

IN BRIEF



3,000 kg of garbage collected from Everest

KATHMANDU
A total of 3,000 kg of solid waste has been collected from the world's highest peak, Mt. Everest, since April 14 when Nepal launched an ambitious clean-up campaign aimed at bringing back tonnes of trash left behind by climbers. The campaign seeks to bring back and safely dispose of a total of 10,000 kg of waste. PTI



Beluga whale found with Russian harness

COPENHAGEN
A beluga whale found with a harness that appeared to be Russian made has raised the alarm of Norwegian officials and prompted speculation that the animal may have come from a Russian military facility. The whale's harness says "Equipment St. Petersburg" and has a mount for a camera. AP



Lebanon's capital sets world record with flags

BEIRUT
Lebanon's capital Beirut has set a Guinness World Record for the number of national flags raised in a city for 24 hours. The Beirut Alive Association on Sunday raised a total of 26,852 Lebanese flags breaking New York's Waterloo record of 25,599 flags, Xinhua reported. IANS

Genes of climate-resistant chickpea varieties identified

ICRISAT study discovers important factors for heat and drought tolerance

R. PRASAD
CHENNAI

An international team led by the Hyderabad-based International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) has identified in chickpea four important genes for heat tolerance and three important genes for drought tolerance.

With rising temperatures and increasing climatic fluctuations due to climate change, the identification of these genes will help in developing newer chickpea varieties that can tolerate temperatures up to 38°C. Also, the identification of other genes with useful traits will help in increasing the yield and providing better resistance to pests and diseases. The study was based on complete genome sequencing of 429 chickpea lines from 45 countries.

More than 90% of chickpea cultivation area is in South Asia, including India. Globally, more than 70% yield is lost due to drought and increasing tempera-



Green thumb: Scientist Rajeev K. Varshney examining chickpea plants. ■SPECIAL ARRANGEMENT

tures. Chickpea is a cool season crop, so in general any further increase in temperature is expected to further reduce the yield.

Timely trial

"With the identification of the heat- and drought-tolerant genes, it will be possible to cross a chickpea landrace carrying those genes with a variety and select only those lines (progenies) with the genetic markers that have the heat and drought tolerance

genes. By using such a genomics-assisted breeding approach, the time taken to produce a new heat- and drought-tolerant chickpea variety can be halved from about eight to four years," says Rajeev K. Varshney from ICRISAT. He is the first author and one of the corresponding authors of a paper on the subject published in *Nature Genetics*.

Chickpea is generally sown in September-October and harvested in January-Fe-

bruary. "Currently, in India, chickpea does not face a major threat from increasing temperature. But we are already witnessing a slight warming during the months of January and February. So a new variety with heat and drought tolerance will be highly useful to Indian farmers," says Dr. Varshney. "When heat-tolerant chickpeas are developed in future, farmers in India may have a possibility to go in for a second round of cropping. Though the yield will be less for the second crop, farmers will still stand to gain."

Diversity, domestication

The study has found that chickpea originated in the Mediterranean/south-west Asia and migrated to south Asia. It reached India about two centuries ago, apparently through Afghanistan. In parallel, it migrated from the Mediterranean to east Africa and central Asia. The study provides insights into chickpea's genetic diversity and domestication too.

New biopic charts formative years of J.R.R. Tolkien

Film follows the author as an orphan, his friendships at school in Birmingham and studies at Oxford University

REUTERS
LONDON

J.R.R. Tolkien's fantastical world of hobbits, elves and orcs have won over fans around the world in the decades since *The Hobbit* and *The Lord of the Rings* stories were published.

Now the British novelist himself is the subject of a film that looks at his early years and inspirations for his



J.R.R. Tolkien

works. *X-Men* actor Nicholas Hoult plays the title role in *Tolkien*, which follows the

author as an orphan, his friendships at school in Birmingham, studies at Oxford University and on the frontline at the Battle of the Somme during the First World War.

Fan following

"We wanted to honour him and tell our story that we thought was fascinating about his formative years

that everyone, I feel as a fan...would be intrigued by," said Mr. Hoult.

Mirror Mirror actor Lily Collins plays Edith Bratt, whom Tolkien met when he moved into a boarding house and who would later become his wife and inspire elf Luthien in his fictional Middle-earth world. "We show her dancing in the forest and...her cheekiness and her love of

storytelling and the way that she just would inspire him to continue telling stories," Ms. Collins said.

Tolkien, who was a professor of Anglo-Saxon Studies at Oxford, published *The Hobbit* in 1937. *The Lord of the Rings* came in three parts between 1954 and 1955.

More than 150 million copies of *The Lord of the Rings* have been sold worldwide.

The film adaptations and those for *The Hobbit* trilogy have grossed around \$5.8 billion at global box offices.

Tolkien died in 1973, aged 81. His family and estate have distanced themselves from the movie, saying in a statement last week "they did not approve of, authorise or participate in the making of this film. They do not endorse it or its content in any way."

Man trapped in hole he dug to spy on ex

ASSOCIATED PRESS
MEXICO CITY

A man in northern Mexico had to be rescued after he accidentally trapped himself in a hole that he dug so he could spy on his former girlfriend in violation of a court order to stay away from her, authorities said.

The Sonora State Attorney General's office said the 50-year-old man had spent days digging the hole in Puerto Penasco, a town on the Gulf of California, only to become trapped and require assistance to get out. The man had been ordered to stay away from his former girlfriend due to domestic violence charges and he is now in jail, authorities said.

The newspaper *El Universal* said the man dug a tunnel under the woman's house. The report said the woman told police that over the course of a week, she had heard scratching noises but assumed the noise was cats.

But when the sound grew louder, she investigated and found her former partner of 14 years trapped below, the report said. She said she ended the relationship because her partner was very jealous.

Police said the man appeared intoxicated and severely dehydrated once they got him out of the tunnel. Gender violence is in Mexico's spotlight this week after a woman was hit by a car and then stabbed to death by her husband in the western State of Jalisco.

+ 'Drug-resistant diseases could kill 10 million a year by 2050'

UN report calls for prudent use of antibiotics

SPECIAL CORRESPONDENT
NEW DELHI

Drug-resistant diseases could cause 10 million deaths each year by 2050, warned the UN Ad Hoc Inter-agency Coordinating Group on Antimicrobial Resistance in a report released on Monday.

It added that by 2030, antimicrobial resistance could force up to 24 million people into extreme poverty.

"Currently, at least 7,00,000 people die each year due to drug-resistant diseases, including 2,30,000 people who die from multidrug-resistant tuberculosis," said the report.

It also noted that more and more common diseases, including respiratory tract infections, sexually transmitted infections and urinary tract infections, are be-



coming untreatable; lifesaving medical procedures are becoming riskier, and food systems are getting increasingly precarious.

"Antimicrobial resistance is one of the greatest threats we face as a global community. This report reflects the depth and scope of the response needed to curb its rise and protect a century of progress in health," Amina Mohammed, UN deputy secretary-general said in a statement.

The report noted that the world was already feeling the economic and health consequences as crucial medicines become ineffective. Without investment from countries in all income brackets, future generations will face the disastrous impacts of uncontrolled antimicrobial resistance.

It has now recommended that countries prioritise national action plans to scale-up financing and capacity-building efforts, put in place stronger regulatory systems and support awareness programs for responsible and prudent use of antimicrobials by professionals in human, animal and plant health and invest in ambitious research and development for new technologies to combat antimicrobial resistance.

Feathered friend



Under a wing: A mural painting at Cantarranas in Honduras seems to have attracted a young admirer during a street art event in which artists from seven countries took part on Sunday. The scarlet macaw (*Ara macao*) is the country's national bird. AFP

With new contracts, revamped Russian animation charms global audiences

State-owned Parovoz is producing a series that is shown in 55 countries but artists are worried that creativity is being sacrificed for commercial success

AGENCE FRANCE-PRESSE
MOSCOW

In a slick Moscow loft, dozens of graphic designers peer at computers, compiling the latest scenes of *Fantasy Patrol*, a cartoon produced by Russia's Parovoz animation studio.

With its Netflix contracts, state-owned Parovoz — which means 'locomotive' in Russian — is at the forefront of a resurgence of the country's animation industry.

But, for some observers, the revival comes at the expense of a tradition of innovation dating back to the Soviet-era heyday. Russian authorities have invested heavily in the animation sector in recent years, after it, like others, was left in ruins following the breakup of the Soviet Union in 1991.



Serious business: Employees working at the Parovoz animation studio in Moscow. ■AFP

Parovoz is part of a state media holding and has grown from around 20 to 300 employees. Its animated series are shown in 55 countries.

Chief executive Anton Smetankin, who co-launched the studio in 2014, said it had "a product for every market".

Last year, two Parovoz

productions were bought by the U.S.-based streaming service Netflix — one of them, *Leo and Tig*, is about the adventures of a tiger and leopard in Siberia.

"We have taken the best from the Russian school [of animation]," said artistic director Yevgeny Golovin. "All of our films are full of kindness and can be watched by children of all ages."

Deals with China

The studio also signed two contracts with China and had several of its projects dubbed and adapted for the Chinese market.

Today they are shown on four of China's top streaming channels whose total users are estimated to number 1.5 billion a month.

Soviet animators won global reputation for their creativity but the sector has seen mixed fortunes since then.

Soyuzmultfilm, a studio launched in the 1930s which made many of the Soviet Un-

ion's animated greats, faced funding problems in the 1990s and lost control of its back catalogue.

In 2011, then prime minister Vladimir Putin stepped in to try to restore the Russian animation industry to its former glory.

By the early 2000s, Soyuzmultfilm had been reorganised and was again a state company.

The government returned the distribution rights for its classics back to the studio and invested about \$14 million over five years.

But it is a cartoon series produced by a private Russian studio, Animaccord, that has proven a big international commercial hit.

Since 2009, *Masha and the Bear* about a mischievous little girl and an amicable, re-

tired circus bear has been viewed dozens of billions of times on YouTube alone, as well as been broadcast in 100 countries, and has inspired several spin-offs.

"Our theme, which revolves around the relationship of a child and an adult, is universal," Animaccord CEO Vladimir Gorbulya said. "There is a good amount of humour and things to reflect upon."

Encouraged by the global success of the computer-animated duo, the Russian government has continued to boost support for the industry, announcing massive subsidies and, in 2017, tax reductions.

"There is a desire to make sure our children look at animated films with our national cultural codes, our mental-

ity, our language and culture," said Irina Mastusova, who heads the Russian animation association.

She noted that the Russian animation sector was still relatively up-and-coming, with around 3,000 employees.

Innovation suffers

Larisa Maluykova, a culture reporter for the independent *Novaya Gazeta* newspaper, said that government support prioritised commercial success, rather than innovative and poetic projects of the kind that made Soviet animators famous. "The Culture Ministry pays less and less attention to original animation," she said.

"This worries artists, since this is what, at least in Russia, is a laboratory that creates new talent."