

Seed bank for the world threatened by financial crisis

ARDINGLY, England (Reuters) — A seed bank that is trying to collect every type of plant in the world is now under threat from the global financial crisis, its director says.

The Millennium Seed Bank Project aims to house all the 300,000 different plant species known to exist to ensure future biodiversity and protect a vital source of food and medicines, director Paul Smith said.

The project is on track to collect 10 percent of the total by 2010 but the financial crisis is drying up funding, casting serious doubts on future collections, he said.

About half the funding comes from the National Lottery and the rest from corporate donations.

But with businesses tightening their belts in the economic downturn and preparation for the 2012 London Olympics sapping lottery money, the pot is about to run dry.

Smith hopes government money and international groups will come through with the nearly \$15 million a year needed to keep the

bank going. But if that does not happen, new collections and research will stop, he said.

"We would say that this is an exceptional bank and that the assets within it, the capital that we have built up, is unique and we can't squander this," Smith said during a tour of the facility south of London.

Each seed costs about \$3000 to collect and store.

The Millennium Seed Bank Project is the only project of its kind in the world that aims to collect and conserve all the planet's wild plant diversity, Smith said.

Human activities, such as clearing forests, have put flora and fauna at risk. Because most of the world's food and medicines come from nature, protecting plant species is critical, scientists say.

For example, it was only 30 years ago that Catharanthus roseus, a small pink plant also known as the Madagascan periwinkle, was found to contain compounds used in cancer drugs.

"Thirteen million hectares of forest are cleared every year—

that's an area the size of England—and of course the plant species which occur there are going the same way," Smith said.

There are 1,400 other seed banks in the world that store about 0.6 percent of the world's plant diversity. The Millennium Project run by Kew Gardens—one of the world's oldest botanical gardens—aims to collect the rest, he said.

Managing the deposits involves far more than simply filing them away for safekeeping. Seeds from across the globe arrive at the bank in packets of all sizes, where they are catalogued, tested, and experimented on.

They are separated from husks, cleaned, and dried again before final storage in an underground vault at minus 4 degrees Fahrenheit, where they can last for up to thousands of years. The vaults are designed to withstand a nuclear accident.

A third of the planet's plants are categorized as threatened with extinction, which could have dramatic effects on human life, trade, and the environment, Smith said.



SEED KEEPER: Aiming to house 300,000 different plant species, the Millennium Seed Bank Project is losing funding due to the world financial crisis. PHOTOS.COM

Ancient Polynesian seafaring renaissance

SYDNEY (Reuters)—A Polynesian voyaging canoe will set sail from Hawaii in March and head into the South Pacific, aiming to reach tiny Palmyra Atoll near Kiribati using only an ancient seafaring skill known as "wayfinding."

The double-hulled canoe, similar to the canoes that sailed across the Pacific thousands of years before European explorers voyaged to the world's largest ocean, will cover some 2,000 miles in the round trip.

The open ocean trip, using no modern navigational equipment, will be a training exercise for future voyages and is part of a renaissance in Polynesian voyaging that is helping to preserve and spread an ancient seafaring culture.

"We sail because we believe that the voyaging canoes have a role in today's society ... keeping us connected to who we are today in the 21st century, by clearly knowing who we were and where we come from," says Hawaiian navigator Nainoa Thompson, who has sailed on 24 voyages across the Pacific.

"In the absence of that understanding we have no identity, we have no distinction, and to be homogenized into the rest of the world, to me, would be a cultural failure," Thompson says in a video presentation that is part of the "Vaka Moana, Voyages of the Ancestors" exhibition at Sydney's National Maritime Museum.

Vaka Moana means Ocean Canoe and traces the world's first blue-water sailors as they set out from Southeast Asia in sailing canoes to explore and settle the islands of the South Pacific.

Wayfinding navigation

Using an open ocean navigation technique called wayfinding, based on sea and sky observations, they

crossed the vast Pacific some 2,500 years before Portuguese, Spaniards, and other Western seafarers made their first trans-ocean voyages.

"It was the major final push by

'It was the major final push by humans to the most remote and inaccessible parts of the planet.'

—Kerry Howe, New Zealand historian

humans to the most remote and inaccessible parts of the planet," said New Zealand historian Kerry Howe, an expert on Polynesian voyaging.

"Once the islands of the Pacific were discovered and settled, that was the end of terrestrial exploration and settlement on Earth. If we want to go further, we have to leave the planet."

By the time Western explorers such as Britain's Captain James Cook sailed to the Pacific, only a handful of islands had not been settled by these ancient mariners using wayfinding.

Wayfinding navigation involved an intricate knowledge of the stars, such as memorizing a 32-point star compass by Micronesian navigators, knowing where stars rose and fell over the horizon, and reading ocean swells, cloud formations, and bird flight patterns.

Charts were made of sticks that recorded ocean swells and attached sea shells depicted islands, allowing a navigator to judge the distance he had sailed.

Islands were positioned using ancient Polynesian stories, and wayfinding allowed a navigator to steer his canoe toward an island hundreds of miles away.

Once ancient Polynesians discovered new islands, they would sail home in the east-west trade winds and return in large canoes with people, food, and livestock.

"This was a remarkable intellectual feat. We are used to using modern devices, compasses, and charts. The wayfinding techniques they used were memorized and handed down," said Howe.

But by the time Britain's Cook landed in Tahiti in the 18th century, these voyages of exploration and settlement had ceased, yet Cook said even the smaller interisland canoes he encountered still outsailed his European ships.

The arrival of Cook and other Western explorers marked the beginning of the demise of Polynesian voyaging. Within years, many Polynesian chiefs had abandoned their canoes for European ships and adopted compasses and paper charts.

Voyaging renaissance

By the 20th century, the ancient navigation skills that enabled the Pacific to be explored and settled were virtually lost. Only a handful of wayfinding navigators were still alive in the remote Caroline Islands of Micronesia and they feared their skills would die with them.

"None of the young kids wanted to learn how to navigate or go sailing—they wanted to have motor-bikes, drink beer, and play pool," explains Ben Finney, co-founder of the Polynesian Voyaging Society in Hawaii.

In 1975, the Polynesian Voyaging Society built the first voyaging

canoe in Hawaii for more than 600 years. In 1976, the 62-foot double-hulled "Hokule'a," using only wayfinding navigation, made an historic trip to Tahiti and back.

Micronesian navigator Mau Piailug was brought to Hawaii for the trip and to teach Hawaiians their lost seafaring skills.

"The aim was to not make this a white man's adventure, but to make it a cultural revival and that has succeeded," said Finney.

The Hokule'a has since sailed more than 125,000 nautical miles or five times around the world and fueled a renaissance in Polynesian voyaging.

"People sail to experience and celebrate their ancestral achievements as the greatest seafarers in the world," said Finney in a telephone interview from Hawaii.

Despite the dangers of open ocean sailing and lack of modern technology, there has been only one voyaging death.

Hawaiian big wave surfer Eddie Aikau was lost at sea in 1978 on the second Hokule'a trip, when the canoe capsized and he attempted to paddle a surfboard to a distant island to get help.

Aikau's death has helped inspire a generation of Hawaiians to recapture their lost seafaring heritage, says Finney.

Modern Polynesian voyaging canoes are now the centerpiece of cultural festivals throughout the Pacific. Thousands of young Pacific islanders compete in canoe racing in New Zealand and there are several canoe building projects underway.

"It's become not just an exercise in relearning the traditional arts, but it's become a centerpiece of Polynesian nationalism all around the Pacific," said Howe.

The Russian rock from outer space

By LEONARDO VINTINI
Epoch Times Staff

An Oopart (Out Of Place ARTifact) is a term applied to dozens of prehistoric objects found in various places around the world that, given their level of technology, are completely at odds with their determined age based on physical, chemical, and/or geological evidence. Ooparts often are frustrating to conventional scientists and a delight to adventurous investigators and individuals interested in alternative scientific theories.

Just a few years ago, a strange stone was found in a suburb of Moscow. It has been examined by investigators from various disciplines, but since it exhibits such unusual characteristics, it seems to defy adequate classification. It might even contradict our current understanding of the distant past.

While investigations found the specimen to date several millennia before the emergence of man, it appears to hold two screw-like objects. Curiously, several researchers agree that these objects don't appear to be naturally occurring features but instead display characteristics of manufactured materials.

On Aug. 13, 2003, the Russian newspaper Life published an article about the specimen.

The report said that the rock was determined to be several million years old, but it contained what some researchers insist can only be the product of an advanced technology.

The report describes the objects, resembling a nut and a bolt, found embedded in the stone. As if this remarkable specimen weren't strange enough, further evidence finds that the rock might not be of Earthly origin at all, but a product of outer space.

More prehistoric stone puzzles

Not long ago, another rock with similar features was found in Russia. Much like the stone described above, this discovery found in the country's Galus Province also contained an unexpected surprise. When the specimen underwent X-ray analysis, it revealed the shocking image of eight screws held within it.

Another discovery of this type was found a few years back in China's Mazong Mountain area. While on a research expedition, stone collector Zhilin Wang uncovered a pear-shaped black stone that also contained what looks remarkably like a metal screw.

Geologists and collectors from all over the world instantly became intrigued with Wang's find. News of the discovery brought together more than 10 geologists and global physicists from various research institutions throughout China to examine the mysterious specimen.

This extraordinary black rock reveals a screw-threaded metal bar that looks undoubtedly manmade. Yet this metal rod seems to have been naturally encased in the ancient rock, suggesting it is millions of years old. All scientists who have examined the stone agree that this specimen is one of the most valuable archeological finds recently uncovered in China.

As all these objects were found embedded within stone, it indicates that they should have already existed before the formation of the rock encasing them. Yet the surrounding rock dates back in some cases to the Paleozoic Era, when creatures such as dinosaurs and trilobites inhabited this planet.

While these fantastic objects are certainly unusual, they are by no means rare. Found throughout the world over the last century, numerous discoveries suggesting the remnants of an advanced culture from a distant age have been found frozen in stone.

Each find is jarring to the scientific community mainly for the "impossibility" of their existence. In most cases, these examples are given little consideration; they are often written off as technological anomalies or natural oddities because the current anthropological assumptions contradict the evidence obtained.

Do these rocks offer real evidence to challenge the currently accepted notion of when mankind first originated? Or are they simply unusually magnificent natural features preserved in prehistoric rock?

If we entertain another possibility, as some researchers have theorized, are these odd specimens even native to this planet at all? If so, does it suggest that there were technologically advanced beings inhabiting the far reaches of space millions of years ago? Are these beings still out there, and how did material from their planet reach our world?

As more specimens of this type continue to be found and given careful and fair examination, perhaps a new picture of our ancient history will emerge—a history that might seem unfathomable today, given our current limited understanding.

Study shows what makes locusts swarm

LONDON (Reuters)—A brain chemical that lifts people out of depression can transform solitary grasshoppers into swarming desert locusts, a finding that could one day help prevent the devastating plagues, researchers said.

Increases of serotonin, the nerve-signaling chemical targeted by many antidepressants, appears to spark the behavior changes needed to turn the normally harmless

'For a swarm to develop, the locusts must transform from a solitary phase into a gregarious phase.'

—Stephen Rogers, University of Cambridge researcher

insects into bugs that gang up to munch crops, they said.

"Our paper shows how this change in behavior changes what are essentially large grasshoppers living in the desert into swarming, destructive pests," said University of Cambridge researcher Stephen Rogers, who worked on the study.

"For a swarm to develop, the locusts must transform from a solitary phase into a gregarious phase."

Vast swarms containing billions of locusts stretching over dozens of square miles periodically devastated parts of the United States when the West was settled, and they continue to inflict economic hardship on parts of Africa and China.

The last big African swarm in 2004 cost \$400 million simply to eradicate the pests, a tab that did not include money lost to destroyed crops, Rogers added.

"The gregarious phase is a strategy born of desperation and driven by hunger, and swarming is a response to find new pastures," he said.

Rogers and colleagues, who published their findings in the journal Science, wanted to find out what triggered the behavior change, which occurs when the insects gather in close quarters.

The researchers said they looked at serotonin because it is a well-known chemical that affects the way nerve cells communicate with each other.

"The question of how locusts transform their behavior in this way has puzzled scientists for almost 90 years, now we finally have evidence to provide the answer," said Michael Anstey, a University of Oxford re-



SWARMING CHEMICAL: Researchers have found that an increase in serotonin can trigger solitary locusts into forming large, destructive swarms. TENGKU BAHAR/AP/GETTY IMAGES

searcher who worked on the study.

In their experiment, the team injected some grasshoppers with drugs that blocked serotonin and others with the chemical itself.

Locusts injected with serotonin turned gregarious even in the absence of other pests while insects exposed to the drugs did not, even in a situation in which they should have, the researchers said.

The findings do not provide an immediate pest control solution but could one day help find a way to stop the devastating swarms before they form, researchers said.

"For this to be effective we need to get it at an early stage," University of Cambridge's Rogers said. "Once you have several million or a billion locusts, they are by de facto a swarm."