Environment News Futures

Unbelievably Cute Mammal with Teddy Bear Face Rediscovered

By Carrie Arnold, National Geographic, March 19, 2015

For more than 20 years, the Ili pika (*Ochotona iliensis*), a type of tiny, mountain-dwelling mammal with a teddy bear face, had eluded scientists in the Tianshan Mountains of northwestern China.

People have seen the furry critter only a handful of times since it was discovered by accident in 1983. In fact, people have spotted only 29 live individuals, and little is known about the animal's ecology and behaviour. (Also see "Newly Discovered Carnivore Looks Like Teddy Bear.")

Then, in summer 2014, researchers rediscovered the pika. Weidong Li, the species' original discoverer and a scientist at the Xinjiang Institute for Ecology and Geography, had gathered a group of volunteers in the Tianshan Mountains for some pika searching. At noon one day, as they were setting up camera traps, the team spotted their prize.

A curious pika emerged from a gap in the cliff face, and Li snapped a few photos (*see* Snapshot).

Wearable Electronics' Newest Wrinkle: Power-Producing Cloth

Nanotechnology uses human motion to power electronics and other devices—no charging cords or batteries needed.

By Wendy Koch, National Geographic, March 19, 2015

Good-bye charging cords and batteries. Wearable electronics such as the Apple Watch might soon power themselves with a clean, portable energy source: human motion.

If cutting-edge nanoscience pans out, limited battery life may no longer be the bugaboo of everyday technology. At universities worldwide, researchers are finding new ways to produce power from walking, typing, and other basic activities. Their progress, documented in at least 146 scientific papers in the last three years, holds promise not only for wearable devices but also for keyboards, smartphones, laptops, and biomedical applications such as robotic skins.

"Self-powered electronics will play a critical role in the Internet of Things," in which people and devices are seamlessly connected, says Zhong Lin Wang, a leading researcher in nanotechnology as regents' professor of engineering at Georgia Institute of Technology. (Read about how scientists also develop nanobatteries.)

The basic principle—static electricity—is ancient. It focuses on the friction that occurs when two dissimilar materials touch each other. It's basically the spark that can occur when combing your hair, putting on a freshly laundered fleece in winter, or touching a doorknob after shuffling across carpet.

What's new are the minuscule materials, typically a fraction of the width of human hair. The result: Nanogenerators that are triboelectric, which stems from the Greek word for "rub".

50-50 Chance of El Nino This Year

Amit Bhattacharya, TNN | Mar 10, 2015

New Delhi: Early indications do not look too good for the monsoon this year, with the US and Australian meteorological agencies predicting 50-50 chances this summer of an El Nino, the unusual weather pattern that often weakens rains in India.

The US agency announced in its monthly update that an El Nino had formed over the Pacific Ocean in February and that there was a 50 to 60% chance it would continue through the summer—when the southwest monsoon hits India. The Australian meteorological bureau put the chances of El Nino this year at 50%. Both agencies said El Nino conditions had developed over the last month.

On the brighter side, El Nino predictions made in March often suffer from low credibility because of what experts call the 'spring barrier'. Experts also said an El Nino this year, if it sustains into summer, would be a weak event.

"The US agency uses a weather model that's fairly popular. However, many other models do not see an El Nino during the summer although they say the Pacific is likely to remain warm," said D. Sivananda Pai of India Meteorological Department, who is the agency's lead monsoon forecaster. Pai said the picture would be clearer in the next two months. "Whether an El Nino forms or not, what's important for the monsoon is how other weather patterns react to the warming of the Pacific," he told TOI.

El Nino is a periodic warming of ocean waters in the east and central equatorial Pacific which leads to changes in wind patterns and impacts weather in large parts of the globe. An El Nino is generally associated with weak summer monsoons in India.

Singapore Introduces Commercial Solar Tariff to Reduce Fossil Fuel Reliance

Reuters | Mar 19, 2015

Singapore: Singapore is taking steps to reduce its almost total reliance on fossil fuels in power generation by offering commercial customers the city-state's first dual solar and conventional electricity contract.

Singapore generates 95 per cent of its power from natural gas and currently has only 25-30 megawatt-peak (MW) of photovoltaic capacity installed, around 8 per cent of the national target of 350 MW by 2020. Together with Oslo-listed Renewable Energy Corporation (REC), Singapore's PacificLight Energy (PLE) is offering a hybrid electricity bundle to commercial and industrial users that consume at least 4,000 kilowatt-hour (kWh) a month.

Under the collaboration, consumers can consolidate two streams of costs—one to REC for solar-generated electricity at a fixed cost per kWh, the other to PacificLight at prevailing grid prices—

into a single bill, unlike most set-ups where consumers have to pay the solar seller and power generator separately.

"Once you have made the (solar panel) instalment, you are not subject to any (price) volatility," said PacificLight's chief executive officer Yu Tat Ming. Solar power use is rising fast around the world as module prices are down 75 per cent since 2009. Singapore's electricity tariff, by contrast, rose by almost a third between 2009 and 2013, official data shows, driven by a tight oil and gas market during that time.

The relatively high electricity price and falling solar costs have helped Singapore join a host of countries, including most of Europe, the United States and Japan, to achieve grid parity, in which solar costs break even with electricity sale revenues, Deutsche Bank estimates showed. The bank said in its 2015 solar outlook that solar systems will be at grid parity in up to 80 per cent of the global market within three years and that grid parity without subsidies already existed in many regions.

Tombs of 221 BC Filled with Ancient Treasures Unearthed in China

PTI | Mar 15, 2015

Beijing: A series of tombs built thousands of years ago, some filled with ancient treasures, have been discovered by archaeologists at a construction site in China's central Henan Province.

The archaeological site in Zhoukou City's county-level Xiangcheng city, consists of 21 tombs built thousands of years ago, spanning from Warring States Period (475-221 BC) and East Han Dynasty (25-220), said Han Yanzhen, a scholar at cultural heritage institute of Zhoukou City. Among them, 19 tombs are earth pit in shape and another two are brick-chambered tombs. Archaeologists said all but five tombs were damaged by robbers.

Lots of funeral paraphernalia including pottery, bronze wares and jewellery were found in the tombs, state-run Xinhua news agency reported on Sunday. A well-preserved bronze sword was one of the rarer discoveries, said Han, adding that it was well preserved due to the local soil conditions. Archaeologists said the treasures in the tombs can help researchers to better study the shape and structure of tombs, culture and customs between Warring States Period and East Han Dynasty.

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