

Environment News Futures

Engineering Seeds to Resist Drought

July 8, 2021—Massachusetts Institute of Technology

Researchers have devised a way to protect seeds from the stress of water shortage during their crucial germination phase, and even provide the plants with extra nutrition. Simple and inexpensive, the process could be deployed in arid regions to facilitate agriculture on drought-stressed land.

As the world continues to warm, many arid regions that already have marginal conditions for agriculture will be increasingly under stress, potentially leading to severe food shortages. Now, researchers at MIT have come up with a promising process for protecting seeds from the stress of water shortage during their crucial germination phase, and even providing the plants with extra nutrition at the same time.

The process, undergoing continued tests in collaboration with researchers in Morocco, is simple and inexpensive, and could be widely deployed in arid regions, the researchers say. The findings are reported this week in the journal *Nature Food*, in a paper by MIT professor of civil and environmental engineering Benedetto Marelli, MIT doctoral student Augustine Zvinavashe '16, and eight others at MIT and at the King Mohammed VI Polytechnic University in Morocco.

Ancient Ostrich Eggshell Reveals New Evidence of Extreme Climate Change Thousands of Years Ago

July 8, 2021—University of Exeter

Evidence from an ancient eggshell has revealed important new information about the extreme climate change faced by human early ancestors.

The research shows parts of the interior of South Africa that today are dry and sparsely populated, were once wetland and grassland 250,000 to 350,000 years ago, at a key time in human evolution.

Philip Kiberd and Dr Alex Pryor, from the University of Exeter, studied isotopes and the amino acid from ostrich eggshell fragments excavated at the early middle Stone Age site of Bundu Farm, in the upper Karoo region of the Northern Cape. It is one of very few archaeological sites dated to 250,000 to 350,000 in southern Africa, a time period associated with the earliest appearance of communities with the genetic signatures of *Homo sapiens*.

New Fossil Sheds Light on Evolution of How Dinosaurs Breathed

July 6, 2021—European Synchrotron Radiation Facility

An international team of scientists has used high-powered X-rays at the European Synchrotron, the ESRF, to show how an extinct South African 200-million-year-old dinosaur, *Heterodontosaurus tucki*, breathed. The study is published in *eLife* on 6 July 2021.

Natural History and Conservation Importance of Chinese Mountain Cat

June 24, 2021—Nova Southeastern University

In a large study of Chinese cats, genetic detectives highlight the evolutionary uniqueness and premier conservation importance of the elusive Chinese mountain cat (*Felissilvestrisbieti*), found only in the Tibetan plateau of China.

We know that the domestic cat has distant relatives that roam the earth—lions, tigers, cheetahs and mountain lions. Less familiar are the 38 distinct species in the Family Felidae, many with strange names like pampas cat, kodkod and rusty spotted cat. The new field of genomics—the unravelling of DNA genomes of separate species -- is resolving old conundrums and revealing new secrets across the history of evolutionarily related species among cats, dogs, bears and ourselves.

An Algorithm that Reduces Energy Usage in Computer Servers

July 8, 2021—Sowmya Ramasubramanian

(*See Snapshot 1*)

Colombia has the World's Largest Variety of Butterfly Species: Study

June 23, 2021—Bogota, Colombia, 12:45 IST—AFP

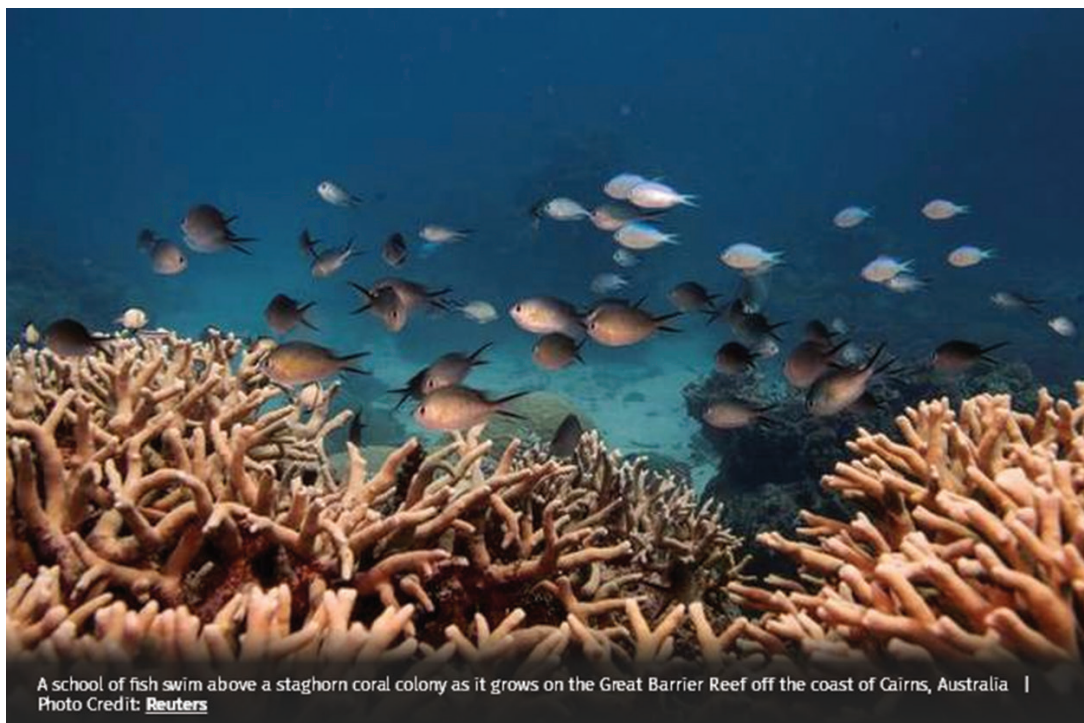
Project researchers traveled widely in Colombia, analyzed more than 350,000 photographs, and studied information collected since the late 18th century, the museum said. Colombia is home to the world's largest variety of butterflies, approximately 20% of all known species, according to a study published Tuesday by the Natural History Museum in London.

An international team of scientists cataloged 3,642 species and 2,085 subspecies, registering them in a document titled “Checklist of Colombian Butterflies.”

More than 200 butterfly species are found only in Colombia, said Blanca Huertas, the senior butterfly collection curator at the Natural History Museum in London, who was part of the research team (See Snapshot 2).

UNESCO to Downgrade Status of Great Barrier Reef; Australia Blames Political Interference

June 22, 2021—Canberra, 08:10 IST—Reuters



A school of fish swim above a staghorn coral colony as it grows on the Great Barrier Reef off the coast of Cairns, Australia | Photo Credit: Reuters

Australia has for years been battling to keep the Great Barrier Reef off the “in danger” list.

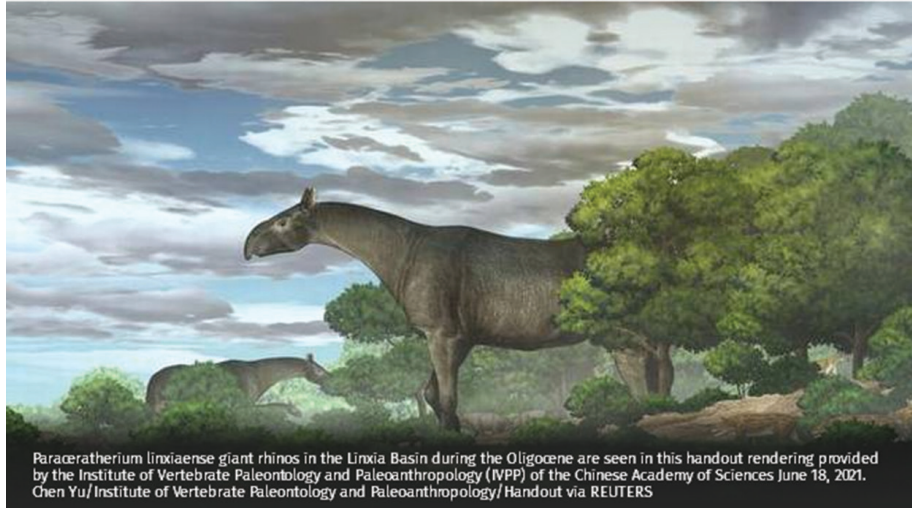
The Great Barrier Reef should be added to a list of “in danger” World Heritage Sites a UN committee recommended on Tuesday, prompting an angry response from Australia which said it had been blindsided by the move and blamed political interference.

The United Nations Educational, Scientific and Cultural Organisation committee, which sits under UNESCO, said the world’s biggest coral reef system should be added to the list due to the impact of climate change.

Australia has for years been battling to keep the Great Barrier Reef, a major tourist attraction that supports thousands of jobs, off the “in danger” list. In 2015, UNESCO noted the outlook for the reef was poor but kept the site’s status unchanged. Since then, scientists say it has suffered three major coral bleaching events due to severe marine heat waves.

Fossils Show New Species of Extinct Giant Rhino that Roamed Asia

June 19, 2021—Beijing, 12:25 IST—Reuters



Giant Panda gives Birth to Twin Cubs at Tokyo's Ueno Zoo

A month ahead of the Tokyo Summer Olympic Games, the city has another reason to celebrate – giant panda Shin Shin has given birth to twin cubs at Ueno Zoo, the first panda birth there in four years.

Jun 23, 2021— Last updated 11:18 IST



A staff member of Ueno Zoological Park holds one of the newly-born twin pandas delivered by giant panda Shin Shin at Ueno Zoological Park in Tokyo, Japan.