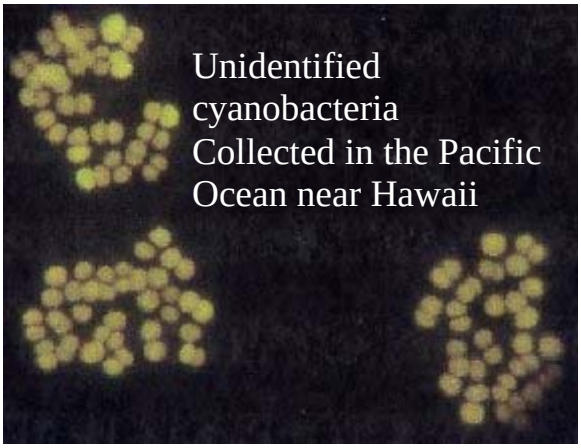
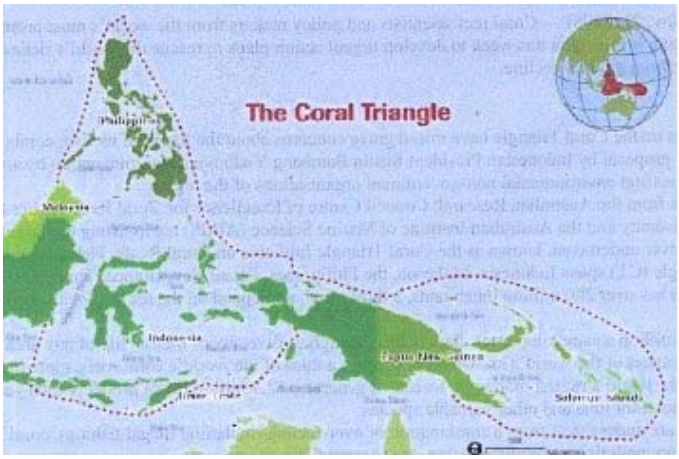
Penzance B.S.A.C.
Conservation Officer's Report
December 2008


Unidentified cyanobacteria Collected in the Pacific Ocean near Hawaii

A mysterious and unusual microorganism has been discovered in the open ocean which may force scientists to rethink their understanding of how carbon and nitrogen cycle through ocean ecosystems. A research team at the University of California characterized the new microbe by analysing its genetic material, even though researchers have not been able to grow it in the laboratory. The newly described organism seems to be an atypical member of the cyanobacteria, a group of photosynthetic bacteria formerly known as blue-green algae. Unlike all other known free living cyanobacteria this one lack some of the genes needed to carry out photosynthesis, the process by which plants use light energy to make sugars out of carbon dioxide and water. However the mysterious microbe can do something very important, it provides natural fertilizer to the oceans by "fixing" nitrogen from the atmosphere into a form useable by other organisms.

Some shellfish have a hard life, when they settle at the bottom of the sea close to the coast the constant to and fro of the surf pulls at them. So that they are not washed away by the waves the shellfish use special proteins to attach themselves firmly to a foundation, an ability engineers have found difficult to achieve, adhesion underwater. Shellfish can do this thanks to the amino acid dihydroxyphenylalanine also known as dopa. Chemists have now reproduced the protein responsible for this in a synthetic material that contain the same adhesive elements. Irrespective of whether the adhesive is completely made up of these elements or whether they represent just a tenth of its make up, adhesion is equally good.

Human pressures on marine life in an area of the East Indies known as The Coral Triangle have raised grave concerns about the future of its fish, corals and other sea life, leading to a proposal by the Indonesian President for joint action by six governments, scientists and environmental non-governmental organisations of the region. The Coral Triangle spans Indonesia, Malaysia, the Philippines, Papua New Guinea Timor and the Solomon Islands. The area has over 200 million inhabitants, a third of whom depend on the sea for food security or livelihood. It has the highest diversity of marine life of any area on Earth. It contains ¾ of the world's known coral species, a third of the world's coral reefs, more than 3,000 species of fish and the world's richest mangrove forests. It generates $2.3 billion in sea products each year and is a major spawning ground for tuna and other valuable species. These resources are under threat from a combination of over-fishing (including illegal fishing) coral bleaching and ocean acidification, pollution and sedimentation due to coastal development.



I only received sighting reports from one dedicated watcher for November, who saw Harbour Porpoises off The Brisons, Gwennap Head, Lizard Point, Pendeen Watch and The Minack Theatre on various days. She also saw a pod of 10 to 20 dolphins, possibly Common Dolphins, off Gwennap Head and Minke Whales off Gwennap Head and The Runnelstone on different days, so there are creatures to be seen at this time of year if you are prepared to go and look for them. On the last day of the month a mother and baby Common Dolphin became stranded up Frenchman's Creek on the Helford River. BDMLR and medics attended and after tagging the animals, transported them to Porthallow and released them back into the sea. There was an interesting report of a large Grey Seal being sloshed about in very shallow water just off the beach outside the National Aquarium Plymouth with just the top of its head and back showing. Observers, including aquarium staff, thought it was dead and were discussing what to do, when it suddenly exhaled a deep breath and swam off..