

THE ANDROGYNOUS LOOK

For a short time, visitors to London's Natural History Museum can inspect a living, newly hatched gynandromorph, a half-male, half-female moth. Male on the right and female on the left, this *Antheraea frithi*, a silk moth native to Thailand, is divided right down the middle, including its reproductive organs. Museum scientists said this exceedingly rare condition—which occurs in perhaps 1 in 50,000 moths and butterflies—results from an error involving the sex chromosomes in the first cell division.



Boating With The Phoenicians

In 600 B.C.E., the Greek historian Herodotus wrote a century and a half later, the king of Egypt commissioned Phoenicians, the lords of the Mediterranean, to sail around Africa. Philip Beale, an adventurer and former London investment manager, wants to show how they could have accomplished the feat.



On 8 August, Beale plans to embark with a crew of 20 from the Syrian island of Arwad in a Phoenician-style boat. They will head through the Red Sea and down the coast, rounding the perilous Cape of Good Hope in January and arriving in Alexandria, Egypt, by early summer. They'll be equipped with no engine or running water and little modern equipment other than that for navigation and communications.

The 21-meter vessel (above) is modeled on Phoenician sailing ships based on data from shipwrecks and other artifacts. It's being built of Aleppo pine, with 10 rowing stations on each side. It will have a single square sail of linen, which means the ship can't sail into the wind but does best with a following wind. Beale says "one of the key questions" to answer is whether the ship can get up Africa's West Coast in the face of northeasterly winds and currents pushing it out into the Atlantic.

Four years ago, Beale, 47, led another ancient replay, helming the Borobudur ship, a replica of an 8th-century double outrigger, to show that traders could have sailed from Indonesia to the West coast of Africa.

An Alien Hello?

Scientists searching for radio or light signals from extraterrestrials may be barking up the wrong tree. Aliens might send almost-undetectable

particles called neutrinos, argue physicists John Learned and Sandip Pakvasa of the University of Hawaii, Manoa, and Anthony Zee of the University of California, Santa Barbara. If so, detectors currently under construction, such as the massive Ice Cube array at the South Pole, might spot those signals, they write in a paper posted to the arXiv preprint server.

Unlike radio and light waves, neutrinos will pass straight through almost anything, and their signals couldn't be confused with emissions from stars because

nothing naturally produces very high-energy neutrinos, Zee says. By tuning the neutrinos' energy to 6.3 peta-electron volts, tech-savvy E.T.s could set up a particularly strong interaction in earthly particle detectors. All they would need would be particle accelerators that reach energies 6300 times higher than the highest energy achieved by a humanmade accelerator.

Even if aliens could produce such accelerators, would they use them to send signals into the void in hopes of getting a reply millennia later? "It's not the first thing that I would do," says David Rubin, an accelerator physicist at Cornell University. Still, Zee says, if aliens are sending such signals, they'll be in the data that Ice Cube will collect anyway, so "you might as well look" for them.

High Science

Despite stormy winds and temperatures below -17°C , Italian climbers last month successfully installed the world's highest automated climate station on Mount Everest.

Three alpinists and six Sherpas set out from the Pyramid, an Italian research station 5400 meters high in the Khumbu Valley, carrying 50 kilos of equipment, wires, and poles. They anchored the station to the rock at an altitude of 8000 meters, less than 900 meters from the summit.

With a network of ground-based monitoring stations in the Himalayas, scientists are tracking the movements of the so-called ABCs (atmospheric brown clouds) that waft through the mountains from the industrial plains. "The new station will help us to trace pollutants that we have unexpectedly monitored" since 1990, such as industrial aerosols and organic compounds, says project director Paolo Bonasoni, a physicist at Italy's Institute of Atmospheric Sciences and Climate in Bologna. The weather station is now sending hourly data to the Pyramid on solar radiation as well as weather conditions. "Reliable records of temperature trends in the upper troposphere [between 6000 and 11,000 meters] are still lacking," says Veerabhadran Ramanathan of Scripps Institution of Oceanography in San Diego, California. "Temperatures at this high-altitude station can be one of the most fundamental measures of global warming."

