

Friends of Penzance B.S.A.C. Conservation Officer's Report, January 2013

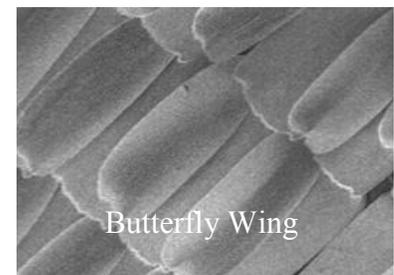


At least one third of the species that inhabit the world's Oceans may remain completely unknown to science. That's despite the fact that more species have been described in the last decade than in any previous one, according to a report published in the Cell Press publication Current Biology that details the first comprehensive register of marine species of the world — a massive collaborative undertaking by hundreds of experts around the globe. The researchers estimate that the oceans may be home to as many as one million species in all—likely not more.

About 226,000 of those species have so far been described. There are another 65,000 species awaiting description in specimen collections. “For the very first time, we can provide a very detailed overview of species richness, partitioned among all major marine groups. It is a state of the art of what we know—and perhaps what we do not know—about life in the ocean” said a leading scientist of the Intergovernmental Oceanographic Commission (IOC) of UNESCO. The findings provide a reference point for conservation efforts and estimates of extinction rates the researchers say. They expect that the vast majority of unknown species—composed disproportionately of smaller crustaceans, molluscs, worms, and sponges—will be found this century.



A South American butterfly flapped it's wings and caused a flurry of nanotechnology research to happen in Ohio. The researchers have taken a new look at butterfly wings and rice leaves and learned things about their microscopic texture that could improve a variety of products. For example the researchers were able to clean up to 85% of dust off a coated plastic surface that mimicked the texture of a butterfly wing, compared to only 70% off a flat surface. The research engineers report that the textures enhance fluid flow and prevent surfaces from getting dirty — characteristics that could be mimicked in high-tech surfaces for aircraft and watercraft, pipelines and medical equipment. Reduced drag is desirable for industry, whether you are trying to move a few drops of blood through a nano-channel or millions of gallons of crude oil through a pipeline, and self cleaning surfaces would be useful for medical equipment—catheters, or anything that might harbour bacteria. The researchers used an electron microscope and an optical profiler to study wings of the Giant Blue Morpho butterfly (*Morpho didius*) and the leaves of the rice plant *Oriza sativa*, and cast plastic replicas of both textures. The Electron-Microscope revealed that the Blue Morpho's wings aren't as smooth as they look to the naked eye, instead the surface texture resembles a roof with overlapping shingles, suggesting that water and dirt roll off the wings “like water off a roof”. Their wings are so delicate that getting dirt or moisture on them makes it hard to fly, so staying clean is a critical issue. The rice leaves provided a more surreal landscape under the microscope with rows of micrometer - (millionth of a meter) sized grooves, each covered with even smaller, nanometer—(billionth of a meter) sized bumps—all angled to direct the raindrops to the stem and down to the base of the plant



There were only 10 reported sightings of Marine animals during December, 9 of them were of Harbour Porpoises which were sighted from the cliff path off Newdowns Head, near St Agnes on the north coast to Nare Head off Gerrans Bay on the south. The largest number seen together were 8 to 10 near The Runnelstone on the 1st of the month, and 7 were seen off Porthgwarra on the 5th, some of which were close inshore and others as far out as 1 Km. The other sighting was of a Bottlenose Dolphin surfacing occasionally in St Austell Bay on the 17th, and the observer thought that it might have been two. There was a sighting of a couple of Whale blows by watch keepers at Gwennap Head NCI Look-out on the 8th which was thought to be of a Minke Whale