X-ray mag

GLOBAL EDITION
Aug :: Sept 2007
Number 18

Scuba & Spa on Tioman *Ocean Arts: Inspired by the Sea* *Science of Sound Underwater*

Freediving with
Tiger Sharks
COVER PHOTO BY ROGER HORROCKS

Fontaine-de-Vaucluse
Treasure Cave

Ecology
Manta Rays

USCG Diver
The Right Stuff

Tony White's
Great White Shark Adventure

Underwater Sculpture
Jason Taylor

Socorro
Mexico's Islas Revillagigedo

SEACAM

silver

www.seacam.com

DIRECTORY

X-RAY MAG is published by AquaScope Underwater Photography
Copenhagen, Denmark - **www.aquascope.biz**
www.xray-mag.com

PUBLISHER
& EDITOR-IN-CHIEF
Peter Symes
psymes@xray-mag.com

MANAGING EDITOR
& CREATIVE DIRECTOR
Gunild Pak Symes
gsymes@xray-mag.com

ASSOCIATE EDITORS
& REPRESENTATIVES:
USA: Millis Keegan
Millis@xray-mag.com
Russia: Andrey Bizyukin
Andrey@xray-mag.com

South East Asia Rep & editor:
Catherine GS Lim, Singapore
Cat@xray-mag.com

ADVERTISING
International sales rep:
Kevin Brennan (US/Can & UK)
sales-uk@xray-mag.com

International sales rep:
Geoff Mellard (Europe)
sales-europe@xray-mag.com

International sales rep:
Harvey Page (Red Sea & Africa)
Harvey@xray-mag.com

International sales rep:
Arnold Weisz (Business Directory)
Arnold@xray-mag.com

SENIOR EDITOR
Michael Symes
science@xray-mag.com

ONLINE EDITOR
Willy Volk
Willy@xray-mag.com

TECHNICAL MANAGER
Søren Reinke
Sreinke@xray-mag.com

MARKETING MANAGER:
Yann Saint-Yves
marketing@xray-mag.com

CO- EDITORS (continued)
Arnold Weisz - News, Features
Willy Volk - News, Interviews
Millis Keegan - *Opinions,*
Brian Keegan - *Equipment*
Michael Arvedlund - *Ecology*
Jason Heller - *Photography*
Dan Beecham - *Videography*
Michel Tagliati - *Medicine*
Leigh Cunningham - *Tech*
Edwin Marcow - *Sharks*

CORRESPONDENTS
John Collins - Ireland
Jordi Chias - Spain
Enrico Cappeletti - Italy
Tomas Knutsson - Iceland
Marcelo Mammana - Argentina
Svetlana Murashkina - Russia
Amos Nachoum - USA
Barb Roy - WA, USA
Robert Aston - CA, USA
Nonoy Tan - The Philippines

CONTRIBUTORS THIS ISSUE
Anna Grethe Aaen
Kurt Amsler
Robert Aston
Scott Bennett
Andrey Bizyukin, PhD
Linda Bolhuis
Nyxolyno Cangemi
David F. Colvard, MD
Helen Goldberg
Anita Hochman
Millis Keegan
Wolfgang Leander
Catherine GS Lim
Edwin Marcow
Barb Roy
Gunild Symes
Michael Symes
Peter Symes
Jason Taylor
Donald Tipton
Cedric Verdier
Tony White

Further info see **contacts page**:
www.xray-mag.com

SUBSCRIPTION
X-RAY MAG International Edition in English is FREE
To subscribe, go to: **www.xray-mag.com**

COVER PHOTO
Tiger Sharks and Diver, by Wolfgang Leander
(CONTINUED ON PAGE 4)

Ocean Arts:
Inspired by the Sea... page 54

SEASILKS BY HELLEN GOLDBERG
AVAILABLE AT **WWW.SEASILKS.COM**

contents

Underwater sculpture by Jason Taylor. Photo by Jason Taylor. See his portfolio on page 89

28
"The Socorro Islands" Revillagegidos Arca.
by Barb Roy

40
Great White Shark Adventure
by Tony White

44
Ecology: Manta Rays
by Robert Aston

55
The Right Stuff US Coast Guard Diver
by Nyxolyno Cangemi

60
Science: Sound Underwater
by Michael Symes

64
Freediving with Tiger Sharks
by Wolfgang Leander

67
Ocean Arts: Inspired by the Sea
by Gunild Symes

71
Fontaine-de-Vauclus Treasure Cave
by Andrey Bizyukin, PhD

88
Underwater Sculpture of Jason Taylor
by Gunild Symes

plus...

EDITORIAL 3
NEWS 6
M.I.D.E. 12
TIOMAN MEGADIVE 13
EQUIPMENT 51
WHALES&DOLPHINS 53
BUSINESS DIRECTORY 86

columns...

16
Scuba & Spa: Ayura Spa on Tioman
by Gunild Symes

63
Dive Psych Nitrogen Narcosis
by David Colvard, MD

69
Shark Tales: Bits & Bites
edited by Edwin Marcow

76
Tech Talk: Solo Rebreather Diver
by Cedric Verdier

80
Underwater Photo & Video:
by Kurt Amsler

Not yet subscribed to X-RAY MAG? Sign up now! It's FREE! QUICK! EASY! click here...

Join the World's largest Online Diving Community and you will never be without a buddy again.

Imagine a resource that will answer almost every question you ever had about diving: photography, gear, physics, flora, fauna, destinations, wrecks, technical diving, and then imagine this resource is but a click away. What would you call it? Well, we call it **www.ScubaBoard.com**

Join over 75,000 users, including 1200 Scuba Instructors, hundreds of manufacturers and so many dive experts in the World's largest Online Scuba Community and find the answers you are looking for. It's free, it's huge, it's ultra friendly and we are waiting for you to show up! **ScubaBoard.com** is the ultimate place to begin your research and to find a host of dive buddies all around the world with a common goal: to share our under water heaven in a safe and friendly atmosphere! See you on the 'Board tonight!

ScubaBoard

X-RAY MAG is distributed six times per year on the Internet.

© 2004-2006 X-RAY MAG. All rights reserved.

Material in this publication may not be reproduced or transferred electronically in any form without written permission from the copyright owner.

Views and information expressed in articles are those of the individual author and are not necessarily representative of views held by X-RAY MAG or its affiliates. Unsolicited manuscripts, photographs and illustrations should be emailed to: **gsymes@xray-mag.com**

X-RAY MAG accepts no responsibility for unsolicited materials sent to its office, nor is it liable for loss or damage to such materials.

X-RAY MAG observes a strict privacy policy. No personal or private information will be shared with a third party without the written permission of the owner.

DEMA Official Member

X-Ray Magazine is a member of Diving Equipment & Marketing Association: www.dema.org

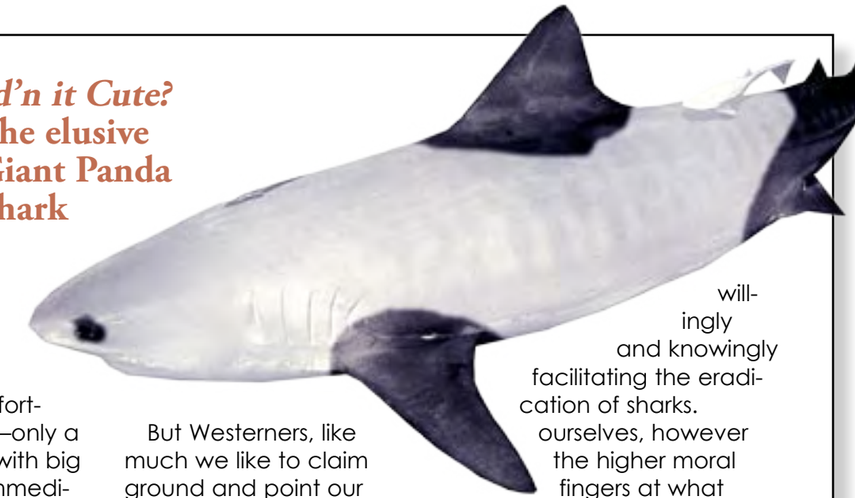
NAUI WORLDWIDE DIVE SAFETY THROUGH EDUCATION

Editorial statement regarding News from NAUI in X-RAY MAG:

This issue of X-RAY MAG and others includes news and press releases from NAUI in sections designated by the NAUI logo. While the page design is done by X-RAY MAG as an integrated part of the magazine, these news stories are brought to you by NAUI at NAUI's discretion.

Driving the message home

Id'n it Cute?
The elusive Giant Panda Shark



In this issue, we have a lot of stories about sharks and rays—magnificient creatures that we are only gradually getting to know and be somewhat comfortable with in the waters. Who would have thought—only a few years back—that you could dive in the open with big sharks like the tiger and the great white and not immediately become lunch. I can't help feeling awed, intrigued and yet wary. Mind you, these are huge apex predators—it takes only one grumpy or psychotic specimen to bite you in half on a bad Tuesday morning. Some dogs we keep as pets bite, too, y'know, and sharks, well, these are wild animals. So, my thoughts on the subject are: Don't try this at home, kids.

With the growing awareness and close encounters with the big sharks and rays, we also have to face the uncomfortable truth that these animals are being slaughtered to extinction as we, who love marine wildlife, can only watch somewhat helplessly while it unfolds before us. The operative word here is *watch*... and helplessly, at that—or are we?

The main culprit for the sharks' plight and the core issue is, of course, the seemingly insatiable appetite among some Asian nations, predominantly China, for shark fin products. Our fellow shark fin campaigners have constantly implored the management behind trading companies like Alibaba.com to stop the shark fin trade taking place on their portal since they are willingly and knowingly facilitating the eradication of sharks.

But Westerners, like ourselves, however much we like to claim the higher moral ground and point our fingers at what we consider a barbaric and totally unnecessary culinary custom amongst the Asians, should climb down off the high horse and take a good long look at ourselves, too. How are we indirectly contributing to the problem and what can we do about it?

Yahoo.com owns a substantial stake—40 percent according to some sources—of Alibaba.com. While that is not a controlling share, it is still influential. Yahoo.com has not returned calls from our fellow campaigners either. Then, there is Discovery Channel, which just ran another round of its Shark Week series. Here, at *X-RAY MAG*, we have been told that the contributed documentaries in this series have been edited—some would say sanitised—removing any references to the shark finning issue and the peril the species are now placed due to it. So much for "documentaries"! Why go the extra lengths to hide the facts, I would like to know. Why don't the corporations seem to care? What if there was the panda who had its paws cut off, dried and sold by thousands on their portals? *Talk about bad press!*

On the following page, you will find an example of what you can do to help. It is an open letter written to the president of Equador by a fellow concerned diver and dive professional, Dominick Macan of Dive Advice. In it, is an appeal to the government of Equador to renew a ban they have recently lifted on shark fishing in Galapagos in order to halt the new boom in shark finning that has found new grounds in this region due to the rich resource of sharks in this once protected area. (See *X-RAY MAG* Galapagos / Equador issue no. 13).

Add your voice to the plea and let government leaders around the world know where you stand on the issue. Sheer numbers of voices joined on an issue puts pressure on politicians to change policy and renew protections. No one wants a bad rap... let's not let it be the sharks who lose.

—Peter Symes

Open Letter

Sir Rafael Correa Delgado, PhD
President of the Republic of Ecuador
Quito.

Your Excellency,

In recent weeks, I have become increasingly aware of media reports in the world press regarding the Ecuadorian Government's lifting of a ban on the commercial fishing and exportation of shark fins in Galapagos.

My understanding is that there has been a regulation in place since October 2004 (decree 2130) which prohibited the fishing, commercialization and exportation of sharks and any of its parts in Galapagos and mainland Ecuador.

Despite that regulation, a small black market trade in "Shark Finning" continued, but it was illegal and punishable when caught.

The new government regulation, (introduced by the Government of July 30, 2007), totally lifts that ban and allows fishermen free reign to catch as many sharks as they wish, remove their fins and throwing the dying carcasses back into the ocean, without fear of punishment or retribution. In fact, it becomes their most profitable income source as they are allowed to keep the fins and export them, as long as they claim they caught the sharks by "accident".

It seems that in a week, over two tons of shark fins have been seized and then released back to the fishermen. The foreign traffickers of the fins have then exported the fins at immense profits – most of the monies going overseas and not benefiting the fishermen at all.

We understand the Government of Ecuador must play a decisive role in assisting its citizens to make a living and provide them with the means and the tools to do so, but does it not also have a more important obligation to lead them in their everyday struggle by providing them with the infrastructure and laws to make that living sustainable in the long term?

The removal of this ban on "Shark Finning" will possibly do more damage to the future of the fishermen, and the sustainability of Galapagos as a "Golden Egg", for the people of Ecuador than any other single act.

Sharks play a major role in nature's natural balance, and the Galapagos has been renowned for its shark population for many years, which is precisely why the traffickers have identified it as a major resource for fins.

Sharks are REALLY threatened and "Finning" promotes the wild and inhuman hunting of sharks, forcing the fishermen towards an unsustainable future, with short term gains leading to long term poverty. A living shark represents more value than the cost of the fins from a dead one.

You, Mr President, are better equipped than anyone to understand how immensely important this issue is, and with your help, to implement a development plan which gives the fishermen a new economy by profiting from a living ocean in a sustainable manner.

The international community is ready to lend a hand to your actions.

Mr. President… the future survival of sharks in Galapagos is in your hands.

— Dominick Macan / DIVE ADVICE

OCT 31 – NOV 3, 2007

EXPLORE

WWW.DEMASHOW.COM

DEMA Show 2007 is the ONLY international trade event for diving, adventure travel and action water sports professionals — creating an exclusive environment focused on addressing every possible need you have as a dive retailer or instructor.

Business: Connect with more than 700 companies gathered in one global marketplace — see, demo and buy virtually every product, service and technology your business needs to stay competitive.

Pleasure: Have fun while networking with more than 11,500 total attendees during the show and at the industry's biggest social event, the DEMA Awards Party.

Education: Participate in on-target, practical training designed to help you stay abreast of changing technology and find new ways to boost your bottom line.

Diving: Discover programs that support the growth of the dive industry and your business, including Ships to Reefs and DEMA's Diver Acquisition Project.

DEMA SHOW

Orange County Convention Center
Orlando, Florida

INFO@DEMASHOW.COM

+1.703.683.8500

Take advantage of this golden opportunity, make plans to attend or exhibit at DEMA Show 2007.
Visit www.demashow.com for more information.

PETER SYMES

NEWS

News edited by Peter Symes & Catherine GS Lim

Electric Fish Conduct Electric Duets in Aquatic Courtship

Cornell researchers have discovered that in the battle of the sexes, African electric fish couples not only use specific electrical signals to court but also engage in a sort of dueling "electric duet." The study is the first to compare electrical and behavioral displays in breeding and nonbreeding *Brienomyrus brachyistius*, a type of mormyrid electric fish, which emit weak electric fields from a battery-like organ in their tails to sense their surroundings and communicate their species, sex and social status with other fish. It is also the first study to successfully sort signals in electric fish based on sex. ■

SOURCE: JOURNAL OF EXPERIMENTAL BIOLOGY

Exploited reef fish recover ...*slowly*

In the longest running study focusing on how reef fish populations recover from heavy exploitation, researchers from the Wildlife Conservation Society found fish can recover, but sometimes need decades to do so.

The study involved nearly 37 years of continuous data from four marine parks off the coast of Kenya that were closed to fishing at different times. Researchers found commercially important species, such as surgeonfish, can take a quarter of a century to recover.

More importantly, researchers said the ecological equilibrium needed for a healthy reef system, which relies on the interplay of many fish, invertebrate and plant species, takes even longer to achieve. ■

SOURCE: ECOLOGICAL APPLICATIONS

Fish get emotional too

"Especially for animals that have to cope with many predators, it is an advantage if they can use one hemisphere to keep an eye on predators while they use the other hemisphere to do other things."
—Culum Brown

Have you ever heard of a fish being undecided? Or thought of them as having emotions? Perhaps not. Well, now it turns out that fish, like humans, process information—and perhaps emotions—on different sides of the brain.

It has long been established that fish exhibit similar reactions to stress as humans do, such as releasing adrenaline into the bloodstream and other physiological reactions, when under duress. This has been taken as circumstantial evidence that they also feel at least fear and anxiety.

Now, additional findings lends further credence to the notion that fish do indeed possess emotions and harbour thought processes. It turns out that fish growing up in the wild among predators use their left eye to look at novel objects, while their offspring raised in captivity use the right eye.

Culum Brown, now at Macquarie University in Sydney, Australia and his team caught bishop fish (*Brachyraphis episcopi*) from areas with high and low predation rates in Panama. The team bred the fish in the lab and then tested the behaviour of both the wild parents and their offspring. Fish swam towards a slatted barrier through which they could see either a novel object (a yellow cross), nothing or another bishop fish. They could then swim past the barrier either to the left or to the right. Exiting to the left meant the fish had kept its right eye on the barrier, and vice versa.

Neither fish from areas of low predation nor their young showed much of a preference for a left or right exit, suggesting their brains were not very lateralised. However, fish that had to deal with a lot of predators in the wild favoured one eye, as did their lab-born offspring.

This clearly suggests that life experiences can affect which side of the brain fish use and even that they have emotional mind sets, since different sides of the brain may correspond to a curious or suspicious attitude.

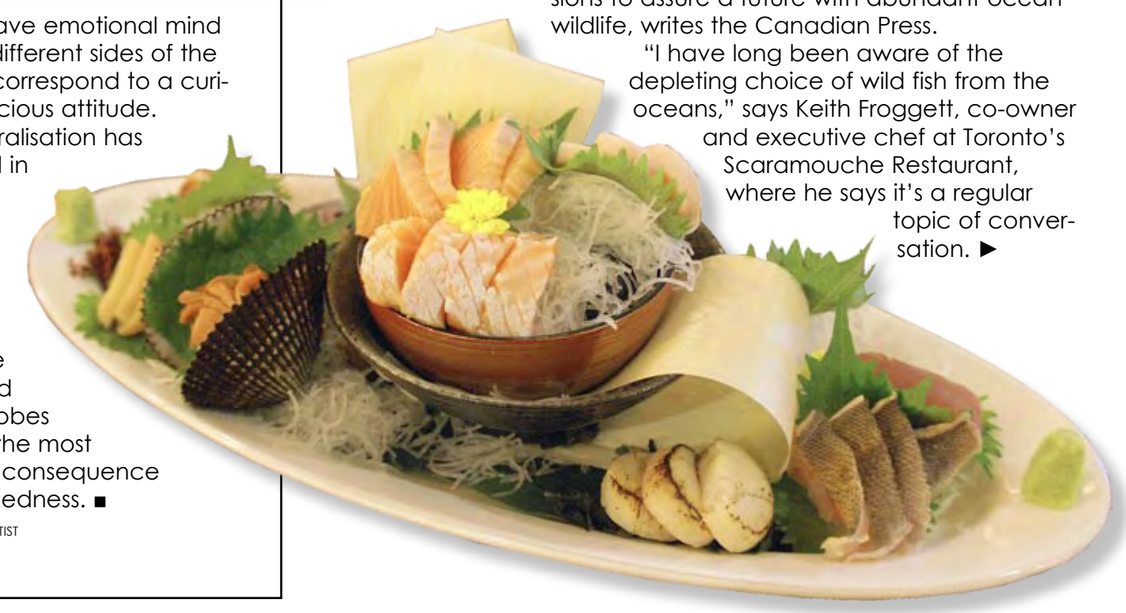
Brain lateralisation has been found in an increasing number of other species in recent years. Humans use their left and right brain lobes differently, the most well-known consequence being handedness. ■

SOURCE: NEW SCIENTIST

Endangered fish stocks spur Canadian chefs to change menus

The depletion of fish stocks around the world has Canadian top chefs arming themselves with the tools needed to make informed decisions to assure a future with abundant ocean wildlife, writes the Canadian Press.

"I have long been aware of the depleting choice of wild fish from the oceans," says Keith Froggett, co-owner and executive chef at Toronto's Scaramouche Restaurant, where he says it's a regular topic of conversation. ►



Dive
Embracing China
CHINA DIVE EXHIBITION 2007
25-27 AUGUST · BEIJING
CHINA WORLD EXHIBITION HALL
CDEX2007
www.chinadiveexhibition.com
Come and join us at CDEX07
in the coming Olympic City - Beijing,
and get a feel of the world's largest emerging diving market!
For ticket booking and detailed information,
please visit www.chinadiveexhibition.com.

Plan to cull cownose rays could backfire

As reported in the previous issue of *X-RAY MAG*, the depletion of sharks as controlling predators along the US east coast have led to a surge of cownose rays that feed on the commercially important oyster.

Tales of cownose rays ravaging oyster restoration sites, as well as some underwater grass revegetation projects, have become so common that plans are in the works to turn the tables on them—by putting them on the table. By creating a food market for rays—and therefore a fishery—some fishery managers hope to cull the ray population. However, it is controversial, as the rays' slow reproduction makes them particularly vulnerable.

In Virginia, where the rays are most plentiful in the Bay, some consider them to be a more formidable obstacle to oyster restoration than the diseases that plague the shellfish.

Last year, when scientists planted 750,000 oysters on a large reef in the Piankatank River, they thought it might prove to be a model for future large-scale restoration efforts. *Cownose rays, on the other hand, thought of the oysters lying exposed on top of the reef as lunch.* A school of rays descended on the reef and in a matter of days, virtually no oysters were left.

The rays are not only an impediment to restoration, but also to aquaculture and many oyster growers worry their investment will be wiped out by rays. But Dean Grubbs, program manager of the Shark Ecology Program at the Virginia Institute of Marine Science, called efforts to create a fishery "a really bad idea."

If humans develop a taste for cownose rays, they say, it could result in taking too big of a bite out of the ray populations.

Rays are slow-maturing fish: Females don't reproduce until they are seven or eight years old, and males are typically six or seven. Furthermore, females produce just one live pup per year. That, combined with the late maturity rate, is a recipe for overfishing, says Grubbs. ■

► But as Froggett experienced, even when you think you're doing the right thing, you may still be hurting the environment. Last year, for example, he was using organically raised farmed salmon from the West Coast on his menus.

"We got a call from the Monterey Bay Aquarium pointing out that they were having some difficulties with the impact that these farms were having on the environment," he explains.

The aquarium, based in Monterey, California aims to inspire conservation of the oceans through education and its **Seafood Watch guides**, which pinpoint fish to avoid or that are a better choice.

The chef immediately discontinued using that product, turning instead to a sea cod farm in the Shetland Islands. ■

Read more about Seafood Watch guides here (**link**)

news

Edited by
Peter Symes

Coral Reefs Decline Faster Than Anticipated

Coral reefs in the Pacific and Indian oceans are disappearing faster than had previously been thought, a scientific study has shown.

Nearly 1,554 sq km (600 sq miles) of reef have disappeared each year since the 1960s—twice the speed at which rainforest is being lost.

The corals are vanishing at a rate of 1 percent per year, a decline that has begun decades earlier than expected.

Details of the survey appear in the journal Plos One. ■

New Report Finds 80 Percent Loss of Coastal Marine Habitats in Europe

A new study published in the Annual Review of Oceanography and Marine Biology examines the drastic decline of coastal marine habitats across Europe and calls for regulatory changes to improve their protection. "The magnitude of habitat loss is alarming and today, less than 15 percent of coastal European habitats are considered to be in good condition," said lead author Mike Beck and marine scientist at The Nature Conservancy. ■

Countries Reverse Decision to Protect Precious Red Corals

Scientists, conservationists and many government officials expressed outrage when a proposal to protect precious red corals from international trade was reversed on June 15.

Delegates voted by secret ballot to overturn their initial decision to list these overfished species under the Convention on International Trade in Endangered Species (CITES), following a massive lobbying effort by the coral industry and some exporting countries. The proposal initially passed, with 62 countries voting in support of the listing.

Scientists have long called for trade protection for red corals. Red corals are among the world's most valuable wildlife commodities, with a finished necklace retailing for up to US$20,000. But destructive fishing methods and over-harvesting means global red coral catches have plummeted by 90 percent in the past two decades.

The move to reopen the red coral debate on Friday was instigated by Tunisia and seconded by Algeria and Morocco, all coral exporting countries. A secret ballot was requested and despite the proposal receiving support from the majority of delegates present, it fell short of the required two-thirds majority needed for a CITES listing.

"Over the past twenty years, overfishing of red coral has put these animals at great risk. A CITES listing would have helped safeguard the species as well as the coral industry.

Dr. Andy Bruckner, a NOAA scientist and the author of the U.S. proposal to list Corallium, said the outcome was shocking: "Over the past twenty years, overfishing of red coral has put these animals at great risk. A CITES listing would have helped safeguard the species as well as the coral industry. Effective conservation for red coral now requires cooperation by range states to implement appropriate domestic measures, to ensure the survival of these species." ■

SOURCE: SCIENCENOW DAILY NEWS

Precious coral or red coral is the common name given to *Corallium rubrum* and several related species of marine coral. The distinguishing characteristic of precious corals is their durable and intensely colored red skeleton, which is used for making jewelry.

Red corals grow on rocky seabottom with low sedimentation, typically in dark environments—either in the depths or in dark caverns or crevices. The original species, *C. rubrum*, is found mainly in the Mediterranean Sea. It grows at depths from ten to 300m, although the shallower of these habitats have been largely depleted by harvesting. ■

Red Coral Necklace as displayed on www.germes-online.com

news

Edited by
Peter Symes

China Criticizes Japan for Planting Coral Around Tiny Pacific Reef in Spat Over Territory

China has criticized the Japanese government for planting coral around the uninhabited Pacific atoll of Okinotori—an uninhabited reef some 1,740 km south of Tokyo.

"This action does not accord with recognized international conventions and affects the interests of other countries," said spokesman for the Chinese Foreign Ministry, Qin Gang. According to the United Nations Convention on the Law of the Sea, Okinotori does not have an exclusive economic zone or continental shelf, said Qin. "Okinotori is not an island but a reef which is submerged at high tides,"

Japanese officials said they had begun planting coral on Okinotori in a four-million-dollar project to defend its territory. ■ SOURCE: XINHUA

300 year old coral found off Japanese coast

A huge coral mound thought to be about 300 years old has been found off the coast of Azuchi-Oshima Island near Hirado at a depth of about ten meters. The *Stylocoeniella guentheri* coral mound is 3.8 meters long, 3 meters wide and 1.3 meters tall.

Satoshi Nojima, an associate professor in Kyushu University's Amakusa Marine Biological Laboratory who is familiar with corals, said the mound was probably one of the largest in Japan. The coral grows only about five millimeters per year. The biggest previously known specimen found off the coast of Amakusa, Kumamoto Prefecture, measured about 50 centimeters. *Stylocoeniella guentheri* coral is found around Japan and places such as the Philippines and Taiwan. It grows into a round shape with parts of the coral forming branches or rods. ■

Oil clean-up chemicals harmful to corals

The chemicals used to clean up marine oil spills may be much more harmful to the coral than the oil itself, researchers at Israel's National Institute of Oceanography in Haifa have uncovered. The findings suggest that spill-recovery crews should physically try to contain spills that occur near coral reefs, or allow the oil to degrade naturally, rather than dumping cleanup chemicals in their vicinity.

Oil cleanup chemicals known as dispersants work by breaking up oil slicks into tiny droplets. They are sometimes dumped near coral colonies, many of which are located along the world's coastal areas where oil production and transportation activities are conducted. To test the effect of the dispersants on coral, the team exposed nubbins, or small branch clippings to solutions of six commonly used chemical dispersants for 24 hours, and then monitored the nubbins' health for seven days.

The experiments produced dramatic results: Nearly all of the coral nubbins died after exposure to mixtures of dispersants and oil. Dispersants alone killed up to two-thirds of the coral clippings, whereas oil alone produced no abnormal mortality. ■

SOURCE: ENVIRONMENTAL SCIENCE & TECHNOLOGY

Coral 'shuffle' helps reefs survive global warming

Corals on Australia's Great Barrier Reef might be able to survive warming sea temperatures, geneticists the Australian Institute of Marine Science have found. The scientists have found that many corals store several types of algae, which can improve their capacity to cope with warmer water as some coral algae are more heat tolerant.

"This work shatters the popular view that only a small percentage of corals have the potential to respond to warmer conditions by shuffling live-in algal partners," said institute marine scientist Madeleine van Oppen. "Simply, when conditions warm the more heat-tolerant algae provide back-up, become more abundant. Some algal types impart greater resistance to environmental extremes".

The Australian scientists said their study had found that coral has the ability to "shuffle" the algae, maximising nutrients depending on water temperature. This ability may also explain why coral reefs have been able to survive for thousands of years during various climate changes.

The Australian scientists discovered heat-resistant algae by examining the DNA of different types of coral.

They said their study had found that coral has the ability to "shuffle" the algae, maximising nutrients depending on water temperature.

But many marine scientists have argued that "back-up" algae were infrequent because of the small number of corals that were shown to host several types of algae. ■

Bug is killing Britain's rare coral

The cause of a mystery disease that is killing off rare pink sea fans on the south-west coast of Britain has been identified by marine biologists from the University of Plymouth. A species of bacteria known as *Vibrio splendidus* is killing the cold-water corals by producing enzymes that attack their tissue. Some scientists suspect that the disease may be linked to higher water temperatures which stress the corals and reduce their natural resistance, or help harmful bacteria to thrive. ■

Pink sea fan. This specimen was photographed in the Gulf of Alaska by NOAA

NOAA

Algae blooms as seen from a satellite

Firm Wants to Fertilise Ocean with Iron to Counter Global Warming

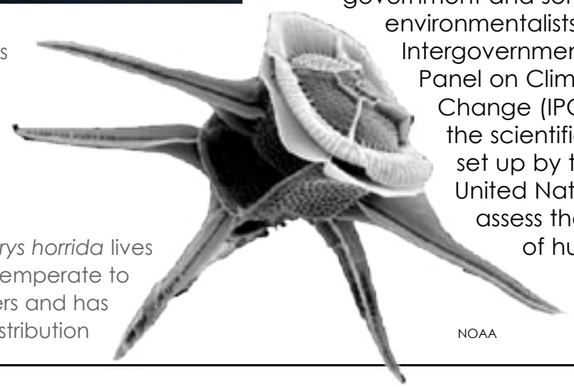
The US based company Planktos believes "ocean fertilisation" may be a way to mitigate the climate changes driven by human-produced greenhouse gases. It plans to deposit iron particles in the sea in the hope CO_2-absorbing plankton blooms will form.

Research shows that seeding the oceans with iron can create favourable nutrient conditions for plankton.

But the proposal by California-based Planktos to deposit 100 tonnes of iron ore powder in a 100 square kilometer area of ocean hundreds of kilometres west of the Galapagos Islands has drawn concern from the US government and some environmentalists. The Intergovernmental Panel on Climate Change (IPCC), the scientific body set up by the United Nations to assess the risk of human-induced climate change, says it regards the process as "unproven".

In its Working Group Three report, released this year, it said: "Geo-engineering options, such as ocean fertilisation to remove CO_2 directly from the atmosphere, or blocking sunlight by bringing material into the upper atmosphere, remain largely speculative and unproven, and with the risk of unknown side-effects."

Russ George, president and chief executive of Planktos counters: "This is work that must be done if we are to reverse the apocalyptic collapse of the ocean ecosystem as well as the climate crisis it is helping to accelerate. We are the first responders to a planetary medical emergency." ■



Ceratocorys horrida lives in warm temperate to tropical waters and has worldwide distribution

NOAA

The Clearest Ocean Waters on Earth is Found in the Pacific

As clear as the clearest lakes on the planet, salty as ocean waters, and roughly the size of the Mediterranean—this, say researchers, is the clearest and most lifeless patch of ocean in the world. And it is in the middle of the Pacific.

"Satellite images that track the amount of chlorophyll in ocean waters suggested that this was one of the most life-poor systems on Earth," explains Patrick Raimbault of the University of the Mediterranean, in Marseille, France.

In October 2004, Raimbault and colleagues set out to study the remarkable patch of ocean water on a three month cruise—called BIOSOPE—that left from Tahiti in French Polynesia, passed by Easter Island and ended on the Chilean coast. Along the way, they sampled the water's chemistry, physics and biology.

Marc Tedetti, also from the University of the Mediterranean, was on the expedition to investigate the water's clarity. He was struck by the colour of the water, which he describes as closer to violet than to blue. ■

SOURCE: NEW SCIENTIST

aquatours
ADVENTURES FOR THINKING DIVERS

NAUI WORLDWIDE
DIVE SAFETY THROUGH EDUCATION

News & Press Releases from NAUI

Are you living the "JUST DIVE®" lifestyle… full of diving adventure and exploration?

Photo Competition—last call for entries

As part of our "JUST DIVE® 2007" promotion, NAUI is still accepting photo entries from photographers of all ages, skill levels and backgrounds for its "JUST DIVE®" photo contest.

NAUI wants to see you in action. Show us your favorite diving spot, underwater moment or diving adventure and you could win. If your photo wins, it will be featured on the cover of NAUI's Sources Magazine! You can also win other great prizes such as:

- Four tickets to dive in Walt Disney World ® Resorts "The Seas" attraction at EPCOT® during the 2007 industry trade show in Orlando
- Free stay at a tropical destination and diving
- Free scuba course
- Free scuba equipment

FILE PHOTO: NIKON

Deadline

Photo contest submission deadline is September 10, 2007—you still have time to start diving and show us your "JUST DIVE® "moments to win!

Click here for contest guidelines **www.naui.org/justdive.php**.
For questions please email **justdivephotocontest@naui.org**.

NAUI Europe becomes CE and ISO certified

During the recent meetings at the Europeans Underwater Federation's (E.U.F.) meeting at PADI Internationals HQ in Bristol, UK, NAUI received the ISO and CE certifications on all levels.

Mark Caney, president of the EUF and president of PADI International proudly presented the official certificate to Dick Lucas, CEO of NAUI Europe. This step forward will help the dive industry in professionalizing and serve the dive industry on a higher level. ■

Peter Jonas Ö.N. | Dick Lucas CEO, NAUI Europe | Peter Caney PADI

Edited by
Peter Symes

Michael Portelly has died

We have lost a great friend of the ocean and very good colleague. When the news arrived that Michael Portelly passed away on July 5, it was as if the sky clouded over and birds stopped singing. He was only 55.

Michael Portelly was a true gentleman and a pioneer underwater filmmaker. Almost three decades ago, he produced the groundbraking *Ocean's Daughter*, which even in this digital day and age is astounding to watch. In my humble opinion, it was for underwater cinematography what Kubrick's *2001: A Space Oddyssey* was for science fiction. It was a masterpiece that has held its own against time and led the way for following generations.

Michael Portelly was a visionary in more than one sense. About the movie, he said that he tried to add a voice to the growing calls to protect our planetary future. "It was a film that tried to express the sacredness of life and the magical beauty of nature and the fact that we, as humans, were in danger of destroying ourselves, before we had the chance to evolve into mature adulthood as a species."

This was three decades before global warming and coral bleaching became household words. At the underwater festival in Antibes five years ago, he voiced an idea to marine architect Jacques Rougerie and Andre Laban, the famous diving legend of Cousteau fame—an idea that could really make a difference. It was called the Blu Revolution and is designed to breath life back into the oceans, create new habitats and revitalize fishing communities around the globe in an attempt to preserve our ocean heritage and restore it as a source of food to feed the hungry.

He envisaged persuading the United Nations—guided by a scientific council—to initiate a global program to restore life to the oceans, to construct artificial reefs in suitable materials that could provide work for idle fishing fleets and create a new global industry designed to reverse the destruction as well as provide a haven for wildlife to flourish.

Being diagnosed with incurable cancer in 2001, he relentlessly fought for the idea and outlived his prognosis by years. At the time of his death, he was also planning another film tilted strongly toward conservation issues, while serving as an editor on several dive publications including this one, Ocean Realm and Diver in UK. He is survived by two sisters and two brothers. Michael Portelly will be missed by many. ■

Michael Portelly will be remembered mostly for The Ocean's Daughter, his 1980 elegy to the beauty of the sea

It would be tragic indeed, if future generations were forced to live under inhospitable planetary conditions and never witness the wonders of nature we have experienced, except by watching the films from our era. They would be like the visual fossil record of what once was but is forever gone.
— Michael Portelly

2nd Malaysia International Dive Expo (MIDE)

Pretty good, actually

Text and photos by Peter Symes

Kuala Lumpur, Malaysia – MIDE was a pleasant surprise. To be honest, at first I didn't feel like going at all. Perhaps I was suffering a bit from dive expo-itis, an occupational hazard being a dive mag editor after attending a long series of dive shows recently, and they were not always that exciting. There, now I said it. So, my expectations were quite modest when I arrived in Kuala Lumpur. But my mood was soon to change. I've got to hand it to the organisers for putting on a surprisingly good show. Granted, there were still a few teething problems, but to be fair—as the show is only in its second year—it was very well organised and surprisingly well visited. In fact, the aisles were soon packed with an inquisitive audience eager to suck up information about diving, which made it so much more energetic and vibrant than many of the often quite tired European shows. The local audience is also clearly younger than its western counterparts while seemingly not lagging behind when it comes to disposable income. Also, the audience seems a lot more polite and genuinely interested in what's on offer than the grumpy-sceptic Europeans. The show venue was okay, too. Not great, but fine for the job, and located conveniently in downtown KL with easy access both by public transportation and by car (are you listening ADEX organisers?). Also, the adjacent hotels were just a great value for the money—five star quality for around €60/$80 a night is not bad and the food was splendid. MIDE seemed to be well marketed, too. I saw several posters hanging around in the cityscape and along the freeways leading into town, and the fact that it had free admission surely didn't hurt either. Where the expo was somewhat lacking, was in the department of seminars, presentations, movies and the like. It was virtually non-existent this year. but the organisers informed me that they will include such activities next year. So. whom is this show good for? Definitely local divers keen on assimilating some info. There weren't many equipment manufacturers or distributors there, but lots of resorts. So, if you are coming from overseas, it would be a bit much to go to KL for the show's sake. But, if you are in the city anyway—on a layover or passing through—it is definitely worthwhile to visit, especially next year when they say that there will be more entertainment.

For manufacturers of dive equipment, I suspect it would definitely be worthwhile a go, since MIDE clearly has a substantial audience to offer. As for ourselves, would we return next year? Definitely! ■

Tioman Megadive

Too much Disco Too little Diving

Text by Peter Symes
Photos by Gunilld and Peter Symes

There is something dreamy about Tioman. It's lush appearance and slopes of dense jungle strutting right out of the South China sea encircled by bounty land beaches is easy to associate with Hollywood, perhaps not a coincidence since the movie classic Bali Hai was shot here. When I think back it is with mixed emotions and hazy memories too. I am tempted to say, the best moments were all the great massages to which I treated myself while at the resort.

I am afraid that I picked up an expensive habit there but getting all those hard marbles kneaded out of my aching back and shoulders was priceless. More on that later...

Tioman was the final leg on our mini-trip to Malaysia that also took us to Kuala Lumpur and the successful MIDE expo there. We have arrived to look over the Tioman Megadive event. It was set to be the biggest annual gathering of diving enthusiasts in the Asia Pacific region and was given plenty of marketing as such.

It was a four day diving festival for divers from all over the world and was packed with events and activities. One of the main highlights was the treasure hunt where participating divers were dared to locate ten treasure chests hidden somewhere among the dive spots of Tioman. The lucky finders would then win prizes—various diving equipment—dictated by numbers hidden in the chests. The event also hosted an underwater photography contest and underwater wedding held in "traditional Malay" style at the marine park. There was a Crown-of-Thorns eradication program in which visiting divers could partake. A photo-workshop with author Mathieu Meur was also on the agenda, which was rounded off by a big beach party at the end.

MATHIEU MEUR

The underwater wedding ceremony was held in traditional Malay style

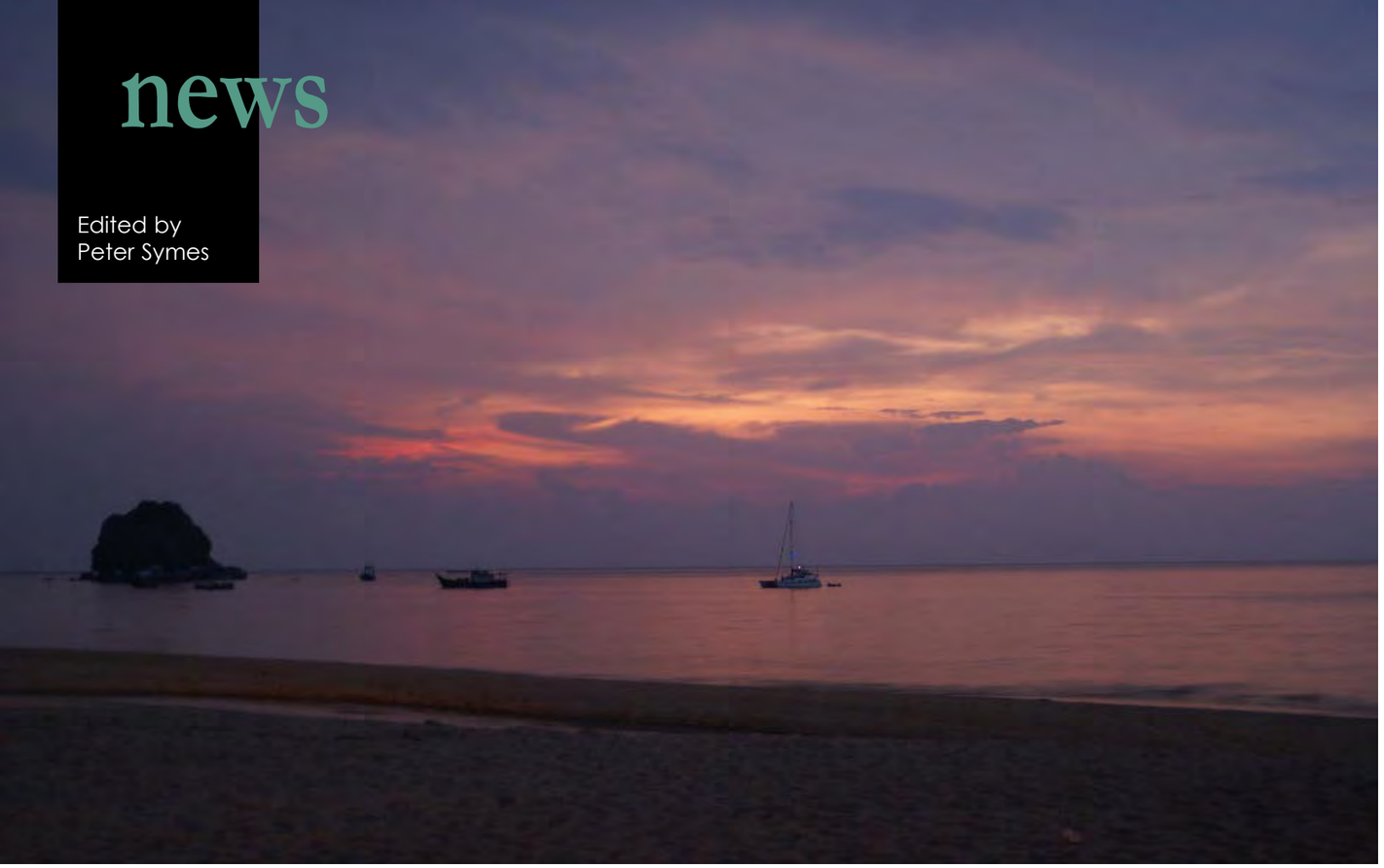
Obviously, a lot of admirable good intentions and lots of planning had gone into staging an event of this size. But that only makes it all the more painful to report that the implementation was, in large parts, woefully inadequate. Too many things didn't work as planned or didn't happen at all. For example, the one-couple wedding arrangement was almost cancelled, and when it did happen, it was confusing and marred by terrible visibility, which clouded the ceremonial scene for most of the attending photographers.

Single events such as having to attend the opening of the Crown-of-Thorns campaign bothered me, too. We had to sit on plastic chairs on a lawn under the scorching sun to listen to a series of long-winded speeches by some officials who were, incidentially, comfortably seated in sofas in the shadow. That they also kept us waiting for half an hour frying in the sun first did little to ease the sense of aggravation. I wanted to go check out the diving, and my time was both limited and precious.

As to the diving, I came with certain expectations since the island was marketed as hav-

news

Edited by
Peter Symes



ABOVE TOP: Gorgeous sunset at Berjaya Tioman Beach, Golf & Spa Resort. BOTTOM: Malaysia's national troupe of dancers entertain the audience at Tioman Mega Dive

ing crystal clear water. So, I was looking forward to getting a little wet as a highlight of the trip. But the visibility was plainly horrible and anything but crystal clear— "soup" came to mind. I hardly saw any fish, and for possibly the first time ever, I came out of the water with film to spare. To be fair, Mathieu Meur later relayed to me that the visibility was usually quite good, and that this was the worst he had seen it on the many occasions he had come here. So, take his word for it, not mine.

The accommodation was decent but oversold when compared to how it was presented on the resort's website, which I checked out prior to trip. On the website, it all looked very appealing. The Berjaya resort holds five stars, and to me that denotes the best of standards, absolute luxury and attention to detail. Y'know... big fancy bathrooms and such. But I found our room pretty run

Endless beach parties stretch on and on into the night on Tioman

down, with faded paint and no bath tub but a shower with plastic handles, cracked floor tiles and a water heater you must switch on manually. What was all that about? According to the room plans on their website every single room, regardless of standard and booking class, should have a bath tub. I have a problem with that. At home, I can live with a shower, but on my holiday, I want to soak in a tub. There was no internet access in the room either, which we were promised.

In our room, I felt more like I was staying at a two to three star hotel. Which can be fine, if that is what you expect and pay for. I have been in primitive lodges deep in the jungle and felt positively surprised and pleased. This was the opposite experience.

With the beach right outside our door and a great combined swimming pool with water slides and other toys, it appeared, however, to me to be a superb place for families with kids. The kids have a great place and can run free without getting in harm's way,

A local enjoys a moment of repose on the beach at Tioman

A wild monkey inspects the resort grounds

Tropical flowers float in a basket of greenery on the steps of the Ayura Spa at Berjaya Tioman Beach, Golf and Spa Resort

so the parents can relax—a gift sent from the gods. For the slightly older kids, there is also a big arcade games room that can keep them busy for hours on end. The restaurants all open up towards the sea or sit on the beach facing the sunset. The beach is also good, not for diving perhaps, but the cove is sheltered and shallow and the bottom sandy. It is great for swimming and for playing water games. ■

Beach parties... beach parties... and more beach parties...

Local fishermen enjoy a moment of leisure on the deck of their boat

A performer with the national troupe of dancers wows the crowd on Tioman. The group represents Malaysia by bringing the Malaysian spirit through dance to the rest of the world

EDITOR'S NOTE: THE CONTENT OF THIS ARTICLE, AND ANY SERVICES CONTAINED HEREIN, IS NOT INTENDED TO, AND DOES NOT, PROVIDE MEDICAL ADVICE, DIAGNOSIS, OR TREATMENT

Scuba & Spa

Tioman's Ayura Spa

Text by Gunild Symes
Photos by Gunild and Peter Symes

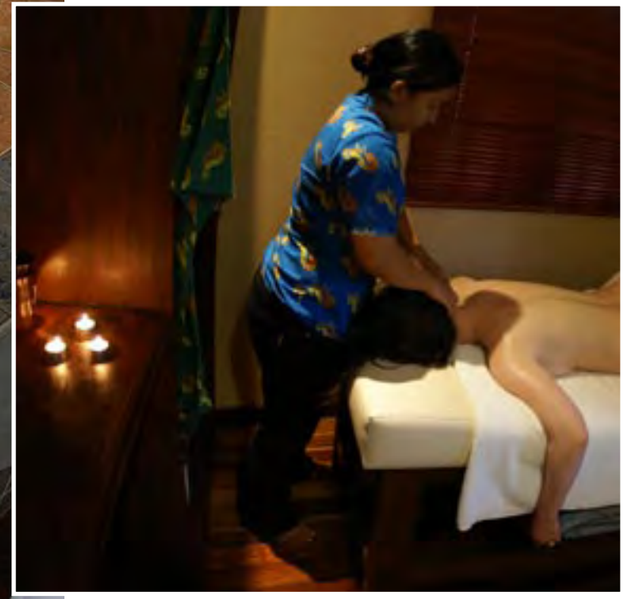
Lifting tanks and hefting dive gear in and out of the water can lead to tired, weary, stressed-out muscles and fatigue. Diving itself can strain muscle groups not necessarily used in the same way up on land. What better way to pass the time between dives, than enjoying a full body massage? It's the answer to an aching back and sore muscles, and gets you ready for your next day of diving.

Traveling divers often suffer from jet lag and are exposed to all sorts of toxic fumes from jet fuel on poorly maintained airplanes to noxious diesel smoke from dive boat engines, all of which add to the total toxic load accumulating in our bodies. Not to mention, divers' skin and hair take a beating under the sun, wind and sea. Salt encrusted and dehydrated skin can crack and burn more easily. The good news is that divers who are environmentalists as well as fitness and health enthusiasts can enjoy a great array of natural, organic, traditional and medicinal body treatments, massages, wraps and facial treatments that detoxify and rejuvenate the body, mind and soul, re-hydrate cells and bring life back into tired skin and muscles.

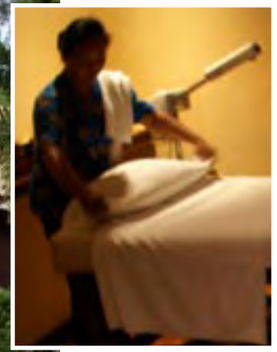
Athletic types who need a more macho excuse for a physical workup can refer to the sports massage as an important and effective tool toward peak performance of the athlete underwater. It works well for world-class footballers and other peak performance athletes on land, so why not divers underwater?

There are many kinds of massage techniques today, developed from traditional sources to sports medicine. Every country around the world has its own style. Asia is well-known to carry a number of popular massage techniques. Traditional Malaysian massage, complete with its own secret handmade recipes for massage oils, facial masks and aromatherapy, is a form of massage that is new to most Westerners. In Malaysia, it is only offered at the luxurious Ayura Spa of the Berjaya Tioman Beach, Golf & Spa Resort on Tioman Island. The resort has only just introduced the special Malaysian form of massage recently to accompany other more commonly known massage techniques available such as Japanese Shiatsu, Thai and Indonesian massage.

The traditional Malaysian preparations for body oils, facial masks, cleansers and moisturizers are all natural recipes using soothing and deep cleansing lemon grass, ginger and jasmine. Traditional Malaysian massage techniques are passed down through the generations from grandmother to daughter to granddaughter and employ several different techniques for various effects including deep tissue massage with acupressure as well as rhythmic circular motions to reach the sorest areas and induce healthy circulation to wash out toxins that build up with exertion and exercise.



LEFT: Floating tropical flowers fill an aromatherapy tub. INSET: An Indonesian masseuse works out the knots with expert hands



LEFT TO RIGHT: Outdoor jacuzzi and inner sanctum of Ayura Spa; Chilled, fresh ginger tea served on deck; Preparing the massage table for the next client

Ayura Spa

The Ayura Spa, managed by a warm and welcoming Malaysian matron, offers 60 to 90-minute massages including heated poultices of aromatic herbs and spices placed upon meridian points along the body to ease joint pains and invigorate sore muscles. Blood circulation is enhanced and stiffness and tension is relieved in the one-hour long deep tissue massage which makes jet lag literally vanish over-night. Relaxing, airy, mystical music of flute, chimes and ocean waves is piped into the comfortable candle lit massage rooms filled with the sweet fragrances of tropical flowers and spices. After your massage, you can lounge by the outdoor pool located in the sculptural Asian garden of the spa or soak in the pool's bubbling jacuzzi under rustling bamboo trees and gently swaying palms.

Best of all, the price of each massage at the Ayura Spa is a steal compared to the regular rates of luxury spas at other resorts. For just 160 ringgits, that's just 52 USD or 45 EUR, you can get a full body deep tissue massage for 60 minutes. The price is so economical that some guests come to the resort just for the treatments. Many guests will reserve ten packages of massages, wraps and facials over a period of ten days. When one looks at the inflated costs of health care today, it is certainly a tempting if unorthodox alternative to consider. It cannot replace conventional care, but it might add to good living. I would much rather spend a couple thousand dollars at a spa of a resort that also had diving and snorkeling, delicious local cuisine and treks into the rainforest, than sit under fluorescent lights in a clinic's office and pay out the nose for treatments that either don't work, or offer very little lasting benefit and pain relief, and contribute absolutely no joy to the spirit whatsoever.

The Massage

A year's worth of corporate stress-induced frown lines were erased from my face after two hours on the table under the careful and expert hands of my masseuse from Indonesia—a member of the local community of developing Tioman Island. The treatment she gave me was a full body deep tissue massage with natural aromatic oils. She used rhythmic and circular palm movements over muscles with gentle firm finger pressure on acupressure points throughout the body working deep into tense muscles, especially my knotted calf muscles, rolling marbles out of my shoulders and in between my shoulder blades, neck and lower spine.

After the deep tissue massage and an Ayura Spa special facial, which included stress relieving micro-massage around the jaw, forehead and eyes, several layers and applications of natural gels and oils, an exfoliating mask, steam mist and a finishing moisturizer, the heavy lead-like feeling of fatigue was washed away, my mind was clear and void of worry, and my previously aching joints felt joyously painless.

After the treatment, the staff served us a fragrant chilled floral ginger tea in traditional clay pottery by the pool. We were advised to drink lots of fluids after the massage in order to wash out the toxins and also to wait an hour before taking a shower. According to the masseuse, one's blood circulation needed that amount of time to return to harmony before being exposed to cooler temperatures.

A word of warning, the full body massage is exactly that, so women who are squeamish about having their mammary glands handled better speak up before the massage. Then the masseuse will know to skip the pectoral region.

Secondly, not all massage therapists are alike. If you find one you like, be sure to request her or him for your next session. If you ask for a lighter touch, and there is no change, stop the massage or you may end up with a bad headache. Although most Malaysians are fluent in English, many Indonesians are not so fluent, so be aware of the communication gap and ask for assistance from the spa manager. Headaches may also result from a sensitivity to ingredients in aromatherapy products. Ask your doctor for advice.

In addition to full body massages, the Ayura Spa offers body wraps including a ginger sea salt scrub for detoxification and improved blood circulation; a coffee and cocoa scrub made from local coffee beans and cocoa, which exfoliates skin—awakening senses and invigorating spirit with its rich aroma; heated algae seaweed wraps detoxify, tone and purify beyond the deep layers of the skin; a boreh wrap of spices and yoghurt helps reduce water retention, muscle pain and poor circulation; and a tropical fruit wrap made of fresh papaya exfoliates and whitens skin as well as moisturizes with anti-oxidants such as vitamin A and C.

Facials are provided for all skin types from oily to dry—60 to 90 minute treatments include mask preparations made from cucumber, yoghurt and clay, banana and honey, jojoba and sweet almond oil. Treatments will purify congested skin with green clay and essential oils. For hands and feet, there are 45 to 60 minute manicures, pedicures, foot soaks, sea salt scrubs and mini massages. To spend a whole day at the spa, packages of treatments of two to four hours are available and offer a menu of body massages, facials and scrubs from which to choose.

Social responsibility

So, next time you are wondering what to do with yourself between dives, do your body and your buddy a favor… get a massage. It will help to improve your diving performance and assist the healthy balance of your body's fitness. Your mind will be clearer for the next dive, which can only be an added plus for your buddy who depends on your attentiveness in emergencies. In addition, you will be helping the local economy and the creation of jobs for the indigenous people of the region, especially women, who work hard to give you and the other guests of the resort the warm hospitality for which Asia is renown. ■

news

Edited by
Willy Volk

Flint scrapers from the hunting stone age between 8,000 and 13,000 years ago. These scrapers are from Denmark

PETER SYMES

Stone Age Settlement Found Under English Channel

Erosion on the floor of the English Channel is revealing the remains of a busy Stone Age settlement from a time when Europe and Britain were still linked by land, a team of archaeologists says.

At 8,000 years old, the settlement found just off the Isle of Wright is the only underwater Mesolithic site in Britain, though it is probably part of a much larger area of occupation yet to be uncovered,

"This is the only site of its kind in the United Kingdom. It is important because this is the period when modern people were blossoming, just coming out of the end of the Ice Age, living more like we do today in the valleys and lowlands," Garry Momber, director of the Hampshire and Wight Trust for Maritime Archaeology, which led the recent excavations told LiveScience in a interview.

As the climate began to warm up near the end of the Ice Age about 10,000 years ago, people were moving into Northern Europe and settling down in the many river valleys left behind by melting glaciers, not long before the meltwater eventually also filled in the Channel and drove the settlement's last occupants north to higher ground.

There is unequivocal evidence of human activity at the site. Burnt wood fragments gouged with cut marks and a layer of wood chippings were found lying under 35 feet of water during the latest dig.

Divers brought the material to the surface still embedded in slabs of the sea floor that were carried up in specially-designed boxes, which were then pieced back together and examined and dated in the lab.

Underwater sites better preserved

Despite the logistical problems of underwater archaeology, the Isle of Wight site and others like it are usually better preserved than their counterparts on land. When the floodwater rose slowly in the English Channel, it deposited layers of silt atop the settlement, encasing it in an oxygen-free environment that preserves even organic materials such as wood and food.

The trade-off is an environment that can carry away the precious remains at any time—a real concern at the Isle of Wight settlement.

"The erosion of this site would be a loss of information to humanity, not just the washing away of a bit of material," Momber said. "There is the potential to find so much more there and so much to learn." ■

From the excavation of the site

HAMPSHIRE AND WIGHT TRUST FOR MARITIME ARCHEOLOGY

Training bulletin

Edited by
Peter Symes

2006

DAN Medical Center Annual Diving Report

Fatalities and serious diving injuries are rare and often seem to be associated with unsafe behaviors or hazardous conditions, but they can occur without apparent cause.

Understanding the contributing factors could lead to safer diving. The primary goal of DAN's Annual Report on Decompression Illness, Diving Fatalities and Project Dive Exploration is to further this understanding. ■

Download here:
www.diversalertnetwork.org

United States, pressrelease:
FBI Issues Scuba Industry Alert Over Requests for Specialized Training, "Nefarious Activity"

The purpose of the advisory is to provide situational awareness to the scuba industry regarding behavior that may indicate an individual(s) is involved in nefarious activity.

The following threat indicators, taken in isolation, generally reflect legitimate recreational and commercial activities. In combination with other information, they can indicate possible links to criminal behavior. Please note, the below indicators are not an all inclusive list; these indicators represent a baseline that could possibly indicate suspicious behavior.

Training Indicators

Requests for specialty training, including odd inquiries that are inconsistent with recreational diving. These may include:

- Requests to dive in murky water or sewer pipes
- Inquiries about procedures such as diver towing

Requests to learn advanced skills associated with combat swimming, including:

- Use of re-breathers and diver propulsion vehicles (DPVs)
- Deep diving
- Conducting kick counts
- Receiving extra navigation training

Requests for advanced diver training by applicants from countries where diving is not a common recreational activity. Similarly, training sponsored by groups or agencies such as religious organizations, cults, associations or charitable agencies not normally associated with diving.

Potentially Suspicious Equipment Purchases or Rentals

Volume purchasing inquiries related to Swimmer Delivery Vehicles (SDVs) and Diver Propulsion Vehicles (DPVs): SDVs are very expensive vehicles normally used for specialized military purposes, and usually are not available to recreational divers. Efforts to purchase DPVs, the more commonly available civilian counterpart to SDVs, could be associated with extending the range or payload capacity or a combat swimmer team.

Other Indicators:

- Paying cash for diving instruction
- Refusal or reluctance to provide personal information

Recipients are requested to report suspicious or criminal activity to their local FBI Office. ■

'Nefarious'—what kind of word is that anyway?

ne far i ·ous
Pronunciation[ni-fair-ee-uhs]
–adjective
extremely wicked or villainous; iniquitous: a nefarious plot.
[Origin: 1595–1605; < L nefārius wicked, vile, equiv. to nefās offense against divine or moral law (ne- negative prefix + fās law, right) + -ius -ious, with intervocalic s > r]

SOURCE: DICTIONARY.COM

DIRebreather

This new website and the work done by TheRebreatherDIR team will prove that it's also possible to do with CCRs. Proper training, thorough planning, equipment selection and adaptation can help the rebreather diver to be a DIR diver. Standardization should help to make simpler and safer dives, avoiding confusion and improving team work and communication, especially when problems occur.

All RebreatherDIR Active members and Instructors work on CCR gear and procedures standardization. Based on some extensive cave and wreck explorations, and physiological studies, they try to adapt the most current thoughts in decompression into Rebreather diving. It is also a goal to help rebreather divers to improve their personal skills and techniques through articles, DVDs, manuals and specific Workshops.

RebreatherDIR is not a training agency. TheRebreatherDIR team is made of experienced and active Rebreather explorers and instructors who share the same goal: implementing the DIR Philosophy into Rebreather diving.

If you want to fully understand what it is about, download: "10 questions about DIRrebreather"

To support or join, please visit the **Membership page**
Or contact **by email** (link) ■

DIR

The Doing It Right (DIR) philosophy can apply to a lot of things. In diving, it means having:

* The right Mindset
* The right Equipment
* The right Procedures
... and the right Team!

By applying this set of rules and techniques, divers have explored caves, wrecks and reefs in various environment all over the world, with impressive safety records.

Why Diving DIR ?

How many times did you see rebreather divers with poor diving skills, bad propulsion techniques and unefficient buoyancy control?

Their rebreather is far from streamlined and their gear configuration can easily be improved.

The procedures they follow are complex and different for each diver, even within the same team.

And everything becomes even more difficult in case of emergency or rescue...

An impressive work has already been done by the WKPP members and GUE Instructors in order to adapt the DIR Philosophy to the Halcyon RB80 Semi-Closed Rebreather. But many people think that Closed-Circuit Rebreathers "can't be DIR".

"DIR Diving with a Closed-Circuit Rebreather? Impossible!"

Not so! ■

For more information on the wrecks, visit:
www.clueshipwrecks.org/Anthony-Wayne.html
www.inlandseas.org/press.html

The 156-foot steamship *Anthony Wayne* had 93 people aboard, as well as live stock and barrels of wine. It is believed that 38 people were killed because the boilers exploded and the ship sank. The vessel was built in 1837 and rebuilt in 1849. The sip had left Sandusky heading for Cleveland in the early morning of April 27th, 1850

GREAT LAKES HISTORICAL SOCIETY

The *Anthony Wayne*, Lake Erie

THE GHOST SHIPS OF THE GREAT LAKES

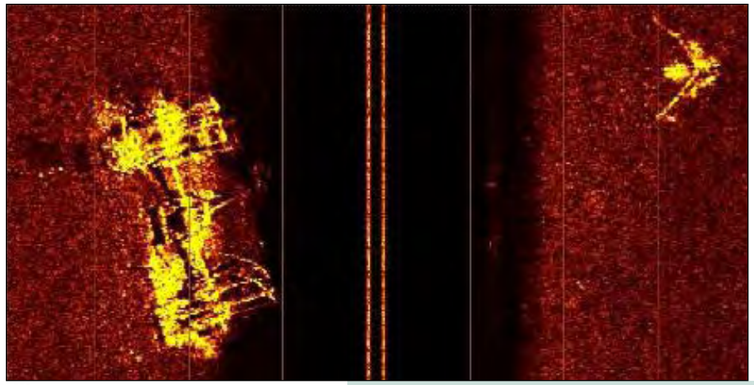
The stormy waters of the Great Lakes have been feared among sailors since times immemorable. Many are the ships that have foundered here never to be found again. The tales about the Great Lakes lost ships tells stories about ghost ships sailing the waters, looking for salvation and as years went by reported sightings kept the myth about the phantom ships alive. And once in a while one of them is actually found.

Text by Millis Keegan. Images: Tom Kowalczk

Not to long ago, one of the lost ships of the Great Lakes was found. Tom Kowalczk of Cleveland Underwater Explorers (CLUE), recently located the shipwreck of the *Anthony Wayne* in Lake Erie.

He got the first indication of the find in September 2006, during a sonar search in an area where the ship most likely had sunk according to historic records. When the monitor suddenly showed a shadow indicating something that might be the ship, he was very excited, but had to wait until after the winter to dive. It must have been a long winter, which he confirms:

"Yes, waiting eight months to dive is kinda like preparing for a baby," he grins, "especially when it appears to be such a significant find. I looked at the sonar images so many times I had the actual wreck layout memorized. When I first dove, it was 'yep, this is the shaft I saw in the image'. Like I had already been there."



Waiting for spring, Tom and other members of CLUE contacted the Cleveland Group and the Great Lakes Historical Society and did more research. The *Anthony Wayne* is believed to be the oldest steamboat wreck in the lake, and the first dives comfirmed that the wreck was indeed a side wheel passenger steamboat. Several parts of the ship matched the historical description of the *General Anthony Wayne*.

The remains of the steamboat lies in 50 feet of water about eight miles off shore, but the diving conditions are a bit harsh:

"Visibility was still only about three to five feet, far from ideal conditions."

Confirmation

I asked Kowalczk if it had been confirmed that the wreck is the *Wayne*, and he replied:

"The most compelling evidence for identification is the dimensional confirmations of the vessel beam and the size of the paddle wheels. These are consistent with the known dimension of the *Wayne*. Other items, layout and length all reinforce the finding. Since the *Anthony Wayne* was the *only* side wheeler sunk in this location, and nothing found contradicts the facts, we are as certain as anyone could be without absolute evidence."

Kowalczk also tells us that they, during the most recent dives, have located the bow of this wreck, which is of a very unusual construction.

"Being one of the oldest side wheel steamboats sunk in Lake Erie, this has been a very historic discovery. We think there is much to learn from this shipwreck concerning early design and construction of Great Lakes steamboats." ■

The bow is of a very unusual construction, and will possibly help with the identifyication of *Anthony Wayne*

wreck rap

Straits of Mackinac Shipwreck Preserve

THE GHOST SHIPS OF THE GREAT LAKES

If cool water doesn't bother you and you are keen on wrecks, you are in for a treat if you are heading to the US Great Lakes. Between Lake Michigan and Lake Huron, you will find the Straits of Mackinac Underwater Preserve, an underwater wreck park with impressive variety of wreckages dating back centuries.

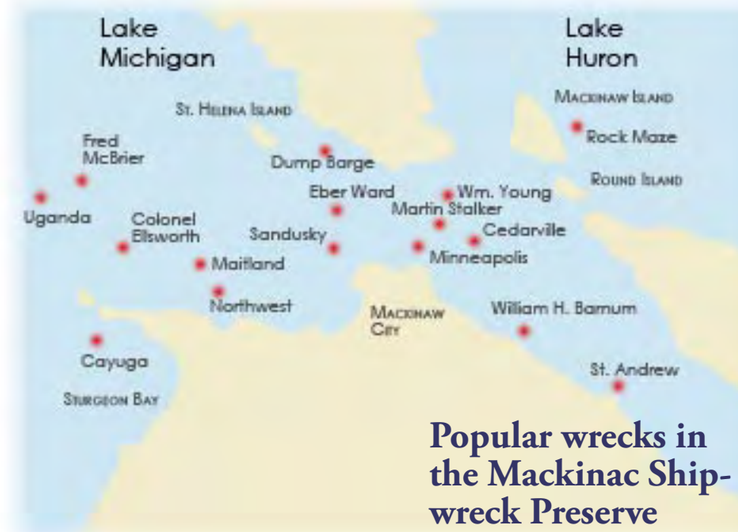
Text by Millis Keegan
Photos by Cliff Roberts

Most of the wrecks in the preserve sank during the 19th century and offer a great look into maritime history from that era. Some can be reached from the shore, others require a boat. The visibility ranges from two to 70 feet, and there is often a current. All major dive sites are bouyed, and on the buoys is posted information about the wreck below. On the webpage, GPS coordinates for a number of wrecks in the area are listed. There is also excellent shore diving in the harbor of St Ignace where all sorts of artifacts have been tossed in the water throughout history.

Larry Sanders with the Mackinac Shipwreck Preserve Association said: "If I had to choose, I recommend the *William Young*, a virgin wreck just discovered five or six years ago. The *Sandusky*, is a schooner rig, which is rare on the lakes, sports a figurehead, which is also rare, and is the oldest known wreck in the preserve. The *Cedarville* is a 660-foot steel freighter lost in a fog collission in 1965—the third largest on the lakes (after the *Fitz* and *Carl D. Bradley*) and the only one within recreational limits (60 to 120 feet)—and the *Eber Ward*, a very well preserved wood freighter lost to ice in April 1909. It has an uncommon mushroom anchor.

"There are a few deeper wrecks that go beyond recreational limits. Diving the *Ward*, for example, pushes the recreational limits. The local dive charter will not take divers, even tech ones, there." ■

Straits of Mackinac is located right at the junction of the US Great Lakes



The *Sandusky* was a schooner rig

Popular wrecks in the Mackinac Shipwreck Preserve

The *William H. Barnum*
An early season storm sank this wreck, and it went down with a load of grain during the first trip of the season in 1894. The wreck rests in about 68 feet of water.

The *Sandusky*
The oldest shipwreck found in the strait. Built in Ohio, This 110-foot sailing vessel stands upright on the bottom, about 90 feet down, and is in very good condition. Divers will find two masts and a square stern, and a few other things that will make the dive interesting.

The *C.H. Johnson*
An easy shore dive, the wreck rests in up to 15 feet of water and is in a good location when the weather is a bit up and down. The schooner *C.H. Johnson* ran aground in 1895 in a storm. The cargo was large sandstone blocks, and those can be found on the dive site along with a number of small artefacts. An interesting dive when the visibility cooperates. ■

SOURCE: WWW.MICHIGANPRESERVES.ORG

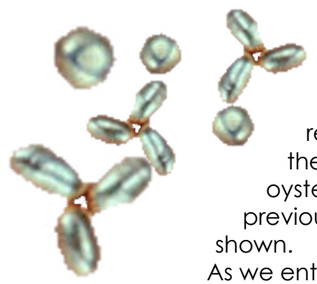
Pearls

Thousands of pearls found off the Keys

Text and photos by Millis Keegan

It was just laying there, on the bottom of the sea—a rather plain little lead box, which could have been easy to miss had the circumstances been different. It was found during the excavation of the *Santa Margarita* wreck site from the 1622 galleon fleet, the fleet that the more well known treasure ship, *Atocha,* belonged to.

The very unpretentous little box held an amazing treasure—thousands and thousands of pearls in all sizes. The smaller ones no bigger than three millimeters in diameter, the largest almost two centimeters. What surprised everyone is that they were in extremely good shape. Pearls don't handle salt water very well, once they are removed from their protective oyster shell, which previous finds have shown.



As we entered the busy room, back stage at Mel Fisher´s museum, we could sense the excitement. Duncan Mathewson, marin archeologist, sat bent over his desk, sizing pearls. The desk was covered with pearls. He had come a long way, but there were still hundreds if not thousands left on the table to sort. He stretched and looked at us with a slightly bewildered who-the-hell-are-you expression on his face. We could tell that he was well into his task.

I introduced myself: "Millis Keegan, *X-RAY MAG*... so, you are counting pearls today? How's your back doing? Must be tough sitting like that for hours."

A nod, and then introductions all around, and we got a chance to get up close to the pearls. They came in all sizes and colors, some of them seemed no bigger than a grain of sand. They were beautiful! Today, was the day for which the counting of the pearls was scheduled, hence, the excitement and, at the same time, the tedious and most likely boring job of sorting them by size and color.

This is a rare find. The pearls are antique, and they are in good shape. The reason for that is the little lead box and that silt had made it into the box. That protected them all the way from 1622 until 2007. The shine is incredible, as they lay there on the white plate on the desk. A curious mind wonders, whats they're worth?

There is no way we will know the value until they have been preserved" says Mathewson, "but there is no question, these pearls are worth a fortune." Then the curious mind wonders, what happens next?

After the sorting, they will be registered, preserved and photographed right here on the premises in the archeology laboratory. ■

Sean Fisher shows the plain lead box that contained the unexpected treasure

Duncan Mathewson shows us the big pearl. It still has luster after all those years in salt water. It is a truly amazing find

Some of the pearls was small as a grain. On the table you can see the disc tools used for sizing the pearls.

Odyssey Marine Exploration and Spain at loggerheads

Following our report on Odyssea Marine Exploration's recovery of artifacts from a wreck named the "Black Swan" the Spanish authorities detained the ship in the Spanish port of Algeciras. According to a press release by Odyssea the search and detention was apparently conducted as a result of a court order to look for evidence that Odyssey's recent "Black Swan" discovery was made in Spanish waters. Odyssey has repeatedly stated that the "Black Swan" recovery was conducted in the Atlantic Ocean outside of any country's territorial waters or contiguous zone.

Odyssey Marine Exploration, Inc.'s survey vessel, the *Ocean Alert*, was cleared for departure by the Spanish Guardia Civil on Saturday, July 14th.

Later, Odyssey Marine Exploration filed complaints in the Admiralty arrest cases seeking compensation for losses sustained through Spain's recent actions obstructing Odyssey's ability to conduct operations. Odyssey is seeking not only relief in the form of a set-off of any award Spain may ultimately receive on any shipwreck, but also affirmative relief for damages caused by Spain's interference with Odyssey's rights to all three sites.

The Motions for Protective Order were filed to keep the preliminary site assessments under court seal to protect the security of the sites and to protect Odyssey's proprietary sources and methods from competitors. ■

Mexico

Wooden items shaped as lightning bolts were found by diving archaeologists in Mexico. The wooden lightning bolts are believed to be offerings, made 500 years ago, in rites performed by Aztecs priests to bring rain. They were found in a lake in an extinct volcano, Nevadade Toluca. ■

HMAS Sydney

Kormoran

Has the *HMAS Sydney* finally been found?

The *HMAS Sydney* was lost November 1941 after a battle against the German raider *Kormoran* off the coast of Western Australia. The engagement resulted in the loss of the *Sydney's* entire crew of 645. The wreck has never been found. But now, a team of amateur researchers claim to have located it in 150 metres of water off Dirk Hartog Island near Carnarvon. Former deputy prime minister Tim Fischer, a patron of the Finding *Sydney* Foundation, says, despite a number of false leads in the past, this one seems to have substance.

Experts doubt *HMAS 'Sydney'* found

Defence Minister Brendan Nelson says while the results so far are encouraging, no one can be certain until the Navy has conducted a survey of the wreck.

Reports about steam pipes on the deck has cast doubt on the indentity of the wreck. *Sydney* would not have had any steam pipes anywhere near the deck, a merchant ship could, to work its hoisting gear, but not a warship. The group who found the vessel says if it is not the *Sydney*, then it is probably the German ship that sank it, the *Kormoran*.

Archaeology curator of the WA Maritime Museum, Dr Mike McCarthy, says the find is still cause for congratulations.

Other clues

The *Kormoran's* Commanding Officer, Theodor Detmers, recorded his account of the battle in an encoded message in a dictionary.

Retired Captain Peter Hore has deciphered the code and says it will lead searchers to the site of the *Kormoran*. "Once we've established a datum by finding the wreck of the *Kormoran*, then from there we can go south and go and search for *Sydney*."

Looters

Meanwhile there is concern for international privateers and relic hunters who will seek to profit from the wreck of the warship *HMAS Sydney*. Former Western Australian MP, Philip Pendal, chaired a select committee into shipwrecks off the WA coast and says that the federal government must move to authenticate and protect the site.

"We've seen an appalling list of cases in the past 50 years where the finders of important shipwrecks have been treated badly, and I don't think we have to have that repeated," he said. ■

SOURCES: ABC, AUSTRALIAN MINISTRY OF DEFENCE

NEW! OMS® Ultra Bright Head Lamp and VEGA®

The Ultra Bright 3 W LED Head Lamp and the VEGA® flashlight introduced by OMS® are two of the brightest 3W LED luminaries in the world with over 80 lumens output! Both have a burn time of 3 hours (using CR-123A batteries) and incorporate redundant O-Rings for a depth rating to 100 meters. The headlamp can be mounted on a helmet (helmet and hardware not supplied) placed on your Hood (band supplied) on your head (band supplied), used as a Goodman light (strap supplied) or even mounted to your chest strap (band supplied). Best of all both are competively priced. Visit your local authorized OMS® dealer for a demonstration.

L191 3W LED VEGA Flashlight

OMS

Ocean Management Systems

P.O. Box 146 Montgomery, NY 12549

Phone 845.692.3600 ~ Fax 845.692.3623 ~ www.omsdive.com

Filephoto from www.thorfinn.net

SS Thorfinn goes down on Pohnpei's Reef

Liability issues and bad weather hampered salvage operation

On June 8, the renowned live-aboard *SS Thorfinn* struck the outer reef next to the Main Passage in PNI harbor in Saipan as it was exiting. *Thorfinn* was designed as an icebreaking whaler for operations in the Arctic. Despite the extremely heavy construction for those duties, the reef tore a hole in the wall of the engine room and the ship began taking on water.

Captain Higgs said that he then had no other options than to ground the *Thorfinn* on the reef to avoid sinking in the channel and causing a worse problem than currently existed. Considering its load of over 80,000 gallons of waste oil that is essentially the consistency of diesel fuel, which it uses to fire its boilers, it's a significant problem indeed.

As this issue went to press, there was no mention of the event on www.thorfinn.net nor have we been successful in obtaining a comment from *Thorfinn's* operators. ■

Sad Times in Galapagos and Ecuador

Chaos ensues as Galápagos National Park shuts out dive operators *—while ban on shark finning is lifted*

Valid permits held only by *Aggressor I* and *II, Sky Dancer* liveaboards. All other operators on stand-by pending a review.

On Tuesday, July 10, 2007, the director of the Galapagos National Park (GNP) began the first in a series of stringent enforcement efforts by suspending dive trips operated by tour companies not in possession of the appropriate permits according to a statement issued by the GNP. The Galapagos National Park is enforcing current legislation which requires that tour operators have a specific diving permit to run dive charters inside the Galapagos Marine Reserve (GMR) and Park. Previously, many operators have carried out dive tourism with only a land tour permit.

In essence, this has closed down all the dive operations there but those of the *Aggressor* and *Sky Dancer* liveaboards. Consequently, tour operators and travel agents had to issue a massive amoung of cancellations on trips that were already booked.

Cupos and Patentes

The issue at hand seems to be that there is no such thing as a formal dive permit. It doesn't exist. Operators need two sets of documents: A *cupo* is a document that gives the owner the right to operate a tourist yacht in Galapagos. This is tied to the owner not the actual yacht and can be transferred to a new yacht. It is said that only 80 cupos exist, and no new ones have been issued since the 1970s.

A *patente* certifies that a yacht is safe to operate and must be renewed annually. It requires a cupo to get a patente. The patentes also list the itinerary the yacht is allowed to operate without asking for additional permission from the GNP. This includes land activities but diving, as such, is not included on any patente.

Why does there seem to be an exception in regards to the *Sky Dancer* and the *Aggressors* who run dive trips on their patentes? They don't have any land visits. Their standard itinerary includes the islands of Darwin and Wolf where no one is ever allowed to go to shore.

Shark finning

News is seeping in from Ecuador that a campaign is under way to save the shark population of Galapagos and Ecuador, now seriously threatened by recent lifting of a government ban on "Shark Finning", which allows fishermen to export shark fins as long as the shark *was caught by accident*.

The Galapagos' species-rich waters are an easy target for fisheries. As anyone who has ever dived these waters will tell you, they have the largest population of sharks of almost any place on Earth. Shark fishing is still banned in Galapagos, but they have little or no power to stop the mainland fishing fleets from sailing to Darwin and Wolf—the most isolated and northerly islands, where there are no patrols, no rangers and now only three dive boats that can keep an eye on these fragile waters.

The first week after the lifting of the ban, the authorities seized more than two tons of shark fins, but because of the new law, they were forced to release the perpetrators and their catch—which was soon on its way out of Ecuador to lucrative markets all over the world, where each fin can fetch US$100 or more.

Half of the 29 species of sharks that call these waters home are considered threatened. It is estimated that 80 percent of Ecuador's shark fins come from the islands. The government recently lifted the ban, announcing it would allow export fins from sharks that were "accidentally" caught in the process of fishing for other species. They have now written that into law, basically declaring "open season" on sharks. ■

FILEPHOTO: JASON HELLER

Galápagos and Niokolo-Koba National Park inscribed on UNESCO's List of World Heritage in Danger

Dominic Macan of Dive Advice contributed to this report. Information was current as of the time we went to press. Please note that the circumstances around the Galapagos may change on short notice

news

Edited by
Peter Symes

15 years of diving with Emperor Divers

To celebrate 15 years as one of the Red Sea's leading dive centres and liveaboard operators, Emperor Divers will be offering guests 15th Anniversary Special Offers from this October and throughout 2008.

With an environmentally focused vision to the next 15 years, the company has recently joined in a unique partnership with the conservation group, ReefCI, to provide valuable research and conservation projects to help protect the Red Sea's marine eco-system.

Throughout the 15th Anniversary year, promotions and special giveaways are planned along with a fabulous chance to win a luxurious liveaboard holiday at the NEC Dive Show (in Birmingham, UK). ■

Turkey's getting into attracting divers

Species numbers increasing at Gökçeada Underwater Park

After designating the three-mile area as a protected sea zone in Gökçeada ten years ago, a hunting and fishing ban was put into force. Fish species have since increased from the previous 60 to over 100, and numbers are expected to increase further. Dolphins, seals and whales now visit the area, too. There are over 100 species of algae as well.

Gökçeada Park is the first protected sea zone in Turkey, and the success is aiding the preparations for proclaiming the areas of Foça and Bozyazı as protected sea zones as well. Increasing protection would continue and focus would be directed to the habitats of Mediterranean seals. ■

Take a virtual underwater tour in Bodrum (click here)

One of the notable underwater museums of the world, the Bodrum Museum of Underwater Archaeology can now be **visited via the Internet**.

Diving the Caspian Sea coming up next?

Turkmenistan announced plans to spend €1.3 billion and seek additional foreign investment to build a major tourist resort on the Caspian Sea.

The Caspian Sea holds great numbers of sturgeon, which yield eggs that are processed into caviar. In recent years overfishing has threatened the sturgeon population to the point that environmentalists advocate banning sturgeon fishing completely until the population recovers.

There are several species of fish endemic to the Caspian sea, including Kutum (also known as Caspian White Fish), Caspian Roach, Bream, and a species of salmon. Caspian Salmon is critically endangered. Also, the Caspian Seal is endemic to the Caspian Sea, It is one of very few seal species living in inland waters. ■

JACQUES DESCLOITRES, MODIS LAND RAPID RESPONSE TEAM, NASA/GSFC

Via Press Release

Underwater Spa in the Maldives

Looks nice, huh? Promotional photo from huvafenfushi.com

Huvafen Fushi takes the world's first underwater treatment rooms to new depths.

The ground-breaking underwater spa treatment rooms at Huvafen Fushi, the most spectacular island-chic resort in the Maldives, have undergone an innovative transformation that takes cutting-edge cool to another level.

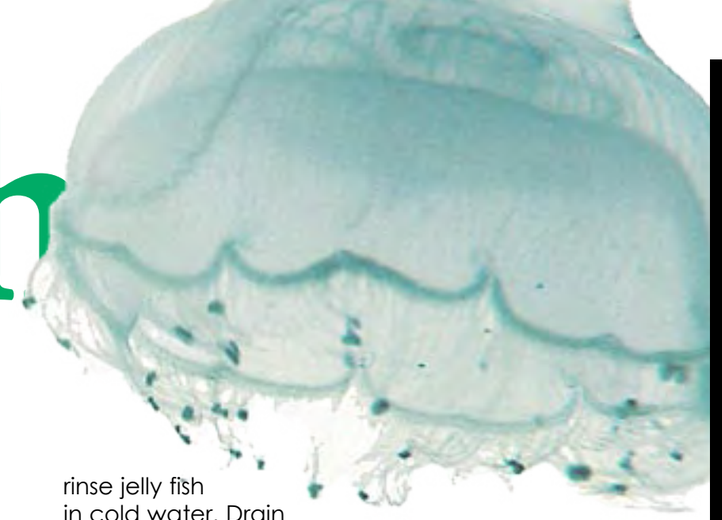
Masterminded by the award-winning British designer and architect Richard Hywel Evans, the two underwater treatment areas have been completely reinvented, with the addition of a separate relaxation pod where post-treatment guests can relax on an oversized day bed and enjoy the sublime surroundings.

"We wanted to create an interior that was in keeping with the spa's position at the bottom of the sea! The underwater spa has always been a sensational concept and the new interior was designed to reflect and amplify this extraordinary environment; one of our main challenges was dividing the space into three separate areas using room dividers that could disappear, unifying the space so that it could be used for a variety of functions including 'underwater' wedding ceremonies. The underwater spa is now truly the world's most unique spa experience," says Hywel Evans. ■

Edited by
Peter Symes

The invasion of the Jellyfish

What to do?



Booming jellyfish populations have become a real nuisance in many parts of the world as masses of the gooey creature are infesting waters, clogging ports and washing up on beaches in the Mediterranean, Japan and Australia. So what to do about it? As several groups of researchers have found, perhaps we can use them— for food or cosmetics. To weird? Think again...

Use them for cosmetics, foods or drugs

Akiko Masuda of the Institute of Physical and Chemical Research in Saitama and colleagues have extracted a previously unknown glycoprotein—a repeating sequence of amino acids with sugars attached—from jellyfish. The compound is a type of mucin, a gelatinous, moisture-retaining substance secreted by animals (it's a main component of human saliva and mucus, for instance), and it could find uses in cosmetics as a food additive or in drug manufacturing. Since jellyfish mucin has a simpler structure than some other mucins, it may be usable as a building block for creating custom-tailored mucins with antibiotic or other specific properties.

The researchers, who reported their findings in The Journal of Natural Products, extracted the mucin from several species including the moon jellyfish (*Aurelia aurita*, one of the most abundant in the world) and *Nemopilema nomurai*, one of the biggest, at up to six feet in diameter and 450 pounds. They found that the mucin made up as much as three percent of the dry weight of jellyfish. So, there is an awful lot of mucin in the world as well.

aquatours
ADVENTURES FOR THINKING DIVERS

... or *eat* them

According to one of Brisbane's famous chefs, Lien Yeomans, there are several great dishes based on cooked jellyfish coming out of the Vietnamese kitchen.

The two species of jellyfish that are used for eating are the Sua ro - Bizen Karuga (*Rhopilema esculenta*) and the Sua sen (*Aurelia aurita*). Usually, only the top part of the jellyfish is used, and it is sold dried and salted. It is then soaked in cold water and cut into little strips. When put into boiling water, they curl up, and then you make a salad dish to go with it.

Vietnamese Jellyfish Salad (nom sua or goi sua).
Serves four

200g salted jellyfish
1 green cucumber
1 large carrot
¼ cup sugar
50ml fish sauce
50ml lemon juice
1tspn finely chopped hot chilli
2tbspn crushed roasted peanuts
2tbspns crushed roasted sesame seed
100g chicken breast
100g pork butt
2 eggs beaten
2tbspns chopped coriander leaves

1. Wash, soak and rinse jelly fish in cold water. Drain well, roll up into a tight roll and cut into thin strips. Blanch in boiling water for 15 seconds (until the jellyfish strips curl up). Leave aside.
2. Wash cucumber, cut into quarters lengthwise, seeded and cut into very thin diagonal strips, sprinkled with ½ sugar. Leave until sugar dissolves then squeeze dry.
3. Peel and shred carrot, sprinkle with the rest of the sugar. Leave until sugar dissolves, then squeeze dry.
4. Cut chicken and pork into thin slices, shallow fry; then cut into thin strips.
5. Grease a non-stick pan; make a thin omelette with beaten eggs. Let cool then roll up and cut into thin strips.
6. Mix prepared jellyfish, cucumber and carrot with fish sauce, lemon juice, chilli, crushed sesame seed and peanut and arrange the mixture on a platter and top with strips of chicken, pork, omelette and coriander leaves.
7. Mix well before serving. Adjust taste to achieve a balance of sweet, sour, salty, spicy and nutty.

"It's a very popular dish in spring and summer. It's delicious and most people would like it if they didn't know what it was"!

Marinated jellyfish with green apple dressing

Serves four

400g salted jellyfish
1tbspn chilli oil
1tspn toasted sesame seeds
1tspn sea salt
Juice of 2 green apples
Juice of 1 lime
1tspn sugar
1 red Spanish onion, cut into thin slices
100g snow peas cut into thin strips diagonally
Coriander leaves, chopped

1. Wash, soak and rinse salted jellyfish. Drain well. Mix jellyfish with chilli oil, salt and sesame seed.
2. Mix apple juice, sugar and lime juice.
3. Mix snow peas and red onions; arrange this on a plate and top with jellyfish and coriander. Dress with apple and limejuice.

A little more Googlin' also brought to light the following recipe, which has to be credited to a Kim McFarland: (**link to website**)

Bon Appétit! ■

SOURCE: ABC BRISBANE

Sesame Jellyfish Donburi
Soak the jellyfish in cold water for three hours, changing the water at half-hour intervals, to diffuse the salt out. Then soak it in hot water for 5 minutes and cool in cold water immediately. Tear the jellyfish into bite-sized pieces. Mix 2 teaspoons of soy sauce, 3 tablespoons of sesame oil, 2 teaspoons of rice vinegar, and 2 teaspoons of sugar. Soak the jellyfish in this for a half hour, then serve it over hot rice and shake sesame seeds over it. ■

Security and Comfort
Now you can have BOTH!
NEW HI-FLOW MODEL NOW AVAILABLE

SeaCure™ Custom Mouthpiece is moldable *and remoldable.*
Created by an orthodontist, SeaCure is designed to fit your mouth, teeth, and gums . . . PERFECTLY.
Available at your local dive center.
SeaCure™ CUSTOM MOUTHPIECE
www.seacure1.com

JAMES GATHANY, CDC

Larvae of Culex Mosquitoes. As seen on the picture, larvae make dense groups in standing water

Tilapia combats Malaria

Kenyan researchers have found that the humble tilapia, a fish commonly seen on the Kenyan dinner tables is highly effective in combating malarial mosquitos in stagnant waters.

In a study published in BMC Public Health, an open access journal, tilapia was introduced into abandoned fish ponds at an altitude of 1,880m and the effect measured over six months on the numbers of mosquito immatures.

By consuming mosquito larvae the fish managed to reduce numbers of two of the main malarial mosquitoes by more than 94 percnt. Nile tilapia's taste for mosquitoes has been known since 1917, but this is the first time field data has been published detailing their use in mosquito control. The BMC Public Health study noted the fish could prove critical as mosquitoes are becoming resistant to pesticides.

The authors suggested that for Kenyans, the fish could prove a win-win investment. In addition to limiting mosquito populations, they could also be used for food, and even generate income, too. There should be no problem with acceptance of this malaria control method, since the local communities already farm this fish species.

This species, already a popular food fish in western Kenya, is an apparently sustainable mosquito control tool, which also offers a source of protein and income to people in rural areas.

Joanne Greenfield, malaria advisor for the World Health Organization in Kenya, was, according to BBC news, more circumspect, while describing the findings as "positive".

"This method may well work in a defined area of water, but mosquitoes spread in all sorts of places—including small pools in the mud and puddles—where you obviously can't introduce fish," she said. "It just wouldn't work for many areas."

But she added: "We recommend a spectrum of methods to combat malaria, and this could certainly be a useful tool." ■

SOURCES: BIOMED CENTRAL, BBC

Malaria is one of the most common infectious diseases and an enormous public-health problem. The disease is caused by protozoan parasites of the genus *Plasmodium*. Malaria parasites are transmitted by female Anopheles mosquitoes. The parasites multiply within red blood cells, causing symptoms that include symptoms of anemia as well as other general symptoms such as fever, chills, nausea, flu-like illness, and in severe cases, coma and death.

Malaria is widespread in tropical and subtropical regions, including parts of the Americas, Asia and Africa. Each year, it causes disease in approximately 650 million people and kills between one and three million, most of them young children in Sub-Saharan Africa. ■

PETER SYMES