GirlDiver: Girls On Speed—Scooter Dive

GLOBAL EDITION
October 2008
Number 26

British Columbia
Thetis Island

330m Deep
Pascal Bernabé

India
Bangaram Island

Portfolio
Stéphane Braud

Night Photography
Kurt Amsler

DOMINICA • ST LUCIA • ST VINCENT
Caribbean Islands

COVER PHOTO BY KURT AMSLER

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COVER PHOTO: *Manta Ray,* recently photographed in Komodo by Kurt Amsler who said it was the most beautiful manta he had ever seen, ***Photosub.com*** (CONTINUED ON PAGE 4)

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Diver inspects reef coral and sponges, Dominica, Caribbean. Photo by Steve Jones

When is 'safe' safe?

So, this is the level diver certications has sunk to: An aquarium diver c-card. What's next? Jacuzzi skindiver? C'mon...

I appreciate that recreational diving should not be made any more complicated or inaccessible than a reasonable level of safety dictates. It is not rocket science, but a recreational pastime.

Yet, it is not completely without risk, as the current trends in dive marketing seem to ignore.

These latest c-card level, and some of the statements made in the Be A Diver campaign, cause me great concern. Proclaiming that diving is as safe as bowling is like comparing apples to oranges. Or have I missed something—can bowling also lead serious injury and even death? Stating that one does not have to be fit in order to dive and directing unfit divers to consult with their local dive instructors and retailers is reckless. Excuse me, but what kind of medical qualifications do these good hard-working people possess?

Glazing over the sometimes inconvenient truth that accidents do happen and sweeping it in under the marketing rug for the sake of raking in the last marginal groups to make another dollar is doing this great sport a huge disfavour.

Don't get me wrong... I do not long for the days when even the entry level diver certification was like going through military bootcamp, and the instructor was just out to get you to see if you could stand up to the pressure. When I took my advanced course (CMAS*** actually) 20 years ago, I had to perform a complete equipment swap in near-freezing waters on a silty bottom of an industrial harbour with three-inch viz. It was extremely uncomfortable, very challenging and, in hindsight, quite dangerous. That was way over the top, and I am only glad that the bar has been lowered significantly, and that far more people can enjoy diving.

But lowering that bar so far down that it now virtually lies flat on the ground is taking the process of debunking old diving myths too far.

The great irony is—considering that this is all about marketing—that over the years, these efforts have also made diving look so ordinary and non-challenging, that diving ultimately became un-cool and boringly old-folksy.

We all know that we can break a leg going skiing, and we have to stay alert in traffic, if we take our car for a spin. We accept this and take our precautions. So, in our daily lives, we are no strangers to managing risk and acting within limits of safety according to what (hopefully) we were taught.

So, why do we go about diving in a different way? Diving is indeed a quite safe recreational activity—and, to a large degree, we can thank the steady improvements in diver training for that—but if we fail to instill a proper appreciation and recognition of the inherent risk elements in new divers by luring them through marketing that is borderline misleading, they could be lulled into a false sense of security, ultimately putting them at real risk.

Diving is accessible for most people, but not everyone should dive. ■

— Peter Symes
Editor-in-Chief

X-RAY MAG is a founding member of the Underwater Network **Underwater Network.com**

X-RAY MAG is a member of Diving Equipment & Marketing Association: **Dema.org**

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NAUI WORLDWIDE DIVE SAFETY THROUGH EDUCATION MEMBER

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NEWS

Red fluorescence in Reef fish A novel signalling mechanism?

At depths below 10m, reefs are dominated by blue-green light because seawater selectively absorbs the longer, 'red' wavelengths beyond 600nm from the down-welling sunlight. Consequently, the visual pigments of many reef fish are matched to shorter wavelengths, which are transmitted better by water. Combining the typically poor long-wavelength sensitivity of fish eyes with the presumed lack of ambient red light, red light is currently considered irrelevant for reef fish. However, previous studies ignore the fact that several marine organisms, including deep sea fish, produce their own red luminescence and are capable of seeing it.

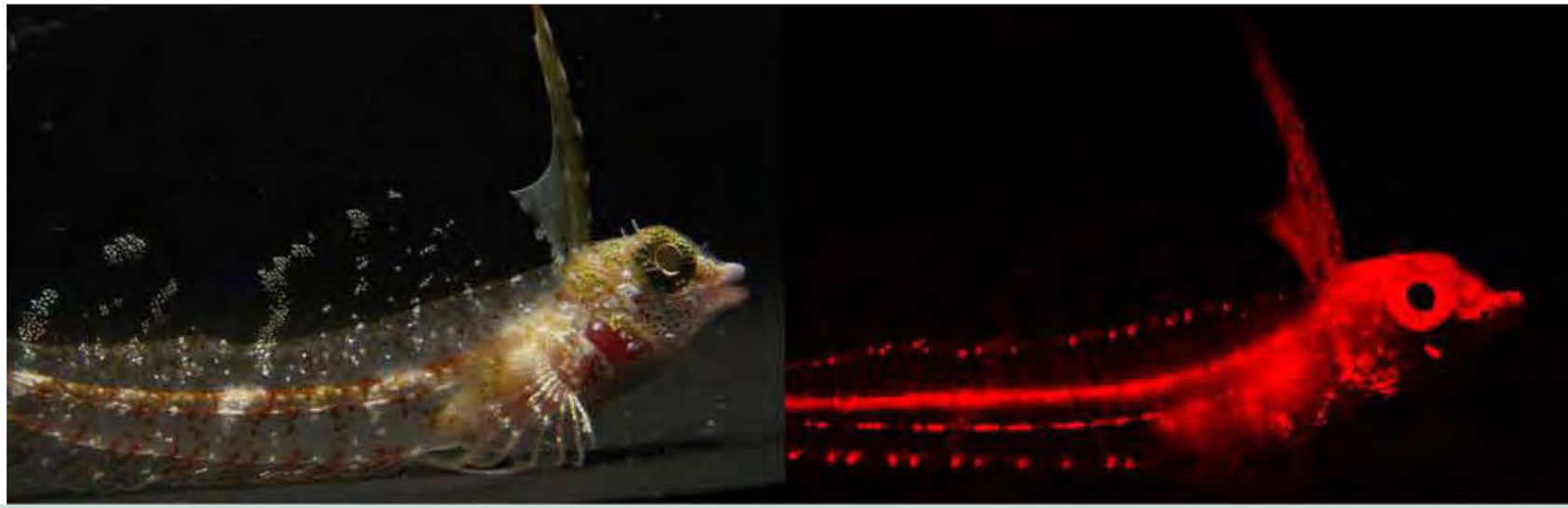
It has been reported recently, in BMC Ecology 2008, 8:16, however, that at least 32 reef fishes from 16 genera and five families show pronounced red fluorescence under natural, daytime conditions at depths where down-welling red light is virtually absent. Fluorescence was confirmed by extensive spectrometry in the laboratory. In most cases, peak emission was around 600nm and fluorescence was associated with guanine crystals, which thus far, were known for their light reflecting properties only.

The purpose of the study was to see "with our own eyes" whether there is indeed a lack of red light at depth in the euphotic zone during daytime and to identify the observed sources of natural red fluorescence in fish in particular. This work combines results from several studies carried out on coral reefs in the Red Sea and the Great Barrier Reef and has been supplemented by observations and measurements on fish in the laboratory.

The data indicate that red fluorescence may function in a context of intra-specific communication. Fluorescence patterns were typically associated with the eyes or the head, varying substantially even between species of the same genus. Moreover red fluorescence was particularly strong in fins that are involved in intra-specific signalling. Finally, micro-spectrometry in one fluorescent goby, *Eviota pellucida*, showed a long-wave sensitivity that overlapped with its own red fluorescence, indicating that this species is capable of seeing its own fluorescence.

It is shown that red fluorescence is widespread among marine fishes. Many features indicate that it is used as a private communication mechanism in small, benthic, pair or group-living fishes. Many of these species show quite cryptic colouration in other parts of the visible spectrum. High inter-specific variation in red fluorescence and its association with structures used in intra-specific signalling further corroborate this view.

These findings challenge the notion that red light is of no importance to marine fish, calling for a reassessment of its role in fish visual ecology in subsurface marine environments. ■



Sustainable Sushi Guide

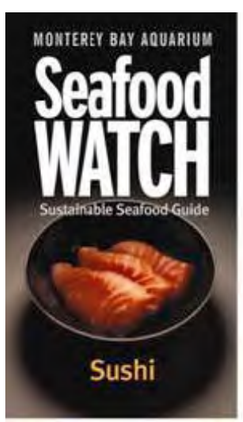
How to pick Ocean-Friendly Sushi

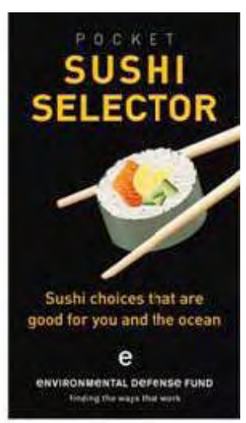
Blue Ocean Institute, Environmental Defense Fund, and Monterey Bay Aquarium collaborate to promote ocean-friendly selections.

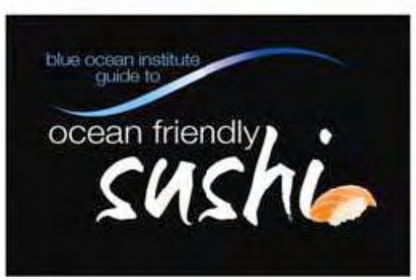
On October 22, three leading ocean conservation organizations—Blue Ocean Institute, Environmental Defense Fund and the Monterey Bay Aquarium—will make available to the public, color-coded consumer guides ranking popular sushi selections based on whether they are prepared using seafood that are caught or farmed in ways that harm the ocean or pose a health risk to people.

"For the first time, sushi lovers have tools that enable them to join the growing movement of those making ocean-friendly choices that protect life in the seas now and for generations to come," said Julie Pareles, executive director of Blue Ocean Institute.

"These new guides not only enable sushi lovers to choose fish that are caught or farmed responsibly, they also highlight selections that are healthy for them and their families," said Tim Fitzgerald, marine scientist for Environmental Defense Fund. "The reality is quite simple," said Sheila Bowman, Seafood Watch outreach manager at the Monterey Bay Aquarium. "If you care about the future of the oceans, you'll avoid red-listed sushi."







No-nos

For sushi aficionados, that means both pleasant surprises and some disappointments. Popular items like Bluefin tuna (hon maguro/kuro maguro) and freshwater eel (unagi) are firmly on the "red" list, as is farmed salmon (sake). These species are either overfished, farmed with aquaculture methods that pollute the ocean, or caught using methods that destroy ocean habitats or kill large amounts of other sea life.

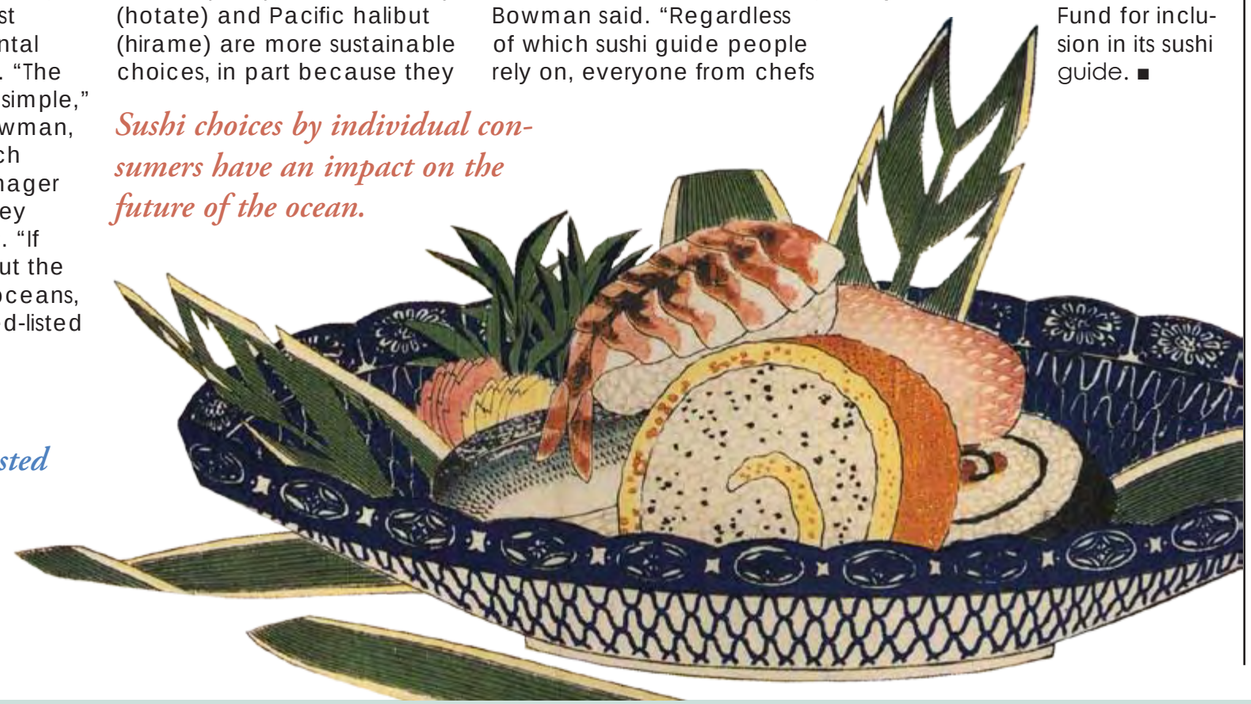
OK

Items like wild-caught Alaska salmon (sake), farmed scallops (hotate) and Pacific halibut (hirame) are more sustainable choices, in part because they come from abundant, well-managed fisheries or—in the case of scallops—are raised using sustainable aquaculture methods. All three guides offer a substantially consistent message about the best selections, as well as the fish to avoid when choosing sushi. "While we consider similar factors in assessing each fishery, we each tabulate the environmental information in slightly different ways," said Kate McLaughlin, Blue Ocean Institute's Seafood Program Director. "That results in subtle variations for a handful of rankings."

"The differences are minor," Bowman said. "Regardless of which sushi guide people rely on, everyone from chefs to consumers now has a very clear picture of what one's sushi choices mean for ocean wildlife."

All three guides incorporate human health recommendations from Environmental Defense Fund, and fish that contain levels of mercury or PCBs that may pose a health risk to adults or children are flagged. Fisheries researchers from the Blue Ocean Institute and Monterey Bay Aquarium evaluated the seafood species included on the guides. The Monterey Bay Aquarium seafood rankings are the basis for items selected by Environmental Defense Fund for inclusion in its sushi guide. ■

Sushi choices by individual consumers have an impact on the future of the ocean.



Avoid red-listed Sushi

Marine scientists filming in one of the world's deepest ocean trenches have found groups of highly sociable fish swarming 7,700 metres beneath the surface.

"More fish than we or anyone in the world would ever have thought possible at these depths."
—Dr Alan Jamieson

Scientists filming in one of the world's deepest ocean trenches have found groups of highly sociable snailfish swarming over their bait, nearly five miles (7700 metres) beneath the surface of the Pacific Ocean. This is the first time cameras have been sent to this depth.

"We got some absolutely amazing footage from 7,700 metres. More fish than we or anyone in the world would ever have thought possible at these depths," says project leader Dr Alan Jamieson of the University of Aberdeen's Oceanlab, on board the Japanese research ship the Hakuho-Maru.

"It's incredible. These videos vastly exceed all our expectations from this research. We thought the deepest fishes would be motionless, solitary, fragile individuals eking out an existence in a food-sparse environment," said Professor Monty Priede, director of Oceanlab.

"But these fish aren't loners. The images show groups that are sociable and active—possibly even families—feeding on little shrimp, yet living in one of the most extreme environments on Earth. ■

Read the full story and watch the video on our website

Edited by
Michael Symes

Snapping shrimp

Explorers find hundreds of undescribed species on Australian reefs

The Census of Marine Life.

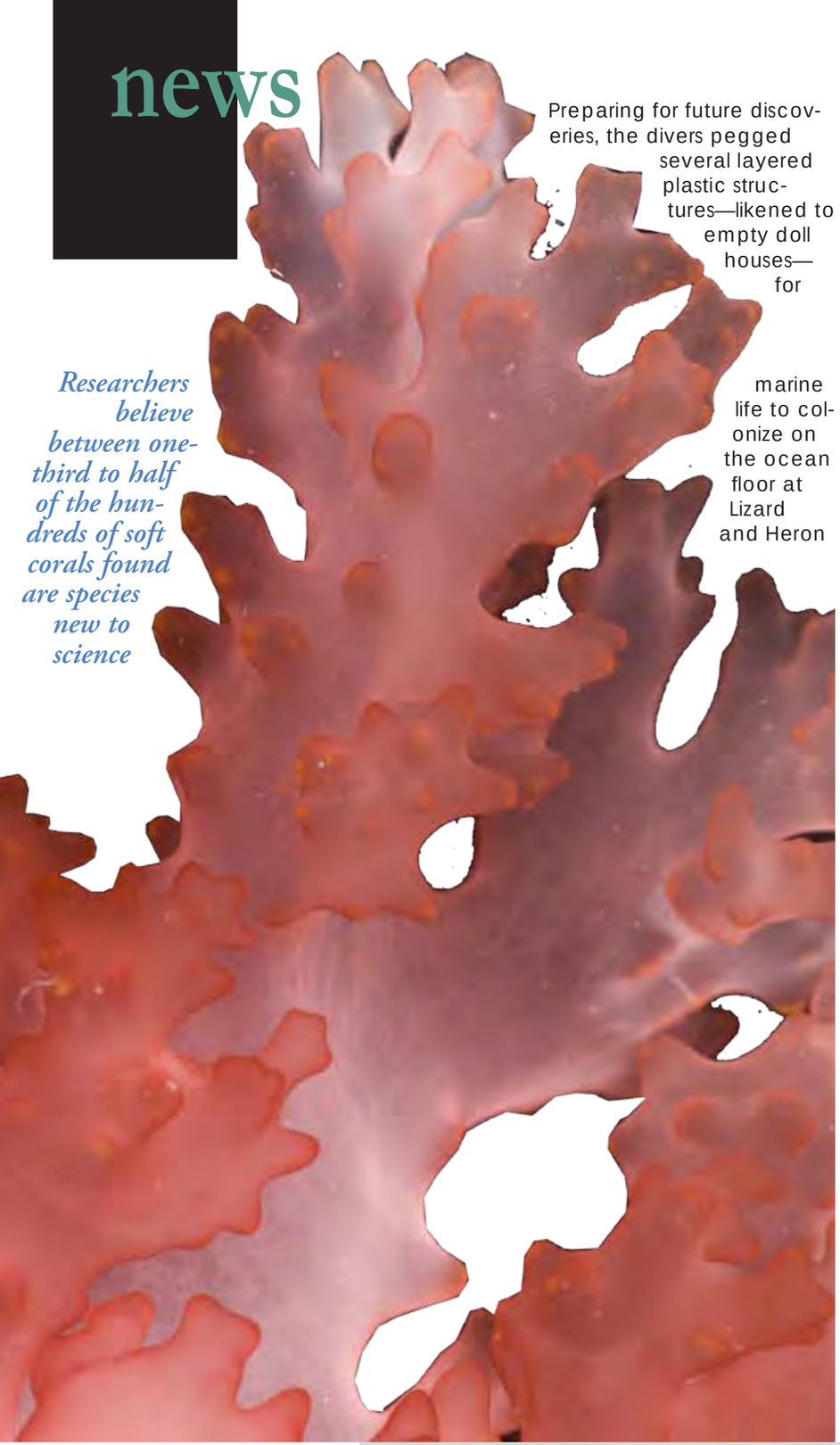
This is a global network of researchers in more than 80 nations engaged in a ten-year initiative to assess and explain the diversity, distribution, and abundance of marine life in the oceans—past, present, and future. The network will release the first Census of Marine Life in 2010. However, some initial results and stunning images from their landmark four-year effort to record the diversity of life in and around Australia's renowned reefs have recently been released. See also www.coml.org.

Hundreds of un-described corals and other species have been found on familiar Australian Reefs, for example, tongue-eating isopod parasites on fish. These new kinds of animal species surprised international researchers systematically exploring waters off two islands on the Great Barrier Reef and a reef off northwestern Australia.

The expeditions, affiliated with the global Census of Marine Life, help mark the International Year of the Reef and included the first systematic scientific inventory of spectacular soft corals, named octocorals for the eight tentacles that fringe each polyp.

Discoveries at Lizard and Heron Islands (part of the Great Barrier Reef), and Ningaloo Reef in northwestern Australia, included:

- About 300 soft coral species, up to half of them thought to be new to science;
- Dozens of small crustacean species—and potentially one or more families of species—likewise thought unknown to science;
- A rarely sampled amphipod of the family *Maxillipiidae*, featuring a bizarre whip-like back leg about three times the size of its body. Only a few species are recorded worldwide;
- New species of tanaid crustaceans, shrimp-like animals, some with claws longer than their bodies;
- The beautiful, rare Cassiopeia jellyfish, photographed upside down on the ocean floor, tentacles waving in the water column—a posture that enables symbiotic algae living in its tentacles to capture sunlight for photosynthesis;
- Scores of tiny amphipod crustaceans—insects of the marine world—of which an estimated 40 to 60 percent will be formally described for the first time.



Researchers believe between one-third to half of the hundreds of soft corals found are species new to science

Preparing for future discoveries, the divers pegged several layered plastic structures—likened to empty doll houses—for marine life to colonize on the ocean floor at Lizard and Heron Islands. Creatures that move into these Autonomous Reef Monitoring Structures (ARMS), which provide shelter designed to appeal to a variety of sea life, will be collected over the next one to three years.

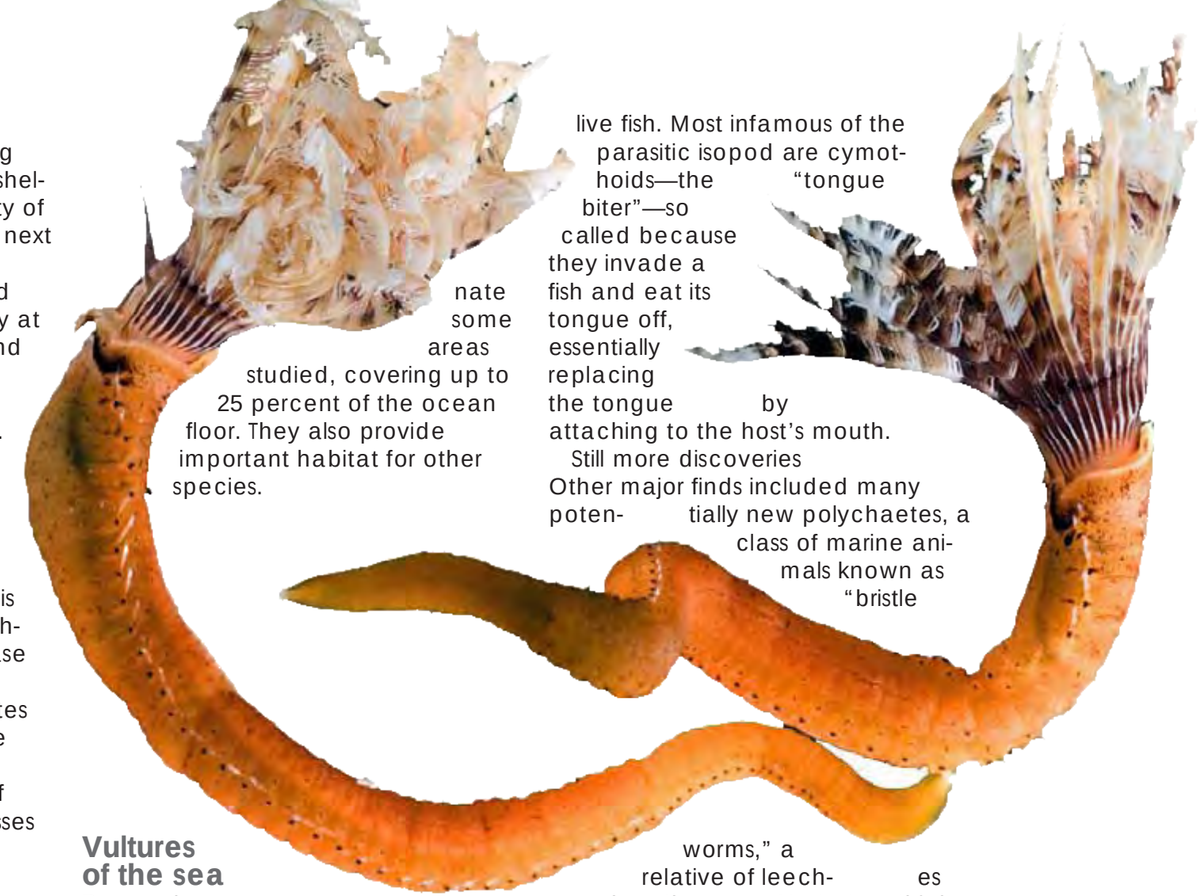
Previous studies have uncovered large differences in the biodiversity at the Great Barrier Reef's Lizard Island and, further south, Heron Island, which had 30 percent more hard corals and 40 percent more fishes. Ningaloo Reef appears to be the least biodiverse of the three sites studied, which may be related to its comparative isolation from other reef systems. The cause of such gradients in species diversity is poorly understood, but species richness in the region tends to decrease with distance from the equator.

Expeditions to the same three sites will be repeated annually over the next three years to continue their inventory and measure impacts of climate change and other processes over time.

Soft corals on Barrier Reef

The expedition marks the first census of soft corals, named octocorals for the eight tentacles that fringe each polyp. The addition of perhaps as many as 150 new species to the global inventory of soft corals is a major addition to the knowledge of this group which, despite its high distribution worldwide, remains one of the most poorly understood groups. Researchers believe between one-third to half of the hundreds of soft corals found are species new to science.

While these animals are not reef builders, they dominate some areas studied, covering up to 25 percent of the ocean floor. They also provide important habitat for other species.



Vultures of the sea

Researchers were intrigued as well by discoveries of various isopods, often referred to as vultures of the sea, because some feed on dead fish. Of the many isopod species collected during the first two expeditions, approximately 100 are not yet described in the scientific literature.

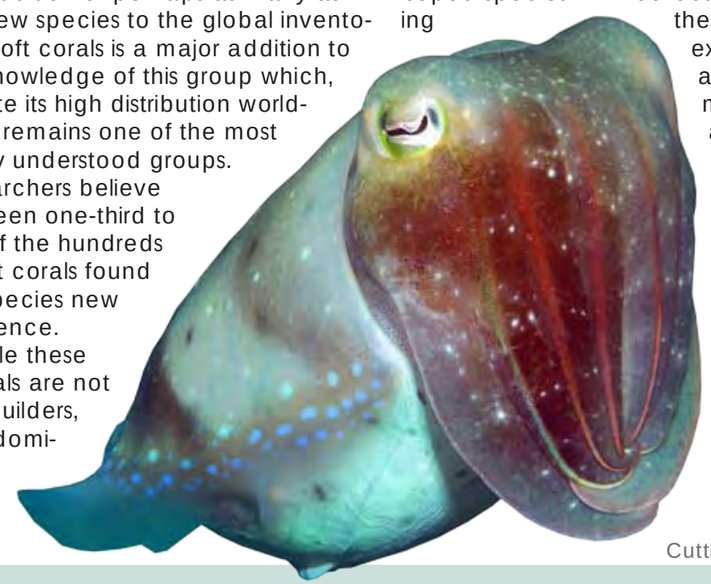
Some isopods are parasitic and burrow into the flesh of live fish. Most infamous of the parasitic isopod are cymothoids—the "tongue biter"—so called because they invade a fish and eat its tongue off, essentially replacing the tongue by attaching to the host's mouth.

Still more discoveries

Other major finds included many potentially new polychaetes, a class of marine animals known as "bristle worms," a relative of leeches and earth worms. Up to two-thirds of species found at Lizard Island alone are thought to be un-described.

The scientists' studies also included seaweeds, urchins, and lace corals. More formally known as Bryozoans, lace coral colonies consist of asexually budded (and therefore genetically identical) individuals. Colonies form large intricate structures that bear no resemblance to the structure of the individual.

The new Australian expeditions reveal how far we are from



Cuttlefish

Pseudocodium

knowing how many species live in coral reefs around the globe. Estimates span the huge range from one to nine million. Even at the low end of this range, we must wonder why nature has evolved such prolific diversity on coral reefs. While they are icons of diversity, the processes that have generated and maintained coral reef biodiversity are still unknown.

CoML Census of Coral Reef Ecosystems

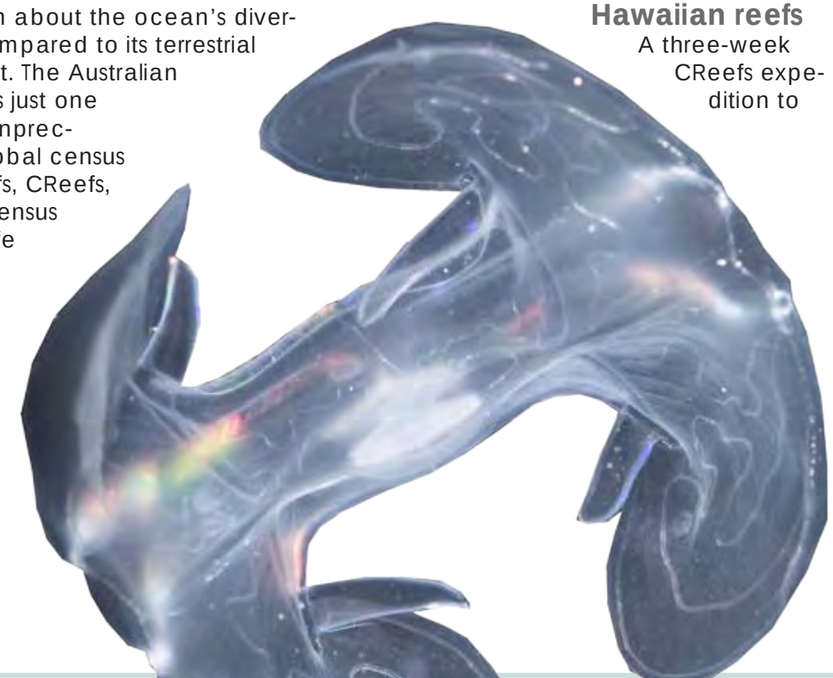
(www.creefs.org)

Coral reefs are highly threatened repositories of extraordinary biodiversity and therefore have been called "the rainforests of the sea," but little is known about the ocean's diversity as compared to its terrestrial counterpart. The Australian expedition is just one part of an unprecedented global census of coral reefs, CReefs, one of 17 Census of Marine Life projects.

CReefs aims to census life in coral reef ecosystems, to consolidate and improve access to coral reef ecosystem information scattered throughout the world, and to strengthen tropical taxonomic expertise.

Researchers adapted sampling methods and applied these in a wide range of habitats, including sampling diversity in dead coral heads—the skeleton of a coral emptied of the fleshy animal that once lived inside. Samples were obtained by enveloping small dead coral heads in a bag and carefully chiseling off the base to capture all of the animals inside. A single dead coral head can yield more than 150 individual crustaceans, molluscs, and echinoderms. Worldwide, these dead coral heads host many thousands of species and their use is emerging as an important tool for assessing coral reef biodiversity.

The biodiversity data generated will be made publicly available through the Ocean Biogeographic Information System (OBIS) (www.iobis.org), an initiative of the Census of Marine Life.



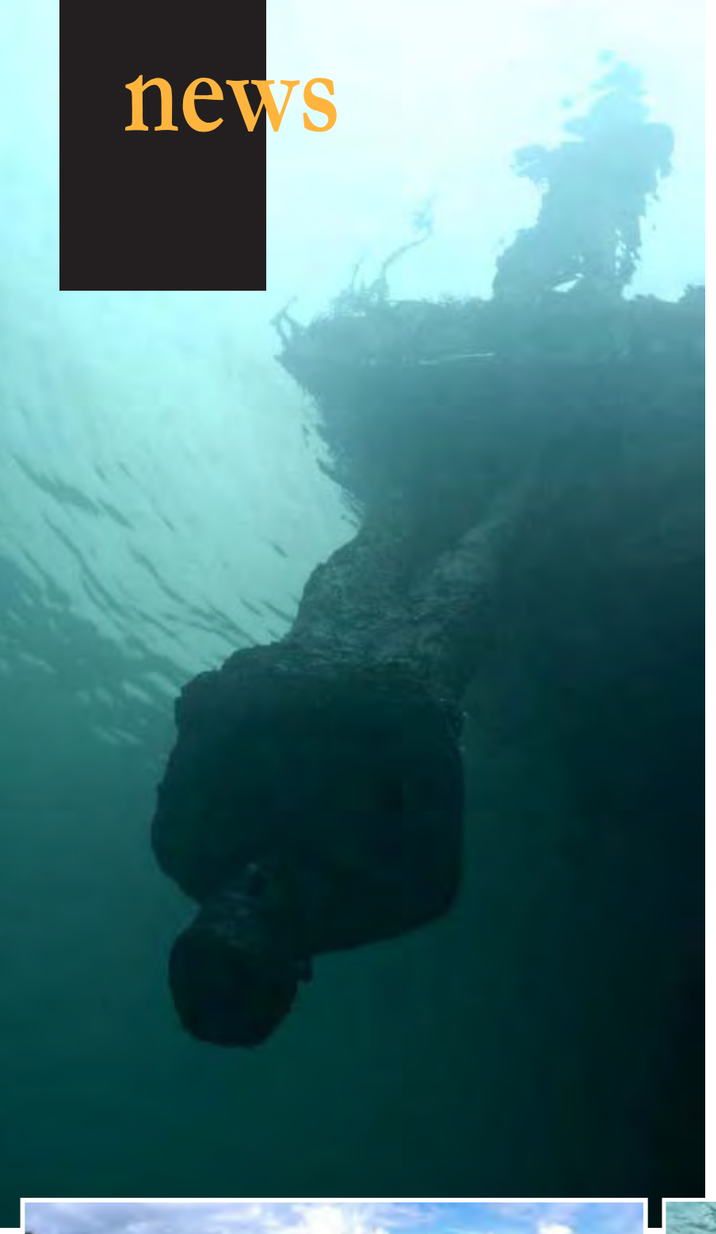
Hawaiian reefs

A three-week CReefs expedition to Hawaii's French Frigate Shoals in 2006 discovered more than 100 potential new species and/or location records and advanced understanding of marine biodiversity in the Hawaiian Archipelago. An international team of taxonomists and crew collected and photographed several potentially new species of crabs, corals, sea cucumbers, sea quirts, worms, sea stars, snails, and clams. Many other species familiar in other ocean areas had never been recorded around Hawaii.

Elsewhere

Meanwhile, US and Mexican researchers have chronicled a century of research on 46 named coral reefs of the southern Gulf of Mexico. The chronicle links to GulfBase (www.gulfbase.org), a database listing species inhabiting southern Gulf reefs (2057 species) and islands (298 species), reflecting greater-than-expected biodiversity there.

The chronicle (www.tamu.edu/upress/BOOKS/2007/tunnell.htm) reveals that reef condition is better further offshore, away from population centers, and in areas of low rainfall and runoff. ■



Inverted solitude was created by Jason Taylor (below) using cement, fibre-glass, and steel plate. Dimenions: 2500mm x 700mm. Depth: 2.5m

UK artist-diver sinks more sculpture

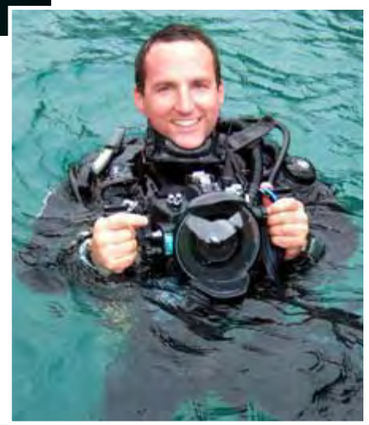
Inverted solitude by Jason Taylor is a lone figure hanging upside-down underneath a floating platform in The National Diving & Activities Centre, Chepstow, UK. With depths of over 80m, the site—located in what was once a stone quarry—is the deepest inland body of water in the UK. The sculpture is permanently fixed to a pontoon currently used for national free diving competitions and training.

The sculpture, which is constructed from cement and fibreglass, was cast from BBC presenter Mike Fishetti and filmed for the BBC network as part of a production for SMART Art. Due to be aired early next year, the programme documents the creation of the sculpture from initial casting to installation.

When the sculpture is viewed from below, a figure is seen standing on the platform staring down into the deep. A mirror image of the figure is reflected onto the surface of the water.

Taylor said in a press release: "*Inverted Solitude* aims to explore reflection, space, isolation and extended being... The inverted and lonely demeanour of the figure also shows a man distanced from society. Arms folded resolutely, he is left to reflect on a life in which pride and self obsession have created an impenetrable barrier."

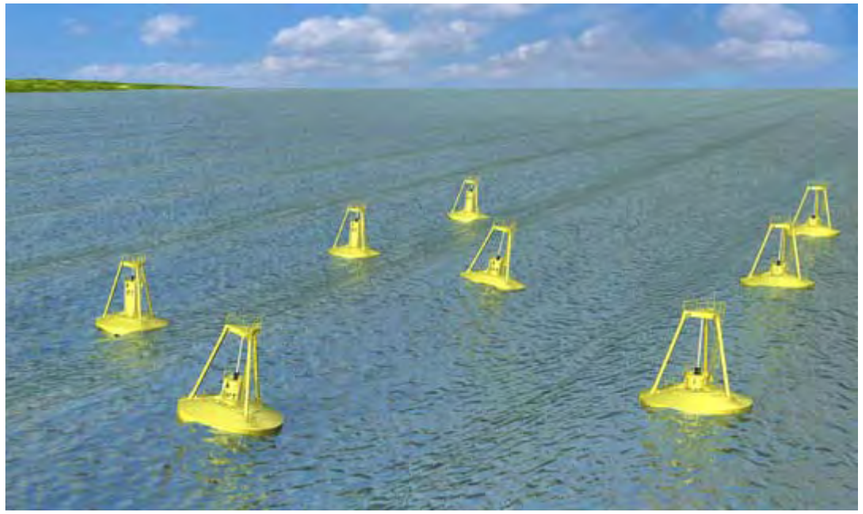
Taylor gained international recognition for the creation of the world's first underwater sculpture park in Grenada, West Indies. Designed to create artificial reefs for marine life to colonise and inhabit, his underwater sculptures embrace the transformations that result from ecological processes, celebrating the regenerative powers of nature and the potentially positive effects of human intervention. ■



Jason Taylor

SOURCE: UNDERWATERSCULPTURE.COM ALL IMAGES COURTESY OF JASON TAYLOR

Ocean buoys could provide 10 percent of US energy



Ocean Power Technologies PowerBuoy wave generation system uses a "smart", ocean-going buoy to capture and convert wave energy into low-cost, clean electricity. A 10-Megawatt OPT power station would occupy only approximately 30 acres of ocean space

Ocean energy is "probably the last of the large natural resources not yet investigated for producing electricity in the United States," according to a report from the nonprofit Electric Power Research Institute.

Roger Bedard, the EPR institute's ocean energy expert, believes that the potential for hydro electricity generation is "significant." In fact, he believes it could generate up to 10 percent of America's power needs, accounting all current inefficiencies and practicalities. Perhaps, in the future, that 10 percent could grow as power grids change and adapt to handle the sometimes irregular influx of power generated from wind, solar and water. Europe is already well ahead of the US in terms of ocean technology. Only recently did a wave farm begin operations in Portugal, and a giant underwater turbine is currently under installation off the Scottish coast. ■

How the jellyfish got its sting

Jellyfish may thank a humble bacterium for their ability to sting. Scientists have found that bacteria have gene similar to the one responsible for the jellyfish sting. This suggests the ancestors of jellyfish picked up the gene from microbes. The research is published this week in *Current Biology1*.

The find came as a great surprise to research team lead by developmental biologist Nicolas Rabet. This is an example or what is called horizontal gene transfer. Unlike vertical gene transfer from parent to offspring, the horizontal variety happens between organisms, or even between different species.

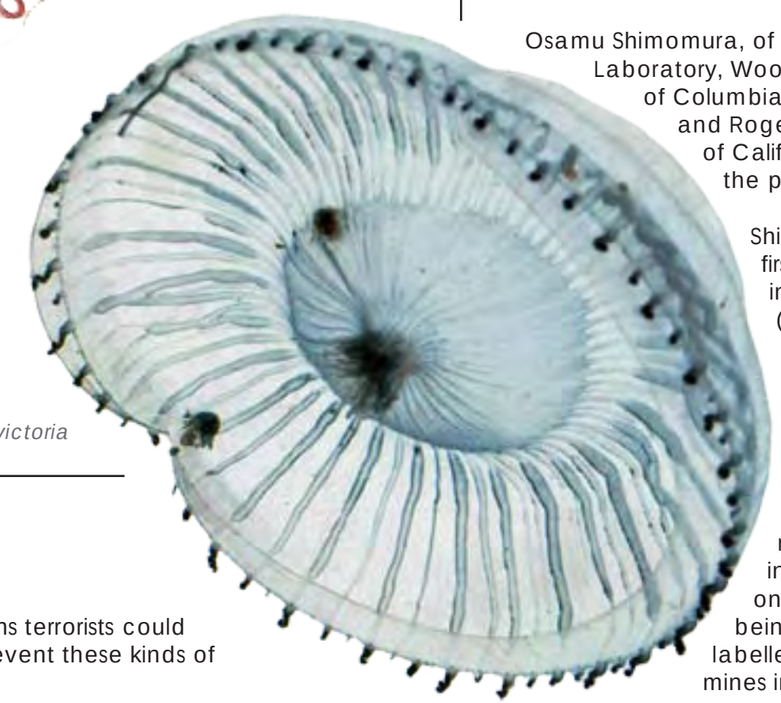
Common in microbes, it has only been described a few times in animals. "This mechanism is often neglected, and could sometimes be more important than we thought" said Nicholas Rabet.

The gene in question appears in all known genomes of creatures from the phylum cnidaria, which includes jellyfish, anemones and corals. Rabet and his colleagues found that the cnidarian gene fits well into the bacterial family tree. They also showed that the gene turns on in at least one jellyfish, *Clytia hemisphaerica*.

The same gene pops up in certain sponges, worms and fungi, suggesting it jumped between species more than once, the scientists say. It is not yet clear how the transfer might have occurred, or why this particular gene would be so well-travelled.

Scientists are finding that horizontal gene transfer, once thought to be the domain of single-celled critters, is not uncommon in the animal world, says Michael Syvanen, who studies comparative genomics at the University of California, Davis. "Horizontal gene transfer with the animals is going to turn out to be more widespread than anybody believes now. When that realization comes down, it will definitely change the way people think about evolution." ■

This is how jellyfish, mice and bacteria got all mixed up



Aequorea victoria

Jellyfish research leads to Nobel prize

For isolating and developing the green fluorescent protein from a jellyfish, the 2008 Nobel prize for chemistry has been awarded jointly to two Americans and one Japanese scientist.

Jellyfish will glow under blue and ultraviolet light because of this protein, referred to as GFP, in their tissues.

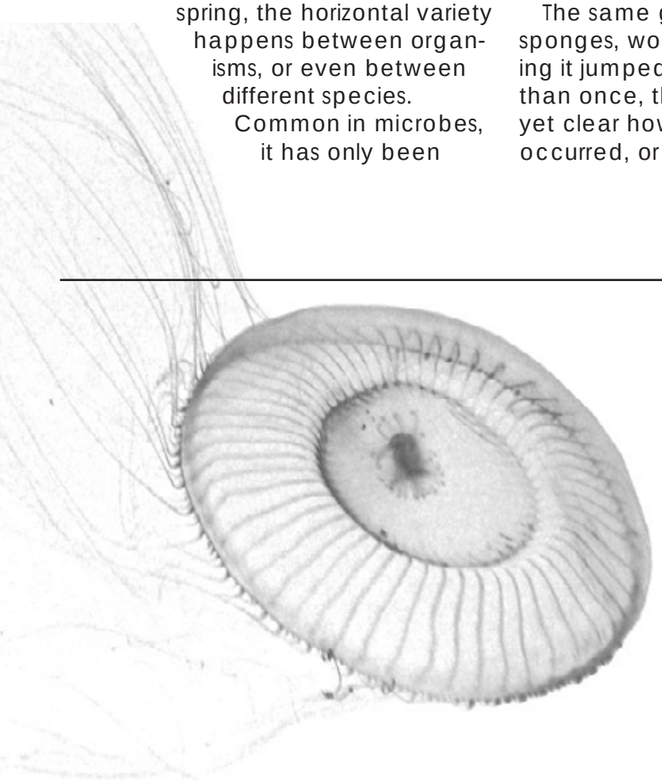
The protein fluoresces green when exposed to blue light, and the gene that makes it has been added to organisms as diverse as bacteria, yeast, insects and even humans, to prove that "alien" genes can be inserted, expressed and passed on.

Osamu Shimomura, of the Marine Biological Laboratory, Woods Hole, Martin Chalfie of Columbia University, New York, and Roger Tsien of the University of California, San Diego, share the prize.

Shimomura made the first critical step, isolating GFP from a jellyfish (*Aequorea victoria*) found off the west coast of North America in 1962. He made the connection also with ultraviolet light.

Chalfie routinely receives letters describing potential uses of GFP, one of the most bizarre being a way of using GFP-labelled bacteria to locate mines in minefields.

GFP has been used in dozens of applications, from searching for a cure for deafness, to making ANDi, the first genetically modified primate, now being used to develop treatments for Huntington's disease. ■



Jellyfish Help Fight Terrorism Too

Anthrax, plague and small pox are some of the possible pathogens terrorists could use against us; but now, researchers say jellyfish are helping to prevent these kinds of attacks.

An innovative biosensor, which is currently under development by scientists and engineers at Massachusetts Institute of Technology, will be able to identify harmful bacteria or viruses in the air in less than two minutes by using jellyfish DNA inserted into mouse cells. The presence of a targeted pathogen makes the mouse cell glow. A device called the Panther containing 16 chambers pulls air through the disk to collect and test any pathogen that might be in the air. If a dangerous pathogen is detected, a sensor looking for the emitted light goes off—alerting anyone who could be in harm's way. ■

Mouse with GFP gene from jelllyfish glows green. Click on mouse to watch movie

SAMUEL LUNENFELD RESEARCH INSTITUTE

French sea-architect and visionary Jacques Rougerie recieves prestigeous award

Twenty years after Cousteau, another underwater hero is honoured under the dome of the French Institute.

The French Institute Fine Arts Academy has elected French sea-architect Jacques Rougerie under its dome on the 25th of June. This award honours the work of the architect himself, as it also reflects onto the entire community of sea and underwater world passionate for which he has so often dedicated his work.

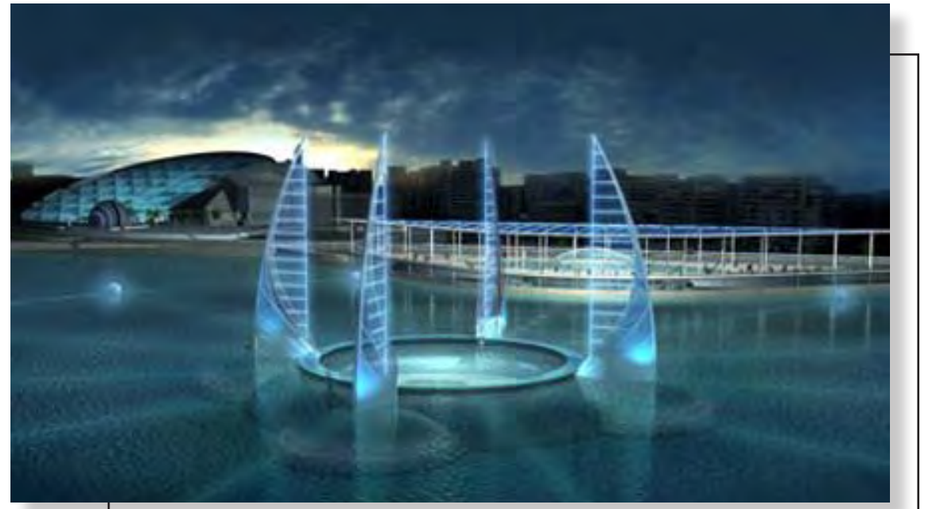
Born in 1945, Rougerie graduated with a degree in architecture and oceanography. An architect in 1972, he started his own company and initiated marine architecture projects as he began with the great adventure of underwater habitats. In 1974, he created the Centre for Sea and Space Architecture, later labelled Space and Sea Association.

He specifically worked on technical and scientific projects that would lead him to his first underwater houses (Galathee in 1977, Hippocampe, Aquabulle, Aqualab, etc) and undersea observation boats and vessels (Aquaspace, Aquascope, etc).

An experienced diver, he his much involved with children and education and considers teaching about the wonders of the underwater world a key to building tomorrow's society. He is therefore the architect of the main Sea Centres in France (Nausicaa in Boulogne sur Mer, Oceanopolis in Brest) as well as the Culture and Science Museum abroad (Sea Pavilion in Osaka).

Nowadays, Rougerie still spends a lot of time creating sea-related projects. He is currently working on the Underwater Archaeological Museum of Alexandria (Egypt) and on the City in The Ocean project in Abu Dhabi, a marine city with underwater park and housing.

Still much involved with space adventure, he participates in the underwater training program for NASA astronauts (Neemo) with his friend Bill Todd. A synthesis of all his work and experience, the SeaOrbiter project combines underwater observation, scientific monitoring of the ocean and human and scientific adventure through the main oceans of our planet. ■



Rougerie's vision for an Underwater Museum in Alexandria gets the go-ahead from United Nations

Cleopatra's palace sank long ago into the Mediterranean in the harbour of Alexandria, Egypt, but visitors may eventually view the complex's remnants via the world's first underwater museum which the UN plan to establish in the port.

The proposed underwater museum in Alexandria, Egypt, came closer to reality in September 2008, when the UN established a committee to aid the design process with the Egyptian government.

If built, the museum could display treasures and monuments of her palace, which once stood on an island in one of the largest human-made bays in the world but were submerged by earthquakes from the fourth century A.D. onward.

Cleopatra's palace was built on an island in one of the largest human-made bays in the world. Earthquakes unfortunately submerged her opulent lair until the 1990s when archaeologist-divers found the thousands of precious objects. ■

Training bulletin

Edited by Mathias Carvalho

Have website, will dive

PADI has been around for a certain number of years now, and so has their website—the same old one, I mean. Okay, perhaps I am not being fair. It is a fairly good website, but in today's lightning-paced online rat race where everything you see today is gone the next moment you glance back, it took us a while to see their new and improved online face. But it finally did happen.

PADI will launch it's new and improved version on October 22, and I was given the preview tour on a web-based seminar this last week.

Among its new features, the new PADI website will be easier to navigate, have more online information regarding training—for those who ask themselves, "Okay, I'm certified, now what?"—equipment selection, online courses (the Advanced OWD course is now available online on their eLearning© area), travel tips, how and who to "Go Pro!" with, news and events, and so on.

In their current version, PADI had made an earlier effort to give it's website a "2.0" feel, with the "My PADI" area (Wow, I haven't been there in a while myself).

Unfortunately, it came on too early, when online budding wasn't an issue yet and, later on when it was a big deal, it didn't evolve in the same manner as today's better known online communities. I see more divers exhibiting (and actually using) their online profiles in several popular online community websites, such as MySpace, Orkut, Facebook and LinkedIn, than on PADI's. Again, I am not being fair, I don't think PADI could ever beat them; no other dive agency could—the best strategy would be to join them.

But the feature that I believe will make the difference is the new "Dive Shop Locator". More often than not, divers need help on whatever diving issue crushes their soul, and the dive shop is their promised land. Divers regard the dive shop as a haven for information, a truly reliable source for training, equipment and travel options—or simply an opportunity for good ol' chattin' with your friendly neighborhood dive pro. Even dive travelers need to feel welcome as strangers in a strange land and, with the internet doing what it does best, only the very alienated won't at least try to Google their destination beforehand.

This time, PADI did work out a keen strategy by using Google's best geo-locator tool, Google Maps, as a way for divers to pinpoint PADI dive centers across the globe. As almost everyone now uses Google Maps to locate places and dig up information, this could not be more user-friendly. If enough PADI stores and schools take the time to update their profiles on the website, maybe the world will indeed become smaller and cozier. ■

PADI in a Bottle

New certification: Open Water Diver – Controlled Environment

Controlled environment diving is sometimes the only option presented to many divers located in areas where access to the sea isn't at hand. Those man-made structures may include aquatic parks, specially designed oversized swimming pools, massive indoor tanks and large-scale aquariums. While not quite giving the same experience provided by open water dives, these environments do offer good visibility, interesting and often original features, and constant warm water conditions, something that some divers prize above all others.

Thousands of new divers begin their scuba training in these controlled sites, many becoming certified as PADI Scuba Divers. It means that, while certified for open water conditions, they can only dive under the direct supervision of a PADI professional.

PADI now offers a new certification: Open Water Diver – Controlled Environment, that allows for unsupervised dives within the confines of controlled environments.

While much larger than standard swimming pools, controlled environments should not have the same unpredictable variables that exist in open water sites, even bodies of water other than the sea (such as quarries, lakes and so on). That way, divers won't need to consider these factors in their dive planning, a characteristic of PADI's standard Open Water Diver course. ■

CO_2 makes oceans noisier

Sound now travels furthe[illegible]gh the ocean thanks to carbon emissions that have ma[illegible] oceans more acidic.

It is now common knowledge that oceans are becoming more acidic because of rising levels of CO_2 in the atmosphere, which dissolves in seawater to form carbonic acid. Less known is it that acidity can influence how far sound travels in seawater. E A whales' calls, for example, travel further in the north Pacific than in the north Atlantic, due to differences in pH.

Exactly how the process works is unclear, especially at frequencies below one kilohertz, which include whale calls, crashing waves and noise from shipping. "At these frequencies, the exact molecular mechanism is still a bit fuzzy," said Peter Brewer of the Monterey Bay Aquarium Research Institute in California.

It has been hypothesised that ion pairs of carbonate, bicarbonate, boric acid and borate are tuned to absorb sound wave energy of 1 kHz and below. The acidity of the water affects the balance between these chemicals.

The predicted drop in ocean pH by an average of 0.3 before the end of this century would cause a 40 percent decrease in the absorption of sounds below 1 kHz. "The ocean will have higher levels of ambient noise, marine mammals will communicate at greater range, and military or industrial sounds will travel further," Brewer said. ■ SOURCE: GEOPHYSICAL RESEARCH LETTERS

LIFE EVOLVES ONTO LAND

Remember to get your 2009 Ralph Hagen Dive Cartoon Calendar available from our **webshop**

Dive into ocean conservation with Oceana

For divers, the ocean is more than a playground. You understand this complex and colorful world better than those who have never delved beneath its surface. You can recognize very quickly the signs when something is wrong: debris, bleached coral, fewer wildlife sightings...

As a diver, you can make a difference for the better, both in the water and out. Divers can be monitors conducting coral reef and fish surveys, stewards keeping the oceans pollution-free, and voices for the oceans advocating for aquatic habitats, marine wildlife and sustainable fisheries.

Join Oceana—the largest international organization focused 100 percent on ocean conservation—in the fight for healthy oceans. Be more than a diver. Be an Oceana WaveMaker! Sign up today and be the first to know when the oceans need your help. ■

Climate zones shift south as Australia's northern oceans warm

Since the 1950s, average sea surface temperatures in northeast and northwest tropical Australian waters have increased steadily, causing a 200km shift southwards of climate zones along the northeast coast and an expansion in the area that can be designated "the tropics".

According to senior AIMS scientist and climate change team leader, Dr Janice Lough, who has published her findings in the journal Geophysical Research Letters*, if current trends continue, annual sea surface temperatures in northern Australian tropical waters could be around half a degree warmer, and those of more southern parts, about two degrees warmer within the next 100 years, with dire consequences for our coral reefs, particularly those in the more southerly areas. ■

AUSTRALIAN INSTITUTE OF MARINE SCIENCE

How corals react to night and day

Researchers have uncovered a gene in corals that responds to day and night cycles. This could lead to a better understand of how symbiotic corals work together with the algae they are hosting.

Shallow water corals have developed symbiotic relationships with photosynthetic dinoflagellates, which they harbour in their organisms. The dinoflagellates use sunlight to produce energy for the coral, which in turn use that energy to construct mineralized skeletons for protection. This process, coral calcification, is synchronized with the diurnal cycle through molecular mechanism, which remains unclear.

Aurelie Moya and colleagues have now characterized the first coral gene that responds to the light cycle. The gene makes an enzyme that converts carbon dioxide to bicarbonate, and it is suggested that it becomes more active at night to cope with acid buildup during the night.

The calcification process requires many hydrogen atoms, which during the day, can be removed by photosynthesis. At night, however, hydrogen accumulates, which increases the acidity of the coral, and therefore, the enzyme creates extra bicarbonate as a buffer to prevent acid damage. ■

Seaweeds stunt coral growth

Seaweeds resort to chemical warfare to beat corals for the sweet spots on a reef surface.

Chemicals released by the algae into the water can have a significant impact on the success of coral recovery after damage. Following damage to a reef, algae nearly always beat the corals in the race to resettle the devastated area. Researchers have proved that some seaweeds or algae produce toxic chemical signals that deter coral larvae from settling on reefs devastated by bleaching, storms or other impacts. Meanwhile, coral larvae may also use algal chemicals to find a place to settle.

"Seaweeds produce a wide range of chemicals, some of which encourage coral larvae to settle and some of which repel them," said Laurence McCook of ARC Centre of Excellence for Coral Reef Studies.

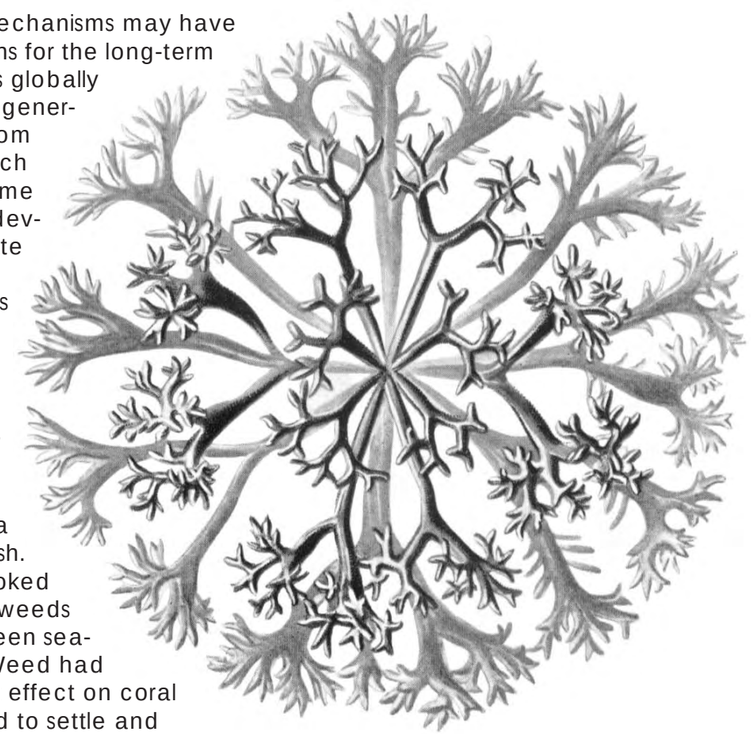
These chemical mechanisms may have important implications for the long-term survival of coral reefs globally and their ability to regenerate after damage from coral bleaching, which is expected to become more frequent and devastating under climate warming, he said.

A lot then depends on which algae dominate the new system, and whether there are enough fish, turtles and other herbivores around to 'mow' the weeds and give the corals a chance to re-establish.

The researchers looked at three kinds of seaweeds and found that a green seaweed called Turtle Weed had a powerful deterrent effect on coral larvae, which refused to settle and appeared stressed. Larvae had difficulty settling with a second seaweed, and a third produced chemicals that actually encouraged coral settlement.

"On the Great Barrier Reef, we have been relatively lucky, but elsewhere, we have seen a number of instances where seaweeds simply took over the reef, completely preventing the corals from coming back," said McCook.

"The greatest threat seems to be when we get thick mats of algae combined with sediment runoff, which smother the reef and stop corals gaining a foothold —a serious problem for our coastal reefs," he added. ■



Irish moss, *Chondrus crispus*, a red algae that might encourage coral settilement

16th-century Portuguese treasure wreck found in Namibian sand

Off the Namibian coast, geologists prospecting for diamonds stumbled upon a very well preserved 16th century shipwreck laden with treasure. Namibia's Information Ministry announced that the wreck is of a 16th century Portuguese vessel, which was bound for Asia. The cargo included 2,000 gold coins, copper ingots and 1.4 kilograms in silver coins.

A trident-like seal indented on the ingots reveals that they where supplied by German merchant Jakob Fugger, a known supplier to the Portuguese crown during the Habsburg dynasty.

The shipwreck is located near Oranjemund, about 160km south of a small diamond mine. Its good condition is attributed to being buried in sand, which preserves wood.

This is an important archeological find, since navigational instruments were also identified among the remains of the vessel. Cannons and elephant tusks also found scattered on the seabed. This find will provide scientists with a rare insight into the heyday of seafaring explorations between Europe and the Orient.

There has been some initial speculation about the vessel been linked to Portuguese explorer Bartholomew Dias, the first European to round Africa's Cape of Good Hope. This was quickly dismissed by archaeologists, as some of the gold coins found were dated October 1525, 25 years after Dias went missing.

Researchers believe that this might be the oldest shipwreck ever discovered off the coasts of sub-Saharan Africa.

A team of archaeologists and geologists from Namibia, the United States, Portugal, South Africa and Zimbabwe is working on the site. As keeping the sea at bay while the excavations are taking place is very costly, there is great pressure for the work's completion by early October. ■

Amazing finds on the bottom of the Thames

Screenshot of *HMS London* from BBC documentary on Thames shipwrecks. *London* was accidentally blown up in 1665 and sank in the Thames Estuary. Image released into the public domain by the BBC

Shipwrecks found at the Thames riverbed

A joint operation between The Port of London Authority (PLA), which regulates the river, and Wessex Archaeology, is documenting and clearing up seven shipwrecks from the Thames Estuary. These are only a few, as trade and war caused roughly 1,100 vessels to go down over the centuries.

Wessex Archaeology has been advising the PLA, since 2003, on the safeguard of archaeological and historical interest of these channels' shipwrecks. The project, part of major expansion plans that include new dredging in the existing channels, also has practical objectives, as jagged metal and debris may pose a serious threat, especially to large cargo ships that can skim within half a meter of the riverbed.

Among the wrecks located, researches found a warship that was blown up in 1665, the trading ship *Dovenby*, a yacht converted to a Second World War gunboat, an unidentified vessel in which divers found a personalized gin bottle and an amazingly well-preserved shipwreck of the *HMS London*, the oldest find of the lot. Over a dozen divers used 3D survey equipment to locate the wrecks in near-zero visibility.

The British Broadcast Company "BBC2" aired a two-episode documentary titled "Thames shipwrecks: a race against time", relating the history behind the struggle over the Thames estuary and the Empire's busiest trading and shipping river. ■

wreck rap

Diva shipwreck may have been found

Nancy shipwreck of 1784 is finally located off Scilly islands

The loss of the *Nancy* has been one of the most intriguing shipwrecks to date, and a tale that seems to include all elements of a romatic drama: a beautiful actress, a tragic shipwreck and a lost fortune. Now this fabled wreck may have been found by British divers, Todd Stevens and Ed Cumming, who spent a year seaching for her.

Still showing inconclusive results, the evidence recovered so far leads them to believe it is *The Nancy*, a packet ship from India that, in 1784, wrecked on the rocks off Cornwall, dooming 49 passengers and Ann Cargill, an internationally renowned actress and opera singer who was returning to England.

Ann Cargill (born Ann Brown) (1760 - March 4, 1784) was a British opera diva and celebrated beauty whose life and death were a sensation in London at the close of the 18th century. On a return voyage from India, her ship wrecked and sank off the Isles of Scilly in February of 1784. Her body was found, dressed in a chemise, with an infant clutched in her arms.

18th century superstar

The 23-year-old star, a celebrity with the same caliber as an 18th Century Madonna (she was as renowned for her scandalous love-life as for her talent), had been performing in Calcutta, where her latest lover was stationed with the British East India Company.

The star was adored worldwide by the late 1700s theatre audiences and charged 'astonishing' fees to play in the top London theatres. Besides amassing huge fame and riches, she had also collected a series of lovers, and there were rumors she had given birth to an illegitimate child. Not unlike many of today's superstars, her business cunning made her extremely rich, as she often took a share of the profits on top of her payment. Her vast personal fortune—cases of valuable jewels—supposedly sank with the vessel. According to official logs in India, the wreck might contain more than £200,000 worth of jewels and gifts from her various scandalous lovers.

Following the accident, bodies were recovered by searching parties, including a woman clutching her dead baby, whom rescuers were unaware was Ann Cargill's. She was afterwards buried in a pauper's grave. Only when her paperwork was sent to London, did officials realize who she was. Soon after that, her body was exhumed and reburied in the Sicily's St Mary's Basilica.

As English newspapers published the tragic account of Cargill's death and her 'floating in her shift and her infant in her arms' tale, it all grew into local legend. It tells of her lonely spirit, which still haunts the spot where she perished, singing a ghostly lullaby to her child.

Searches in the wrong place

Since the 18th century, divers have been trying to locate the wreck, but they may have simply been looking in the wrong place. Cumming said that a contemporary record of the tragedy had the ship mistakened for its survivor's lifeboat: "It had been written that they 'were driven' onto Rosevear Island by the stormy sea, and most people took it to mean *The Nancy*.

Stevens added, "Doing this has been so rewarding. We are still trying to piece together the human stories around the wreck, but it has been a real thrill. This kind of discovery is what you go diving for." They have "adopted" the wreck through the Nautical Archaeology Society (www.nasportsmouth.org.uk), and any treasure will have to be logged and reported to the Receiver of Wreck at the Maritime and Coastguard Agency.

Scattered over at least 300 square meters, it makes diving on the site difficult and possible only under certain weather conditions. The two British divers, who have now written a book called *The Ghosts Of Rosevear*, have yet to discover any treasure on board, but plan to hand all materials over to the Isles of Sicily Museum. ■

Aikoku Maru is one of many shipwrecks in Chuuk lagoon stemming from one of the biggest naval battles during WWII. On 17 February 1944, the *Aikoku Maru* was attacked by *Avenger* dive bombers. She was hit by two bombs in the front part of the ship, causing the *Aikoku Maru* to explode violently

Chuuk Lagoon at risk from oil leaking from WWII wrecks

Filled with shipwrecks, what used to be know as "The Pacific Theater of Operations" in World War II, is today a much valued destination for all sorts of diving enthusiasts, ranging from wreck aficionados to coral and marine life photo amateurs. Chuuk Lagoon evokes clear blue waters, colorful corals and an exuberant underwater life. But many of the corroding Japanese and American planes, tankers and submarines are now starting to leak toxic fuel and oil; scientists estimate that the millions of liters still contained in the wrecks could lay waste to the area's entire ecosystem.

The Federated States of Micronesia, a four-island state archipelago to which Chuuk belongs, has tourism as its main source of income, particularly for its diving and fishing industry. An oil leakage on a scale as predicted could create havoc to its delicate economy, a grim perspective to the population of more than 50,000 residing in around 200 islands.

Three sunk tankers alone have a combined capacity of roughly three quarters of the Exxon Valdez catastrophe. Dr Bill Jeffery, from James Cook University, believes that most will be released in the next five to ten years, a certain loss to the environment and everyone concerned with it. However, what is less clear is who will take responsibility for cleaning it up.

Japanese and American authorities still claim ownership or interest in their sunken military vessels, as draining the oil from the wrecks may cost millions but the cargo is also still worth a lot more. ■

CLARK ANDERSON/AQUAIMAGE

Divers next to the mast of the another wreck in Truk Lagoon, the *Unkai Maru*

MARIELLE LARSSON

Text by Millis Keegan

A Symbol of Power

When a lion figurehead was found imbedded in the bottom sediment next to the sensational well-preserved 17th century wreck that was discovered in the archipelago of Stockholm a few years back, the archeologists of the Maritime Museums of Sweden had one more clue to the mystery of the ship's origin.

During the 17th century, the lion was a symbol for power. A lion figurehead sent a message about its owner's position in society. This find, plus the fact that a canon and an escutcheon belonging to a noble family in England was found aboard, could mean that the ship was used for more than trading. A lot of information could come from examining the figurehead more closely, but since the figurehead was halfway buried and eroded, it was difficult to investigate it under water. A decision was made to salvage it for further documentation, but only for a few days. Then, it would be returned to the site.

Monday, 30 September 2008, the figurehead was salvaged from the deep. During the dive, a couple of planks were salvaged as well, which will undergo dendrochronological tests, to see how old the wood is. The following week, the archeologists were busy working with the figurehead.

The lion was measured during the days with an optical scanner to create a 3D computer model. At night, it was resting in an inflatable pool to keep it from drying out. Thursday, 2 October, the figurehead was returned to the wreck. The sculpture will now be compared to *Vasa's* sculptures, and there will be tests made to see if it has been painted.

Why return the figurehead? The opinion of the Maritime Museum is clear: "The wreck site is a magical, unique imprint of the past, and should remain as untouched as possible, as part of a fantastic underwater museum," said Andreas Olsson of the Maritime Museums of Sweden.

Underwater museum

When the well-preserved wreck from the 17th century was found in 2003, the researchers were really excited. Finds indicated that the wreck could be more important historically than even the world famous *Vasa* ship itself. The Maritime Museums of Sweden has, since the find, worked towards creating a one-of-a-kind Historical Wreck Park. Their vision is to offer guided tours to wrecks in the region spanning an era of 400 years. That might take some time, since the wrecks are protected by law, and diving is not allowed, but progress is being made. ■

Niklas Eriksso

Virtual dives on Europe's sunken wrecks

Underwater archeological sites and wrecks are commonly threathened by erosion, deep-sea trawling and looting. Now archaeologists from 11 different institutions across Europe have teamed up with computer experts to develop 3D models of underwater sites in an effort to preserve and share this knowledge with other scientists and the general public.

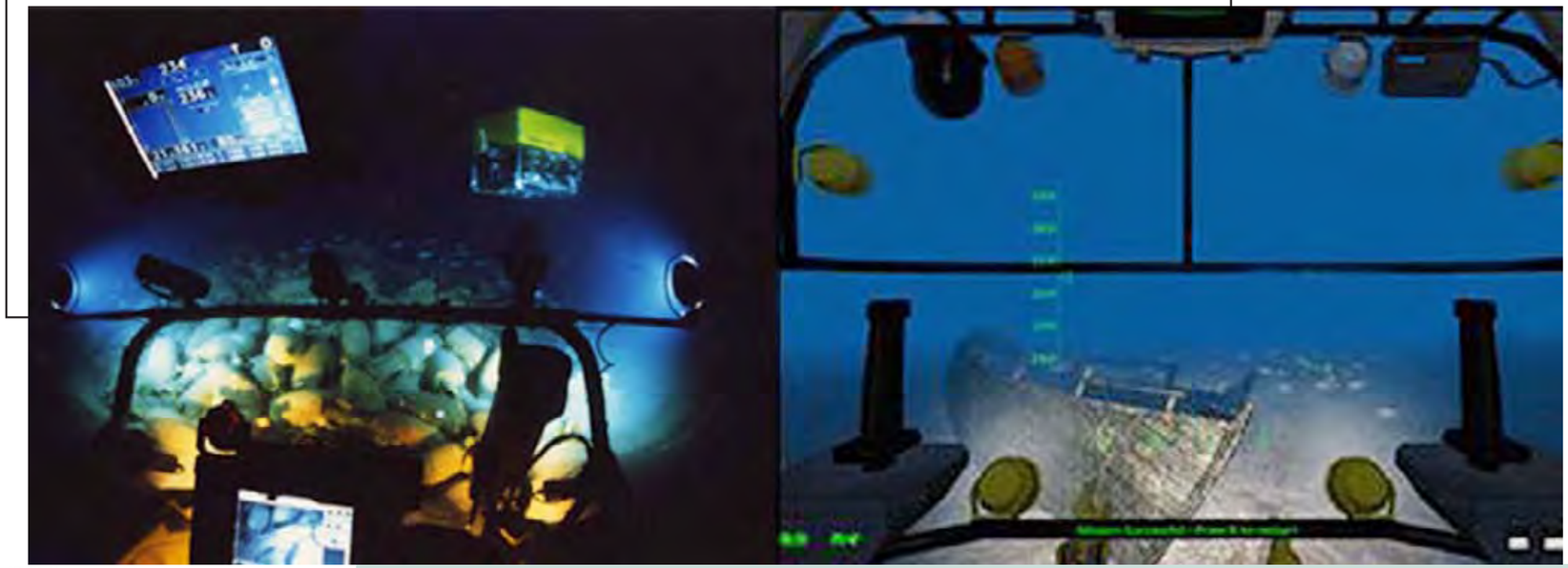
Emulating the cockpit view of a virtual submarine, researchers using the software will be able to explore the sites and decide about future excavations without going out to sea, a usually time-consuming and costly venture.

The Venus Project (Virtual Exploration of Underwater Sites) has, so far, developed a digital representation of two shipwrecks: 200 AD Roman ship, located off the island of Pianosa, in Tuscany, and the *Barco da Telha* ("roof tile boat"), an early18th century vessel that sank off Sessimbra, Portugal. A second Roman wreck, located off Marseilles, is due next.

Another advantage of the simulator is that researchers can add in elements that are no longer available, in order to clarify the site's details and improve on the whole viewing experience.

All elements presented in the simulations are in precisely in the same arrangement as on the sites. For accuracy's sake, researchers conducted sonar surveys from the surface and obtained information from a robotic submarine. This provided more detailed sonar data, as well as clear images of the wreck itself. The simulator is currently on display at the Deep aquarium, in Hull, England.

By early 2009, the simulator's software should be made available at the project's official website www.venus-project.eu and will run on standard personal computers. link: **piccard.esil.univmed.fr** ■



Re-sinking the *USS Spiegel Grove*

The *USS Spiegel Grove* is a Landing Ship Dock (LSD 32), which has been sunk to create an artificial reef in Key Largo

ScubaBoard and DiveNav are announcing collaboration with two premier dive shops in the Florida Keys to develop a virtual dive site of the *USS Spiegel Grove*.

"At the time of its sinking, the *Spiegel Grove* was the largest ship ever intentionally sunk to create a new reef for divers," said Captain Slate, owner of the Atlantis Dive Center, "and as of today, she remains one of the largest ships in the world ever scuttled for that purpose," he continued.

The *USS Spiegel Grove* is a Landing Ship Dock (LSD 32); she is 510 feet in length and 84 feet wide, and she now rests at a depth of 134 ft near Dixie Shoals in Key Largo.

"Once this project is completed, anyone with a computer and access to the Internet will be able to virtually dive the *USS Spiegel Grove* using eDiving," said Peter Murray, president of ScubaBoard. "The *USS Spiegel Grove* is one of the best dive sites in Florida," he added.

eDiving, developed by DiveNav, is the virtual underwater world that allows divers, snorkelers and marine enthusiasts to virtually visit real locations.

"The Upper Florida Keys is one of the top destinations in the country for divers and snorkelers," said Captain Gary, owner of the Conch Republic Divers. "By offering a virtual tour of the *USS Spiegel Grove*, you will be able to see this massive artificial reef and how the abundant sea life have now made it their home," he continued.

"We are glad to collaborate with ScubaBoard and with local experts such as Captain Slate and Captain Gary," said Alberto Mantovani, president and CEO of DiveNav. "We are calling upon the Florida's diving community and upon ScubaBoard's members to contribute their expertise to this project, so we can make the *USS Spiegel Grove* accessible to a wider audience," he added.

Please check with Atlantis Dive Center or Conch Republic Divers to see how you can become a part of this exciting project.

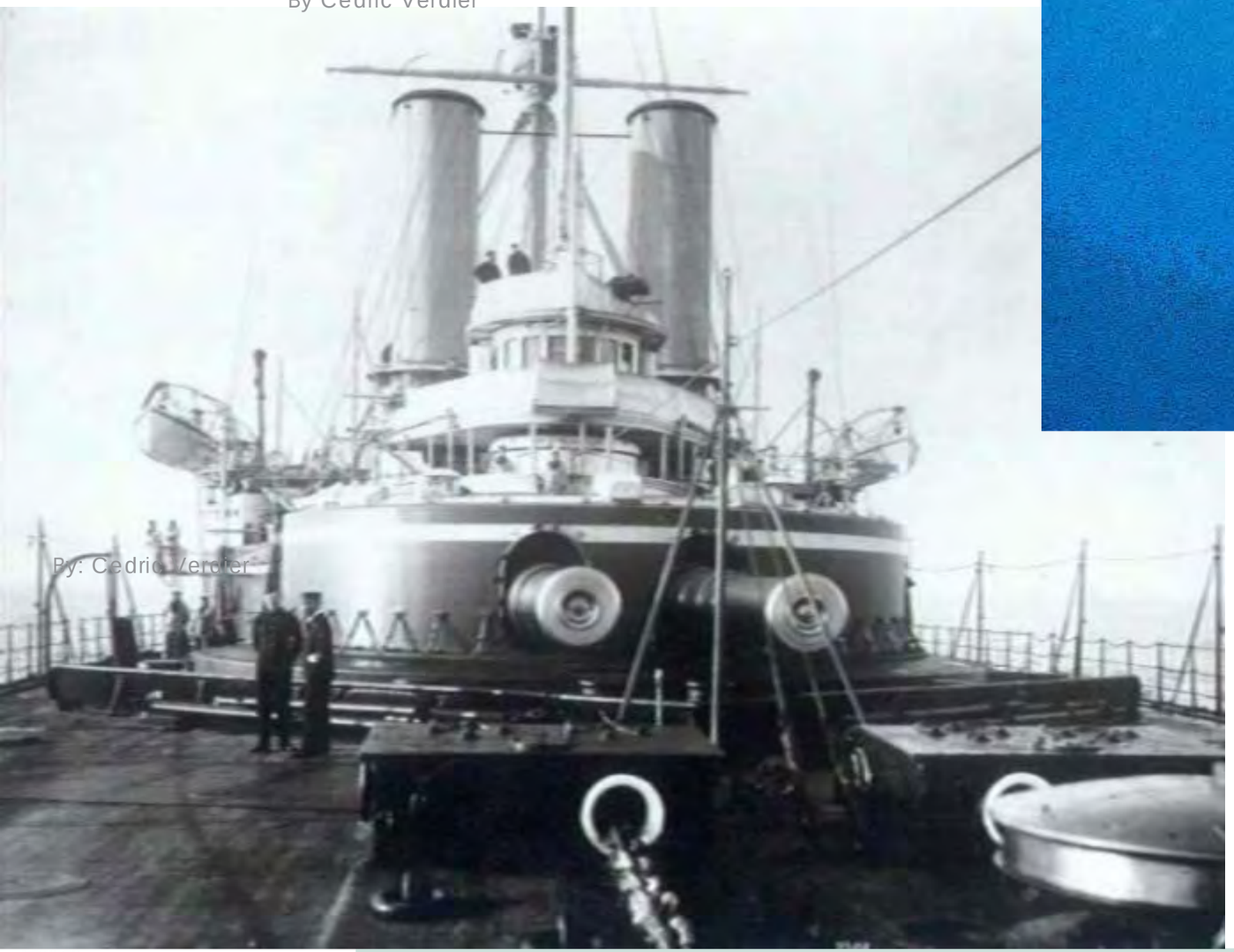
ScubaBoard and DiveNav are planning to demonstrate virtual diving on the *USS Spiegel Grove* at the DEMA Show, booths number 2409 and 4951, respectively. ■

wreck rap

No Secret for *Victoria!*

What does a fish exporter from Norway, a Chief Information Officer and diving instructor living in the Netherlands, a renowned lawyer based in Cyprus, a Project Manager working in Sweden, and an expat French Technical Diving Instructor have in common?

By Cedric Verdier

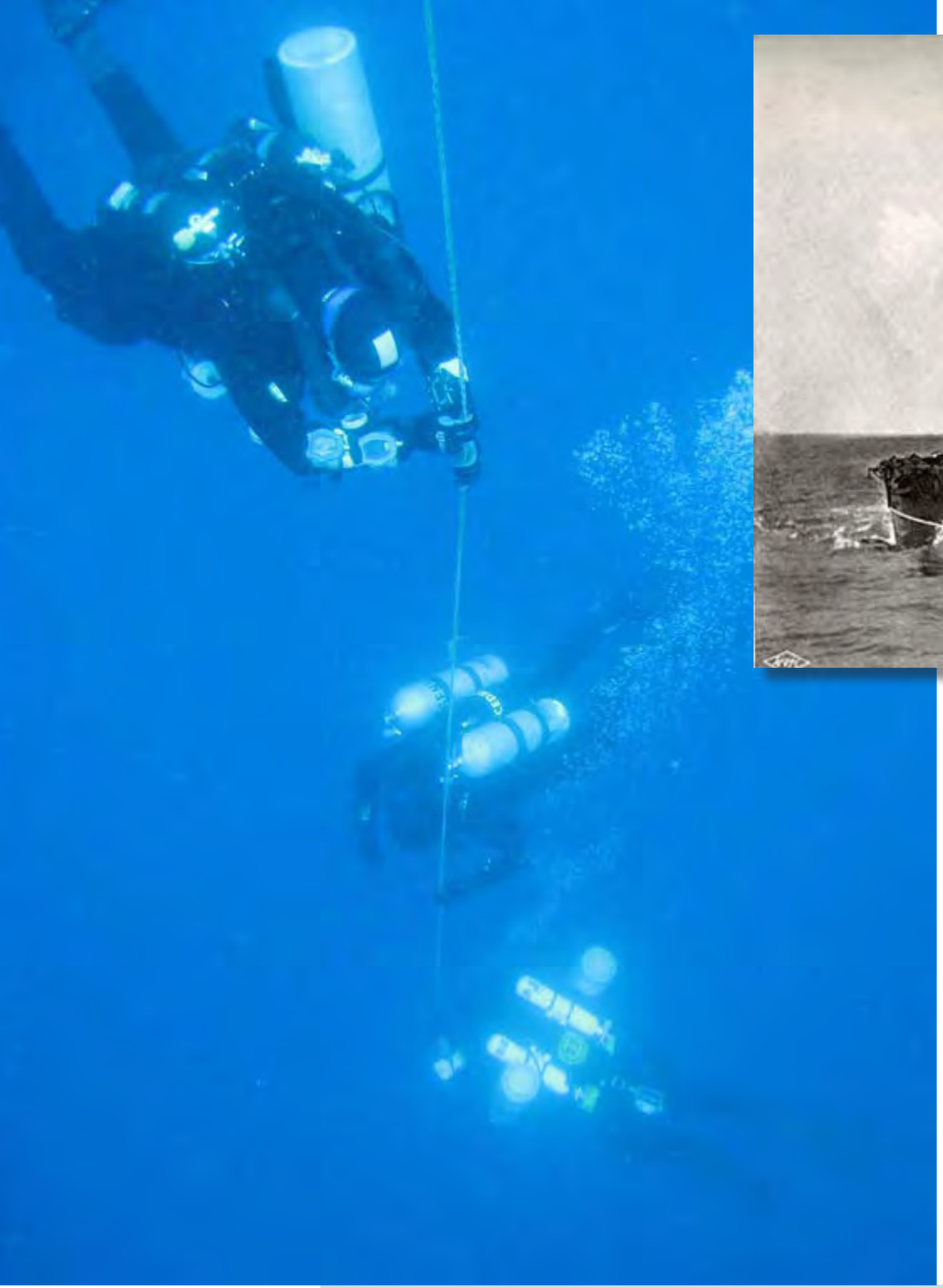


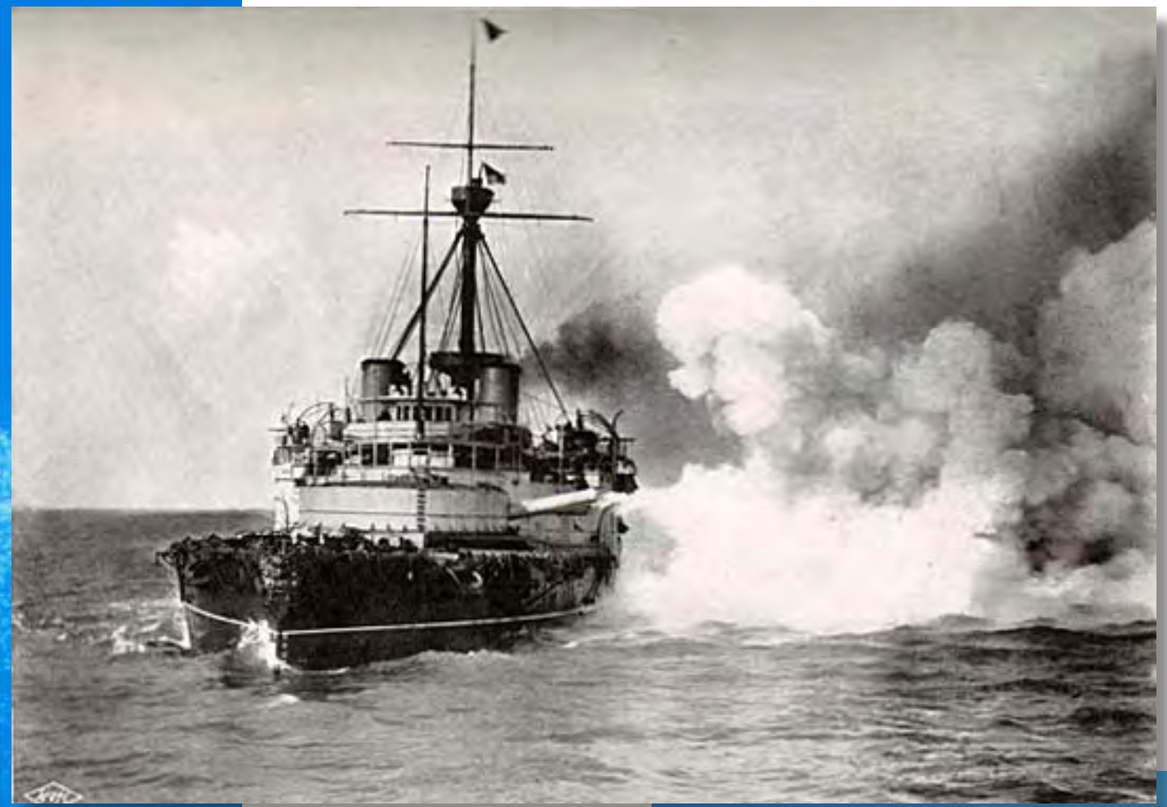
HMS Victoria was one of two Victoria-class battleships of the Royal Navy. On 22 June 1893 she collided with HMS Camperdown near Tripoli, Lebanon during manoeuvres and quickly sank, taking 358 crew with her, including the commander of the British Mediterranean Fleet, Vice-Admiral Sir George Tryon. She was the first battleship to be propelled by triple expansion steam engines and also the first Royal Navy ship to be equipped with a steam turbine, which was used to power a dynamo.

Apparently nothing—except their love for underwater wrecks and their desire to explore some of the most famous ones all over the world.

A few months ago, Per Bjorn Rakvag, Pim van der Horst, Spyros Spyrou, Henrik Enckell and Cedric Verdier decided to go on a wreck expedition to Lebanon. The purpose was to explore the *HMS Victoria*, a British battleship that went down in 1893 and now lies a few miles off Tripoli, between Beirut and the Syrian border, resting at 140m (460ft). The divers were equipped for the challenge ahead with Megalodon Closed-Circuit Rebreathers and diving according to the principles set forth in the DIRrebreather diving standards.

Spyrou and Verdier had been discussing diving the *HMS Victoria* since the summer of 2007. The impressive wreck is quite unusual in the sense that it stands up vertically rising up from 140m to 77m with her bow deeply embedded in the thick layer of sediment. Spyrou contacted ambassadors and officials from Cyprus and Lebanon to obtain all the necessary permissions. Soon he came in touch with Christian Francis, owner of Lebanon Divers who first





located the wreck.

During that time, thanks to the DIRrebreather forum and its members, Verdier spoke with several experienced rebreather divers who wanted to participate in this interesting project, and before long, a team was formed.

However, it takes a good deal more than dedication and tenacity to get a project like this off the ground. You also need experience, and above all, financing.

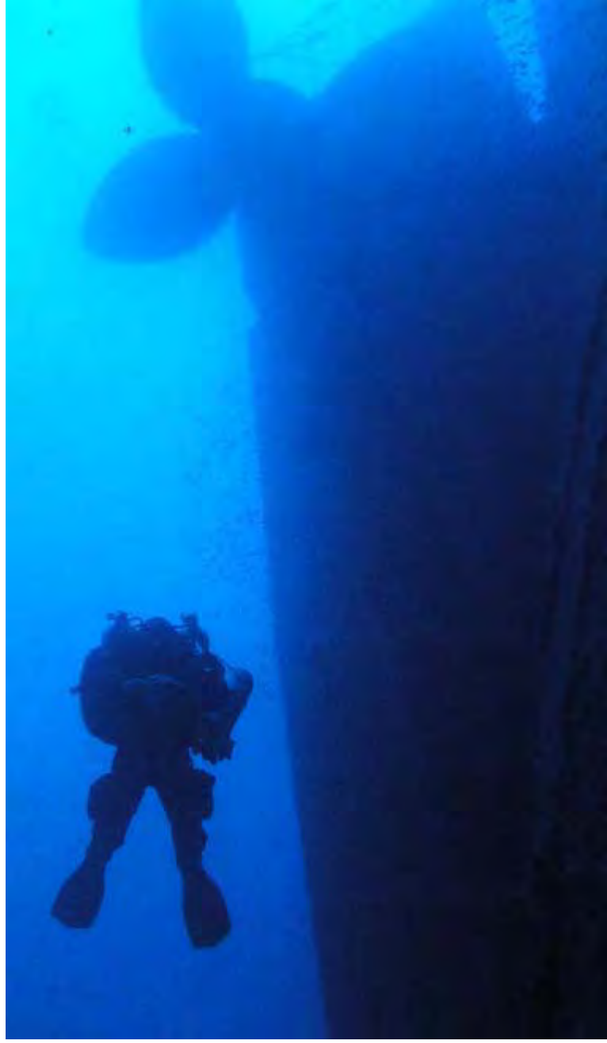
The plan was for the team to first gather in Cyprus a few days before the trip to Beirut, but airlines sometimes work in mysterious ways, and as a consequence of multiple delays, some of the participants had to go directly to Lebanon. Some of them even used a Rolls-Royce as a taxi to the airport!

Lebanon!?

When you mention to someone that you are going to Lebanon, you get this same strange expression back—a delicate mix of surprise and worry. Lebanon is anything but the usual, off-the shelf diving destination. After so many years of civil wars, conflicts with the neighbouring countries, and military actions against extremist groups, Lebanon is not any more the coveted and classy tourist destination that it once was.

The southern border is still quite "active", and Beirut International Airport has been closed repeatedly in the recent years. But one has to admit that Lebanon is a beautiful country, and it is well known for its surprising nightlife, its extremely rich archaeological heritage, and the warm hospitality of its inhabitants. Lebanese

In 2004 the wreck of the Victoria was discovered by diver Christian Francis. She was found in 140 metres of water. The most amazing aspect of the wreck is that unlike all others she sits vertically with about two thirds of her above the sea bed.



people, most of whom are multi-lingual, have also learnt to live with war and enjoy peaceful moments in their stunning landscapes.

Once very westernized in their tastes, religion and manners, Lebanese people enjoyed close ties to France and the UK. That is also the reason why a fleet from the Royal Navy went to anchor off Tripoli, a couple of hours north of Beirut. According to the Naval Historical Collectors and Research Association (Review Autumn 2007): "The tragic sinking of the 10,470-ton *HMS Victoria* remains the Royal Navy's biggest peacetime disaster ... On 22 June 1893, 22 officers and 334 of her crew were drowned after the *HMS Camperdown* accidently rammed the Mediterranean flagship in an elaborate and ill-judged fleet manoeuvre ordered by Vice-Admiral Sir George Tryon KCB."

Blad of one of the giant propellors

Within only 13 minutes, during which most of the crew managed to abandon ship, the proud battleship was pulled downward by the weight of 111 tons of her two forward-mounted main guns in their huge turret, while still being driven forward by her churning propellers.

After reading about a very epic court martial of the main officers involved at that time, and the many documented attempts to find the wreck, Christian Francis, a local Dive Centre owner, finally found her resting place, exactly where the battleship was last spotted by the nearby Tower of Lions.

Why was the wreck so difficult to find? Simply because the wreck of *HMS Victoria* stands up vertically, which her bow deeply buried in a thick layer of mud, making searches with a depth sounder very difficult.

Diving *Victoria*

If you ask the five DIRrebreather members who explored this wreck in April what impressed them most about this wreck, you'll get five different answers.

Spyrou will tell you that "this wreck is clearly like no other, as it's so weird and disturbing to go down along what you are used to see horizontal". Van der Horst and Rakvag will speak about the pictures they took of the two impressive propellers pointing toward the surface. Enckell will maybe mention the artefacts and portholes, the fishing nets, and the huge rear gun he looked at for a few minutes. Verdier couldn't help but explaining how a wreck of this kind could accommodate any level of Trimix Divers, ranging from the comfortable tour of the stern at 77m/250ft to the extreme exploration of the wreckage at 140m/460ft. In other words, it looks like *Victoria's* got something for everyone!

These five rebreather divers were so fortunate to arrive during perfect weather conditions to explore the whole wreck. They shot pictures and videos, paying their price at the end of the end with long decompression stops in 18° C (64F) cold water.

Thanks to the robustness of their Megalodon rebreathers, they didn't experience any single equipment failure during their expedition in Lebanon. All the dives were done according to strict DIRrebreather team procedures, using standards mixes, setpoints and decompression schedules.

None of the participants suffered from any sign of decompression sickness, which is an absolute requirement bearing in mind the remoteness of the location and the relative lack of state-of-the-art recompression chamber.

Apart from the trouble eating the local corned beef, everyone participated in a safe and extremely enjoyable deep rebreather diving expedition. ■

travel news

Edited by
Scott Bennett

Global credit crunch has detrimental effect on the diving tourism industry

The global credit crunch, coupled with soaring fuel costs and global economic instability, has forced one Australian tour operator to cease day trips to the Great Barrier Reef. As of October 12, Townsville's Sunsea Cruises will cease trips to Kelso Reef in the Great Barrier Reef Marine Park. General manager Darin McDonald says the service is no longer viable, and cancelling it was a difficult decision. "We've spoken to the Members of Parliament to try and cough up some money to try and make this thing happen," said McDonald. "We've looked at other options of how we can save this business and make a go of it, but realistically we can't see any other option but to have to close the doors." ■

Maldives Nature Trail

Shangri-La's Villingili Resort and Spa, Maldives, opening in the fourth quarter of 2008 in the Addu Atoll, will feature the first "Underwater Nature Trail" in the Maldives, as well as a snorkelling garden "seascaped" with transplanted corals. As part of the resort's marine initiatives, guests will also be invited to help track some of the archipelago's largest manta rays found in the Addu Atoll waters.

The Underwater Nature Trail, designed by the resort's marine specialist, will lead out to the resort's house reef on the northern end of Villingili Island. Submerged signage will identify resident marine life along the way, including branching corals, sea anemones, Maldives anemonefish, clams, moray eels and the colourful juvenile Oriental Sweetlips. The marine specialist has also created snorkel gardens close to the southwest shoreline of the resort. In addition to offering a marine adventure for less experienced swimmers, the shallow-water snorkel gardens will provide a nursery for corals and reef fish.

Experienced divers will be invited to participate in the tracking of manta rays. Addu Atoll is one of the few places in the Maldives where giant manta rays with wingspans of more than five metres can be found year-round. Divers will be encouraged to photograph manta rays and contribute to the photo database that will be shared with other such centres around the world to help monitor the movement and population of these sea creatures. The resort will also set up a programme to educate and encourage guests to sponsor the satellite tagging of sea turtles and support organisations working on conservation on a larger scale.

This will be the first resort in the Maldives to offer nature trails—both above and below water. With lush vegetation providing the backdrop for trails through the coconut trees and ancient Banyan trees on the three-kilometre-long island, guests will be able to enjoy all the natural wonders of Villingili Island, on land and sea.

Shangri-La's Villingili Resort and Spa is Addu Atoll's first luxury resort. Currently under development, the resort will boast 142 villas offering views of the ocean or the island's lush native vegetation. The Maldives' second international airport, Gan International Airport, is an eight-minute boat ride away while Male International Airport is 70 minutes by air. ■

Yoga and Diving Make for a Winning Combination in the Maldives

Located in a secluded nook of the Maldive's South Ari Atoll, the luxurious Conrad Maldives Rangali Island is encircled by some of the world's best dive sites. In order to embellish the underwater experiences of its guests, the resort has teamed up with Yoga guru Katy Appleton to offer unique Dive and Yoga Bliss packages from 20-30 October 2008.

As a keen diver herself, Katy has long recognized the benefits of yoga as a tool to enhance the quality of her diving experiences. In conjunction with the resort's Sub Aqua Dive Centre, guests will have a choice of two options: Discover Scuba/Yoga for beginners or Yoga Scuba for experienced and certified divers.

The beginners' course will commence with 90 minutes practicing specific yoga techniques focusing on breathing, meditation and relaxation techniques to assist with underwater relaxation. A diving programme in the resort's own reef, accompanied by Katy and Sub Aqua Manager Alexis Vincent, will follow. Experienced divers can join Katy for 60 minutes of Yoga practice, followed by a boat dive enabling participants to practice their newly acquired breathing skills.

In addition, guests can choose from a variety of Retreat options, from spa treatments, fitness and yoga classes and consultations with visiting practitioners as well as the resort's own naturopath. A Dive and Yoga Bliss session costs US$200/GB£115.

For additional information, visit Katy Appleton's website at: www.appleyoga.com. ■

Sabah Resort Says No to Sharkfins

At least one Sabah resort has taken steps to prevent sharks from being cruelly mutilated for their fins. Gayana Eco Resort will now refrain from serving shark fin soup at its recently refurbished Alu Alu Seafood Restaurant. By doing so, it has become the first tourism establishment in the state, and perhaps all of Malaysia, to implement a federal minister's call to cease serving shark fin soup at government functions. "Killing sharks and throwing them away just for their fins is a despicable and shameful practice that must be stopped," said Nilakrisna James, spokesperson and public relations consultant for the resort.

Gayana Eco Resort is situated on Gaya Island, just off the Borneo coast near the city of Kota Kinabalu. Gaya Island is one of the five coral reef islands that make up the Tunku Abdul Rahman Marine Park.

Of the world's estimated 2,000 sharks and ray species, Sabah's waters are believed to be home to 36 species of sharks and 42 species of stingray. It is estimated that 100 million sharks are killed annually for their fins. ■

Increased dive tourism is threatening reefs in the Red Sea

In a report to be soon published in the *Marine Pollution Bulletin*, a study conducted by Hasler and Ott have revealed sites with intensive diving activities bore significantly lower coral cover than un-dived areas. Studies were conducted on the reefs of Dahab in Egypt's South Sinai region, some of which receive over 30,000 dives annually.

Compared to areas with little or no dive traffic, findings indicated that reefs with intensive diving activities suffered considerably increased levels of coral damage. Corals situated on reef crests were considerably more affected than those sites encompassing reef slopes, with 95 percent of the branching corals broken. Some sites also bore the effects of sedimentation, an indication that heavy diver traffic was stirring up debris on the seabed. While fish life didn't appear affected, a reduction in coral cover may have serious repercussions in future.

In order for the reefs to recuperate, Hasler and Ott have recommended the implementation of ecologically sustainable dive practices, including a reduction in the number of dives allowed per site on a yearly basis. Also emphasized was increased education of dive guides and divers alike to help understand and maintain the integrity of the reef's delicate ecosystem. ■

Atlantis Hotel Dubai

Opening in late September, Dubai's latest exercise in opulence sits atop an immense man-made island in the shape of a palm tree. Opening in late September, the $US1.5 billion resort, features two hotel towers linked by an arch and boasts 1,539 rooms, 17 restaurants, spa and waterpark.

Situated in the main hotel, the resort's centerpiece is the sprawling Ambassador Lagoon. Holding a staggering 11 million litres of water, the world's third largest aquarium is home to 65,000 fish. The tank's star attraction, however, is Sheika, a four-metre long Whale shark. Stranded in too shallow waters in the Persian Gulf, the exhausted fish would have surely died had it not been rescued by a local fisherman.

Brought to Atlantis, it received treatment at the aquarium's own hospital and was eventually released in its new home. In addition, a sister attraction called the Lost Chambers is home to 21 additional tanks, which harbor a dizzying array of sea life ranging from jellyfish to an enormous giant grouper. ■

Odyssea's Cocotinos Resort commences construction

After months of preparations, Odyssea Divers has announced construction of their new Cocotinos Resort has commenced on the island of Lombok. The new resort will feature a total of 28 rooms comprising of one two-story bungalow with private roof top bathing and sun tanning facilities, two suites with private splash pools, four water's-edge villa rooms, 18 garden villa rooms and three Terrace Rooms. Although the official opening date is not finalized, the new resort is expected to open for business in the final quarter of 2009. ■