



GLOBAL EDITION  
September 2012  
Number 50

Atlantic  
**Greenland Shark**

Nova Scotia  
**The Arrow**

Timor-Leste  
**Tasi Tolu**

Tech  
**Sheck Exley**

Diving With  
**Humboldt  
Squid**

KIMBE BAY. WITU. MILNE BAY. TUFU. NEW IRELAND

**Papua New Guinea**

Portfolio  
**Seth Casteel**

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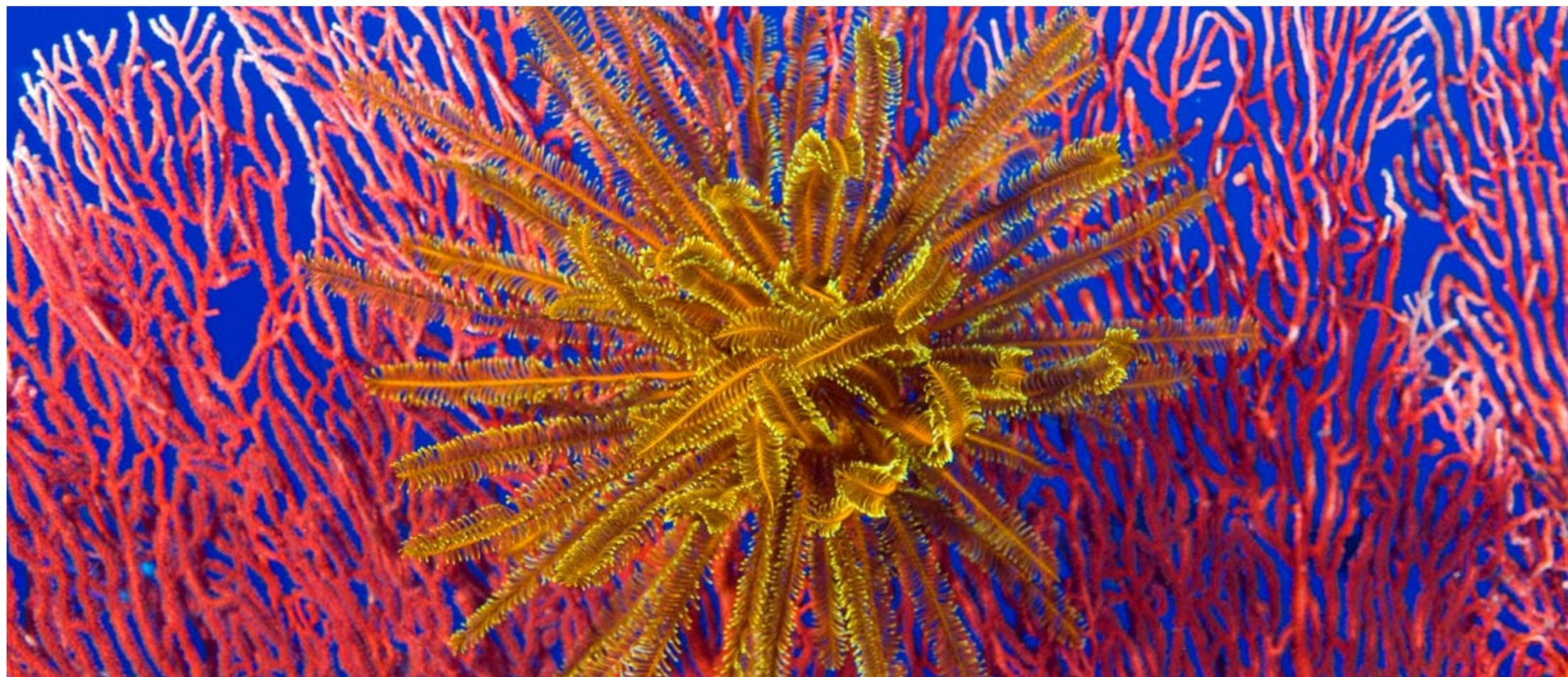
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COVER PHOTO: Diver and Coral Garden, Papua New Guinea,  
by Steve Jones

Crinoid on fan coral, Kimbe Bay, Papua New Guinea. Photo by Steve Jones



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## *Less* risk, *more* fun

It was not too long ago that diving was perceived as an extreme sport, which insurance would either not cover or cover only at a premium. Fortunately, the world has since come to its senses. Nowadays, diving has become, for better or worse, just another leisure or holiday activity, which you can share with family or friends for an evening, weekend or vacation.

As statistics have abundantly documented, recreational diving is really quite safe a pastime and on par with many other outdoor activities—that is, when it is performed along the guidelines set forth by the training agencies.

This is thanks to decades of advances in technology and training but in no small measure also from lessons learned by past accidents and research.

I recently watched a Formula One race on TV. Barely had the cars moved off the starting grid before a massive collision

occurred, catapulting some of the racers into the air. In a matter of only a few seconds, a handful of very expensive high tech racing cars were ignominiously reduced to crumbled masses, with bits and pieces strewn all over the track.

One or two decades ago, an accident of such severity would surely have led to fatalities or serious injuries. But now, thanks to a number of modern safety features derived from accident analysis, all drivers were able to climb out of the wreckage, suffering no injuries other than a rather dented pride.

Diving has also become a lot safer.

However, it is not and will never be completely risk free—just as is the case with any other outdoor activity. But risk can be reduced and kept to an acceptable minimum.

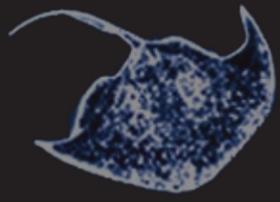
This is an ongoing process, which also depends on

whether we, as individual divers, are still prepared to listen and learn and constantly improve our skills and understanding. There is a lot we can do to minimize risk and avoid accidents. But while improvements in technology are all fine and helpful, they don't do it alone. Safety is also a matter of mind set.

In this issue, Gareth Lock addresses the issue of a 'Safety Culture' (see p. 61). His article is one of the most significant contributions we have seen in the magazine for a long while, so please give it a good read and some thought to the matter at hand.

Only you are in charge of your attitude and can decide whether you will let pride stand in the way of better, safer and, consequently, more enjoyable diving.

—The X-RAY MAG Team



News edited  
by Peter Symes

from the deep  
**NEWS**



## Twenty-five new coral fish described



Conservation International (CI) recently announced the release of the three-volume book set, *Reef Fishes of the East Indies*, by CI scientists Dr Gerald Allen and Dr Mark Erdmann, representing the culmination of a combined 60 years of effort to document the biodiversity of the mega-diverse coastal waters of the East Indies. The book set contains concise descriptions of each of the 2,631 currently known reef fish species from the region. ■

All images this story by Gerald Allen



CLOCKWISE FROM LEFT: Fairy basslet, *Pseudanthias mica* (male); Tripod fish, *Pteropsaron longipinnis*; Beautiful blue dart fish, *Ptereleotris rubristigma*; Shrimp goby, *Tomiyamichthys gomez*, named after former Director of the Marine Sciences Institute at the University of the Philippines Dr Edgardo Gomez for his contributions to marine sciences; Fairy goby with iridescent blue eyes, *Tryssogobius sarah*

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Candy-striped clingfish (above), *Lepidichthys akiko*; Delicate tiny sand goby (left), *Grallenia baliensis*; Rare goby (below), *Acentrogobius cendrawasih*



Clingfish (left), *Aspasmichthys aloreensis*; Small coral bream (above), *Pentapodus komodoensis*; Red spotted sand perch (top), *Parapercis bimaculata*

All images this story by Gerald Allen



MATHEW MEIER

Giant kelp forest. This filephoto is from California

## Australia list kelp forest as endangered

The giant kelp jungles in the waters off southeast Australia are gravely threatened by climate change. In some areas off the east coast of Tasmania, they have shrunk by more than 95%. Environment Minister Tony Burke has listed the forests as endangered.

It is the first time a marine ecological community has been given such protection under (Australian) federal environmental law. The only remaining kelp forests are around southeast Tasmania, southeast South Australia and western Victoria.

Listing the forests as endangered means that restrictions could be placed on activities that exacerbate the threat, such as overfishing, dumping waste and

land uses that wash too much sediment into the sea. Karen Gowlett-Holmes, a marine biologist with the CSIRO and co-owner of Eaglehawk Dive Centre on the east coast of Tasmania, told *The Sydney Morning Herald* the destruction of the kelp forests was having "a huge impact" on marine ecology.

CSIRO released a marine health snapshot that provided evidence for what scientists have long suspected: climate change has strengthened the East Australian Current, which moves down the

east coast, driving marine species south to seek colder waters. The warming sea temperatures are also influencing the distribution of marine plants and animals, with species currently found in tropical and temperate waters likely to move south. Giant kelp grows in dense stands known as kelp forests, which are home to many marine animals that depend on the algae for food or shelter. Giant kelp is one of the fastest-growing organisms on Earth. They can grow at a rate of two feet a day to reach over 45m (148ft) long in one growing season. ■

## Cook Islands declares world's largest marine park

The 1,065-million-square-kilometre reserve will be the largest area in history by a single country for integrated ocean conservation and management.

Australia announced in June that it was creating a network of marine parks covering 3.1 million square kilometres, more than a third of its territorial waters. However, they are dotted around its huge coastline.

The new Cook Islands protected zone will be the largest single marine park in the world, taking in the entire southern half of the nation's waters.

Prime Minister Henry Puna called on other Pacific island nations to follow the Cooks' lead and create an enormous protected zone in the ocean.

Kiribati and Tokelau have already created large reserves, while the French Pacific territory of New Caledonia this week announced plans to set up a 1.4 million square kilometre park in the next two to three years. ■

## Marine reserves give reef fish the best protection

Reserves perform significantly better than any other fishery management system for tropical reefs says a new study. Using fish counts and habitat measurement, the study tested how marine reserves in Guam contributed to the reproductive biomass of the thumbprint emperor fish (*Lethrinus harak*), a common and typical reef fish.

The team from University of Guam and Curtin University compared fish biomass across four sites: two fully

protected from fishing and two open to fishing. The total biomass from the fully protected sites was over five times greater than on comparable fished sites.

Such differences were even more pronounced in spawners, with 16 times more biomass. Furthermore, adults made up a higher percentage of the population in fully protected areas. ■



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## Starfish evolved super fast

Two closely related "cushion stars," *Cryptasperina pentagona* and *C. hystera*, living on the Australian coast are identical in appearance but live in different regions. *Hystera* occurs on a few beaches and islands at the far southern end of the range of *pentagona*.

And their sex lives are very, very different. *Pentagona* has

male and female individuals that release sperm and eggs into the water where they fertilize, grow into larvae and float around in the plankton for a few months before settling down and developing into adult sea stars.

The researchers looked at the diversity in DNA sequences from sea stars of both species and

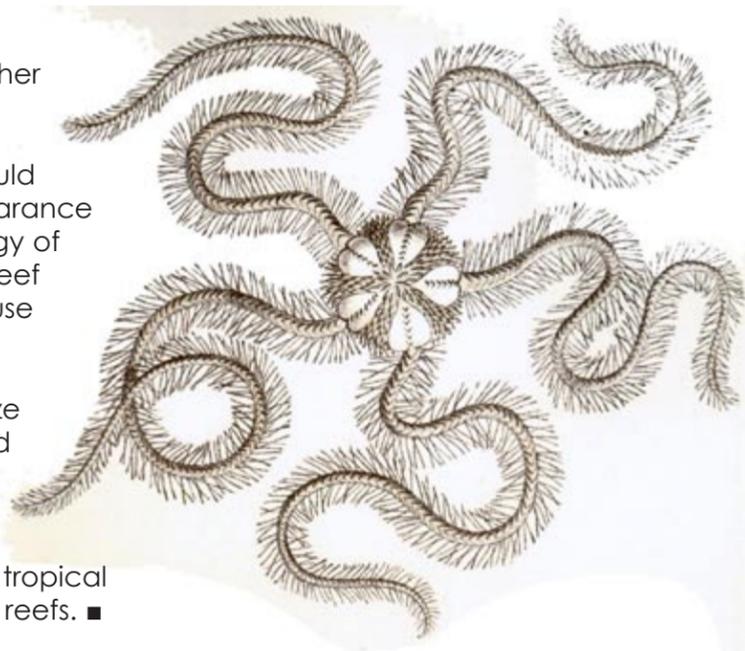
estimated the length of time since the species diverged. The results show that the species separated about 6,000 to 22,000 years ago. That rules out some ways new species could evolve. For example, they clearly did not diverge slowly with genetic changes over a long period of time, but were isolated quickly. ■

## Pacific brittle star invades the Atlantic

Growing populations have established themselves at distant points in the Atlantic, its presence near Brazilian and Caribbean ports more than 4,500 km apart suggests it could have been spread by shipping.

Clonal, six-armed brittle stars (*Ophiothela sp.*), previously limited to the Pacific Ocean, have invaded Brazil and St. Vincent. Large numbers of the small stars, which can be readily visible on soft corals, sponges and other hosts, eventually may become abundant from Florida to South America. The impact of the *ophiothela* brittle star remains to be seen. Like most marine invertebrates (except for commercially important species) we know little about its biology, so it is difficult to envision how it will affect the ecology of its new

ocean. But further expansion of the range of *Ophiothela* could alter the appearance and the ecology of Atlantic coral reef habitats because *ophiothelas*, in multitudes, densely colonize gorgonians and sponges on Indo-West central Pacific and on tropical eastern Pacific reefs. ■



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*The main reason that Indo-Pacific reefs are more resilient is they have less seaweed than the Caribbean Sea.*

— Dr George Roff

## Indo-Pacific corals are tougher

**Coral reefs in the Indo-Pacific region, including the Great Barrier Reef, recover faster from major stresses than their Caribbean counterparts.**

Seaweed and corals are age-old competitors in the battle for space. When seaweed growth rates are lower, such as the Indo-Pacific region, the reefs recover faster from setbacks. This provides coral with a competitive advantage over seaweed, and our study suggests that these reefs would have to be heavily degraded for seaweeds to take over, explained Dr George Roff from the ARC Centre of Excellence for Coral Reef Studies. The researchers also found that seaweeds in Indo-

Pacific region bloom four times more slowly than those in the Caribbean.

"We're not sure why this happens, but a plausible theory is that Caribbean waters are highly enriched in iron," they said. "For thousands of years, the Caribbean Sea has received dusts that blow across the Atlantic from the Sahara, and the dust contains iron—an essential element for algae to grow.

"This suggests that the difference between the Indo-Pacific and Caribbean oceans and their coral reefs is

fundamental, and occurs on a very large scale.

### Indo-Pacific teeming with fish

"Another factor that protects these reefs is the abundance of herbivorous fish, such as surgeon and parrotfish that treat seaweed as a delicacy. The Indo-Pacific region has a lot of these fishes.

"For instance, the Indo-Pacific region has 70 species and six genera of parrotfish, while the Caribbean only has 13 species and two genera of the fish." ■

## The Pacific is divided

**The formidable Eastern Pacific Barrier virtually divides the vast ocean in two different biological zones.**

The Eastern Pacific Barrier (EPB) is an uninterrupted 4,000-mile stretch of water with depths of up to seven miles, which separates the central from the eastern Pacific Ocean. In 1880, Charles Darwin hypothesized that most species could not disperse across the marine barrier, which he had

termed "impassable" in his writings. A recent study, by a team of researchers led by Iliana Baums, an assistant professor of biology at Penn State University, is the first comprehensive test of that hypothesis using coral and has confirmed that many species of marine animals seem unable to cross this

oceanic divide. "The adult colonies reproduce by making small coral larvae that stay in the water column for some time, where currents can take them to far-away places," Baums said. "But the EPB is a formidable barrier because the time it would take to cross it probably exceeds the life span of a larva." ■

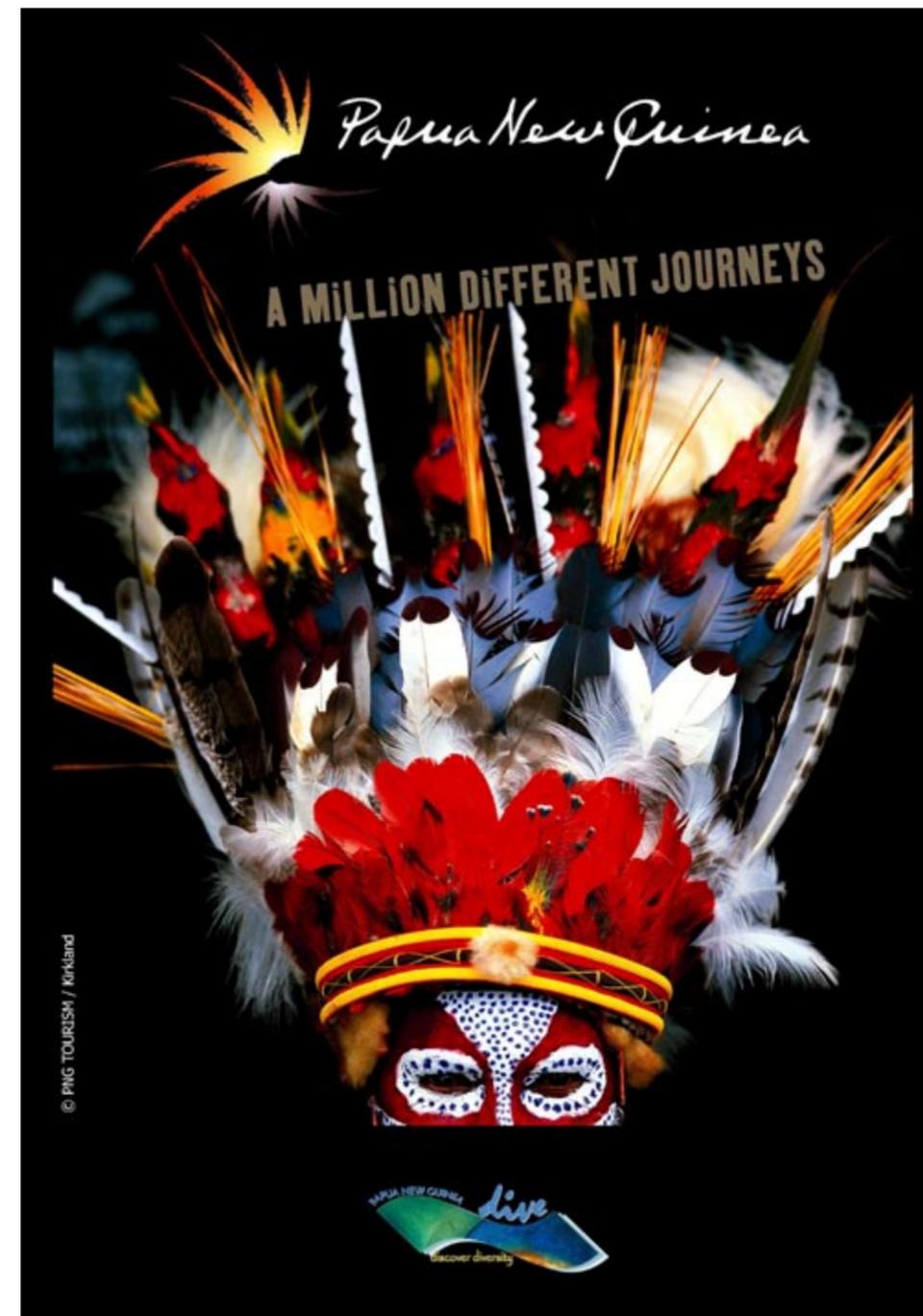
## Increased growth responsible for color changes in coral reefs

**Increased growth is the underlying physiological process associated with disease, wounding and stress-related colour changes in reef-building corals.**

Locally accelerated growth in the presence of foreign biological material, represents a novel component of the innate immune response of reef corals in which the animals try to neutralise potentially dangerous organisms by overgrowing them, a new study finds.

The study conducted by researchers from the University of Southampton and National Oceanography, Southampton, just published in the latest issue of the journal *Coral Reefs* investigated distinct green fluorescent protein or GFP-like pigments responsible for the green, red and purple-blue colours of many reef-building corals.

By examining these GFP-like pigments in four coral species from the Red Sea, the Arabian/Persian Gulf and Fiji, researchers found that their presence indicates growing tissue in growing branch tips and margins of healthy coral colonies as well as in disturbed colony parts, compared to undisturbed areas. ■



PETER SYMES





# Diving the *Arrow*

Text by Robert Osborne  
Photos by Ingo Vollmer

**It's an unsettled kind of morning on Chedabucto Bay of Canada's east coast. The sun is shining—it's really quite pleasant—but there's a brisk wind blowing from the southwest. What that translates into here in the waters between Cape Breton Island and Nova Scotia is heavy seas. We're pounding through four to six foot swells in a 25-foot rigid hull inflatable boat. The ride out to the dive site is turning out to be a wild, you might say bone-jarring, experience. All this for a dive that I'm still not certain I want to do at all.**

We're on our way to dive on the wreck of an oil tanker called the *Arrow*. But given the state of the sea I'm not sure whether we're going to be able to get down.



Getting out of the boat isn't going to be a problem. But crawling back in when the boat is swinging

through a three meter arc is a real question mark.

The other question mark: What

am I going to find? When the *Arrow* went down on 4 February 1970, it was an environmental

disaster of catastrophic proportions—one that at the time rivaled the more recent Gulf of Mexico

disaster. Am I going to find a thriving artificial reef or a still leaking environmental killer?



Anita Vollmer looking at sculpin hiding in sea weed (right) and on deck of *Arrow* (bottom); Diver (below) by rudder. PREVIOUS PAGE: Mid ship on *Arrow*, looking at valves used to control oil flow



Arrow

20 years-old—the second oldest ship in the fleet—and the *Arrow* wasn't in a great state of repair. In fact, virtually all of her navigation systems, with the exception of her compass, were out of order.

As she entered the bay the *Arrow* encountered heavy rain and winds gusting to 60 knots. Slowly but

surely, as the ship made its way down the bay she drifted out of the shipping lane. By the time she was way halfway, the *Arrow* was well out of the safe zone. At 9:30 a.m. she struck Cerberus Rock and ran herself well up onto the reef. Initially officers and crew were not overly concerned. They tried full reverse to get off. No luck. But the captain, George Anastassopoulos, felt that they still

could work free at high tide. No distress signal was sent. The first step toward an environmental disaster had just been taken.

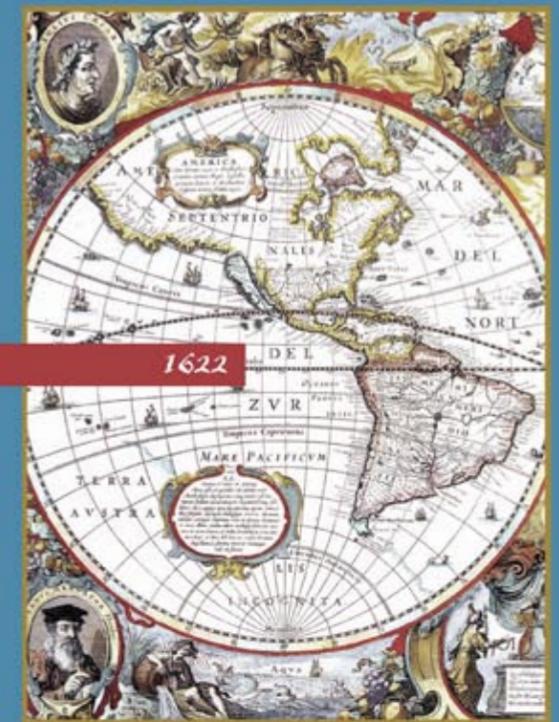
### Diving the *Arrow*

After 20 minutes of pounding through the waves we arrive at the buoy that marks the location of the wreck. My host, Ingo Vollmer, casts a skeptical eye on the water conditions. Finally, he makes a decision: "I think it's possible." I slide into my dry suit and gear up. My dive buddy for the day is Ingo's wife, Anita. We roll backwards off the RHIB and swim over to the descent line. A quick check and we submerge. Right away I can tell this isn't going to be a promising dive. It's

only 30 meters deep here and the rough water has churned up the bottom. We descend to the wreck with only two to three meters of visibility and hit the top of the superstructure at about 20 meters.



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Carol Tedesco

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CLOCKWISE FROM LEFT:  
Diver examining plumose  
anemone; Looking down  
the port gangway; Finback  
whales in Chedabucto  
Bay; Inside the superstruc-  
ture of the *Arrow*

though I have to admit I feel vaguely like a Navy Seal when it's all over. Ingo asks me how the dive went. When I tell him, he says: "We'll try again tomorrow." He fires up the engines and we head for shore.

### History

Hoping tomorrow would bring a better day was something that Captain Anastassopoulos was relying on. He was certain that he could reverse his ship off the rocks. But after trying all day without success he began to realize this was more serious than he'd first thought. The weather was starting to turn really ugly. Finally, he sent out a distress call. A Canadian Fisheries vessel responded and removed most of the crew.

During the next day several attempts were made to tow the *Arrow* off the rocks. All attempts were unsuccessful. It was finally decided that to pull the ship off the rocks, the oil would have to be pumped out. But salvagers decided to wait until the following day—a decision that some see as the second major error in the catastrophe.

The next morning was too late. When crews arrived on site, a three mile-long oil slick had already spread out across the bay.

Overnight the *Arrow* had split and

nals me to follow. We manage to complete a circuit of the wreck—down to the rudder at 30 meters and around the hull—

but all I can make out are just vague dark impressions. After 30 minutes we give up and head for the surface.

And this is where the dive gets a

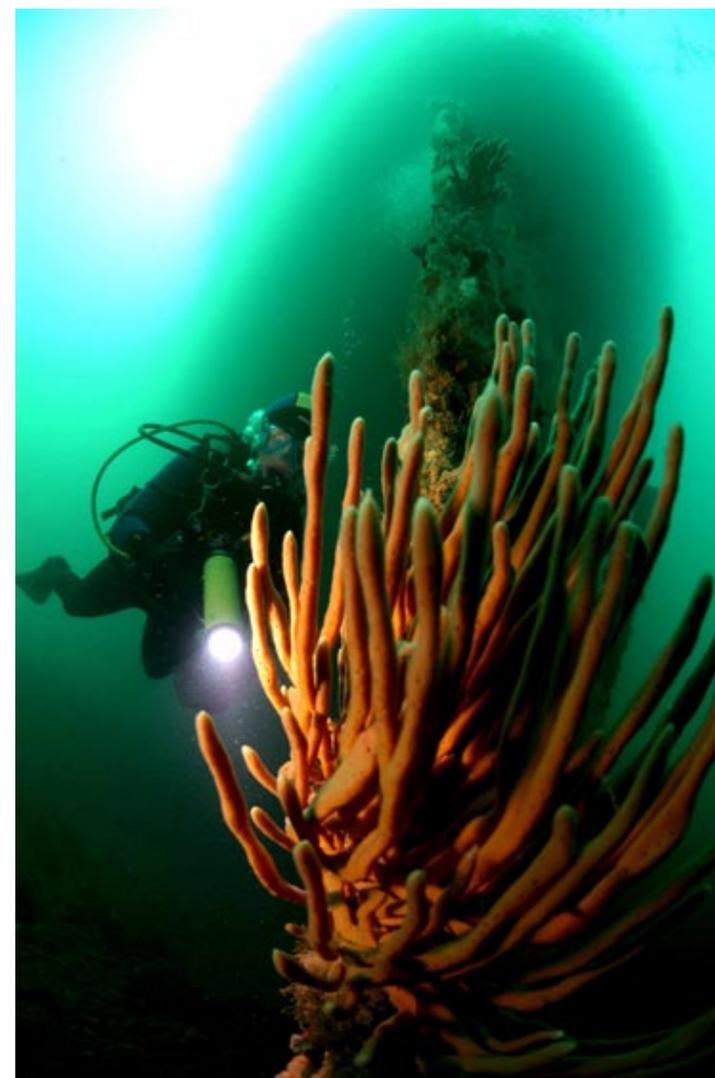
little tricky. The winds have picked up even more. The RHIB is bouncing up and down in a dangerous manner and there is no dive ladder. Getting back in is like something out of a rodeo. We have to catch hold of a rope and, while hanging on the side, remove our BCDs and weight belts, hand them up to the boat tender and then heave ourselves in. At the top of the arc my feet are nearly clear of the water, at the bottom I'm submerged to my neck. My arm and shoulder get severely yanked around and it takes some real work to hang on, but eventually I manage to get all my gear off and haul myself up over the side. I'm getting too old for this stuff,



I can see we're on a wreck, but not much more. Fortunately, Anita knows this dive site like I know my neighborhood; she could find her way around blind folded. She sig-



Arrow



CLOCKWISE: Inside *Arrow* just above engine room; Miniature sea anemone growing on sponge on wreck; Sponge growing on rudder plate; Sea anemone inside cargo hold

the bow section had already sunk spilling 3.5 million gallons of oil. The majority of the ship—the back two-thirds—was still intact on the surface. Most of the oil was contained in that section. Coast Guard ships tried to get a line on her to tow her into port. But again the weather drove them back.

The following morning the stern section was gone as well. An environmental time bomb was now sitting on the bottom of the bay. Within days, maybe even hours, that bomb could go off releasing millions of gallons of oil.

**Back to the present**

Day two and we head out once again. Again the winds are coming from the southwest and that means there's still a heavy swell. As we approach the reef where the *Arrow* struck, the seas flatten out—marginally. Ingo decides we're good to go and once again we're over the side and dropping down the descent line. This time Anita decides we'll do a circuit around the superstructure and top deck. Again the visibility is poor. But we're only at about 20 meters so the light penetration is excellent. I start to see more. Masses of

shaggy seaweed cover the gangways of the superstructure. Thousands of small bait fish, a kind of ocean perch called cunners swarm the top of the wreck. As we work our way down the length of the main deck, Anita points out a wonderful macro feature. The pipes and machinery that used to move the oil are covered in miniature orchid-like

sea anemones. As I approach, some of the pipes they look as if they're covered with frosty clouds of candy floss. We hit the far end of the wreck and I notice a couple of very promising points of penetration—old



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CLOCKWISE: School of cunners (sea perch); Anita Vollmer penetrating gang way area; Small wolf fish in old pipe with wreck of *Arrow* behind; Diver at port gangway

hatchways that lead down to the forward hold and out the front of the wreck. I make a mental note to revisit them on the next dive when the visibility is better. We hit our turnaround time and head back for the boat. A more promising dive to be sure, but I can't help thinking there's more to this wreck than I'm seeing under these conditions. One thing I am sure of, this wreck is no longer an environmental time bomb.

### Response

The first divers visited this wreck within days of her going down, but they weren't recreational divers. They were military—and with a tough job ahead of them. In response to the sinking, the Canadian government launched what amounted to a virtual military campaign. The spill from the bow section had already contaminated 190 miles of coastline and potentially destroyed the local fishing industry. They didn't want the rest of that oil leaking out and finish-

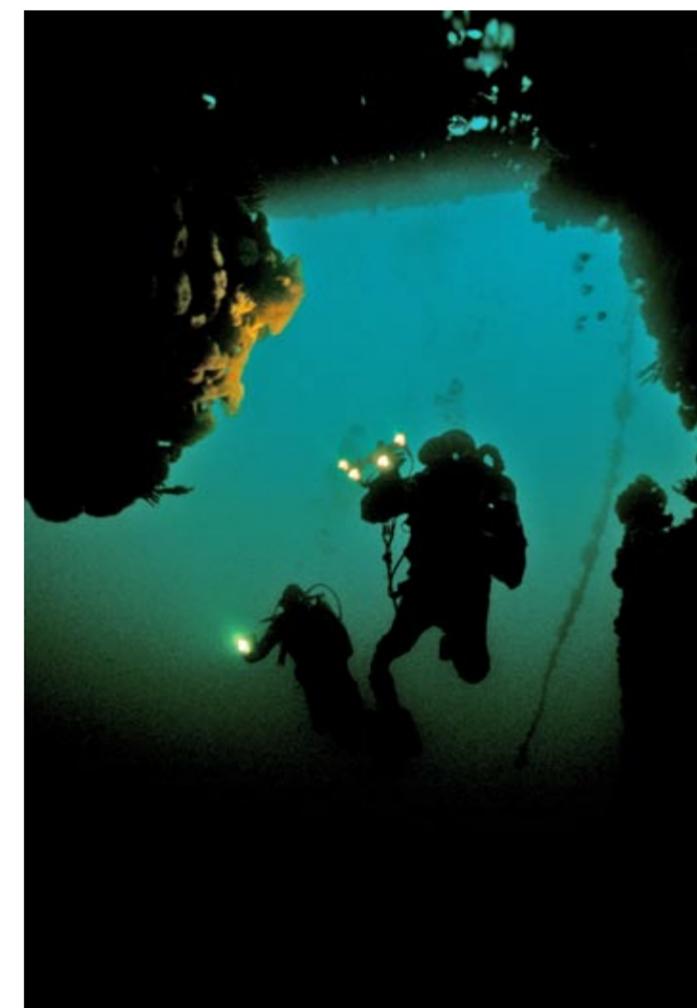
ing the job. So the Canadian military, with the assistance of the U.S. and Canadian Coast Guard, started a campaign to save the bay.

It was a two part operation: one part was to clean up and contain the millions of gallons already spilled. The second thrust was to get pumps down to the wreck and get the oil in the stern section safely into a barge. The operation went better than anyone could have expected. Within weeks divers had attached pumps to the outside of the wreck and, using an ingenious technique of pumping hot water into the holds to heat the oil so it would flow, they pumped the oil up to a waiting barge.

The clean up on the shore took a lot longer and the success of that part of the job drew mixed reviews. Eventually, the government declared the operation complete and gradually the disaster drifted from memory.

Faded away until, that is, 20 years





CLOCKWISE: Looking towards front of wreck across mid section of deck; Sea anemone; Penetrating front end of wreck; Close-up of flounder; Wolf fish hiding in wreck

later, local divers began to explore the wreck and found that a transformation had taken place. A transformation I'm still trying to see on my third and final day of diving.

### Third time's the charm

It begins on a promising note. I poke my head out of my cabin; the sun is shining. What's even better is that the wind has died completely. I head up to Vollmer Lodge's dive shop and quickly pack my gear into the RHIB.

This time the journey out is magical. We blast along on a

calm sea past islands covered with sea birds. Eagles perch in the trees that line the bay. Every time I turn and look, a harbor seal is poking its head out of the water. Suddenly Chedabucto Bay has come to life.

Without the heavy swell, our trip to wreck takes only a few minutes. We're over the side in record time and as soon as I submerge I know this dive is going to pay off. I can see the top of the superstructure 20 meters below me. As I descend, I start to get a sense of the scale of the wreck. It's

massive—around 140 meters long, 20 meters wide and about 20 meters high. We swim past the superstructure and head deeper to do a circuit of the main hull. Swimming ten meters away from the wreck and parallel, I'm dwarfed by the size of the structure. With such great visibility I also start to notice a few other details—the bottom is covered with scallops and lobster.

We circle around to the front of the ship. This is where the bow of the *Arrow* tore away from the stern; jagged and

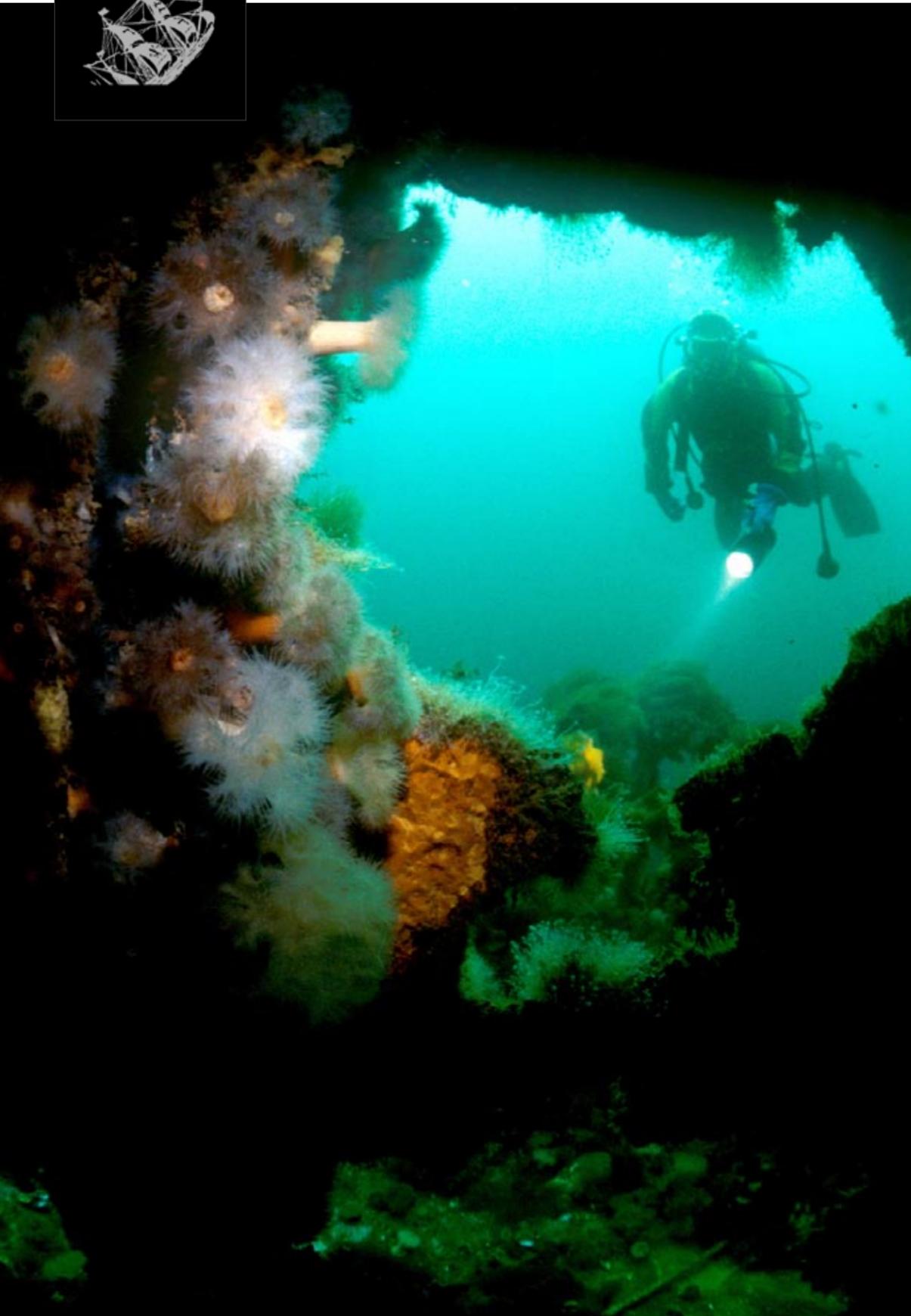
twisted plates and beams poke out from the hull looking vaguely like some surreal metallic space squid. Oddly there's enough clearance to swim in for a quick look. A mental note, next time I come I should bring a reel or two, there's clearly lots to explore inside the hull of the *Arrow*.

We pop back out and head for the main deck. Now I'm beginning to get a sense of just how alive this artificial reef has become. In the midst of the





LEFT TO RIGHT: Diver peers into superstructure of *Arrow*; Diver with school of fish in main superstructure of wreck; Atlantic lobster on sea floor by wreck; Location of wreck on map of North America



*Arrow*

came to see, the sunken oil tanker I was so curious about.

### Research

In fact, the government of Nova Scotia is also curious about what's going on at the site of the *Arrow*. It just launched a study to assess the long term effects of the oil spill on the surrounding environment. Researchers may yet discover that what appears to be a thriving ecosystem is still only a thin veneer of life on a toxic sub-surface.

Certainly studies done ten years and even 20 years after the *Exxon Valdez* spilled 750,000 barrels of oil into Prince William Sound show that wildlife populations are



it could take 60 years before some wildlife populations recover fully.

But if there is any long term damage in and around the wreck of the *Arrow*, then I've certainly not seen anything to indicate this. What I've witnessed from my brief visits is an example of how, given time, the sea has an almost infinite capacity to be resilient. ■

*Features editor Robert Osborne is an internationally published dive writer, television producer and reporter based in Toronto, Canada.*

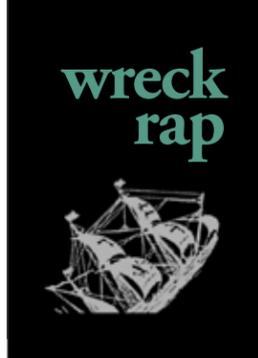
shaggy masses of seaweed are star fish, crabs, the usual schools of cunners and cod. Little wonder that the harbor seals make this a regular stop for feedings. It's an underwater smorgasbord.

Hard to imagine what this was like 40 years ago—an environmental disaster of staggering proportions. Later Ingo

tells me that inside the hull, you still come across globs of oil, but I see no evidence of any lasting environmental impact on this dive.

Long before I'm ready to surface I'm out of bottom time. This time it's an easy pull to get into the RHIB and a gentle ride back to shore. I've finally seen a good glimpse of the wreck I

not recovering quickly and signs of deformities from low levels of toxicity are common. High levels of leukemia have been recorded and anyone who digs down a few inches discovers globs of oil cropping up. Even in the Bay of Biscayne where the *Amaco Cadiz* went down in 1978 (spilling 1.6 million barrels of oil) scientists say



*HMS Terror* thrown up by the ice. Engraving after a drawing by Captain George Back, from his 1836-37 Arctic expedition



## Franklin's lost ships

**The Canadian government launches its largest search yet for the lost ships of Sir John Franklin's doomed 1845 quest for the Northwest Passage.**

This year's search, led by Parks Canada, is the fourth government-led expedition over the past five years and is by far the biggest, involving a much larger alliance of federal departments and other public and private interests.

Parks Canada is expanding the scope of its investigation this year

with new partners, vessels and instrumentation to cover more area over an approximate four weeks rather than the six days of surveying done in past years.

UVic's Ocean Technology Lab's AUV is equipped with a bathymetric side-scan sonar system to gather three-dimensional data about the ocean floor that

can be used to identify items of archeological interest.

None of the 129 men on board survived, and although traces of the expedition have been found, the ships' final resting places remain unknown.

The ships were last seen entering Baffin Bay in August 1845. The disappearance of the

Franklin expedition set off a massive search effort in the Arctic.

The broad circumstances of the expedition's fate were first revealed when Hudson's Bay Company doctor John Rae collected artefacts and testimony from local Inuit in 1853. Later, expeditions up to 1866 confirmed these reports. ■

## Robert Scott's ship found

The *SS Terra Nova*, the ship that took Captain Robert Falcon Scott and his team on their ill-fated expedition to the Antarctic a century ago, has been found on the seabed off Greenland. The famous polar exploration vessel was known to have sunk off the coast of Greenland in September 1943 after being damaged by ice.

A crew from the Schmidt Ocean Institute discovered the *Terra Nova* whilst testing echosounding equipment aboard its flagship vessel—the *R/V Falkor*.

Last month, during routine functional performance testing of the multibeam mapping echosounders on the Schmidt Ocean Institute's flagship, *R/V Falkor*, the team aboard—including

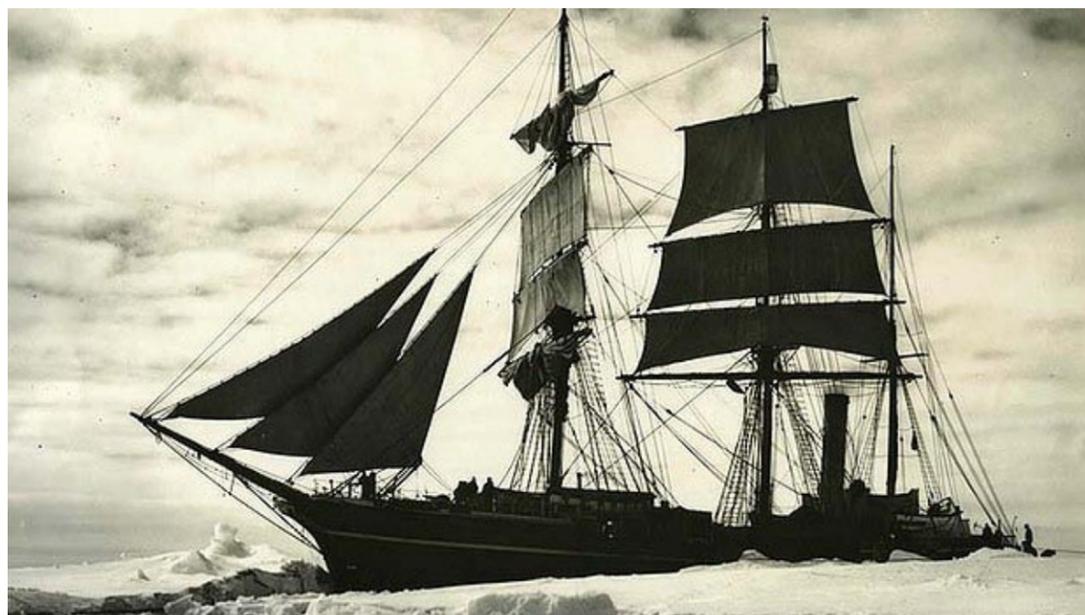
researchers from the University of New Hampshire, Ifremer, and Woods Hole Oceanographic Institution—discovered the *S.S. Terra Nova*, a whaler,

sealer and polar exploration ship that sunk off the southern coast of Greenland in September, 1943, after being damaged by ice. The crew was saved by the U.S. Coast Guard cutter *Southwind*.

On arriving at the geographical South Pole in January 1912, Scott and his party discovered they had been beaten to it by a Norwegian team led by Roald Amundsen.

The polar team led by Scott died on their return journey from the pole; their bodies were found by a search party eight months later.

Their endeavour became popularly known as the *Terra Nova* expedition. ■



The *SS Terra Nova*



## Search is on for Capt. Cook's Endeavour

**A marine archaeologist is hoping to find and recover the wreck of Capt. James Cook's famous ship the Endeavour in Newport Harbor.**

*HMS Endeavour*, also known as *HM Bark Endeavour*, was a British Royal Navy research vessel commanded by Lieutenant James Cook on his first voyage of discovery to Australia and New Zealand from 1769 to 1771.

The *Endeavour*, which Cook sailed to Australia in 1770, was scuttled by the British in 1778 as part of its blockade of Narragansett Bay.

*Endeavour's* end came in August 1778 when the British occupation of Newport was threatened by a fleet carrying French soldiers in support of the Continental Army. The British commander, Captain John Brisbane, determined to blockade Newport Harbor by sinking surplus vessels in its approaches. Between August 3-6, a fleet of Royal Navy frigates and transports, including Lord Sandwich,

were scuttled at various locations in Narragansett Bay.

The Rhode Island Marine Archaeology Project (RIMAP) is engaged in a multi-year process to locate and identify the 13 British transports sunk in Newport Harbour on 5-9 August 1778.

RIMAP's research process is to find all of the transports that still exist, to study each site in turn and to determine how closely each fits the descriptions of the known transports.

Even if the *Endeavour* is not found, Rhode Island has discovered one of the largest Revolutionary War fleets of transports, and that is significant because little is known about this important (but usually overlooked) ship category of the American Revolution. ■



Edited by  
Peter Symes

*Even after 27 years working at PADI and nearly 40 years in the dive industry, I feel like I'm just getting started. There is so much opportunity ahead to authentically transform peoples' lives and leave a legacy for future generations*

— Drew Richardson

## Drew Richardson to take the helm at PADI Worldwide

Brian P. Cronin, PADI Worldwide CEO and Chairman of the Board for the past 17 years has announced his retirement. Dr Drew Richardson has been appointed as his successor.

Richardson joined the PADI organization 27 years ago and has most recently served as PADI Worldwide president and chief operation officer. A dive industry veteran, Richardson has been

involved in water safety, scuba diving and dive education since 1974, and his contributions have had an enormous effect on the dive community worldwide. ■



PADI WEBSITE

## DEMA launches health & business insurance program for U.S. members

Members located in any of the 50 U.S. states can purchase a variety of health insurance products including a pharmacy benefits program, group employee and individual health insurance, business insurance and have access to workers compensation insurance at DEMA member-only rates.

Competitive insurance rates are avail-

able to DEMA members because DEMA has combined with more than 9,000,000 association participants from across the United States

*Every company in the diving industry is faced with escalating health care insurance costs for their owners and employees, and in some cases these companies have had limited or no access to health insurance coverage*

— Tom Ingram,  
DEMA Executive Director

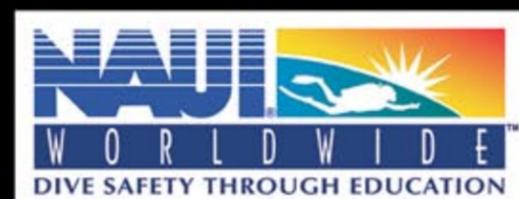
to make it possible for even the smallest DEMA member company to purchase health insurance when they become part of the association.

Getting a customized quote through the DEMA Member Insurance Program is easy. Members simply log on through the DEMA Member Dashboard and enter the Insurance Program portal. There, they are able to customize their desired plan by choosing the coverage, which works best for their business size, their state, their specific needs and budget. Members can even compare their quote with other carriers to make sure they are getting the best rate available for their needs. ■

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Edited by  
Scott Bennett

## Credit card fee for buying flights and holidays to be banned

The hidden fees, which cost customers more than £300 million a year, are imposed on flights, holidays and a range of other services.

New rules in the United Kingdom will soon outlaw the practice of charging customers to use cards. From the end of next year, almost all transactions will be covered. Companies that break the rules will be hit with multi-million-pound fines. The government decided to act after a damning report by the Office of Fair Trading earlier this year denounced the widespread use of card scams.

Under the plans, businesses will not be able to load on excessive payment surcharges. But they will be able to add a small charge to cover their real costs for using any particular form of payment. That is likely to cap credit card costs at a maximum of two per cent per transaction, or around 20p for a debit card payment.

Airlines regularly charge three or four per cent for credit card payments. From mid-2014, an E.U. Consumer Rights Directive will ban businesses in many sectors, including airlines, from imposing above-cost surcharges on any form of payment.

### Airlines already scrapping fees

Meanwhile 12 airlines, including EasyJet and Ryanair, will no longer spring last-minute fees on customers paying by debit card, U.K. Office of Fair Trading has said.

The carriers have agreed to include debit card surcharges in the headline ticket price rather than surprise consumers at the end of the booking process. The airlines also agreed to make surcharges

clearer and easier to find during the booking process, the OFT added. ■

*We want to make sure that consumers paying by card do not have to pay the excessively high surcharges being imposed on them by some airlines and other businesses.*

— Consumer Minister  
Edward Davey

## Good to know

**Your passenger rights**



**at hand**  
EUROPEAN COMMISSION

Even if you are not an E.U. citizen, the consumer protection outlined in the European Union's bill about pas-

senger's rights will apply if you happen to travel on either an E.U.-based airline or a flight departing the European Union. The main air passenger rights deal with the following issues:

- Long delays
- Denied boarding
- Cancellation
- Baggage
- Price transparency
- Identity of the airline
- Package holidays
- Identity of the airline
- People with disabilities and people with reduced mobility ■

► EU's Passenger rights

## Purchase your rebreather on a trip

Siren Fleet is offering you the opportunity to purchase your own Poseidon Recreational Rebreather and combine that with a training course and liveaboard diving in the Philippines.

Board the *S/Y Philippine Siren* for a ten-night diving safari on any of our itineraries, and they will have your new rebreather waiting for you. Courses will be taught on board using the Poseidon Discovery MKVI, which is the fully automated closed circuit rebreather unit specifically designed for recreational diving.

Take the UWECO course with one of their certified instructors, continue to dive on your own unit for the duration of your trip, and then take your new unit home! ■

► More details



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## Western Australia bans shark tours

**Western Australia state said it would introduce rules to ban most shark tourism after four fatal attacks on bathers in the region over the past year.**

Norman Moore, the fisheries minister of Western Australia, quoted research that suggests cage diving can change the behaviour of sharks.

“I have decided that Western Australia will not be the place for shark cage tourism,” he said, while recognising that the activity can bring in tourism revenue. He claimed Western Australia, in contrast to Southern Australia and South Africa, had no known areas where sharks congregated.

“The Commonwealth Scientific and Industrial Research Organisation’s research at shark cage diving sites in South Australia found that white sharks in the study area changed their distribution to align with areas of active berleying (baiting) and, while there was

no determination from the study about the longer term effects on shark behaviour or outside the study area, I would prefer to take no risks until more is known,” Moore told *Bloomsberg Businessweek*.

A total of AU\$13.65 million (£9 million) has now been allocated

to reduce the risk of attacks along Western Australia’s pristine coastline, which draws tens of thousands of tourists every year. The money will be used to fund increased shark safety awareness and research into shark activity in the region.

The existing satellite-linked shark monitoring project will be extended by two years, and additional monitoring equipment will be installed at locations in the southwest to help monitor shark movements. ■

*I have decided that  
Western Australia  
will not be the place  
for shark cage  
tourism.*

—Norman Moore, Fisheries  
Minister Western Australia



Cage diving with great white sharks off Gaudaloupe

## Airline accidents at an all-time low

**The 2011 accident rate for Western-built jets was the lowest in aviation history, surpassing the previous mark set in 2010.**

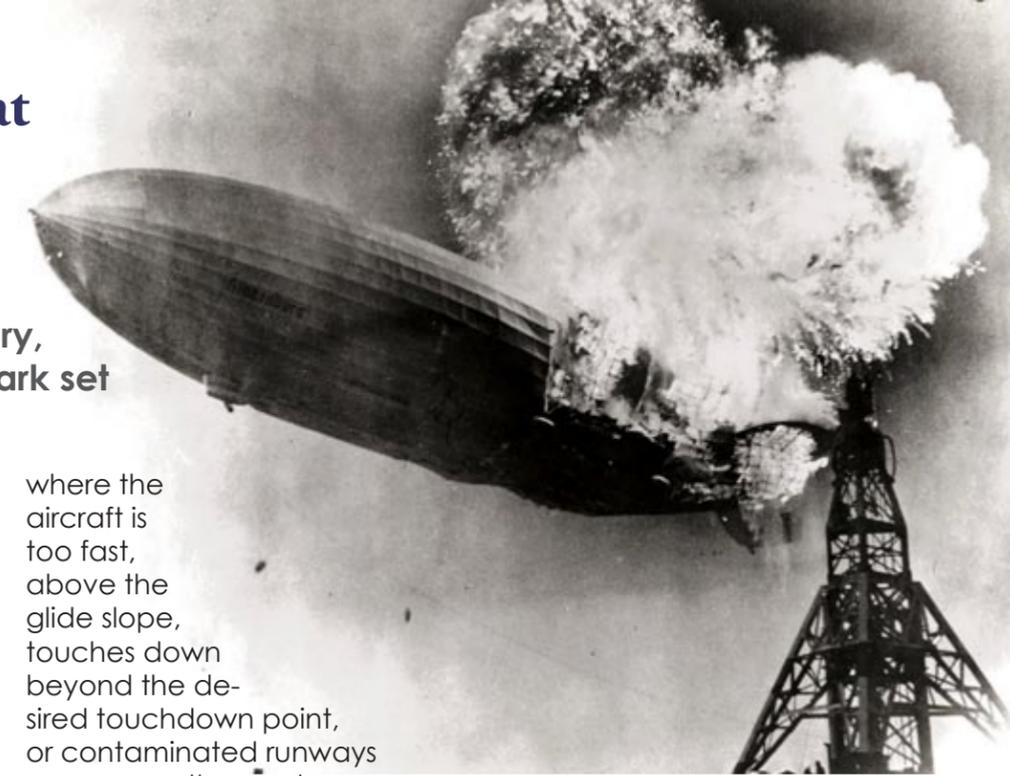
The figures released by IATA go on to show that 2.8 billion people flew safely on 38 million flights in 2011 with 92 total accidents, 22 of which were fatal, on both Eastern- and Western-built aircraft, down from 94 (23 fatal) in 2010.

The highest cause of accidents remains runway excursions at 18 percent. This is where an aircraft departs the runway on takeoff or landing, with 88 percent of the 17 accidents in 2011 coming on landing. Situations

where the aircraft is too fast, above the glide slope, touches down beyond the desired touchdown point, or contaminated runways are among the most common contributing factors to runway excursions on landing.

Similarly ground damage was the second most serious concern, accounting for 16 percent

of accidents. This includes incidents involving ground handling operations and incidents during taxi. ■



## Oregon’s crater lake closed for diving

**Threat of invasive species prompts U.S. Crater Lake National Park officials to temporarily close lake to scuba diving.**

The lake—the centerpiece of Oregon’s only national park, and at 1,943 feet, the deepest and clearest lake in the United States—was temporarily closed to diving while park ecologists developed a plan to keep out invasive species. The most worrisome species are quagga mussels and spiny water flea; park officials are also concerned that



Crater Lake is deepest and clearest lake in the United States, created 7,000 years ago by the collapse of a huge volcano

the hemorrhagic septicemia virus, a deadly fish disease, could reduce native species and damage the lake’s ecosys-

tem. The lake won’t reopen to diving until 2013 and will likely require a permit and adherence to rigorous protocols. ■

