient viruses that have infected us, developing species-wide tolerance
- The story of viruses began aeons before humans
- Viruses were there at the very beginning



Ocean algae

Most of us will swallow more than a billion viruses every time we go swimming," said Curtis Suttle, virologist at the University of British Columbia. He added: "We are inundated by viruses."

SOURCE: AGENCY PHOTOS: SHUTTERSTOCK GRAPHIC: BISWENDU CHOWDHURY

## BIBLIOPHILE

# Turn page after page, for free



From children's literature to the classics, sci-fi and non-fiction, websites around the world have opened up their catalogues

Rachel Lopez

You've probably figured out a few things by now. Cooking isn't always fun. And you can only listen to so many yesteryear songs. So back to books it is, and right now a lot of them are free. Sites around the world have opened up new and back catalogues, launched special read-at-home deals, and a handful have simply always had free books.

**National Book Trust (nbt india.gov.in):** The publisher's #StayHomeIndiaWithBooks campaign hosts books for children and adults for free. Pick from memoirs, books about martyrs in the freedom struggle, plant life, and how glass has transformed history and cultures.

**National Emergency Library (archive.org/details/nationalemergencylibrary):** A week ago, archive.org, the largest free repository of online books, launched a service called the National Emergency Library, to address the closing of American public libraries amid the Covid-19 pandemic. Their collection of 1.4 million digitised books is available globally until June 30. There are 19th-century journals, scans of old novels, some fiction and older editions of non-fiction. Search for a particular title or sift through their tags. The selection is truly eclectic.

**Manybooks (manybooks.net):** Genre-based browsing (fiction, sci-fi, young adult, thrillers) means you can find what you like easily, plus the site's free books cover more than the classics. There's a changing selection of new books and deals every day, in addition to the free selection.

**Sharjah Public Library (spl.gov.ae):** Until the end of June, the Sharjah Public Library is offering readers worldwide free access to its Digital Library, which houses more than 6 million e-books in over 10 languages.

**Open Culture (openculture.com):** The repository of open-source material lists links that direct you to sites offering free classics. Listing is alphabetical, so don't be put off if you see the works of Aeschylus at the top. There's also, George Orwell.

**Scribd (scribd.com):** The American e-book and audiobook subscription service offers a free trial that includes access to a portion of its 1 million titles. This is where to binge-read Neil Gaiman, Terry Pratchett and Stephen King.

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## MIND GAMES

### SUDOKU

	4	7						
		3	9			6	2	
				5	8			
9	1			4	5			
6					1	3		
7		8						
5			2				9	
	6						1	
		2		4				

### SCRAMBLE

Solve the four anagrams and move one letter to each square to form four ordinary words

FLYAE \* \* \* \* \*  
MSYOS \* \* \* \* \*  
BUGLER \* \* \* \* \*  
ANTUJY \* \* \* \* \*

Now arrange the letters marked with an asterisk (\*) to form the answer to the riddle or to fill in the missing words as indicated.

...that jumble of secret worship and ostensible aversion. -Emil Cioran (8)

### WHAT'S THE PASSWORD?



Alex is not able to log in to his computer terminal. It suddenly dawns on him that the passwords are reset by the company every month for security purposes. He contacts the person at the IT department and is told that his password is out of date and the new one is different. The person adds that if he is a good listener he should be able to figure out the new password, which has the same number of letters as his old password and four common letters. Alex thanks the man and logs into his terminal successfully. Can you tell what his old and new passwords are?

Answer: The old password was: Out of date. The new one is: Different

### MATHDOKU

15x		2÷		8+
1-	3-			
	3		8÷	
2÷	5x		12+	
	1			

Place numbers into the puzzle cells so that each row and column contains each of the digits from 1 to 5. No number is to be repeated in any row or column. Each bold-out lined cell contain a hint of a number and one of the mathematical symbols + x - ÷. The number is the result of the operation represented by the symbol in the digits contained.

### SAFETY FIRST



A hay bale is adorned with a face and surgical mask along the edge of a cattle pasture near Florence, Kansas, in the United States, on Sunday

### Solutions

3	8	2	1	4	7	9	5	6
4	6	7	8	5	3	1	2	
5	7	1	3	2	6	4	9	8
7	3	5	8	6	1	2	4	9
6	4	5	7	9	1	8	3	
8	5	8	6	7	2	4	1	
2	6	9	4	5	3	8	7	
8	3	6	9	7	1	7	4	
1	4	7	6	2	8	9	3	5

ANSWERS TO MATHDOKU

1	2	3	4	5
2	1	5	3	4
4	5	2	1	3
3	4	1	5	2
5	3	4	2	1

MATHDOKU SOLUTION

Bugler, Junny

SCRAMBLE Solution: Leafy, mossy.