RESEARCH HIGHLIGHTS

Selections from the scientific literature

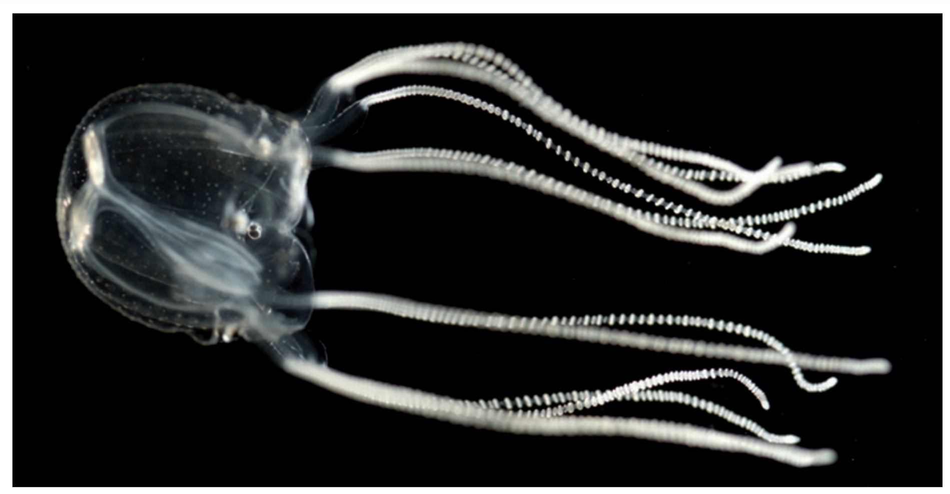
NANOTECHNOLOGY

Bigger screens with nanotubes

Visual displays based on organic light-emitting diodes (OLED) promise to be lighter and brighter than those using older liquid crystal display (LCD) technology. But the polycrystalline silicon transistors that power OLED screens cannot be made in uniform size and shape, causing variation from one pixel to another and limiting display size.

Andrew Rinzler at the University of Florida in Gainesville and his group have created a transistor in which the 'source' electrode is made from a single-layer carbon nanotube network. These transistors can be incorporated into devices made with a wide range of organic materials to provide the required currents, potentially permitting the manufacture of larger screens operating at a voltage comparable to that of silicon-based OLEDs. The resulting devices consume eight times less power than those based on previous technologies and can, theoretically, prolong OLED lifetime by a factor of four.

Science **332, 570–573 (2011)**



J. BIELECKI

ZOOLOGY

Jellyfish eyes on the sky

Box jellyfish seem to have eyes that peer constantly upwards, allowing them to navigate by detecting features on land.

Anders Garm at the University of Copenhagen and his colleagues made video recordings of the box jellyfish *Tripedalia cystophora* (**pictured**), which has a total of 24 eyes, made up of four types. The team found that four of these — the 'upper lens' eyes — always point straight upwards, regardless of the animals' orientation.

T. cystophora that were moved away from their preferred habitat near mangroves rapidly swam back, unless they were moved farther than 8 metres away. At this distance, surface ripples and the eyes' limited resolution would cripple the jellyfish's view of the mangrove canopy. Blocking the canopy from view with a white sheet also left the jellyfish swimming in random directions.

Curr. Biol. **doi:10.1016/j.cub.2011.03.054 (2011)**

ECOLOGY

Understudy takes on tortoise's role

A controversial approach to ecosystem conservation — replacing extinct species with functionally similar ones from elsewhere — has been successfully demonstrated on a tiny island in the Indian Ocean.

The ebony tree (*Diospyros egrettarum*) was unable to rebound after extensive logging on Ile aux Aigrettes because the giant tortoises and skinks that used to eat its fruit and disperse its seeds had become extinct. So Christine Griffiths at the University of Bristol, UK, and her colleagues introduced 19 adults of the Aldabra giant tortoise (*Aldabrachelys gigantea*, **pictured**) from another island between 2000 and 2009. The animals promptly began dispersing ebony seeds. Seeds that had passed through the digestive tracts of tortoises germinated more often and faster than those that had not. Ebony seedlings now dot the island.

Curr. Biol. **doi:10.1016/j.cub.2011.03.042 (2011)**

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GENOMICS

A guided tour of the genome

Help is at hand for scientists struggling to make sense of the current flood of human genome sequence data: the Encyclopedia of DNA Elements (ENCODE). Now an accompanying user guide is available.

The guide — published by a consortium composed of dozens of international research groups — describes data from more than 100 human cell types that define the functional elements in the genome, including more than 2 million regulatory regions. The team mapped RNA transcribed from DNA; protein-binding sites; and 'epigenetic' modifications to DNA's structure, such as DNA methylation patterns. Together, these should help researchers work out possible roles for sequence variants that have been linked to a disease.

For example, ENCODE data helped to clarify how a DNA region upstream of a cancer-promoting gene called c-*Myc* regulates the gene: