

Penzance B.S.A.C.

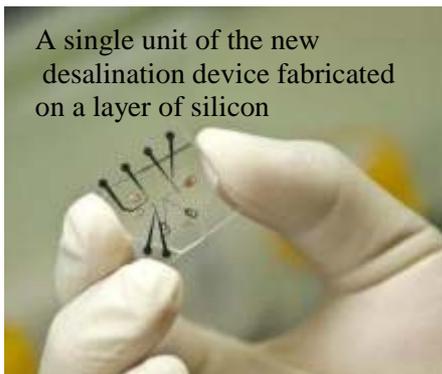
Conservation Officer's Report

May 2010

There are approximately 1,200 species of bats worldwide. Of that total, only six are known to roost with heads pointed upwards. These are all quite rare, and little was known about why they roosted head-up. It was thought that they clung on by suction and they were called Sucker-Footed Bats, but it has recently been discovered that a species of bat in Madagascar, *Myzopoda aurita*, uses wet adhesion to attach itself to surfaces, secreting a fluid, possibly sweat, that enables the pads on the bats' wrists and ankles to attach to surfaces. Myzopoda literally means 'sucker-foot'. You can't change Latin names so it's stuck with it. The bat is a small creature about two inches long and weighing one-third of an ounce. They roost on the slick surface of broad, fan-like leaves located high off the ground in an indigenous tree called Travellers Palm.



A new approach to Water Desalination could lead to small portable units for disaster areas or remote locations. The new approach, called ion concentration polarisation works at a microscopic scale, using fabrication methods developed for microfluidics devices—similar to the manufacture of microchips, but using materials such as silicone. Each individual device would only process minute amounts of water, but a large number of them—the researchers envisage an array with 1600 units fabricated on an 8" diameter wafer—could produce about 15 litres of water an hour, enough to provide drinking water for several people. The whole unit could be self-contained and driven by gravity— salt water would be poured in at the top, and fresh water and concentrated brine collected from two outlets at the bottom. The researchers so far have tested a single unit using salt water and the unit removed more than 99% of the salt and other contaminants clearly demonstrating that it can be done at the unit chip level. While the amount of electricity required by this method is slightly more than the present large-scale methods such as reverse osmosis, there is no other method that can produce small-scale desalination with anywhere near this level of efficiency. If properly engineered the proposed system would only use about as much power as a conventional light bulb.



A single unit of the new desalination device fabricated on a layer of silicon

A large Box Crab was netted at great depth while fishing for Turbot by Matthew Keast on fishing vessel Harvest Reaper based in Newlyn, when 80 miles west of the Scilly Isles. This large Crab is one of only a handful of specimens caught since records began in 1900. In the genus *Calappa* it is not reported which of the 41 species in this genus this crab is, but it can be seen alive at the Blue Reef Aquarium at Newquay



Box Crab

There were 12 reported sightings of Bottlenose Dolphins during April, three of these sightings were on the 6th in St Ives Bay, seen in the morning, afternoon and evening so the same pod spent all day in the area. A pod was seen off Newquay on 23rd, 25th and 26th. Single Bottlenose were seen off Botallack, Porthgwarra and Gamper Bay on different days, and 2 were seen off Porthcurno on the 27th. The south coast pod of 12 or more was seen in The Carrick Roads on the 9th. Pods of dolphins reported off St. Ives on the 1st and 2nd of the month were probably also Bottlenose. A pod of 35 or more Common Dolphins were seen off The Manacles on the 8th and a large pod of 80 to 100 was seen off Gwennap Head on the 13th. A pod of 50 dolphins reported off The Minack on the same day were probably also Common Dolphins. Three reports of Harbour Porpoises were in the area around Porthgwarra Gwennap Head and The Runnelstone on different days. Grey Seals were seen off Gillan, Falmouth area and Gamper Bay, Lands End area. The first Basking Shark of the year was seen off The Minack on the 13th. There was also the Box Crab mentioned above.