IN BRIEF

Akshay Kumar ranks fourth in Forbes list

LOS ANGELES

With earnings of $65 million, Bollywood actor Akshay Kumar has beaten Hollywood stars like Chris Evans and Will Smith to secure fourth place in the Forbes' annual list of world's highest paid actors. Dwayne Johnson ($89.4 million), Chris Hemsworth ($76.4 million) and Robert Downey Jr ($66 million) are the top three on the list. PTI

Priyanka, Pedro Pascal to star in *We Can Be Heroes*

LOS ANGELES

Actor Priyanka Chopra is set to share screen space with Pedro Pascal, Christian Slater and Boyd Holbrook in Robert Rodriguez's Netflix feature *We Can Be Heroes*. Rodriguez, who most recently helmed *Alita: Battle Angel*, will direct and produce the movie from his own script. PTI

Netflix project endorsed by Obamas makes debut

NEW YORK

A documentary about a U.S. glass factory that is run by a Chinese investor debuted on Wednesday on Netflix as the streaming service's first project backed by Michelle and Barack Obama's new production company. The film, which explores workers' rights and globalisation, looks at a culture clash between the factory's employees. AP

Microplastics in drinking water not a health risk for now: WHO

The UN body has called for more research into potential future threats

AGENCE FRANCE-PRESSE
GENEVA

The World Health Organization (WHO) said on Thursday that the level of microplastics in drinking water is not yet dangerous for humans but called for more research into potential future risk.

In its first report into the effects of microplastics on human health, WHO looked into the specific impact of microplastics in tap and bottled water.

"The headline message is to reassure drinking water consumers around the world, that based on this assessment, our assessment of the risk is that it's low," said Bruce Gordon, WHO coordinator of water and sanitation.

WHO said that data on the presence of microplastics in drinking water is currently limited, with few reliable studies, making it difficult to analyse the results.

Global problem: Plastic fibres are ubiquitous in the environment and have been found in drinking water. ▪ AP

WHO has called on researchers to conduct a more in-depth evaluation into microplastics and the potential impact on human health.

The organisation has also urged a crackdown on plastic pollution to benefit the environment and reduce human exposure to microplastics. The report said that irrespective of human health risks caused by microplastics in drinking water, "measures should be taken by policymakers and the public to better manage plastics and reduce the use of plastics where possible".

WHO said that microplastics larger than 150 micrometres are not likely to be absorbed by the human body but said the chance of absorbing very small microplastic particles, including nano-sized plastics, could be higher, although it said data is limited.

"We urgently need to know more about the health impact of microplastics because they are everywhere," said Maria Neira, director of the Public Health Department at WHO, in a statement.

"We also need to stop the rise in plastic pollution worldwide," she added.

Giant guitar made from scrap metal enters record books

The 'art from waste' exhibit is on display at an ITI in Odisha

STAFF REPORTER
BERHAMPUR

A 70-foot-tall guitar built from metal waste by students of the Odisha government-managed Berhampur Industrial Training Institute (ITI) has entered the *Asia Book of Records* and *India Book of Records*.

The guitar, built from metal waste left by the Titli and Fani cyclones, has been drawing attention from several quarters.

"Following this record-making feat, officials of several major companies like Lava, Samsung, Yamaha have started contacting us with enquiries about our students and their technical skills. This will surely increase employability of our students in major companies of the State and enhance our campus placement," said Rajat Kumar Panigrahy, principal, ITI-Berhampur.

The metal guitar put together by 150 students. ▪ SPECIAL ARRANGEMENT

The students, too, are enthused that the achievement will increase the scope for their placements.

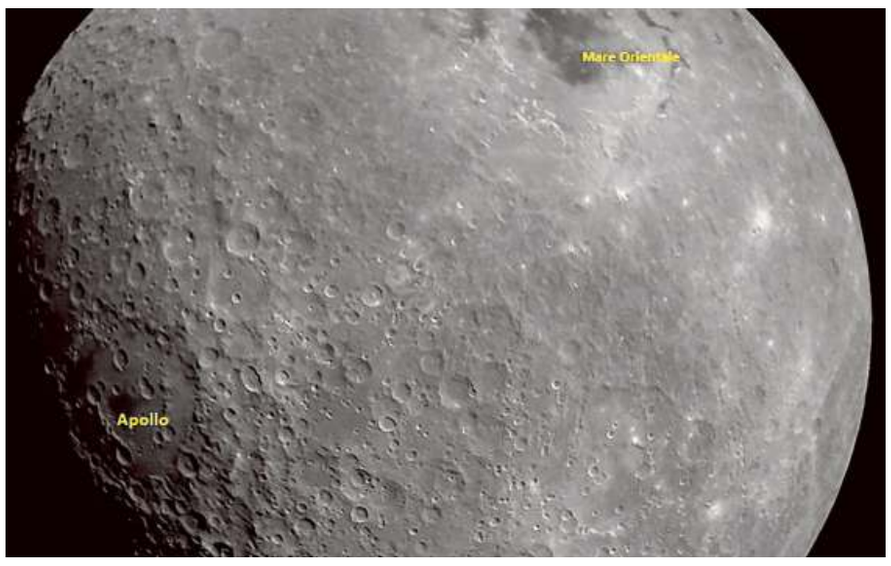
According to a communiqué from the *Asia Book of Records* to the institute, the sculpted guitar, made from waste materials by 150 students in three months and 22 days, has been included in the 'grandmaster' category. The category caters to record holders of the *India Book of Records*, which makes them eligible for the *Asia Book of Records*.

Now, the institute is approaching the Guinness World Records for recognition.

The guitar is now a part of an open air museum of "art from waste" being developed on the campus.

On display are eight other artefacts, including a 32.3-foot-high giraffe made of iron rods and a 13.6-foot-tall model of the Hollywood movie character *Predator*.

Fly me to the moon



One for the album: The first Moon image that was captured by Chandrayaan-2's Vikram lander from a height of about 2,650 km above the lunar surface on Wednesday. Mare Orientale basin and the Apollo crater are identified in the picture. ▪ ISRO

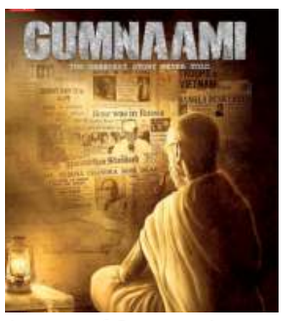
Those criticising *Gumnaami* are misinformed, says director

'Film explores 3 theories and does not give any verdict'

SPECIAL CORRESPONDENT
KOLKATA

Filmmaker Srijit Mukherjee, who has directed the upcoming film *Gumnaami*, said that those opposing the film were "misinformed" about it. The film is being opposed by a section of Netaji Subhas Chandra Bose's family and leaders of the All India Forward Bloc for its alleged "portrayal of Netaji as Gumnaami Baba".

Speaking to *The Hindu*, Mr. Mukherjee asserted that the film does not say that Netaji was Gumnaami Baba. According to the director, the film's poster and teaser have clearly shown that the film explores three theories regarding Netaji's death and does not give any verdict. The theories dealt with in the film are the plane crash theory, the death in Russia theory and the Gumnaami Baba theory.



A poster of *Gumnaami*. ▪ SPECIAL ARRANGEMENT

"It raises questions and leaves it open to the audience," Mr. Mukherjee said. Those who are opposed to the film "are either misinformed or are misinterpreting it on purpose. I don't know on what purpose," the director stated.

The film is being produced by Shri Venkatesh Productions with Prosenjit Chatterjee in the lead role.

Test the ashes, says Netaji's daughter

PRESS TRUST OF INDIA
KOLKATA

Amid a fresh row over the mystery surrounding Netaji Subhas Chandra Bose's death, his daughter on Thursday sought Prime Minister Narendra Modi's intervention for a DNA test of the ashes believed to be of the leader.

Anita Bose Pfaff said she shared the belief that her father had died in the air crash on August 18, 1945. Ms. Pfaff said she would like to meet Japanese authorities to request them to allow a DNA test of the ashes, believed to be Bose's, kept at the Renkoji temple in Japan.

Big data helps confront complex disasters

Flood and cyclone forecasting now relies on computer simulations and machine learning

REUTERS
BANGKOK

Technological innovations – from unique digital identities for drought-hit farmers to use of data from drones and social media – can better predict increasingly complex disasters in the Asia-Pacific region and limit their impact on vulnerable people, the United Nations said in a report on Thursday.

Rising global temperatures have increased the frequency and intensity of floods, cyclones and droughts in the region, making it harder to accurately forecast and monitor them, according to the report by the U.N.'s Asia-Pacific social agency (UNESCAP).

But "big data innovations – using the large data sets from mobile phone tracking to satellite platforms – reveal patterns, trends, and associations of complex disaster risks," said Armida Alisjahbana, UNESCAP's executive secretary.

"These help us understand, monitor and predict the risk of extreme and slow-onset events, and address the key challenges of the new climate reality," she said.

The Asia-Pacific region is particularly vulnerable to climate-related threats, with more fatalities and greater economic damage from disasters.

Since 1970, natural disasters in the region have killed two million people – 59% of the global death toll for that period, according to UNESCAP.

Disasters also cause more damage in Asia and the Pacific, measured as a percentage of GDP, than the rest of the world, and this gap has been widening, the report showed.

But technological innovations are already reducing some of that vulnerability, the report said.

"Technology can help identify and locate those most at risk, to warn them ahead of a disaster, and deliver targeted relief afterwards," said Tiziana Bonapace, director of UNESCAP's disaster risk reduction division in Bangkok.

Clear count: Data can come from a range of sources, including satellite imagery, drone videos and social media. ▪ AFP

Extreme weather

"While extreme weather is the new normal, the number of deaths from climate-related events is decreasing due to advances in technology, including better early warning systems and measures to mitigate impact," she said.

Big data refers to the analysis of very large data sets to reveal patterns, trends and associations. The data can come from a range of sources, including satellite imagery, drone videos, simulations, crowdsourcing, social media and global positioning systems.

Flood and cyclone forecasting now relies on computer simulations, with machine learning helping to predict the location and severity of floods.

Sensor webs and the Internet of Things have enabled efficient earthquake early-warning systems, while remote sensing via satellites and drones provide quick assessments of damage and people affected, and help prioritise relief efforts.

"The substantial reductions in mortalities and economic losses due to typhoons in north and east Asia over the last three decades can be attributed to big data applications," Ms. Alisjahbana said.

Technological advances are expected to become more important as warming temperatures cause a rise in the number and duration of heat waves and droughts, particularly in semi-arid and arid areas in north and central Asia, the UNESCAP report said.

Cyclone intensity and flooding is also expected to increase, with serious impacts for coastal areas in southeast Asia, and extreme rainfall also a threat for south Asia.

Russia launches rocket with humanoid robot into space

Fedor will be trained to assist astronauts on the ISS

AGENCE FRANCE-PRESSE
MOSCOW

Russia on Thursday launched an unmanned rocket carrying a life-size humanoid robot that will spend 10 days learning to assist astronauts on the International Space Station.

Named Fedor, short for Final Experimental Demonstration Object Research, the robot is the first ever sent up by Russia.

Fedor blasted off in a Soyuz MS-14 spacecraft from Russia's Baikonur cosmodrome in Kazakhstan. The Soyuz is set to dock with the space station on Saturday and stay till September 7.

Soyuz ships are normally manned on such trips, but on Thursday no humans are travelling in order to test a new emergency rescue system. Fedor, also known as Skybot F850, was strapped into a specially adapted pilot's seat, with a small Russian flag in hand. "Let's go. Let's go," the robot was heard saying during launch, repeating the famous phrase used by first man in space Yuri Gagarin.

All set: The Fedor robot before being loaded into a Soyuz capsule. ▪ ROSCOSMOS SPACE AGENCY/AP

The silvery anthropomorphic robot stands 1.80 metres tall and weighs 160 kg. Fedor has Instagram and Twitter accounts with posts saying it is learning new skills such as opening a bottle of water. In the station, it will trial those manual skills in very low gravity.

On the website of one of the state backers of the project, the Foundation of Advanced Research Projects, Fedor is described as potentially useful on Earth for working in high radiation environments.

London Zoo takes up tricky task

Hundreds of animals are assessed during annual check-up

REUTERS
LONDON

Bullfrogs, pythons and penguins were among creatures being coaxed onto the scales at London Zoo this week for the annual check on their weight and size.

The check-up allows keepers to assess the animals' general health, find out about pregnancies, when they are about to moult, and help to administer medicines according to their weight, the Zoological Society of London (ZSL) said.

The information is shared with zoos around the world by ZSL, a charity devoted to the worldwide conservation of animals and their habitats. But actually getting animals to stand up and be measured is no easy task, involving for example tricking penguins into walking over scales as they line up for their morning feed or hanging breakfast from up high to encourage lions to reach up to their full height.

Curious duo: Meerkats are weighed on a scale during a photocall at London Zoo on Thursday. ▪ AFP

"We have to know the vital statistics of every animal at the zoo, from the tallest giraffe to the tiniest ant," said ZSL's assistant curator Teague Stubbington.

Model devised to study spread of breast cancer

Converted cells can migrate through microscopic passages, according to the IIT-G and IISc researchers

SPECIAL CORRESPONDENT
GUWAHATI

Researchers of two premier research institutes in India have collaborated to devise an experimental model for studying a medical complication – the spread of breast cancer cells to other parts of the body through blood.

A team of researchers from the Indian Institute of Technology-Guwahati (IIT-G) and the Bengaluru-based Indian Institute of Science (IISc) collaborated for the project.

The team, led by IIT-G's Siddhartha Sankar Ghosh and Gautam Biswas and IISc's Mohit Kumar Jolly, comprised IIT-G's Amaresh Dalal, research fellow Binita Nath, and research scholars Anil Bidkar and Vikash Kumar. Their work was published in the latest edition of the *Journal of Clinical Medicine* published from Switzerland.

"While breast cancer starts as a local disease, cancer can grow and spread to other organs, in a process called metastasis, the most devastating attribute of the disease. We do not yet fully know the molecular and cellular mechanisms of breast cancer metastasis, and this hinders the development of treatment protocols that can prevent or treat cancer spread," Prof. Ghosh said.

"Our bodies are made up of billions of cells of various types and various types of cancers start from different types of cells, and breast cancer starts in epithelial cells," he added. Epithelial cells are found in skin and as lining for all organs inside the body as well as body parts such as the breast and the insides of the chest cavity.

It has been known that cancer cells migrate from their point of origin to other parts of the body by transforming into other types of cells such as mesenchymal causing secondary cancer, the researchers said.

The experimental model, Dr. Biswas explained, was designed to mimic broken membranes through which cancer cells find their way into the blood stream.

"Epithelial-to-mesenchymal (EMT) transition is known to be an important factor in cancer spread, but how the converted cells travel to the blood vessels and undergo reverse transition at the secondary sites has hitherto not been completely understood. Our effort was to understand this through the model," he said.

The team found that the EMT cells had enhanced migratory properties and retained 50% viability, even after migration constricted, microscopic passages developed for the model.