





The Red Sea resort of Sharm el Sheikh, situated at the southern point of the Sinai, has some of the world's most celebrated diving attractions around its shores. The world-famous Ras Mohammed National Park is located at the very tip of the Sinai Peninsula where deep water upwellings generate incredible coral growth, particularly on the signature sites of Shark and Yolanda Reefs.



During the summer months this area is also a hotspot for schooling snapper, barracuda, batfish and unicorn fish. Marine encounters recorded by divers on these life-filled sites also include whale sharks, manta rays and dolphins.

Head north from Ras
Mohammed to the Strait of Tiran
and you will find a coral garden
described by scuba diving
pioneer Jacques Cousteau as
one of the most spectacular
reefs he had ever seen. The
steep-sided walls of Jackson
Reef are where you will find
some of the most beautiful coral
cover in the Sinai region,
including the famous rare red
anemone. Strong currents, most
profuse at the edge of Jackson

Reef, attract an abundance of pelagic fish particularly during the summer months. In the less wind-swept and calm days of summer, boats are able to dive the north side of the reef.

Although far from guaranteed, the chance to see the resident school of scalloped hammerhead sharks is well worth a dive in the blue water.

Wrecks are also a major pull for visitors, with one of the most famous sunken diving attractions located just a few hours' boat ride from Sharm. Voted time over as one of the best wreck dives, the *Thistlegorm* alone attracts scuba visitors from all over the world to the northern Egyptian Red Sea resort.

If you don't want to travel far to a dive site, or like the idea of half-day trips, you can opt to go local. Sharm's local reefs are excellent for training and photography, and at the right time of year throw up their own spectacular surprises. From the months of May to September it is not unusual to spot the odd manta ray or whale shark passing by as they follow the plankton.





# The day the diving stopped

ONTHLY MAGAZINES have long leadtimes. When we started work on this May edition at the back end of February the coronavirus was, unbelievable as it now seems, still a fairly remote blip on the horizon.

I'm scribbling this editorial a few days before the end of March, under the "mild lockdown" conditions that mean that if I exercise my rights to go shopping, help out a neighbour and walk a dog I'd actually be getting more weekday exercise than I usually do.

But it doesn't take much to predict that as you read this in mid-April or later, the situation will be far worse than it is from my current perspective.

Because of the Philippines' popularity we had planned to spotlight its diving over three articles, plus holiday offers in *Booking Now*. We had lined up a typical selection of other features for all tastes, from a trip to St Helena to mine-diving in Cornwall, from diving the amazing *Mars* wreck in the Baltic to an extraordinary basking-shark encounter in the Irish Sea.

If **DIVER** magazine has a long lead-time, **DIVERNET** is our real-time news presence. As a specialist title our remit is narrow, and it took a while to see how the virus was going to impinge on our sport, though by mid-March all the clues were there.

Official advice was the fall-back, and the UK government was slow to impose travel restrictions. On 12 March we were relaying advice on disinfecting dive-gear; the following day we were reflecting the travel trade's views that dive-trips could still be booked and undertaken safely.

Only four days later the FCO was advising against all but essential overseas travel and the scramble began to rearrange or cancel holidays, and make sure all tourists got home while routes remained open.

On 19 March we were passing on governing body BSAC's advice on social distancing for divers. It seemed even then that if we couldn't fly away, we could at least go diving, carefully, at home.

But a few days later official advice to self-isolate and avoid unnecessary internal travel, plus dive-centre closures, meant that unless you had an interesting body of water at the bottom of your garden, diving was off the menu. Never mind that submerged was the safest place to be.

Virtual diving would have to suffice. We decided to complete the magazine much as planned. If you enjoy reading about diving when the real thing is available, we hope you'll enjoy it even more in isolation.

The Philippines articles and holiday news are still there, as is everything else, so you can at least dream the dives and enjoy planning your first post-pandemic trip. We plan to go on feeding your dreams in **DIVER**, keeping you informed on **DIVER**∩ET and welcoming you to a post-crisis celebratory gathering at DIVE 2020 at the NEC later this year.

When we get through this the dive-sites will still be there – and perhaps that much healthier for the let-up in global pollution that will be one of the few positive legacies of this pandemic.

The **DIVER** team sincerely hope that you and those around you are all safe and well by the time you read this. Please do everything you can to stay that way.



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Dive the Red Gen



Volume 65 No 5

the magazine that's straight down the line...

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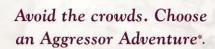
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# Covid-19 puts diving on hold

into semi-lockdown conditions in response to the global Covid-19 coronavirus pandemic as **DIVER** went to press in late March.

With all but essential overseas travel ruled out and coastal and inland dive-centres closing their doors, scuba-diving had been put on effective hold until the crisis could be declared over and restrictions lifted.

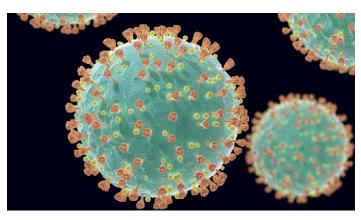
As the UK government tightened its grip on the pandemic and other nations imposed their own entry restrictions, dive-tour operators were faced with requests for package trips to either be rescheduled or cancelled and payments refunded.

Most urgent was to make sure that divers already overseas were able to return safely to the UK as aircraft were grounded, quarantine controls imposed and major airline hubs shut.

In the light of conflicting advice from multiple sources, diving's governing body the British Sub-Aqua Club recommended that divers make government website gov.uk their single point of reference for up-todate and consistent information.

And as self-isolation and social distancing became the norm, BSAC considered alternative pursuits for locked-doen divers.

"We are a creative bunch and I'm sure we can find ways of keeping busy – tidy our dive-kit store, start researching and planning our future dive-trips, do some distance learning, collate our dive photos, videos, logs and stories to share with each other," said BSAC's CEO Mary Tetley. "We've even seen reports of dive-clubs in the (virtual) pub with each other."

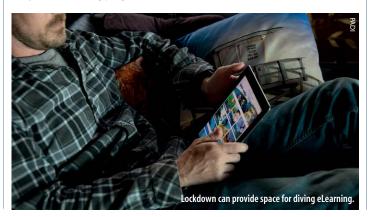


The club advised on ways in which divers could stay in touch with the community by creating virtual networks catering for anything from informal exchanges to online learning sessions, making use of apps such as Zoom, Skype, Facetime, WhatsApp or Discord.

The world's biggest diver-training agency PADI was also quick to emphasise opportunities for using the enforced downtime for online training, offering 25% discounts on its entry-level eLearning programmes.

And PADI's President & CEO Drew Richardson made an impassioned appeal for divers to stay connected during the crisis. "On behalf of the PADI family, I want to express support for millions of divers, dive-centres and resorts, dive leaders and educators, and many colleagues and their loved ones, who are at this minute suffering, isolated or guarantined." he said.

"We are connected through our love of the underwater world. That connection fills both our hearts and souls. Let's come together in this





crisis, focused and unified, to lean in, support each other, and to support our industry."

On a practical front in responding to the pandemic, it turned out that the sometimes-derided full-face snorkelling masks could prove to be a life-saver. Italian research institute Issanova designed a 3D-printable ventilator-link that, when fitted to a Decathlon Easybreath, provided an emergency replacement for the medical CPAP masks that were becoming in desperately short supply.

And many divers not already employed in the health and emergency services but with transferrable skills gained through diving training such as oxygen administration were understood to be volunteering as NHS support workers.

"The global dive industry has weathered and prevailed through many challenges throughout the years," said Richardson.

"Our united resilience during these challenges shows that we have the strength and endurance to make it through this one, too."

### ON WITH THE SHOW — DIVE 2020 PLANNING ALREADY UNDERWAY

STARS OF THE DIVING WORLD have been signing up to participate in the annual UK Dive Show, DIVE 2020, at the National Exhibition Centre over the weekend of 24/25 October.

The Show will, it is hoped, provide a chance for international divers to reconvene after the extraordinary events currently preoccupying the world. Its special line-up of guest speakers and features will reflect the fact that this will be the 30th anniversary event.

From tech diving and historic wrecks to dive travel, training and freediving, the four in-hall stages will have it covered with cutting-edge presentations from world-leading presenters.

Michael Menduno, the man who first coined the term "technical diving", will be giving a special presentation each day to mark the 25th anniversary of Eurotek. This ran alongside the 1995 Birmingham Dive Show and hosted techdive pioneers such as Billy Deans, Olivier Isler, Bret Gilliam, Lamar Hires and Rob Palmer.

Archaeological diver Mark Beattie-Edwards will be speaking about the wreck of 17th-century warship the *London*, and the plans to







raise it from the Thames Estuary in what will be the biggest such initiative in Britain since the lifting of the *Mary Rose*.

Outstanding British explorer, TV man of action and expedition leader of the National Geographic *Pristine Sea* initiative Paul Rose has confirmed that he will be at the Show, as will photography guru Saeed Rashid, curating the ever-popular PhotoZone.

Dr Richard Smith's presentation "The World Beneath: Underwater Photography Meets Marine Biology" will explore the role of divers in discovering new species – as he has done – and acting as citizen-scientists.

Readers can keep tabs on developing plans for DIVE 2020 at diveshows.co.uk

DIVED 8

# Freedivers make their mark – under ice and on foot

### **TWO FREEDIVERS**

have claimed individual Guinness World Records after carrying out specialist breath-hold dives.

In late February Russian diver Alexey Molchanov claimed a Guinness world distance record for

freediving under ice, to add to his two existing mainstream world records.

Under-ice diving is not among the 10 core disciplines of the sport's governing body AIDA, although one of its representatives, Viktor Frantzov, was present to verify that Molchanov's dive had been carried out as stipulated.

The Russian used a monofin to dive beneath the frozen surface of



a dolomite quarry site near Moscow, covering a distance of 180m on one breath to break French freediver Arthur Guerin-Boeri's record of 175m.

That mark had been set in Finland in 2017 under Guinness World Records conditions.

Molchanov currently holds the AIDA world records in the Constant Weight discipline (130m, set in the Bahamas in 2018) and Free Immersion (125m, set at the same location six days later). They are the most recently set male freediving records.

Molchanov, who is chair of the Russian Freediving Federation, dedicated the record to the premiere of *One Breath*, a film about his mother Natalia Molchanova.

The multi-world-champion freediver went missing in 2015 while pursuing her sport off Formentera in the Mediterranean.

Shortly after Molchanov's exploit, Croatian freediver Boris Milosic claimed the Guinness World Record for walking under water.

Milosic, 23, a member of Split Dive Club, performed the feat in a pool in Kastela Bay marina on 1 March.

His aim was to outdo Turkish female freediver Bilge Clingigiray,

who last September broke both the men's and women's record for Longest Underwater Walk with One Breath"

She had covered 81.6m in one minute, as reported in **DIVER**.

The men's record of 79.9m has been held since 2015 by Turkish freediver Sertan Aydin.

The discipline requires one of the freediver's feet to be touching the bottom of the pool at all times.

Milosic took considerably longer than Clingigiray to complete his walk, at 3min 36sec, although he said he had expected his attempt to take more than four minutes.

The freediver is ranked second in the world in the AIDA Dynamic With Bi-fins discipline, having swum a horizontal distance of 234m in 2019.

### **DIVER'S 'DETERMINATION IN FACE OF ADVERSITY'**

TOM OATES, currently training as a scuba instructor despite having been diagnosed with post-traumatic stress disorder (PTSD), has been awarded the Henry Worsley Award at the Royal Foundation's Endeavour Fund annual awards event.

Oates received the award from the Duke of Sussex and Max Worsley, son of Antarctic explorer Henry Worsley, at London's Mansion House on 5 March.

It is accorded to an individual who has "best inspired others through the demonstration of determination in the face of adversity, whilst endeavouring to support others with their recovery through sport or adventurous challenge."

The diver is a programme member of Deptherapy, the charity that rehabilitates, through its scuba-diving programmes, UK Armed Service personnel who have suffered life-



changing mental and/or physical challenges.

Oates was serving with the Scots Guards in Afghanistan when his vehicle was struck by an IED.

Back home, while crossing the road with his girlfriend, she was struck and

killed by a car.
He now suffers
from complex PTSD,
has tried to take
his own life and
requires a high
level of support
but, according to
Deptherapy, "under
water Tom's demons
disappear".

He is now not only achieving his dream of becoming a diving instructor to help others to

overcome similar challenges, but has been offered a place at Hull University to study for a marine-biology degree.

"I have never won anything in my life before, so winning the Endeavour Fund's Henry Worsley Award is unbelievable," said Oates. "Without the support of Deptherapy and the Endeavour Fund I would not be alive; this award is a true milestone for me.

"I hope I can give back to the charity by being a champion for our project Protecting Our Oceans, and by supporting veterans who are new to the programme."

Deptherapy says it launched Protecting Our Oceans in 2016 to support global initiatives to combat ocean pollution through beach and underwater clean-ups and education.

The charity says that Endeavour Fund support has enabled it to offer its training and development programmes to many injured exservice personnel.



AN INQUEST INTO the death of a British scuba-diver who died in Australia last year has opened but been adjourned until July.

Suffolk Coroner's Court in Ipswich heard on 20 March that Australian authorities were still investigating the diving equipment being used and the circumstances surrounding the fatal incident six months ago, according to a report in the East Anglian Daily Times.

Karl Bareham, 37, who was originally from Suffolk, got into difficulties and died while diving in Byron Bay near Brisbane on 24 September.

He was pulled from the sea at a popular surfing beach called the Pass (above) but despite attempts to resuscitate him failed to recover consciousness.

Bareham had been based in Toronto for 16 years as producer and sound engineer for Canadian singer-songwriter Dallas Green and his group City and Colour. They had been in Australia for an appearance at the Brisbane Festival at the end of the month.

Senior coroner Nigel Parsley adjourned the inquest until 23 July. ■



# Wreck-hunting author Clive Cussler dies at 88

S SCUBA-DIVER, shipwreckhunter and best-selling novelist Clive Cussler died in late February at the age of 88.

Cussler used income from his successful writing career to launch the National Underwater & Marine Agency (NUMA) – named after a fictional organisation featured in his 25 Dirk Pitt underwater thrillers – and through it helped to discover more than 60 shipwreck sites.

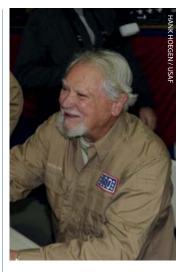
Mounting small-scale expeditions on sonar-equipped research vessels, Cussler and his team would check out the marks they found on scuba. Finds and locations were passed on to official bodies, with Cussler at pains to stress that his motivation was always discovery, not treasure-hunting.

He was responsible for finding many significant shipwrecks through NUMA, including RMS *Carpathia*, the ship that picked up *Titanic* survivors; *U-20*, the U-boat that sank the *Lusitania*; the American Civil War CSS *HL Hunley*, the first submarine to sink an enemy vessel; and, from the same conflict, the first Confederate "ironclad" warship, CSS *Manassas*.

NUMA also believed it had tracked down the famed ghost ship *Marie Celeste*, although that identification was disputed.

Cussler was born in Illinois in 1931 and raised in southern California.

He taught himself to scuba-dive at the age of 20 while serving in the US Air Force, stationed in Hawaii.



Inspired by reading about the exploits of Jacques-Yves Cousteau, he ordered what he later described as "one of the first scuba-rigs ever manufactured" from France.

He saw action during the Korean War, and on being discharged became a successful advertising copywriter and award-winning creative director, while continuing to dive and develop a fascination with shipwrecks.

His first book *The Mediterranean*Caper was started in 1965 though not published until 1973, but it was his third book *Raise the Titanic!*, made into a film in 1980, that cemented his reputation.

He launched his first expedition in 1978 to find the Revolutionary War frigate wreck USS Bonhomme Richard off England's Yorkshire coast.

The wreck has still to be found (Cussler would mount many more expeditions in his efforts to locate it) but it was soon afterwards that he decided to create NUMA.

A prolific author, Cussler wrote 25 books in the Dirk Pitt series as well as the NUMA and Oregon Files series, all with a maritime connection, and the Isaac Bell and Fargo Adventures.

Collaborating with others in later years, he produced some 85 fiction and non-fiction books and sold more than 100 million copies in more than 40 languages. He was still writing up to his death.

In recognition of his non-fiction shipwreck books *Sea Hunters*, published in 1996 and 2002, State University of New York Maritime College awarded him a doctorate.

He also received the Naval Heritage Award from the US Navy Memorial Foundation for his marine-exploration achievements, and was a fellow of the Explorers Club, the Royal Geographical Society and American Society of Oceanographers.

"It is with a heavy heart that I share the sad news that my husband Clive passed away Mon," Cussler's wife Janet posted on Twitter.

"It has been a privilege to share in his life. I want to thank you his fans & friends for all the support.

"He was the kindest most gentle man I ever met. I know his adventures will continue."

# HELP US TO SPOTLIGHT 30 DIVING INFLUENCERS

WITH MANY READERS finding themselves with unexpected time on their hands as a result of the coronavirus pandemic, DIVER hopes you might care to look ahead to October's DIVE 2020 show at the National Exhibition Centre and put some of that time to good use.

It's the 30th anniversary of the Birmingham Dive Show, organised by the **DIVER** Group.

As one of many planned ways to celebrate the big occasion we're looking to pinpoint the "Diving Influencers" – the individual divers who, over the three decades starting in 1990, have done the most to change our sport for the better.

They might come from any part of the world, and their influence can have resulted from their involvement in many spheres of activity.

They might be underwater explorers, wreck divers/researchers, technical divers, cave divers, freedivers, conservationists, underwater photographers, film-makers, eco-activists, dive-gear developers, marine biologists, instructors, travel facilitators, TV broadcasters, authors, charity workers – the possibilities are endless.

We want to come up with a list of 30 names to showcase in a special Diving Influencers Gallery at DIVE 2020 – the key event on the diving calendar that we hope many of those influencers will be attending!

First off, we need your nominations to get the ball rolling. It's simple: just email us three names, and encourage your dive-buddies to do the same. We're already receiving nominations after a call-out on **DIVERNET**.

Further down the line we'll let you know the leading names in the running, and there will be an opportunity for further rounds of voting

We want to be sure that we reflect the most popular choices among the diving community, so please do have your say.

Remember, we're looking for individuals who have left their mark on diving since 1990 – please send your initial three suggested names to steve@divermag.co.uk

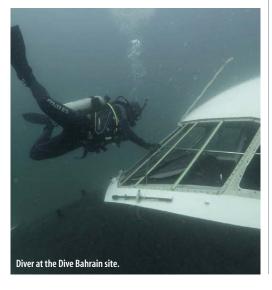
### **Sunken Boeing damaged**

THE 70M-LONG sunken Boeing 747 that forms the centrepiece of the Dive Bahrain marine park that opened last year has sustained "major damage". The heavy nets of two illegal shrimp-trawlers are reported to have come into contact with the fuselage.

Marine investigators were using radar and tracking data to identify the vessels, which were contravening a ban on trawl-nets and had entered the two-mile exclusion zone around the 100,000 sq m underwater theme park.

Repair work was under way on the 747, alongside continuing efforts to complete other artificial-reef structures promised for the park.

"This incident serves as further evidence of the profoundly negative effect fishing with trawling nets has on the seabed ecosystem, reefs and on the marine environment overall," said Dr Mohamed Bin Daina, Chief Executive of Bahrain's Supreme Council of Environment.



DIVER 10 DIVERNET.COM



USS STICKLEBACK has become the third of four US Navy submarines lost since the end of World War Two to be located. It was found at a depth of 3.3km by the Lost 52 Project, led by

US ocean explorer Tim Taylor.

The project, founded following Taylor's first WW2 submarine discovery of USS R12, is dedicated to locating and documenting historic

> wreck-sites through "comprehensive 3D reality capture".

Taylor heads Tiburon Subsea, which hires out autonomous underwater vehicles (AUVs).

Stickleback (SS-415) was a 95m Balao-class submarine commissioned in March 1945.

She set out from Guam to patrol the Sea of Japan in early August, but by the

Nagasaki atomic bombs had been dropped and a ceasefire was declared soon afterwards.

Stickleback was recommissioned the following year for training purposes, based in California.

In 1953-54 she supported UN forces during the Korean War, before returning to training operations.

On 28 May, 1958, she was taking part in anti-submarine warfare exercises with destroyer-escort USS Silverstein and a torpedo-retriever in Hawaiian waters.

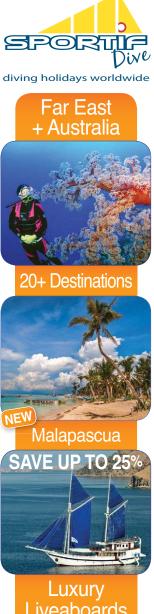
Having completed a simulated torpedo run on Silverstein, Stickleback was diving to a safe depth when she lost power and breached, only some 180m ahead of the ship.

Silverstein hit the submarine, holing her on her port side.

The torpedo-retriever evacuated Stickleback's crew but rescue ships were unable to save the flooding submarine.

She sank 19 miles from Barbers Point, Oahu, where her remains have now been found broken in two.

USS Stickleback is the sixth US submarine to be found by the Lost 52 Project. The other three that were lost after the end of WW2 were the USS Cochino, which has yet to be located, and the Thresher and Scorpion.



# Liveaboards

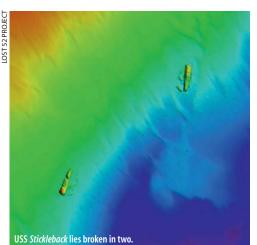
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# Three Truk aircraft wrecks located

bombers downed over Truk Lagoon during WW2 have been located by the charity Project Recover, the mission of which is to recover remains of US forces personnel missing in action in wartime.

The planes, two Douglas SBD-5 Dauntless dive-bombers and a Grumman TBM/F-1 Avenger torpedo-bomber, flew from the aircraft-carriers USS *Enterprise* and USS *Intrepid* for the last time during Operation Hailstone in 1944.

The Project Recover team, led by Dr Mark Moline of the University of Delaware, are now hoping that remains of the seven air-crew can be identified and recovered.

The wrecks lie at depths of 30-65m, at sites said to be far from those regularly visited by recreational divers in the Micronesian state of Chuuk.

From April 2018 Project Recover mounted four expeditions covering 27sq miles of Truk Lagoon, using a combination of side-scan sonar, scuba-divers and ROVs.

The discoveries were made on the third outing and documented on the most recent one last December.

Moline said that the planes had been flying at high speed when shot down and were no longer intact, the scattered debris field partially explaining why the wreckage had not been identified before.

Details of the finds are being shared with the Federated States of Micronesia and the USA's Defence POW/MIA Accounting Agency (DPAA) in the hope that a comprehensive search of the area can be undertaken.

Thirty US aircraft and 103 crew were lost during Operation Hailstone on 17/18 February 1944 while















attacking Japan's Combined Fleet anchorages.

The assault destroyed some 250
Japanese aircraft and sank around 40
ships, including two light cruisers and
four destroyers – the losses that left

Truk Lagoon as one of the world's foremost scuba-diving attractions.

Project Recover, which works in partnership with the University of Delaware and Scripps Institution of Oceanography at the University of California, has so far found 28 aircraft, leading to 13 recoveries of remains.

It had been planning to run further expeditions this year in South-east
Asia. the Pacific and the Middle East.

### Australian dive-team save shark's sight

A JUVENILE GREY nurse shark has retained full use of both eyes thanks to the action of scuba-divers from the Sea Life Sydney Aquarium in Australia.

The team of five divers was dispatched to Bushrangers Bay in February after a member of the public reported that the shark needed help.

They located the shark, a female, and an initial inspection showed that she had a "gang" or multiple-hook rig caught between her eye and jaw.

If left, the hooks were likely to have caused infection or led the shark to be snagged on debris or netting, said the aquarium. Grey nurses, known elsewhere in the world as sand-tiger or raggedtooth sharks, are classed as Critically Endangered.

The divers returned to the bay equipped with a large custom-made "sock" to enable them to handle the shark. Despite what were reported to be difficult conditions, they finally managed to steer her into the container. It then took the aquarium's resident vet Dr Michael Cannon only a minute to remove the hooks.

"It is always heart-breaking to hear of animals in distress, particularly

when dealing with the young female of an endangered species,"

aquarium marine scientist Rob Townsend. "Predators such as grey nurse sharks rely heavily on their vision, so to be able to save the sight of this animal was really rewarding for all involved.

"After the rescue, we administered antibiotics and vitamins before she



swam off beautifully and healthily into the ocean."

The aquarium says that commonly used gang hooks can have "devastating impacts" on wildlife. It wants anglers to avoid using stainless-steel tackle and to use harbless circle books instead.

DIVER 12



**TECHNICAL DIVERS** who retrieved the bell of the *Dundalk*, a WW1 armed merchant steamer sunk in 60m in the Irish Sea five miles off Anglesey, have returned it to the Irish town after which the ship was named.

The 72m *Dundalk* was built in Glasgow in 1899 for Dundalk & Newry Steam Packet Co and sailed weekly between Dundalk and Liverpool throughout the war years.

In late 1917 her captain and crew had been commended for evading a U-boat attack. However when two German U-boats, *UB-123* and *UB-905*, attacked her less than a month before the end of the war, on 14 October, 1918, a torpedo struck the engineroom and she sank in four minutes.

The ship had been heading back to her home port carrying livestock. The explosion destroyed the lifeboats and 21 of the 32 crew and the captain died in the incident, the others surviving on two life-rafts.

Most of the dead came from the Dundalk area, where the 101st anniversary of the sinking was marked last year, with Dundalk Sub-Aqua Club divers exploring the wreck and noting artefacts that might be recovered.

A team of rebreather divers from an Isle of Man dive-centre, Discover Diving, visited the upright wreck three times last July and recovered the bell, a porthole and a porcelain washbasin. The items are now being loaned to Dundalk's County Museum.

"We were overjoyed, very emotional," Marie Agnew of the SS Dundalk Committee told *IoM Today*.

"Many of the committee-members are relatives of the crew and are delighted with the news, describing it as 'like closure' and 'a homecoming."

Now it's Robo-Jelly!

A MOON JELLYFISH has been transformed into a "biohybrid robot", able to move through water almost three times faster than normal.

Scientists at Stanford University in California took artificial control of the live *Aurelia aurita* by embedding a micro-electronic swim-controlling device, which generates pulse waves and stimulates muscle contractions.

They reported that little external power and a relatively modest increase in the metabolic effort on the part of the jellyfish were required.

The hybrid was said to use as little as a thousand times less external power per mass than any man-made

aquatic robots so far devised.

The breakthrough allows jellyfish propulsion to be dialled up until it hits a "sweet spot" at which the greatest speed is balanced against the smallest energy output. The research might sound Frankensteinian, but there is an environmental motive behind it.

Jellyfish are more efficient swimmers than machines but can also self-heal and survive at all depths, temperatures, salinities and oxygen concentrations known in the ocean.

This could make them ideal for underwater monitoring, or as models for building underwater vehicles.

The paper is in Science Advances.

# ORCA SMASHES RECORD — BUT AT WHAT COST?

AN ORCA DUBBED Riptide has covered a distance of around 5000 miles from Iceland to the eastern Mediterranean, more than three times further than any other known swim by a killer whale.

The previous such distance recorded was 1553 miles.

On 20 February the male orca was reported to be off the coast of Lebanon but then moved south along the coast from near Beirut to Israel, where he was spotted by fishermen on 28 February.

The Parks Authority confirmed that it had sighted the orca about a mile offshore between Haifa and Akhziv, and was able to obtain video footage.

Iceland-based conservation organisation Orca Guardians originally identified Riptide from his dorsal fin markings and eye-patches, after contacts in Lebanon had gone out to photograph him.

Killer whales have rarely been known to enter the Mediterranean,



let alone to reach the far end of the sea, and sightings off Lebanon and Israel are thought to be unprecedented.

Riptide was last recorded off his home range of western Iceland in June 2018, and next sighted off the coast of Italy near Genoa last December with other members of his pod, although they looked to be in poor health.

Orca Guardians expressed concern about Riptide's ability to find food, because he appeared to be alone and emaciated.

It is believed that the other orcas from his pod had died – at least one, a female, also appeared to have made it as far as Lebanon, but her body was washed ashore.



**Bathtub Diver** As the coronavirus blues set in, we appreciated this share from locked-down Italian diver Jane Bettoni from the Nautica Treviso club, which was running a photo contest as part of a national "I Stay At Home" campaign. It's all about the mood-setting...

Day In The Life We had a good response to Ross McLaren's Deep Breath piece in the March issue about diving for sufferers from anxiety. He went on to make a well-received video for BBC the Social called A Day In The Life Of A Scottish Scuba Diver – find it on Facebook.

The World Beneath The best marine-life book we've seen so far this year will take some beating. It's by Richard Smith, who also happens to be a fine underwater photographer and will be a guest at the Dive Show in October – more on this must-read next month.

Deep Pockets We had loved the idea of bidding to join pilot Victor Vescovo aboard submersible *Limiting Factor* for a seven-mile dive to the ocean's deepest reaches – until we heard it would set us back some £587,000. Big-time bucket-list, but a bit rich for our blood!

# **Ghost Diving – but only outside UK**

HOST FISHING, the original body of divers dedicated to clearing fishing-nets discarded at sea, has changed its name to Ghost Diving "to make it easier for the public to understand what it does".

However Ghost Fishing UK, until now one of its chapters, has gone its own way and is retaining its name.

The Netherlands-based Ghost
Fishing organisation was started in
2012 by Pascal van Erp, and now
works on environmental projects with
volunteer divers in various parts of
the world. With chapters in the
Adriatic, Costa Brava, Egypt, Greece,
Korea, Lebanon, New Zealand and
Poland, the charity has, says van Erp,
"managed to bring the ghost-fishing
problem into the public spotlight".

"We decided to rebrand our organisation and bring the divers on centre-stage, as they are the ones who recover the lost fishing-gear," said van Erp. "They deserve recognition for



their truly heroic efforts.

"Our goal is that in only a matter of time our new name will become a generic term for all divers working to remove ghost-gear from wrecks, reefs or the seabed."

Meanwhile, the volunteers who make up Ghost Fishing UK, set up in 2015 and now one of the largest chapters with almost 100 members, have voted unanimously against changing their name, and are set to go it alone.

"We are a 'household name' in the diving industry, we are recognised at government level and we are a UKregistered charity," said chair Rich Walker. "We work with several universities and are developing methods of collecting meaningful



### GHOST DIVING

global mission —

data on the problem."

An important reason for retaining the Ghost Fishing UK name is that the charity was increasingly gaining nondiving members, said Walker. They were able to help with activities such as moving nets, counting trapped animals and recording dive data.

"We do not wish to curtail this by changing to a name that implies our work is only about diving," he says. "We are so much more than that."

Referring to Ghost Diving chapters, he added: "We remain united in our missions and wish each other well in our dedication to cleaning up the oceans of deadly ghost gear."

### CONQUISTADOR ANCHOR THEORY

### **UNDERWATER ARCHAEOLOGISTS**

have discovered two iron anchors in the Gulf of Mexico and believe they might have come from ships of Spain's 16th-century invasion force.

It's 500 years since the fleet of conquistador Hernan Cortes landed on what is now eastern Mexico in 1519 and set about destroying the Aztec empire.

Following a magnetometer survey of seabed anomalies off the city of Veracruz, scuba-divers from Mexico's National Institute of Anthropology & History (INAH) excavated the well-preserved anchors buried in sediment at depths between 10 and 15m.

INAH had already discovered one smaller anchor in the area in 2018. Study showed that timber in the stock came from Cantabria in Spain and had been growing in the second half of the 1400s.

That anchor and those recently found 300m away from it were all aligned towards Villa Rica, the port Cortes had gone on to build.

He is believed to have burnt and scuttled his ships in the area to prevent a mutiny among crew who wished to return to Cuba.

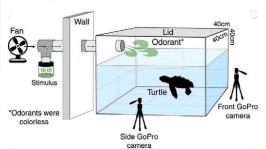
### It's smell, not just sight, that endangers turtles

**THE BELIEF THAT** turtles mistake discarded plastic bags for the jellyfish they eat because of their visual resemblance has been overturned by new US research indicating that odour also leads to the often-deadly confusion.

"When plastics drift in the sea, they develop a community of bacteria, algae and small animals on their surface that gives off odours that turtles seem to like," said co-author Joseph Pfaller of the University of Florida's Archie Carr Centre for Sea Turtle Research

He said that this biofouling "could attract sea turtles into an 'olfactory trap' – sometimes fatally."

The research was prompted by the discovery by co-author Matthew Savoca of Stanford University's Hopkins Marine Station that airborne smells used by marine predators to locate food could originate from biofouled plastic debris.





Airborne odours were fanned through a pipe into the tank of 15 young loggerhead turtles that had been reared in captivity, and their responses were recorded on video.

The odours included those of the turtles' diet of fish and shrimp meal, biofouled plastic and, as controls, deionised water and unfouled plastic.

The scientists were surprised to find that the turtles responded to the biofouled plastic smell in the same way as they did to that of their food, keeping their nares, or nasal openings,

out of the water more than three times longer than they did with the control smells.

"We expected them to respond to both to a greater extent than the control treatments, but the turtles know the smell of their food, since they've been smelling and eating it in captivity for five months," said Pfaller.

"I expected their responses to food to be stronger."

Further study is now needed to determine the key chemicals causing the response. "The plastic problem is increasing, and our findings suggest that it is also more complex than previously thought," said Pfaller.

The study is published in the journal *Current Biology*.■

DIVER 14 DIVERNET.COM



**WE KNOW ABOUT cephalopods** releasing clouds of inky fluid to help them to evade predators, but whales doing the same?

Footage emerged from South Africa in March of a dwarf sperm whale employing the strategy in a vain bid to escape from an aggressive Cape fur seal.

The video was taken in clear, shallow waters off a Cape Town suburb, and shows the dwarf sperm whale (Kogia sima) discharging a dense cloud of dark faecal "ink".

The species usually lives at depth, and scientists say that although such behaviour has been documented it is not known to have been recorded in shallow water before.

The world's smallest whale grows to less than 3m with a maximum weight of 270kg, and its use of the "squid tactic" makes it unique among whales.

It has an intestinal sac loaded with more than 13 litres of ink and can expel this from its anus if threatened by a predator such as a great white shark or orca.

**DIVERS' CHANCES** of seeing dolphins

or below the surface, are dwindling by

in the Indian Ocean, whether above

cetaceans appears to have fallen by as much as 87% over the past 40 years

- because so many are being caught

"We combined results from 10

between 1981 and 2016 in Australia,

bycatch sampling programmes

Sri Lanka, India and Pakistan to

the year. The numbers of small

in huge tuna gillnets.

The ink can disperse over an area of 100sq m, affecting attackers' senses of sight and smell.

Fellow ink-squirters octopus and squid are among the dwarf sperm whale's main prey, along with crustaceans and fish, and it can dive to at least 300m in pursuit of them.

The whales go out of their way to avoid boats, and surface only in the calmest conditions, making them a challenge for scientists to study in the wild.

On this occasion the inking strategy was not enough to save the 2m whale, which had possibly been sick and had either wandered or been chased into the shallow water of Hout Bay Harbour, where its echo-locational abilities would have been severely disrupted.

The similarly sized seal had either regarded the disorientated whale as prey or a threat to its pups, and had gripped its tail in its teeth as it drove it onto a rocky breakwater.

The badly injured whale later had to be put down, and its body was taken to a marine laboratory.

### **Freda's Diver Dishes**

Now that spring is in the air, I have finally managed to get out and forage for seaweed (although you can also buy seaweed ready dried, so it is actually always available).



This month's dish is again plant-based, features seaweed and also uses butterbeans, which are a great source of dietary fibre, protein and B vitamins. Choosing beans and legumes over meat as a source of protein is highly environmentally friendly.

### **Baked Smoked Garlic Butterbean** & Seaweed Pâté Serves 4-6 divers



### **Ingredients**

1 tin butterbeans; 4-5 cloves of smoked garlic; half tsp chilli flakes; 1 tsp lightly crushed pink peppercorns; 1 tsp maple syrup; 3 tbsp cold pressed oil; sea salt & pepper; 2 tsp seaweed: a combination of sea lettuce, dulce & nori.

### Method

Place your garlic unpeeled into a small oven-proof dish with a lid. Drizzle a little olive oil over it and season with salt, pepper and a sprinkle of red chilli flakes. Bake for 30 minutes at 180°C.

Drain the can of butterbeans and rinse them under cold running water. Place in a food-processor with the maple syrup, salt & pepper, cold pressed oil and pink peppercorns.

Then squeeze your soft baked garlic – which now has a paste-like consistency – out of its skin and into the food-processor. Whizz for a minute or two, then use a spatula to scrape down the sides and whizz again until it's all smooth and creamy.

Tip into a bowl, add your seaweed mix and combine gently. Add the oil from the cooked garlic & add more salt & pepper if required.

Serve in foraged shells from your dive, or simply store in a jam-jar and keep in the fridge.

### **Top Tips**

This pâté makes a great sandwich spread and works as a fabulous starter when served with toast. It can be made in advance and lasts in the fridge for up to five days.

delicate pink peppercorns complement the seaweed

**☀ Freda Wright is a diver and chef on British diving liveaboard** mv Salutay. Find more of her recipes in the book 40 Dives 40 Dishes. It costs £16 plus £1.95 postage, with £1 from every sale going to Oceans Plastics Greenpeace, salutay.co.uk

The smoked garlic adds a delicious flavour to the pâté and the



estimate bycatch rates for cetaceans across all Indian Ocean tuna gillnet fisheries," said Dr Puti Mustika of Australia's James Cook University. She was part of an international scientific group led by Dr Charles Anderson of

Manta Marine in the Maldives. The offending nets range from

100m to more than 30km long, and less than 5m to 20m or more deep.

**Dolphins vanishing in Indian Ocean** 

Indian Ocean tuna fishers had caught more than 4 million small cetaceans between 1950 and 2018. said Dr Mustika, the "vast majority" of which were dolphins.

Estimated cetacean bycatch has now declined to 80,000 animals a year, despite an increase in the tuna gillnet-fishing effort. The study called for better monitoring, analysis and management and for changes to fishing practices if dolphin numbers were to recover.

Nations said to have the largest cetacean bycatch in descending order were Iran, Indonesia, India, Sri Lanka, Pakistan, Oman, Yemen, the UAF and Tanzania.





Anthony's Key Resort was named one of the best overall Dive Resorts in the World in Scuba Diving's 2020 Readers Choice Award.

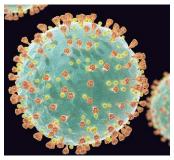


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# THE BIGGER PICTURE

The COVID-19 coronavirus has forced changes in society that would have been unimaginable in peace-time democracies, and has done so at astonishing, breakneck speed. We've all been affected, in our own personal conduct and in the lives of those dear to us, as we each try to deal with the outbreak as best we can.

The comfortable world we've always known, flawed and harsh though it might sometimes have seemed, has been turned upside down and Nature has imposed new realities on us.



Divers have long been in a position to understand the power of Nature. You can't immerse yourself in water without understanding the overwhelming might and indifference of the ocean. The seas don't care about you, me, whales, dolphins or plankton, and while we might sometimes think we've tamed the elements, all it takes is a 1m surface swell to remind us that we haven't.

COVID-19 will recede. The outbreak will end. Things will get back to normal.



But underneath the viral emergency, hidden by it, is a threat that's even more dangerous to humanity in the long term.

The effects that could be wrought by climate change are orders of magnitude more potent than coronavirus.

As things slowly return to normal, we have an opportunity to use some of the lessons learnt from the outbreak to take the actions needed to preserve the planet.

To go on doing some of the previously unthinkable things we've been forced to do, but with which we have been able to cope.

Perhaps we've learned enough to create a legacy to be proud of from this hideous situation.

### **Sharkfood combo**

It's billed as the "world's most extreme dining experience", Sushi with Sharks, and it's right there on the borderline between genius and the other thing, but how could you not go for it?

The experience was on offer at Sydney's Sea Life aquarium, where you first went in the tank with the sharks —and believe me, they have some big sharks in there — before ordering dinner from a laminated menu from local seafood restaurant Fishbowl as you swam around, then got out and dried and sat down to eat your sushi courtesy of Deliveroo.

I'd say it was bad taste, but I don't

imagine the sharks would agree.
Anyway, all proceeds go to the next shark rescue operation.

### **Oyster dip**

Talking of seafood, how about renting a cabin that comes with a dive-site and a "Pick Your Own Oysters" option? Talk about fresh.

With a squeeze of lemon and maybe some Tabasco? It costs \$110 to \$150 per night, the cabins are on the banks of the Hood Canal, which is nothing at all like what I think of as a canal, and is in Washington State, USA.

### Why ask for it?

Of course, sometimes the sea-life fights back. The *Daily Mail* recently highlighted the discomfort suffered by a pair of freedivers who were assaulted by a furious

attacked another guy who had watched the first diver's encounter, yet still got too close.

The Mail was scandalised by the actions of the fish. I'm stunned by the stupidity of the second freediver. Every diver knows that triggerfish can be aggressive in the nesting season, so you stay out of the way of their big, powerful teeth, and when you've already seen one person in bother why swim over to get a closer look?

What made you think the fish wouldn't be as annoyed by you invading its territory as it was by the other guy?

Is there a Bloody Stupid speciality course? If not, I've just spotted a gap in the market.

### Spectator sport?

And here it is again. About once every four or five years underwater hockey is touted as the Next Big Thing, and then promptly disappears again when people realise that all the action takes place under water, on the bottom of a swimming pool, out of sight and it isn't possible to televise it.

I'm sure it's great fun to participate in, but read my lips: It will ever be a major viewing sport. It just won't.



### triggerfish. It attacked one man as he swam down into the blue waters off Nusa Penida island, near Bali, and then it

# Bangin' idea

Did you read about the idea of a tunnel connecting Scotland with Northern Ireland? It was proposed as an alternative to a bridge suggested

by the Prime Minister, with one of the key advantages touted being that a tunnel isn't susceptible to closure in bad weather.

It sounds like a good idea. Except that the tunnel would go under an area where a million tons of no-longer-needed explosives were dumped after the end of World War Two.

That's one million tons. Of explosives. I wouldn't fancy a job digging that big hole.

### **Keeping to himself**

Was it the ultimate in self-isolation and social-distancing? Boris Milosic, who claimed a world



record recently for walking under water, covering a distance of just over 100m on a single breath.

### **Cast in bronze**

Ever been to Portsmouth? Go to Gunwharf Quays shopping centre when next you get the chance.

A larger than life-size bronze statue depicting a pair of early drysuit-clad, oxygen-rebreather-using frogmen working on a sea-mine has just been unveiled and it's simply astonishing.

It honours the sailors of HMS Vernon, who provided the Royal Navy's torpedo and mine-warfare expertise, and the sense of movement and authenticity on display is wonderful.

It had to be unveiled at a smallerthan-planned ceremony as a result of coronavirus precautions, but plans are for the statue to be "re-



unveiled" when it's possible to do so. Check out the story behind it at vernon-monument.org

# STILL MAGNIFICENT



In the first of a two-part feature on one of the world's most iconic shipwrecks, JESPER KJØLLER covers the loss of the Swedish warship in 1564 and its discovery in 2011.

of the Swedish warship Mars Makalös, which sank in 1564, probably one of the most important wreck finds in the world? How did a boy's childhood dream and stubbornness result in the discovery of Mars nearly 450 years after the sinking? And how are technical divers and scientists collaborating to expose Mars's secrets?

### 1564: The Loss

The smoke from the fire is thick and the stench of gunpowder mixes with reverberations of cries and steel blade striking steel blade. The rumble from muskets and cannon is deafening.

The deck of *Mars* is red with blood; it's hard to get traction on the slippery surfaces.

Brave Swedish sailors and soldiers are fighting for their lives. In wave after wave, they drive the enemy back.

It is 31 May, 1564 and the merciless sea-battle rages north-east of Öland in the Baltic Sea.

Mars is now on fire and the air is thick with tangible desperation. It's just a matter of time before the flames reach the gunpowder stores, but surrender is inconceivable.

Only those with noble blood can hope for a pardon from the victors. Ordinary captured soldiers will lose their lives in the cruellest ways to deter others.

The Danes and their associates, professional mercenaries from the Hanseatic city of Lübeck, are driven by a burning ambition to capture Mars. It would be a fantastic trophy, so the soldiers don't care about the political goals of the kings – they just want their share of the treasures of war.

A powerful explosion suddenly shakes the mighty ship. The whole deck seems to rise. Swedes, Danes and German mercenaries alike are now desperately trying to leave the rapidly sinking *Mars*.

The water is boiling, and a huge cloud

The water is boiling, and a huge cloud of steam climbs like a giant ghost out of the sea. *Mars* can no longer to be seen.

**Pictured**: Impressive hull of the 16th-century wreck.

Back at the surface, all that remains is debris and mutilated or dying sailors.

### Church-bell cannon

Erik XIV, 30-year-old son of the Swedish King Gustav Vasa, is eagerly touring Europe's royal courts in a quest to find a bride.

Gustav Vasa has built a strong fleet to secure Sweden's Baltic trade. Prince Erik often requests these ships as transport in his pursuit of a suitable bride. It must have been an impressive sight when the Prince of Sweden entered a port, escorted by the Baltic's most modern fleet.

The Swedish military build-up does not escape the attention of the Danish King Frederik II, and the political situation is getting tense.

Gustav Vasa takes the initiative to build Mars Makalös (Makalös means Magnificent in Swedish). She will be the

KIRILL EGOR

Baltic's largest and most capable warship. Her gigantic keel is laid in Björkenäs off the coast of Kalmar, and the ship will be one-third longer than the largest Swedish warship, the Elephant.

Mars is to be equipped with 30% of the Swedish navy's total number of bronze cannon. That number has been forgotten, but it is more than 100 and at least two of them are 42-pounders, a size previously used only as land artillery.

Bronze is a precious metal, and casting these weapons is very expensive. To the great regret of the clergy, Gustav Vasa commands that the country's churchbells be impounded to be converted into cannon.



**Below**: A painting of *Mars* surrounded by the Danish



King Gustav himself never gets to see Mars completed, dying in 1560. But with its completion, Erik possesses Europe's most modern fleet and intends to use it.

New strategy

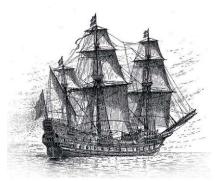
The situation between Denmark and Sweden has worsened during the 1550s and '60s, and battles at sea have become more common. Erik has sent his admiral Jacob Bagge to deliberately provoke the Danes into conflict - this happens next to Borgholm in Öland. The battle is short and the Swedish victory crushing.

Denmark later responds by occupying Elfsborg's fortress on the west coast of

Below from left: Sweden's enemy - Danish King Frederik II; Erik XIV, the son that sparked war between







Sweden without much difficulty. This allows it to bring large numbers of troops into Swedish territory.

Erik's situation is beginning to get desperate. The Swedish army of mostly poorly equipped farmers is no match for the German mercenaries hired by the Danish king. Erik is forced to strike back, and sends his fleet under Admiral Bagge.

On 30 May, 1564, the Swedish fleet confronts the Danes off the Tjust archipelago and heads down towards the northern tip of the island.

For two days the battle rages, and initially things go well for Bagge and the Swedish. With her mighty artillery, Mars sinks the Danish vessel Lange Bark.

At this time, it is unusual for battleships to be destroyed only by the opponent's artillery. The traditional tactic of a sea battle was to inhibit the opponent's manoeuvrability and kill as many enemies as possible, then board the vessel and take it as a victory trophy.

The fact that Lange Bark was shot down indicates that the Swedes had deployed a new and ground-breaking seabattle strategy - avoid close combat and replace it with superior artillery force.

During the evening after the first day's combat, both fleets retreats into the shelter of darkness.

**Deadly battle** 

As 31 May dawns, the wind picks up and the Swedish fleet has a hard time holding formation. To Admiral Bagge's regret, the fleet is now split into smaller groups.

The Danes grabs the moment and attack the admiral's ship Mars.

The rest of the Swedish fleet are just spectators while Mars in her solitary

dignity puts up a heroic battle against the entire Danish fleet. The fight is fierce and desperate. The Danish vessels repeatedly try to get close enough to enter Mars but are repeatedly pushed back. Mars's cannon fire constantly, and several Danish vessels are close to collapse.

Perhaps Mars's helm was damaged during the battle; or perhaps the sails were destroyed.

We don't know, but for some reason several enemy vessels manage to get close to Mars and latch on to her railing.

Danish soldiers board Mars and the desperate final battle ends in a powerful explosion that sinks the ship, with 800 Swedish and 300 Danish/German soldiers and sailors going down with her.

Mars lands on the seabed, 72m down in the cold, dark Baltic Sea. And there she would probably still lie unnoticed, if not for the childhood dream in an exceptionally stubborn and persistent Swedish diver many centuries later.

### 2011: The discovery

In 1977, Sigvard Lundgren brought his three young sons to the Vasa Museum in Stockholm. The visit ignited a fire in the then eight-year-old Richard, and he and his brothers developed a passionate interest in exploring the wrecks of their native Baltic Sea.

They already knew the story of the Swedish amateur archaeologist Anders Franzén's discovery of the royal ships Vasa and Kronan, and that Franzén had also been hunting for Mars and Svärdet (the Sword).

They set out to do what Franzén had failed to do – find Mars and the Sword!

"We started to evolve as wreck-divers, and soon the usual wrecks lost some of their appeal," Richard remembers. "We wanted to find something spectacular.

"We began searching for CF Liljevalch, a cargo vessel torpedoed during World War Two. She had previously been found and lost again, but we rediscovered her and were able to explore her effectively for the first time, even though she was at





70m, because in the meantime we had learned to dive with trimix.

"We were prepared to look for other and even deeper wrecks."

The brothers and a shifting cast of likeminded advanced wreck-divers started searching the northern tip of Öland as early as the 1990s, with the help of simple sonar equipment.

Their ambition was to find and document as many wrecks as possible around Öland, but the principal goal was still to locate the legendary *Mars Makalös* and *Svärdet*.

The group located and dived lots of wrecks. The record was six new wrecks found in a single day! But they couldn't find what they were really looking for.

The divers soon became involved in other projects around the globe, making the search for the two proud ships more sporadic over the years. In the end, only Richard was still an active diver, but he never gave up hope of finding *Mars*.

"During 2010, we got renewed motivation when a wealthy Swedish contractor invested in a new boat with modern search equipment for us," says Richard. "We could now be more efficient and focused.

"That year we located about 10 new wrecks in the area off the west coast of Gotland. But we didn't find what we were looking for.

"2011 started off really well when we discovered new wrecks in an area that supposedly had been searched already.

"We could clearly see that our new gear

**Above**: Professor Johan Rönnby (*left*) and Richard Lundgren study a coin found on *Mars*.

**Above right**: The yearly *Mars* projects are conducted during the summer, when the Baltic is usually calm.

Right: Divers on their stop.

**Below**: Even in summer the temperature on the deeper deco-stops is only 2°C.





provided more possibilities and greater precision."

### Jackpot!

"Guys, check this out!" Christofer shouts. Something unusual is showing on the screens relaying the signal from the ship's side-scan sonar. It is far from the first time Christofer has seen a wreck on the sonar screen, so it's surprising that he should be so agitated.

The team have been following a field of scattered debris for the past 12 hours, but can this really be the ultimate reward?

Richard Lundgren needs only a quick look at the screen to understand why Christofer sounds so excited. The sidescan image doesn't show an intact wreck, but scattered wreckage with a complete, 40m hull side and lots of detail.

"What do you think?" asks Christofer.

"We got her! Finally, we've found her!" Richard shouts, realising that this is an historic moment.

The team plans to dive the wreck to confirm its identity, but they already know that the most important wreck discovery of their generation is a reality. The broad smiles say it all.

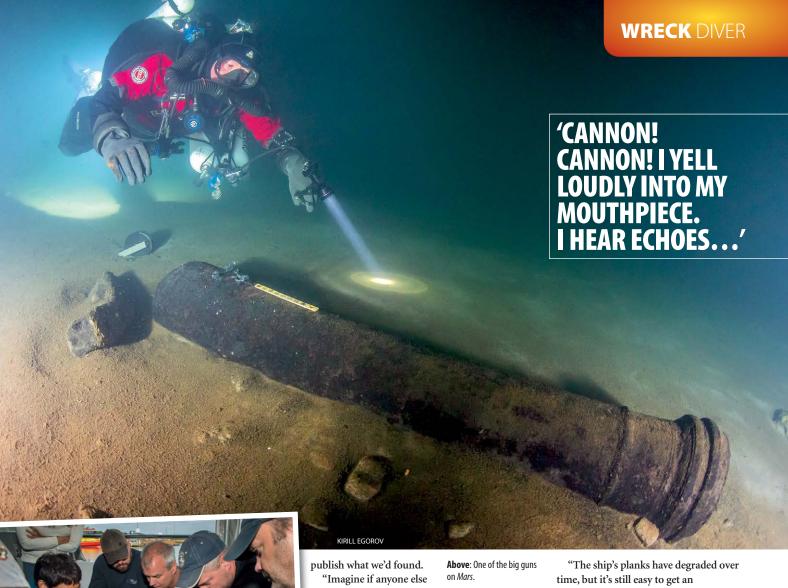
### **First man on Mars**

Richard clearly remembers the first dive: "Slowly the contours take the form of something big in the water as we sink to 70m. It's dark and very cold.

"I'm shaking, but I can't tell if that's the







cold or the anticipation.

"It's been a couple of weeks since we saw the exciting sonar image. It was absolutely insane – after 20 years of searching, we had to leave ground zero unprotected and without being able to "Imagine if anyone else stumbled on *Mars*! It was a risky business.

"But now we're here. In the light of a powerful lamp, I see something big taking shape under me.

"These are definitely parts of a wooden hull, and soon we appreciate the size of the wreck –

it's huge!

"We're the first to land on *Mars*, I think, and can't help giggling into my regulator. In front of us we see an impressive hull side in solid oak and, as we continue forward, rows of cannon portholes emerge in the dark.

**Left**: Members of the 2015 dive-team check out an illustration of *Mars* before their next dive.

**Below**: Divers examine features on *Mars*.

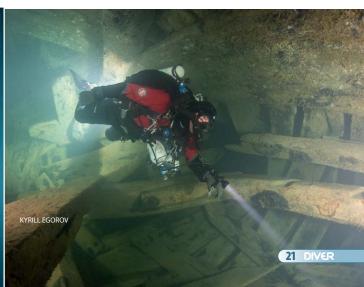
"The ship's planks have degraded over time, but it's still easy to get an impression of how powerful the ship once was."

The divers continue to swim toward what appears to be the stern, and are amazed to discover what must have been Admiral Bagge's quarters and that they are able to swim into the area.

"We glide into the dark overhead, and I strive to absorb all possible impressions," remembers Richard. "Is Admiral Bagge's famous treasure hidden here? The silver coins that the Danish-Lübeck attackers sought and the reason why they fought so fiercely? Did they seize the treasure or is it still on board?

"The historical documents provide no answers, but I have a feeling that future







dives might solve the mystery. We continue the dive and go a little deeper."

### **Guns galore**

"As we approach the bottom, the visibility deteriorates from maybe 20m to just a few. We tighten up our formation and signal OK with our lights.

"In the fog I spot something familiar and swim closer. It's a cannon! I can't believe my eyes, it's a nearly 5m-long bronze cannon. The ghostly green colour of oxidised metal is reflected in the light.

"Cannon! Cannon! I yell loudly in my

mouthpiece. I hear echoes and it takes a few seconds before I realise that Fredrik is shouting exactly the same.

"As I turn to him, I understand why he is yelling and I can hardly comprehend what I'm seeing. Fredrik has found a pile of no fewer than seven cannon, all in different sizes.

"The dimensions of the dolphin ornaments, the handles and the other details of the larger weapons are remarkable. This is better than I could have imagined in my wildest dreams!

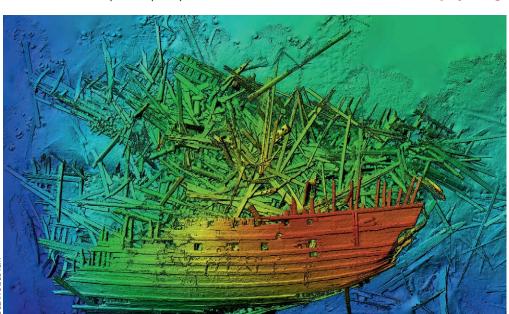
"Gently, I brush some sediment away from one of the cannon. The contours of

**Above**: The handles on this cannon are shaped like a dolphin.

**Right**: Richard Lundgren after another dive on *Mars*.

**Below**: Reconstructing *Mars* in 3D — more next month.

Find more on Mars at mars-project.org





a coat-of-arms become clearer. I have exposed what becomes indisputable evidence that this is indeed the wreck of *Mars*. I have discovered King Gustav Vasa's emblem – a crossbow made out of grain. This is for sure the wreck of *Mars Makalös*!"

After more than 20 years of searching and without ever giving up hope, Richard Lundgren and his team had finally found *Mars* and he had fulfilled his childhood dream.

By the way, the *Sword* was found later that same year by a competing wreck-hunting team, but that's another story.

Next month: Jesper undertakes his own two-week dive-trip to *Mars* 

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**COUNT ONLY ABOUT 23 heads once** the seatbelt sign has been switched on. I'm sitting in the wrong place for a view of Table Mountain, although this morning most of it hides beneath a cloud blanket anyway. I'm about to realise a dream several years old as I fly towards remote south Atlantic island St Helena.

The island's airport has been in operation for three years, and before its completion one would have needed to arrive and depart by sea, a fabuloussounding journey of at least a week.

It's not a given that the aircraft will land us on the island. The airport has a category C runway, meaning that only pilots trained for an "unusual landing approach" and "unusual local weather conditions" are qualified to touch down there.

Visual flight rules are in place. If cloud builds over the runway before our approach, we will be turned back to South Africa. And although the chances of making it during the Southern Hemisphere's summer are pretty good, I'm still holding my breath.

Leaving the plane and looking around me, I initially get notes of Iceland from the landscape; arid, mountainous and with a partially grey sky revealing distant green peaks only occasionally. The climate feels far from Iceland, more like the Caribbean - warm and very humid, although windy.

The ocean appears a richer blue than I have seen elsewhere in the world, but that could just be my excitement. Local people have come to watch the plane landing - it's a popular pastime, I later learn.

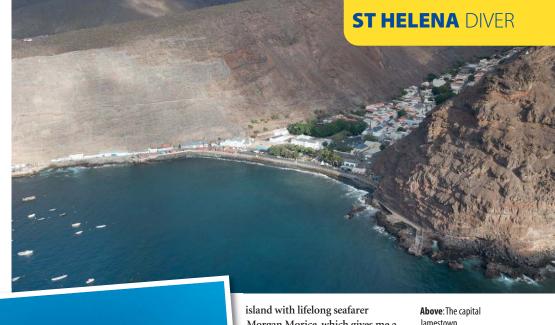
Jamestown in the north, my base for a week, looks out to sea from a deep gash in the surrounding cliffs and feels to be the warmest part of the island.

It can be baking hot yet cool and sometimes raining on the south side although, almost cruelly, not wet enough to sustain decent agriculture.

The Internet is received by satellite only and expensive to use, so with pleasure I leave my mobile phone in my hotel-room.

NTHE MAP I can see plenty of wrecks to visit around the island, but my main interest under water is in the big living stuff. I'm looking for the Chilean devil ray, whale sharks and anything else in that category.

St Helena is a speck on the navigational chart I study over coffee; the nearest continent is around 1600 miles away to the east; to the west, eventually, one will find South America. This is one of the world's most remote populated island



Morgan Morice, which gives me a view from further out to sea and amplifies St Helena's remoteness.

If not in my kayak, travel by sea for me usually means diesel fumes and engine noises. Sailing off St Helena is a holistic experience, with only the sound of wind in the sails and the bow crashing over the peaks and troughs of the south Atlantic.

The weather changes frequently over the island, feeling like three warm seasons in one day.

On morning two, as I walk down to catch a boat, I feel light rain before black cloud breaks away to bring sun. I'm being taken out to freedive and, almost embarrassingly, this will turn out to be my first whale shark sighting in 18 years of diving.

The giants patrol a spot east of the island's wharf and are thought to come to breed. Local marine biologists have noted almost equal numbers of males and females. This is an aggregation seen seldom or never seen elsewhere.

Tagging and monitoring programmes are in progress and the Jamestown.

Left: A Chilean devil-ray

**Below**: Exploring by sail with Morgan Morice (right).

Opposite page: Diver among the ever-present butterflyfish.

locations and it has no decompression chamber, so I must dive well within safe limits. I'm keen to explore from as many perspectives as possible - on and under water, over land and by drone.

I spend an afternoon sailing around the





Above: A 7m whale shark.

Right: Stepped rock tower.

Below: Chilean devil rays fly over the Bedgellet wreck.

whale shark is "one of the island's key species", says Rhys Hobbs, the island's marine conservation officer.

His team started the whale-shark research with Georgia Aquarium about six years ago, and monitor and tag several other species, including yellowfin and skipjack tuna and lobster.

Sea conditions are rough and windy as we pass the lea of the island. Eventually our spotters locate an animal close to the surface, and a long, wide grey shadow produces a dorsal fin. Skipper Keith puts the engine into neutral and I roll off the boat with my camera.

The whale shark, apparently 7m long and some 70 years old, swims towards me for a closer look, rather than me having to keep up with it.

Whale sharks have eyes that are tiny compared to their body mass and I need to fin continually to keep out of its way. Eventually the boat becomes more

interesting for the creature and we part company. The encounter lasts only minutes but is engraved on my mind forever.

### S WELL AS THE SHORTAGE

of potatoes frequently referred to around the town, there is much talk of fishing-industry issues. Rhys fills me in: "The fish population is generally very healthy," he says. "The fisheries are an artisanal small fleet and fished using only one-by-one methods [rod or hand-line, no long-lining] with a landing average of tuna of around 300-350 tonne a year.

"The main issue around the fishery is the ability to process the fish once it's landed." Rhys tells me that the fish-processing plant has long been run by the UK government "but due to its age and overheads it has failed to break even or return a profit for a number of years".

Given that St Helena relies heavily on UK aid, "the UK and St Helena governments have decided it is no longer the best use of public funds to maintain the plant and have attempted to invite investment into the industry". Discussions continue, which is perhaps why I have seen few fish on menus.

I explore underwater caves containing most of the smaller marine species, and a Kiwi freediver joins me as I check out some lobster stacked in the corner of one.

Soldierfish peek out of the dark from an overhanging shelf, while foolhardy butterflyfish in shoals of thousands go about their business in the open.

My dive-guide Anthony believes that Chilean devil rays feed on the butterflyfish from time to time, and Rhys

tells me later that the rays are seen yearround, with the occasional sighting of mobulas. The geology under water is fascinating; stepped rock that looks convincingly man-made stops abruptly where furrowed black and white sand begins.

Grey triggerfish, a species that crosses the Atlantic to reach UK waters every August, swim back and forth along sheer rock-faces. Water clarity is insane, although local diver Karl Thrower urges me to return in April, when visibility "can be 100m". Looking at his photos in the bar later that evening, I concur.

A couple of days into this island adventure finds me descending onto the wreck of the Bedgellet. A British salvage vessel in its working life, today it exists



16m below the surface, upright on the seabed and scuttled as an artificial reef.

The dive-site is pretty but uneventful. During my ascent, however, and with 15 minutes of air to spare, the real action begins. From the blue, two grey-green shapes grow larger. I am halfway along the dive-boat's anchor-rope when the ballet begins.

I learn from local divers that Chilean devil rays seen in groups of three or more tend not to hang around for divers, only gliding past, but these two commence a perfectly choreographed dance, accompanied by their remoras.

Opportunistic trevally enter the stage during the final moments of this matinee performance. Then the rays turn for a final revolution and fly together over the shipwreck and away into the blue.

I could not have positioned them better for a flypast shot over the wreck. I head to the surface happy, having enjoyed the experience alone in the water with these mysterious creatures.

**BETWEEN DIVING AND SAILING,** I walk the island's trails. These either finish on vibrant green peaks covered

with endemic and invasive plant and tree species, or stop abruptly at cliff-edges overlooking the ocean.

I take a challenging drive along skinny, wet, switchback-steep roads down to Sandy Bay, one of the few beaches.

There black volcanic sand meets an angry Atlantic, red Middle-Eastern-looking crumbly cliffs and deep valleys. The wind is too stiff to fly the drone.

Walking closer to the shoreline, what I initially assume are broken shells on the sand I find are all pieces of plastic.

There is hardly any discarded litter on the island, so I guess this waste has arrived from elsewhere. It's a demoralising scene in such a place.

My final and deepest dive off the island is on the wreck of the *Darkdale*, broken in two following a torpedo strike by *U-68* in 1941. Until divers drained the ship's





**Above**: Soldierfish beneath an overhang.

**Left**: Sharp turns and a steep climb on the way to Sandy Bay.

**Below**: Kiwi freediver leaves the cave.

**Below left**: Trevally on the wreck of the *Darkdale*.

oil-tanks to prevent an environmental disaster in 2015 it had continued to leak oil. It still does to some degree, it's said.

Darkdale's location demonstrates how quickly the seabed drops off into the deep around St Helena.

Only 30 seconds away from the wharf by boat we're already over the wreck, which sits on its side in about 45m.

We meet the hull at 33m and guide Craig disappears into the centre of a huge tornado of circling trevally. The shoal swallows and laps him for several



Right: Safety stop above the Darkdale

rotations before dispersing to reconvene in the deep. We could not have timed our descent any better.

I'm secretly hoping to be "stranded",

stream of information, "news" and instantaneous communication -I have been away for only a week, I feel I need easing back into fast society.

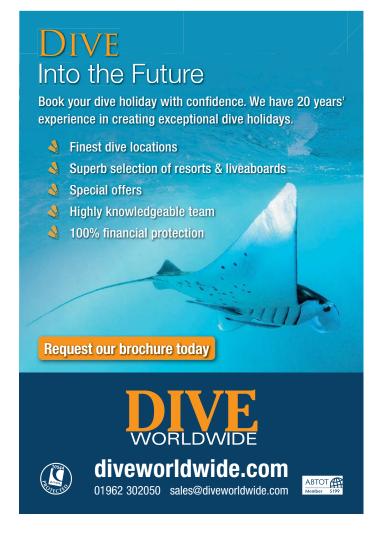


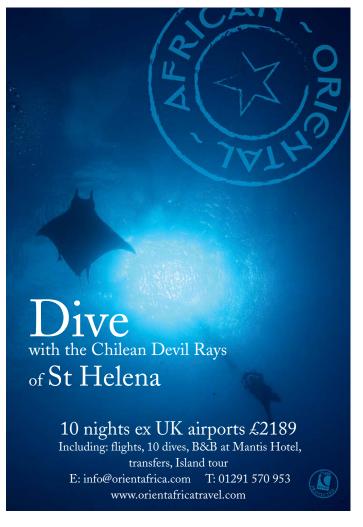
enjoy his exile here. The dining is no reason to go but, with most foodstuffs imported, that's just remote island living.

I can see the pace of life changing should the island receive the broadband cable so often spoken about. Such connection has its benefits, but for now it's good to see people sitting and talking to one another in cafés and bars and on the street, and only rarely gawping at a mobile phone.

St Helena has a charm and sense of community that it will be a shame to lose. Regardless, I plan to revisit. There is something deeply magnetic about this tiny piece of Atlantic rock, and I still have more to explore on land and at sea.







# BEST OF THE VISANS



Kicking off this month's Philippines Special section, MARK B HATTER asks how come he managed to miss out on the pleasures of diving there all these years? He recently signed ash-course liveaboard itinerary to

up for a crash-course liveaboard itinerary to make up for lost time

OMETIMES YOU PLAY your best game in extra time. Which is exactly where I found myself on my last dive on my last day in the south-eastern Philippines.

The dive was along a wall where I had bucked the recommendation of Jona (our cruise director) for the group to "go wide".

During her dive briefing it had actually been Jona who seeded my thought of an alternative shooting plan. As she briefed us on the attributes of Panglao Island's prolific west wall, where seafans predominate and, importantly, differentiate this reef from other sites we'd dived over the previous nine days, she referenced the abundance of "Nemos" found along the crown of the wall

Nemo was the generic term she'd been using for the plethora of anemonefish species found in the Philippines during our voyage. My radar went off. Nemos are my Achilles heel.

Except for one macro site at Big House Reef near Dumaguete earlier in the trip, known for at least six different species of anemonefish found in five different species of anemones, on this adventure I had atypically ignored them, in lieu of other recommended macro or wide-angle targets.

I had planned to focus (literally and figuratively) on anemonefish at Big House, but a leak-warning alarm in my camera housing left me without a camera.

I spent the one-hour dive clearing tears from my face-mask as I counted the different species the other shooters were gleefully collecting.

But my juju had been excellent since the leak (no damage to my camera or lens), with my memory-cards filled with some really different, special images from our 10-day voyage.

I had a feeling that this final dive would yield something special.

"I'm going macro!" I whispered to my divebuddy Richard, as Jona stabbed her pointer at the facsimile of an ornate wall, replete with massive seafans, drawn on the dry-erase briefing board.

Richard agreed, and it was to be a decision that resulted in the game-winning goal of our extra time.

We ascended into the gloaming at around 5pm with Kenneth our dive-guide, and worked our way to the wall's crown at 10m.

The windward reef-top at Panglao is not especially noteworthy because it receives the brunt of frequent typhoons, but the spectacular

vista begins just beyond the crown. There the battering from wind and swell is attenuated by the wall. That's where we found real magic.

T SEEMED THAT every protected nook and cranny just over the lip harboured magnificent anemones, *Heteractis magnifica*, replete with a family of *Amphiprion oscellaris* or *Amphiprion periderion* Nemos.

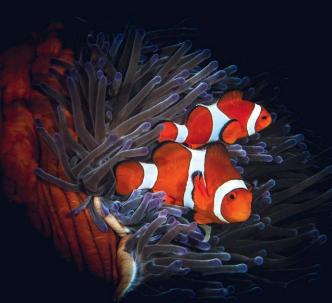
In a rare behavioural display in the waning daylight, the anemones were inflating their bases and withdrawing their tentacles, leaving them looking more like colourful giant onions than shaggy carpets.

The odd, yet beautiful, display opened the door to some creative shooting for Richard and me. Seizing the moment, we adjusted apertures, shutter-speeds, ISOs and strobe power to reduce ambient light.

Then, framing toward the dark open water of Cebu Strait to further limit remaining ambient-light intrusion, our goal to artistically highlight only the Nemos snuggling in the few exposed tentacles of their onion-like hosts took shape. With a time-limited purpose, we went to work.

I reviewed my camera's histogram and LCD between shots. More than pleased with the









results, I smiled inwardly and fistpumped, feeling I'd scored the winning goal in extra time with each successive image.

Ironically, my primary memory-card had filled on the prior dive, leaving all of this dive's images on a different card in the camera, one for which I didn't have a card-reader for downloading on the boat!

As during the ancient days of film photography, it wasn't until I returned home several days later that I was able to confirm that I had indeed put it in the back of the net.

THE PHILIPPINES LIES at the apex of the Indo-Pacific Coral Triangle in the western Pacific. As an avid diver and marine photographer, I can't believe it had taken me nearly a lifetime to finally visit this special country.

In 1981, while stationed in the US Army at Schofield Barracks, Hawaii, our infantry battalion deployed to Subic Bay near Manila for field exercises. I had just arrived at the unit, and did not deploy.

On returning home, my army buddies who *had* deployed regaled me with stories of fantastic reefs and colourful fish they'd encountered on their holidays, leaving me envious for the next four decades.

Fast forward to 2020, and I would finally take an opportunity to dive a location I'd long dreamt about.

The Republic of the Philippines is an archipelagic country on the Pacific's "Ring of Fire", consisting of about 7641 islands with an area of 116,000sq miles. There are three major geographical regions from north to south: Luzon, Visayas and Mindanao. The nation's

**Above**: Spectacular coral coverage and colourful fish at Apo island.

**Left from top**: Snakes abound at Apo; *Amphiprion oscellaris* in *Heteractis magnifica* at Panglao Island wall; Apo wall dive.

location and proximity to the Equator makes it prone to earthquakes, active volcanism and typhoons. Yet it also endows it with abundant natural resources, including some of the world's greatest marine biodiversity.

With so many diving locations from which to choose, I left recommendations on how to best dive the Philippines to the experts advising me, Bluewater Dive Travel. I wanted an itinerary of diving over more than a week, with as much variety as could be managed.

My wish-list included macro and wideangle photography subjects from muckdiving sites to full-blown coral reefs. Any additional image-shooting opportunities deviating from the obvious cast of muck and reef characters would be welcomed.

Bluewater recommended the *Philippine Siren*'s 10-day excursion in and around the Visayas. The itinerary would include a litany of famous muck-sites, spectacular reefs at the marine preserve on Apo island and three bonus sites along the way for the rare and unusual: whale sharks, the world's largest static sardine school and thresher sharks.

It didn't hurt that the Philippines also happened to be home to yet another anemonefish species, the tomato clownfish (*Amphiprion frenatus*), which I needed for my image compendium.

The 40m liveaboard was built on the Indonesian island of Sulawesi, handcrafted from ironwood and teak in the style traditional to the area.

The *Siren* books recurring trips from seven to 10 days throughout the year. In February, our 10-day route began and ended in Cebu City.

We departed from a local anchorage within 10 minutes of the airport, and steamed for nine hours overnight to Capitancillo Island, far off the coast of north-eastern Cebu island.

No check-out dive here – we immediately immersed ourselves in 27°C



water along Capitancillo Wall, Terraces and Kakanggaman. As an introductory tour of things to come, the shooters could choose between wide-angle or macro for these sites, which offered a spectacular wall-dive of soft corals and seafans, as well as a plethora of colourful macro subjects.

I opted for macro the entire day to dial in my new snoot kit before we arrived later in the trip at the iconic muck-diving sites off Negros Island.

It took me the better part of the day to become familiar with the kit, but by day two, at Gato Tunnel and Lapus-Lapus just off the north coast of Cebu, I had everything sorted, scoring cool snoot images of pipefish, clingfish and wirecoral gobies.

N DAY THREE, wide-angle was in order for our first unusual animal encounter of the voyage.

We were to dive to 28m-plus along the wall at Monad Shoal, the underwater seamount several miles east of Malapascua Island, famous for its earlymorning thresher-shark encounters.

At first light threshers often move to the numerous cleaning stations, mostly at the edge of sport-diving depth limits, to be cleaned.

We were diving nitrox to be able to remain a bit longer in hopes of an encounter. I was sceptical, and the popularity of the site with day-boats further dampened my expectations.

However, our *Siren* team were the only divers at the site – it seems they stagger group visits – so we parked at 31m and waited. And waited.

There was a thermocline at 28m and the cool, plankton-rich upwelling reduced visibility to perhaps 10m. We had been sitting there for the better part of 25 minutes when Kenneth, our dive-guide, began to point wildly towards the gloom.

I strained my eyes, yet saw nothing. Again he pointed. I followed the line of

Right from top: Hard corals at Apo's Rocky Point West; snoot shot of a pipefish at Gato Tunnel; blue sponges at Apo.

his pointing arm to the murk and saw an ethereal shape materialise.

"Well, what the hell!" I vocalised through my mouthpiece. It was indeed not one thresher but two, daisy-chaining at the edge of visibility. But it was time to go, and we slowly worked our way up to the safety stop, then into the RIBs.

Aboard the *Siren*, we were comparing notes. It seemed that everyone in group one and two had seen at least one of the sharks, albeit at a distance, which yielded nothing more than a smudge of an image once downloaded on our computer screens.

When group three finally arrived back aboard the *Siren*, they were decidedly more animated. Apparently, while at their safety-stop, a 4m thresher had elected to thrill the divers with a very close drive-by, resulting in some incredible images for at least one of the shooters.

THE FOLLOWING DAY, we sailed around the tip of Cebu and headed south down its western flank.

Along the way, Jona briefed us on the famous sardine ball at Turtle Bay off Moalboal. Estimated at between 5 and 7 million fish, this sardine ball is the only static school of sardines in the world; meaning that they never venture from Turtle Bay. And while it might seem they would be easy pickings for the multitude of predators found in the Philippines, oddly they remain largely unmolested.

Arriving after lunch, we slipped into the shimmering shoal of endless sardines under a hide-and-seek sun.

While the rest of our divers scattered along the reef-edge to shoot the ever-evolving, shape-shifting mass, I parked along the wall at 10m and waited for something to happen.

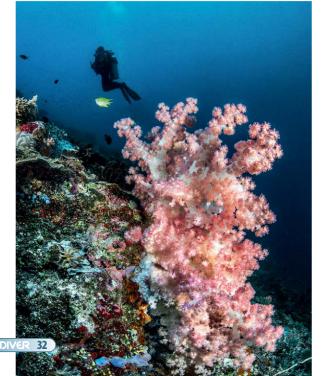
**PHILIPPINES** DIVER













It was a good decision. During infrequent appearances of bright sunshine from behind dull clouds, I captured a handful of images with primary, secondary and even tertiary subjects reflecting exactly what I had hoped to achieve.

This voyage just kept getting better.
Our next stop for two days included several famous muck-sites along the coast of Negros Island, south of Dumaguete.
Muck-sites appeal to underwater photographers because they often support critters not found on hard-coral reefs. And, of the most famous in the Philippines, the "house-reef" at Thalatta ranks near the top.

With purposefully placed underwater structures at various depths in the black volcanic sand, Thalatta is a metropolis for various species of cardinalfish, seahorses, pipefish, omnipresent nudibranchs and several species of symbiotic shrimp.

For me, the best part of muck-diving is the hunt for cool things in the relatively sparse environment, which makes it easier to find the things you seek.

Additionally, with minimal

Above: Whale sharks at Oslob.

Left, from top: Star on the wall; Barbiganti pygmy seahorse at Lapus-Lapus; soft corals at Apo's Rocky Point East.

Below: Table corals at Apo's Rocky Point West.

interference from obvious structures, such as a coral-head, getting creative with your shooting becomes a bit easier. For snoot-shooters, Thalatta is paradise.

AFTER A FEW DAYS of focusing on the tiny, it was again time to focus on the grand. Overnight, we sailed east to Apo Island, to immerse our divers in some spectacular, full-blown hard-coral scenery.

Apo's sea environment was the first marine sanctuary in the Philippines. Established in 1982, in a co-operative move between local fishermen and scientists, the goal was to preserve the pristine ecosystems around the island.

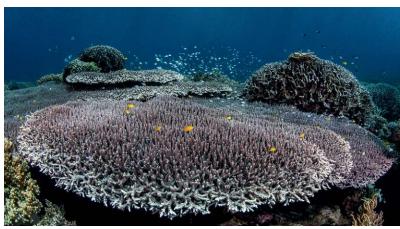
The fee required to visit the sanctuary is worth every peso. Nearly 40 years after its initial designation, the ecosystems we dived over two days validated that wise co-op decision.

Our first taste of Apo occurred at Coconut Point, where we rode a current west for the length of the dive to where the pull relaxed near Largahan.

Jona had briefed us about a strong current, but no one in my group had expected what we actually experienced.

While it was exhilarating to "ride the freight train", photography was all but impossible. I captured only a single image near a field of giant barrel sponges by tucking behind the largest in the group, sheltered for a few precious seconds.

Soon the current tugged me from my





protection, whisking me downstream past a solitary century-old table-coral nearly 3m in diameter. I marvelled at how this structure could endure the physics of such hydraulics without toppling over.

While Coconut proved exhilarating, Rocky Point West at Apo's south end was spectacular. Scientists have catalogued more than 650 species of fish and estimated more than 400 species of corals at Apo.

And I'm sure we would have found them all had we been carrying out a census, but we were obliged to swim with the sea-snakes and turtles along the ridges and valleys. A full 100% of the reef was covered by the different species of tabling, branching and bushy hard corals, along with fields of soft corals and gorgonians.

T WAS DIFFICULT to leave the stunning vistas of Apo Island, but we had to stay on schedule. Our next encounter, at Oslob, was the epitome of the rare and unusual.

Again, in concert with good conscience, commonsense and science, the local fishermen at Oslob found more value in attracting live whale sharks for tourism than in commercial fishing. Scores of

tourists pay good money and line up to board local *pangas* for an up-close encounter, with up to a dozen sharks attracted to be hand-fed each morning in a buoyed-off section of coast.

The Siren has been afforded a special privilege – its divers are allowed to scuba-dive under the sharks during the feeding schedule.

It might all seem rather commercial, but our scheduled dive occurred during a squall, with wind and rain keeping the *panga*-bound tourists under cover on the beach and leaving the giant fish to our divers and the feeder-*pangas* above.

It was tough but rewarding shooting. The current ran hard, the sharks moved quickly against the current and the visibility was low. Rolling onto my back and timing my breathing, I was able to grab a handful of satisfying fisheye images without bubble contrails.

After nearly four decades of thinking about diving the Philippines, reality had finally arrived.

With all of its diversity and wonders, I'm a bit sad that it had taken me so long to discover its marine beauty. Let's hope I have a few decades left in which to make the Philippines an annual affair.





Above, clockwise from left: Turtle at Rocky Point West; and another among the sardines at Moalboal; Amphiprion periderion in Heteractis magnifica anemone at Panglao Island Wall.

# FACTFILE GETTING THERE >> Several airlines fly to Cebu daily from London with single stopovers. DIVING & ACCOMMODATION >> Philippine Siren is a full-service liveaboard with nitrox included and four dives a day. Rooms are spacious, with air-conditioning and the food excellent and plentiful, says Mark. WHEN TO GO >> Year-round. Siren has regularly scheduled trips in the Visayas from August-February MONEY >> Philippines peso, credit card on the liveaboard. HEALTH >> Hyperbaric chamber near Cebu City. PRICES >> Return flights from £580. The 10-day trip costs £3285pp through Bluewater Dive Travel, bluewaterdivetravel.com

DIVERDET.COM

VISITOR INFORMATION ▶ itsmorefuninthephilippines.co.uk

# INSEARCH OF (TINY) DRAGONS



JADE HOKSBERGEN and HENLEY SPIERS have been on the lookout for the ocean's smallest inhabitants in (what

was) a secret macro hotspot in Cebu

ART OF THE JOY of scuba-diving lies in that feeling of discovery, witnessing things and places that will escape most others. Macro-diving has a particularly keen sense of exploration, as we uncover small wonders within seemingly barren seascapes.

That sense of discovery is greatest when we come across these treasures unaccompanied by large crowds of people. In journeying to Alcoy and Boljoon, we were privileged to undergo an experience combining all these elements, a hidden gem of Philippines diving that will delight those looking for something a little off the beaten path.

Alcoy and Boljoon are two neighbouring municipalities on the island of Cebu's south-east coast.

Typically you reach them by flying into Cebu City and then driving for two to three hours down the coast. The area sees few tourists, and those who do visit tend to use it as a base for the whale sharks of

municipality down. Gerhard Gehlen arrived there in 2004 and, along with his local

guide Edil, pioneered diving in Alcoy and Boljoon, establishing and naming most of the sites in the area.

Oslob, the next

As a testament to how unusual diving was in Alcoy back then, Gerhard was arrested by suspicious police officers the first time he took guests to tour the local dive-sites! As it turned out, although the correct licences had been acquired, word had not yet been transmitted from the mayor's office to the police department.

Fortunately he was soon released, and we stayed at his excellent resort: Dive Spot Asia.

Without another dive-boat in sight, we head to Kuransoy Wall, where the shallow reef plateau drops off precipitously. Gliding downwards, we spy a green turtle napping under a ledge, as well as lionfish grouped around soft corals, pectoral fins splayed as they too rest after a busy night of hunting.

At 25m the wall ends in a gravelly ledge, an excellent spot for hunting macro critters, according to our guide.

**NUDIBRANCHS THRIVE THERE**, and on this occasion we sight many from the dorid suborder, distinguished by their anal gills (the fluffy bit at the back).

Nudis do have tiny eyes if you look closely (like two spots drawn in pencil) but are likely to use their rhinophores as their most important sensory tool.

In human terms, the rhinophores are able to smell, taste, touch, and hear – impressive! We were especially excited to see a black crinoid that had made its home on a pink seafan, complete with an ornate ghost pipefish, swimming in trademark head-down fashion while trying to camouflage itself between the crinoid and seafan.

Dynamite-fishing was a real problem 20-30 years ago and the coastal reefs are still regenerating. Alcoy and Boljoon are best viewed as a world-class macro spot, with some reef scenes and plenty of turtles on top.

The success of macro-dives is controlled not only by the abundance of creatures, but by your ability to locate them. Luckily Dive Spot Asia's guides enthusiastically excel at finding subjects.

The passion for macro runs so strong



that a typical evening scene would see Gerhard and the guides huddled over the fish-identification books, talking excitedly about that day's finds.

Nindot Cantil, meaning "beautiful wall" in Cebuano, lies within a marine reserve created just offshore from Alcoy's Tingko Beach.

The restrictions on fishing there seem to be working, with fusiliers, grouper and rabbitfish happily swimming around this beautiful site, occasionally stopping at one of the many cleaning stations.

Whip-corals jut out from the slope, and warrant investigation for Zanzibar whip-coral shrimp, living there in symbiosis, usually in pairs, and evolved to match their host.

Next, our guide is excitedly pointing out a delicate cowrie latched onto colourful soft coral. Part of the snail





family, cowries are distinguished by their ability to extend colourful mantles over their shell, which can retract if disturbed, leaving behind a plain, porcelain surface.

Coming back up into the shallows, we find giant clams with fantastically intricate designs on their mantles.

Impressively sized, they can live to more than 100 years old and weigh more than 200kg. For a while they were even referred to as "killer clams", capable of grasping and drowning humans, and the US Navy Diving manual contained instructions on how to free yourself in such an instance!

In reality, giant clams are about as peaceful an animal as you can encounter, slamming their shells shut only in self-defence. Even then, most of the bigger clams are unable to close their shells up completely, because of the large mantles.

Giant clams are also prized as an aphrodisiac, gastronomic delicacy and ornamental showpiece, and have been mercilessly harvested from the ocean at an unsustainable rate. We delight in seeing them peacefully undisturbed within this natural setting.







Alcoy and Boljoon tend to experience milder currents than other areas around Cebu, so can be relied on to deliver the kind of gentle diving conditions that are perfect for beginners, as well as macro enthusiasts. Another pleasure is the minimal boat traffic, which means that while you should always remain aware, there is far less stress involved when near the surface, compared to Cebu's more renowned dive-spots.

Frog Hill might just be the finest macro dive-site in all of Cebu, with a mucky sand bottom that's rich in unusual creatures. A shallow seagrass bed, home to head-turning turtles, slopes off into a mucky sea bottom, and this is where the treasure hunt begins.

This is not only a great macro site but a supermacro one too, with some absolutely minute animals to be found.

THE NIGHT BEFORE, with our guide eagerly asking what we wanted to see, we had put him to the test with a request for a psychedelic sea-slug.

This slug makes up for its tiny size (2cm) with both a flamboyant name and appearance. Orange spots line its body, set against a pale blue background, and apparently the large edges of its body can be pulled down for swimming purposes –

Above, clockwise from top left: Giant clam at Kuransoy Wall; a delicately marked cowrie, thorny seahorse; Alcoy panorama.

**Below left** Turtle over seagrass.

thus the name batwing. A little scouring of the seabed later and, sure enough, we were soon presented with this elegant nudibranch, with its swan-like posture.

The minute margin shell also lived up to its name, an eye-squintingly small marine snail that comes in vivid orange and feeds on green algae.

That colour combination makes for a pleasing match, but you'd better come armed with a diopter to capture it.

Further down the slope we discover a thorny seahorse, tail wrapped around a nearby stem of coral as it gulps down morsels of passing plankton.

A Napoleon snake-eel, complete with elaborate head markings, relaxes in the sand close by. These nocturnal feeders like to chill in the sand during the day, burrowing a hole with their purposemade tails before reversing in.











It's extraordinary how closely we can approach it in this relaxed state.

Frog Hill is an endlessly entertaining macro dive, in a calm environment ideal for underwater photography.

With a dense population of tiny animals for every square metre of the dive-site, you could spend a week diving there without repeating the same subject.

At all the sites up and down this coastline, the chances of seeing a turtle are high. The many seagrass beds around Alcoy and Boljoon provide ample feeding grounds for green turtles, the species you will mainly see.

They do however tend to be on the skittish side, preferring to stay within





**Top, from left**: The psychedelic sea-slug; hairy squat lobster.

**Above, from left**: Hairy shrimp eggs; lizardfish on corals.

**Below left**: A signalfin goby.

**Bottom from left**: Razorfish; ghost goby.

logbook territory rather than offering the close encounters preferred by underwater photographers.

At the southern end of Alcoy, just out from the mangroves, lies Aquarium. It's a pleasant dive-site with a mix of nice corals and plenty of small stuff to keep the critter-hunters happy. As with most dive-spots close to mangroves, the visibility tends to be worse than in surrounding areas, with the clearest conditions occurring in the morning.

Once upon a time Edil, the guide who originally established the site, lost his false teeth while diving at Aquarium.

After swiftly returning his guests to

their resort, he returned to the site and, in an impressive display of his spotting abilities, found the dentures and went home with a broad, toothy smile!

Both the hard and soft corals are in good shape there. Drifting while gazing down over the large, overlapping plate corals is a delightful sight.

We find a hairy squat lobster in the ridges of a pink barrel sponge, its purple and pink body adorned with a full complement of long white bristles.

This fantastical creature has a mutualistic symbiotic relationship with the sponge, the squat lobster collecting tiny particles on its hairs as it moves up and down the ridges of the barrel sponge.

These small bits of plankton are food for the hairy squat lobster, but problematic for the barrel sponge, which relies on its thousands of pores to filter water and wants to avoid any blockages.

AST BUT NOT LEAST, we cross the boundary of Alcoy into Boljoon, where Dive Spot Asia's house-reef lies, and this is dragon country.

The Lembeh seadragon was discovered only in 2006 (in Lembeh, naturally) and Boljoon is one of the few other places in the world where they can reliably spotted.

It turns out that all the myths were a little misleading, and dragons are in fact tiny. About 3-4cm in length, it is hard to





#### **PHILIPPINES** DIVER





Above, from left: Ornate ghost pipefish on a seafan; crab on a blackwater dive: whip-coral shrimps.

Left: Mating mandarinfish.

Right: Frogfish portrait.

overstate just how fine the LSD is measuring just 1mm in diameter, it's like a strand of hair with oversized eyes.

Its small size, irregular body and sandy colouring enables it to blend in perfectly with rubbly environments.

These relatives of pipefish and

seahorses share the same romantic spirit as their cousins, usually being found in pairs and spending their sunsets freeswimming and canoodling with each other. They are an

> extraordinary adaptation of nature and we

quickly grew to share the Dive Spot Asia staff's enthusiasm for them.

Speaking of romance, the house-reef is a great place to see mating mandarinfish.

These beautiful fish put on a nightly courtship dance and, unlike the mandarin dives in other more popular areas, you can have the whole scene just to yourself.

The courtship can be a little longwinded, as you struggle to keep track of the small fish as they chase each other round and round the finger corals.

When a female does finally relent, she mounts the male's pectoral fin and they rise together over the corals, exploding in ecstasy very soon after.

Once the randy mandarinfish are finished, we continue onto a night dive where mating is replaced by predation.

Barracuda zip above us near the surface, hunting down their prey, and we come across a reef squid halfway through devouring a small fish.

With a fresh portfolio of macro imagery, fond memories and a belly full of delicious wiener schnitzel, we bid goodbye to Dive Spot Asia but promise ourselves to return soon.

Alcoy and Boljoon might not have the fame of Malapascua and Moalboal, but if you're looking to get ahead of the crowds and discover what might just be the next big macro hotspot, we would highly recommend a visit. 

offer flights from the UK to Cebu with one stop along the way. Cathay Pacific offers competitive pricing and 30kg bag allowance in economy. The resort can arrang a private transfer from the airport to Boljoon

**DIVING & ACCOMMODATION: Dive Spot Asia** Beach Resort, divespot-asia.com

WHEN TO GO: Year-round, high season runs from November-May. June to October is the rainy season, with a chance of typhoons.

**HEALTH:** Nearest chamber Cebu City.

**MONEY: Philippine peso, US dollars widely** accepted.

**PRICES:** Return flights London to Cebu around £600 if booked early. A room for two sharing boat-dives for two is 28,300 pesos



watching two Coleman's shrimps slowly preening themselves in their prickly home, that we were almost annoyed to hear the loud "ting, ting, ting" from our local guide Dave. But because he had so far found us some great critters to photograph, we thought we had better check it out.

We had a quick look around in the 12m visibility, but couldn't see him. More tings to the left, so we headed that way, but still no sign of Dave.

More tings this time at a different angle, but we still couldn't locate him.

The tings then got really frantic. He must have found something incredible, we thought, but where was he? And why was he moving around so much?

Suddenly the tings stopped. We had obviously missed some amazing muck critter, so we returned to the colourful Coleman's shrimps.

Surfacing only 10 minutes later, we finally found Dave waiting on the shore for us with the other diver in our group.

They both had big grins, so we asked what all the noise had been about – what had they found?

"A whale shark!" they told us excitedly. At any other dive destination we would naturally question this claim, especially as we had been doing a muck-dive from the shore. However, we were diving Sogod Bay, a destination with the largest population of whale sharks in the Philippines, so whale sharks, even at muck-sites, can never be discounted.

We FIRST VISITED in 2007, on our first dive trip to the Philippines, staying at the wonderful Sogod Bay Scuba Resort. Owned and operated by expat Aussie Phil McQuire, it is located on a pretty beach and has coral reefs on its doorstep.

The dive-centre is managed by local instructor Pedro Batestil and operates two traditional bangka dive-boats visiting the numerous sites around the bay.

Located at the southern end of Leyte, Sogod Bay is not the easiest destination to reach in the Philippines. But with the promise of whale sharks, it was well worth the extra time and effort.

Over our first week there we had seen



**Above**: Diving in the calm and clear waters of Sogod Bay is a real treat.

Below from left: Little Lembeh is a great location to see Coleman shrimps sitting on fire urchins; yellow-lipped or banded sea kraits populate many of the sites in Sogod Bay. several whale sharks, explored beautiful reefs with a great diversity of marine life, and fascinating muck-sites loaded with critters, and had enjoyed the best night-dive we'd ever experienced. Another highlight was the friendliness of the staff.

We had kept in touch over the years, but with so many other destinations to explore, kept failing to squeeze it in. But when we heard from the staff that they had discovered some new sites, including what they described as world-class muck-sites, we were finally lured back.

Little had changed. It was still tricky to reach, involving a flight from Manila to Tacloban, then a three-hour drive in a van, but being off the beaten track means a lot fewer divers. We were happy to discover that most of the staff were unchanged, and the resort as comfortable









#### **PHILIPPINES** DIVER

Larger animals, too big for our macro lenses, included a green turtle and a bluespotted mask ray.

One of the signature dive-sites, Napantao, is a marine park loaded with reef and pelagic fish, and it was even better than we remembered.

The main feature is a wall swept by currents and decorated with soft corals, gorgonians, black corals and sponges. But we could barely see the corals for the swarms of basslets and fusiliers.

Off the wall cruised trevally, mackerel, batfish and whitetip reef sharks.

Trying to ignore the masses of fish, we looked instead between the corals for subjects and found lionfish, pipefish, morays, scorpionfish, angelfish and nudibranchs.

After exploring the wall for a while, we drifted into the shallows to investigate healthy hard-coral gardens. Here we spotted several green and hawksbill turtles, a banded sea-krait, snapper and grouper, but a highlight was a green painted frogfish that appeared to have hiccups.

Now fish don't have a diaphragm, so technically they can't hiccup, but this poor fellow was opening and closing its mouth every few seconds as if it was.

and homely as we remembered.

We headed across the bay to Santa Paz, one of the new sites and typical of Sogod Bay, with a little bit of everything.

We descended onto a coral garden, then glided down a wall, skipped across to a towering bommie, and ended the dive searching the sand for critters.

The bommie was a giant tower of coral rising from 35m to 25m and covered in

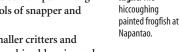
black coral trees and sea-whips. Among the coral were schools of snapper and basslets.

We looked for smaller critters and found nudibranchs, gobies, blennies and a painted frogfish. We also found many subjects on the sand: box crabs, razorfish, flounders, a saddleback anemonefish tending eggs, headshield slugs, porcelain crabs and a shy oriental sea robin.

Right: The hiccoughing

Below from left: Nigel and Helen on the truck; crocodile snake-eel at Padre Burgos Pier; a lizardfish snatches a basslet, seen on a house-

Naturally, we returned to Napantao several times during our stay so that we could also photograph all the fish and corals with our wide-angle lenses. We would see even more turtles, including a few hawksbills munching on the corals, and also found the poor frogfish, still suffering from a bad case of hiccups!









Our afternoon dive was at a site called Max's Climax 1. It starts 10 steps from the dive-shop door and is one of the best house-reefs we have dived. There are coral gardens in the shallows, then a wall dropping into deeper water.

Still concentrating on macro, we photographed clown anemonefish, nudibranchs, shrimps, morays, octopuses and warty frogfish.

On the wall we spotted turtles, mackerel, batfish and a banded sea-krait. Pygmy seahorses are often found on the seafans at this site, we were told.

Diving here the next day, we were lucky enough to see a lizardfish shoot off the bottom and grab a basslet before swallowing it in two gulps!

THIS HOUSE-REEF is even better at night, when a host of critters emerge. We spent more than an hour in less than 10m of water photographing crocodile snake-eels, stargazers, cockatoo waspfish, demon ghouls, a starry-night octopus, basketstars, a pygmy squid and even a small cuttlefish eating a cardinalfish.

Bunga Bend is another wall with pretty corals and pygmy seahorses, but the best part of this drift-dive was its second half, spent in the shallow coral gardens.

There we saw hermit crabs, shrimps, another banded sea krait, pufferfish and more than a dozen large nudibranchs.

Called the red-lined jorunna (*Jorunna rubescens*), these impressive sea-slugs grow to almost 20cm long and we found them mating and laying eggs.

One afternoon we didn't board the bangka but loaded the gear onto the truck and headed to what we were told was now Sogod Bay's best muck-site, Little Lembeh. This was another new site, and with a black sandy slope it did resemble Lembeh muck.

Only seconds after wading into the water we had found our first critters – dozens of fire urchins, many home to zebra crabs and Coleman's shrimps.

Going no deeper than 18m, we and our









Above, clockwise from top: Black coral tree full of basslets at Santa Paz; colourful nudibranchs are found at all the dive-sites; warty frogfish; numerous stargazers are found on the sand around Padre Burgos Pier

**Below**: Hawksbill turtle munching on the corals at Napantao.

guide Dave found pipefish, Pegasus seamoths, jawfish, squat lobsters, mantis shrimps, clingfish and an oriental searobin. On one black coral tree was a lovely sawblade shrimp – and it was on this dive that Dave had seen the whale shark.

These are spotted in Sogod Bay from November to May, and while they can turn up just about anywhere during the season, they are best seen around the Sunok area, on the far side of the bay.

On our previous visit we had done a day-trip to snorkel with the whale sharks and found four of them, ranging in size from 4-8m. On our more recent visit the resort ran two such trips and reported seeing a number of these giant creatures. We were tempted to join in, but decided to concentrate on exploring the new divesites instead.

One of these was Casa Blanca, a mix of muck and coral-heads on a sandy slope. There were many critters to photograph there, highlights including solar-powered nudibranchs, warty frogfish, twin-spot gobies and winged pipefish.

Benit Reef, meanwhile, offered gobies, cuttlefish, nudibranchs and a murex shell eating a dead demon stinger. We also returned to Little Lembeh twice more, and each dive produced something new, such as thorny seahorses, bentstick pipefish, spindle cowries and a rare algae octopus.

OTH SANTA SOFIA and Olly's Wall were pretty reef sites with nice hard corals, but the latter also had fabulous soft corals, gorgonians and sea-whips. While large reef fish and a broadclub cuttlefish could be seen, the critters were the main feature, including pygmy seahorses, splendid mandarinfish, saron shrimps and hairy squat lobsters.

Despite all these great reefs and mucksites, Sogod Bay's gem is the Padre Burgos Pier. You can dive there only by night,



because of boating activities, and it is open to divers only on Monday, Wednesday and Friday nights. We had only one practical opportunity to dive the pier, but it was the highlight of the trip.

In fact the idea of doing this night-dive again had been the clincher in deciding to return to Sogod Bay.

Sitting in the back of the truck, we headed the short distance to the town of Padre Burgos, and pulled up at the pier.

The water didn't look appealing, with rubbish and weed floating at the surface and murk in the shallows. We climbed down the stairs and into the water, wading out to chest-depth, and sank through the surface layer into a fantasy land.

Moving quickly under the jetty we saw the vis improve to 10m, and started by exploring pylons completely encrusted in gorgonians, sponges and soft corals.

Our first find was a rare freckled frogfish, quickly followed by a tigertail seahorse clinging to a gorgonian.

We then explored the rubble and rubbish under the jetty, finding a duskybanded moray eel, lionfish, nudibranchs, basketstars, brittlestars, sole, sea-moths, crabs and a Donald Duck shrimp.

The fun really started when we moved onto the sand in 10m. Here we spotted not one but three bright-red reptilian snake-eels and several stargazers. Out on the sand were shells, crabs, shrimps, nudibranchs and mantis shrimps.

It was a night-dive overloaded with critters, and if anything better than we had remembered.

However, two nights later we couldn't resist a follow-up visit – and it was even better. We saw all of the above, plus three giant frogfish, more freckled frogfish, a starry-night octopus and a cute stumpy-spined cuttlefish. This is a night-dive we could do every night and never get bored.





below, our eyes slowly adjust to our surroundings. We follow the smooth rock face until the pile of roughly broken rocks comes into view in the mineshaft's sump.

I check my contents gauge and depth before getting ready to set up the guidelines to explore further. I can see as far as my torch allows with crystal clarity, but all around is blackness.

The reassuring steady light above my right shoulder confirms that my buddy is still following, and all is well with him.

Old miners speak about the darkness deep underground – how it is as black as you can get when your light goes out, and that's before even reaching the water.

Even on open-water dives I have done to 70 or 80m there has always been a small amount of ambient light, but not down here. My two head-torches illuminate the area ahead, while my hands do the work of setting up lines for today's exploration of a new area.

Those of us who live in Cornwall are surrounded by fantastic coastline, rich in dive-sites including many wrecks – but the diving is almost totally dependent on the weather.

Aside from scuba I have always had an interest in local mining history, and the abandoned mine-workings that litter the Cornish countryside.

Mining here has existed from the early Bronze Age, around 2150 BC, with Cornwall and Devon providing most of the UK's tin, copper and arsenic right up to the 20th century. Originally it came from alluvial deposits in stream-beds and later it was mined underground.

These workings vary from small crawlin tunnels, or "adits", to massive 100m-plus sheer vertical shafts.

Accessing these involves abseiling into workings in which only a small amount of the total space is explorable above the water table. Most of these have now been documented by caving groups.

ANY OF THESE mines are situated on private farmland, so permission is sought where required to gain access. More often than not, mine-workings are on land that's council-owned or public, where access underground is often known about and, if not encouraged, at least tolerated.

It's been more than 10 years since I first took a dip in a flooded mine. After fully exploring the dry sections, a climb down to the bottom revealed a blue pool of that clear water. More than anything, that first dip was to learn how deep the shaft went.

I had decided that I wouldn't venture away from the main dropline, and would take along only a small single cylinder.

I dropped to more than 20m to find



Above: 'Rusticle'-type protrusions on the rungs of a submerged ladder 25m down at the base of a flooded shaft.

**Right**: A old mine-cart, still on the rails as it was left.

**Below right**: Descending almost 100m on ropes into a mine.



**Left**: Tunnel leading deep into a copper mine.

Left, insets from top: Diver looking down a flooded inclined railway shaft; exploring deeper into a mine





myself in a large underwater chamber with multiple tunnels. This gave me the urge to return with trusted company and better equipment, so that I could push further.

Since then I have trained as a commercial diver, and met many likeminded people who like to dive for fun at the weekends as well as for work.

None of us was formally trained as a cave-diver but we shared similar qualities essential for survival: all very comfortable in the water, used to diving in the full range of visibility and calm under pressure, with experience of difficult locations or restricted-access situations.

We read books on cave-diving and made multiple trips into the Dinas silica mine in South Wales with twin-sets as preparation. There we brushed up on our line-laying and emergency drills, and felt ready to see what else was down in the Cornish mines.

URING THE MORE settled months of the year I had started getting into wreck-diving seriously. But every winter, after the boat had been put away, we would find ourselves drawn deep underground, seeking out unexplored mines and

workings. These forays would often end with us just staring at a pool of clear water with features just visible below, enticing us in.

In flooded caves or mine-workings there is no current to worry about, weather is rarely an issue and most locations offer excellent visibility.

This type of diving is not to be taken lightly – or done on a whim simply when it's too

rough to dive in the sea. Once a diver has left the main access shaft he can't just swim up in an emergency, and might need to cover a considerable distance horizontally to reach an exit-point.

Other issues include very dark, cold water, silt build-ups and isolated locations.

So we always carry multiple lights, plan our air and gas reserves using the rule of thirds, and use twin-sets where possible.

We mark exit-points well, using a shot in the main access-shaft with strobes, and use lines and markers even in good visibility, to ensure that we can always find our way back out.

Most of the mines are those in which we have already explored the topside workings, and can be sure of having reasonable access and clear water.



**Above**: Leaving the surface pool in a flooded mineshaft

Below, from top: One of the larger open workings still accessible in a Cornish mine above the water-table; bottom of a mine-shaft looking into the workings. We take several team-members along to help with kit and to be on hand should an emergency occur. This deep underground, I wouldn't dive with anyone I don't know well or haven't dived with much. It's all about teamwork and trust.

We've discovered some pretty amazing

artefacts and sights. Many of the mines had been closed suddenly, and once the pumps were stopped the rising water didn't take long to reach its natural level.

Many tools and personal items were left *in situ* and remain there now. Usually we're the first people to see them again.

Wooden shaft-linings, ladderways, wooden boxes, mine-carts and small tools still lie where they were dropped as much as 200 years ago, with no tide or storm action to move them.

Recently we came across a flooded shaft that still had its man-way ladders in place. The wooden sides were in perfect order, and the metal rungs had sprouted long rusticle-type protrusions, reminding me of ROV images I've seen taken miles below the Atlantic on the *Titanic*.

Future projects include other mines with local history that have never been dived. We have done many of the easy-to-access sites but a few older ones will require a lot of effort to reach the flooded sections. These could hold the most interesting underwater discoveries yet.





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#### Panic!

NE ADVANTAGE of diver training is that you become familiar with those scenarios that are most likely to cause panic. Losing your regulator, flooding your mask and the timeless classic – running out of air. Or, more irritatingly, being in the company of someone who does.

It's all a bit of a controlled set-piece when you're doing those exercises in the pool. And while I can't say that inhaling a ton of chlorinated water up my nose is a favourite memory, at least there was a purpose – it entertained the instructor.

Knowing how to deal with the annoying and possibly life-threatening problems you might encounter on a dive should give you the confidence to do so. Or, at least, prevent you from panicking.

Wise souls will often tell you that panic is what turns the annoying problem into a life-threatening one. But let's be honest, there's a far better reason to avoid it.

Panic is not pretty. Only fish can manage to make it look elegant. A burst of movement, a surge of energy with a quivering flash of silver. Watching fish panic is like witnessing a superfast underwater ballet.

By contrast, for people, a total lack of grace is a self-defining feature of panic, and any diver moving smoothly and confidently under water is not in a panic. So learn, and relentlessly practise, the skill of how to look good on a dive.

You do this by staying aware and relaxed, knowing every inch of your kit, and always remaining physically and mentally composed. *Voila!* You've magically side-stepped the whole problem.

**UNFORTUNATELY MANY** divers look fairly clunky under water at the best of times. So how can you spot a rising state of panic kicking off?

If it looks like a bun-fight taking place inside a washing machine, then it's either a panicking diver or some bloke struggling to raise a porthole that's too heavy for his lift-bag. Approach either only if you can confidently offer a solution.

From experience, the optimum method seems to be to make the floundering person more afraid of *you* than of whatever is causing the panic. Once you have compliance, pretty much anything is solvable.

There's a famous saying: "If you can keep your head when all about you are losing theirs... then you probably haven't realised just how serious the situation is."

Panic starts in your head. It could be caused by an illogical fear (I have seen people panic when first encountering kelp), or the anticipation of something dreadful. The lunchtime soup ration on one now-defunct dive-boat being a prime example.

So, just imagine: the public pools and the indoor sites are shut. The boats are not running, the compressors are silent, and no-one is leaving their house. The planes are not flying and there's nowhere to escape to for diving. You can't make this stop, and you don't know how long it will last.

You can't go diving. Bollocks! I can't go diving.

As the full horror of this hits, I feel my heart-rate quicken. I'm hyperventilating.

So let's *stop*, and regain control. Breathe in and out; regain composure. Immerse yourself in your **DIVER** magazine and keep your dreams of the next dive alive.

Have confidence that, together, we will get through this.



# BETHE CHAMP!

ALEX MUSTARD's last trip before 'going dry' as a result of the coronavirus pandemic took him to the mangroves of Cuba – an environment that demands a very specific approach by quality-conscious photographers

## 'Finding **good conditions** for **photography** is the **biggest challenge** of shooting in **mangroves**'

ANGROVE FORESTS are among the ocean's iconic ecosystems – but are far less photographed than the coral reefs that are often linked with them. I hope this column encourages you to take a photographic dip on the wild side.

Mangroves are crucial in protecting low-lying coastlines from erosion and storms. They maintain ocean water quality by filtering run-off from the land and trapping sediments.

They are a vital nursery for countless fish and invertebrate species and an essential habitat for many endangered species. But, just like reefs, they are severely depleted, and the lack of beautiful photos means that it's harder to get public opinion onside. These are valuable spots to shoot.

I have recently been in Cuba photographing mangroves. I set off before there was a single COVID-19 case in the country and returned to the UK with ever-increasing restrictions to our lives. It looks inevitable that it will be a while before anyone will be reading this and instantly jetting off to the tropics.

As I've often said, while the time we get to spend actually taking under water pictures each year can be measured in hours, we remain underwater photographers 365 days a year, or 366 in 2020! So reading about our hobby, thinking through techniques and ideas, and making plans for the future all help us develop our skills without getting wet.

So my plan is to plough on through topics, which I hope provides some welcome distraction in these stressful times – and becomes useful advice when our opportunities to dive return.

ATTHE HEART of the mangrove habitat are a number of unrelated terrestrial tree and plant species that have, just like turtles and dolphins, reinvaded the oceans in order to prosper. The mangrove community has adapted to survive with roots sunk into salt water and oxygen-depleted soft mud.

They have some fascinating solutions.



Some have aerial roots that get oxygen from the air and provide stability; others have horizontal cable roots, with upward knee and snorkel-like pencil roots and downward anchor and nutritive roots; and some even have large buttress roots providing a wide base in the sediments.

Mangroves are hugely productive habitats. Life there is harsh, but species that can adapt tend to thrive. One of the indelible memories of my dives is the **Above:** Incoming tides bring clearer water and open corals.

Taken with a Nikon D700 and Sigma 15mm. Subal housing. 2 x Subtronic strobes. 1/250th @ f/14, ISO 200.

abundance of colonising life.

The roots of the trees are ideal attachment-points for life such as sponges, sea-squirts and corals, especially along the edges of channels where currents are strongest.

In addition to creating a threedimensional habitat and a point of attachment, the trees also provide a food-source, particularly through their leaves.

Mangrove leaves live a rock 'n' roll lifestyle: grow fast, die young! The leaves are shed so frequently that an acre of mangrove will drop about 3 tons a year.

These fall into the water and decompose into a nutritious mulch, an ideal food-source for marine creepy-crawlies, and power an entire food-chain. Classic mangrove scenery often allows us to tell this story in a single picture, showing the characteristic roots, packed with life, framed against the canopy of leaves.

#### **INDING GOOD CONDITIONS for**

photography is the biggest challenge of shooting in mangroves. For winning images we need the right mangrove, the right part of it, the clearest water and sunshine.

Mangroves are always full of sediment, but the best locations are usually in more oceanic locations away from large land masses.

Deeper channels, close to the edge of mangroves have the clearest water and the most marine life. Further into forest the sediment levels increase and the quantity of marine-life drops.

The exception to this rule is where mangroves thrive around freshwater springs, where the clear upwelling water can provide excellent photographic conditions.

All mangroves are tidal (there are no mangroves in the micro-tidal Mediterranean Sea) and an incoming, rising tide will give much better visibility, especially close to high water.

Ebbing tides will suck out tannincoloured and sediment-loaded water from between the trees.

#### **STARTER TIP**

Calm water and overhanging trees are perfect for capturing beautiful sunbeams under water. Not only do these look beautiful, but they also capture the slightly spooky atmosphere of mangroves.

I can't help you to get sunshine on your holidays, but do wait for it before going to shoot in mangroves!

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We are the other factor that controls visibility and we need to be very careful not to stir up sediments. It is very frustrating to find the perfect scene and then obscure it behind a fog before having the chance to shoot it.

I generally prefer photographing mangroves while snorkelling, which makes it easier to slip through narrow openings, and staying on the surface keeps me away from the sediment. It's also an advantage not to be bubbling when shooting up through the surface, framing reflections or snapping splits.

The final piece of the puzzle is light. Mangroves come alive visually with bright tropical sun. The trees and leaves look great lit by the sun and framed against blue sky.

Sunshine creates beautiful beams below the surface, the flat water focusing the light into shafts that show up in the sediment-rich water. **Above:** Specialist subjects elevate mangrove snaps.

Taken with a Nikon D850 and Nikon 8-15mm. Subal housing. 2 x Retra Pro strobes. 1/125th @ f/20, ISO 500. pictures we can take in mangroves include the sunlight filtering down through the trees. The canopy above the water acts to slice the sun into separate rays, creating spectacular beams below the surface.

The trick is to hide the actual sun from the camera in the composition, so that only the beams are visible.

We will find the best beams on the shady side of channels, where we will be able to shoot into the trees and into the sun.

However, many mangroves have an overhanging lip of foliage, which enables us to shoot a multitude of directions.

The optimum light for these shots is away from the ends of the day.

When the tropical sun is too low in the sky there are just too many trees blocking the beams from reaching the water. A high sun saves us.

Now we have the scene set, we need a subject! Mangroves are nurseries to many species, but the inhabitants tend to be more timid than the same fish are on the reef. Schooling baitfish are probably the most approachable.

Close to freshwater inputs we might find freshwater fish mixing with marine fish: I have photographed cichlids in the mangroves of Mexico and guppy-like livebearers in many locations.

#### **ADVANCED TIP**

Mangrove trees are perfect for splitting the sun into sumptuous beams of light. Hide the ball of the sun in your composition while keeping the beams visible.

This allows you to expose for the beams so that they show up strongly in the picture. They show up best framed against the darkness of the forest, and with a little sediment in the water.

Mangroves are also home to a host of specialist species. Upside-down jellyfish are medusa that want to be anemones, settling on the seabed to soak up the sun.

Archerfish have barred patterns that camouflage them amongst the roots and can hunt insects by spitting a jet of water to shoot them down.

I have seen archerfish many times, but never seen on a hunt!

And then there are big boys – mangroves are home to rays, turtles, manatees and baby sharks.

But the winning smile is that of the crocodile. There are few places where crocodiles can be encountered reliably and safely, but when they can, it is fabulous to be able to include the habitat's top predator.

#### **MID-WATER TIP**

Good conditions are the most critical component in mangrove photography: sun and clear water will transform your shots. A rising tide will bring in clearer water from the ocean and the water movement will also help to flush away any sediment that we stir up.

Subjects such as soft corals are more likely to be open when the water is flowing, as opposed to at slack water.

DIVER 48

## THE WINNERS



## UNDERWATER PHOTOGRAPHER OF THE YEAR

ROZEN MOBILE HOME, an image of crabeater seals swirling around an iceberg, has helped French full-timer Greg Lecoeur to win the title of Underwater Photographer of the Year 2020.

A different photograph from Lecoeur's crabeater-seal series recently won another prestigious contest, the US-based Ocean Art underwater photographic competition, as seen in the March edition of DIVER.

In UPY, Frozen Mobile Home triumphed over 5500 other underwater pictures submitted by photographers from 70 countries. Lecoeur, who had travelled to Antarctica on a small yacht to document wildlife on icebergs, won plaudits from the judging panel of chair Alex Mustard, Peter Rowlands and Martin Edge.

Pasquale Vassallo was named Marine
Conservation Photographer of the Year for

Last Dawn, Last Gasp, showing the final moments of a tuna's life, while Anita Kainrath won the title Up & Coming Underwater Photographer of the Year for Shark Nursery –baby lemon sharks in Bahamas mangroves.

The UK-based UPY competition also gives two awards specifically for British photographers. Motion-blur specialist Nick More was named British Underwater Photographer of the Year for *Rabbitfish Zoom Blur*, while the Most Promising British Underwater Photographer was Nur Tucker for *Commotion in the Ocean*.

British diver Phil Smith was the first Underwater Photographer of the Year in 1965, when the competition was started by DIVER founder Bernard Eaton. After a long hiatus, the event was revived in 2014/15.

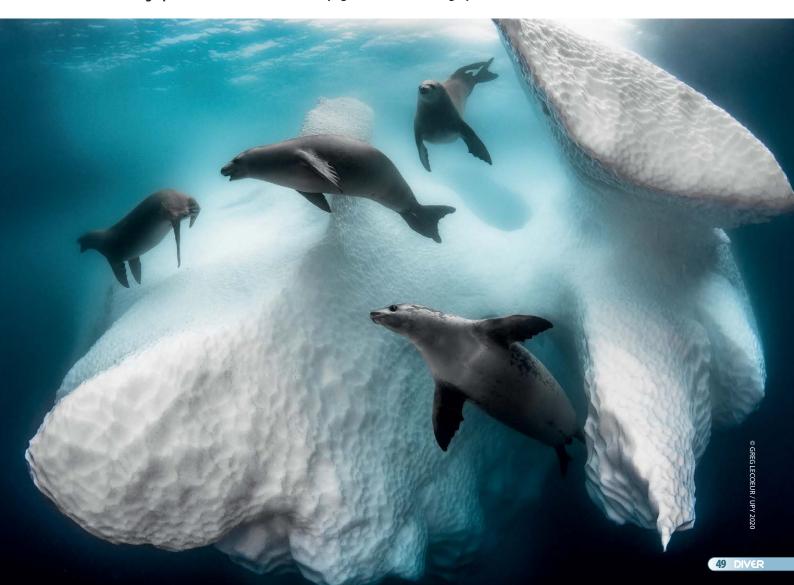
A 180-page Underwater Photographer of

the Year Yearbook, containing all the 2020 winning images with back-stories and judges' comments, is available for free download at underwaterphotographer oftheyear.com.

The overall winners and those in each category are shown with their statements and judge's comments here...

Wide Angle Winner & Underwater Photographer of the Year Frozen Mobile Home Greg Lecoeur (France)

"Massive and mysterious habitats, icebergs are dynamic kingdoms that support marine life. As they swing and rotate slowly through polar currents, icebergs fertilise the oceans by carrying nutrients from land that spark blooms of phytoplankton, fundamental to the carbon cycle.





"During an expedition in the Antarctic peninsula with filmmaker Florian Fisher and freediver Guillaume Nery, we explored and documented the hidden face of this iceberg, where crab-eater seals have taken up residence on icebergs that drift at the whim of polar currents."

Taken with a Nikon D500, Tokina 10-17mm lens, Nauticam NA D500 housing, two Ikelite DS 161 strobes. ISO 250. f/9. 1/250th

ALEX MUSTARD: "The balletic rhythm of these crab-eater seals and the ethereal landscape of the pitted iceberg creates a composition that draws you into a corner of the world that few people have witnessed. The multiple subjects take my eyes on a journey through the frame and into the icy ocean of Antarctica."

PETER ROWLANDS: "A deserved and unanimous winner, which combines photographic beauty,

composition, exquisite light and delicate colours. Perfect poses from the seals make this a celebration of natural life and a most enduring image."

MARTIN EDGE: "A stand-out winner from the very first time I viewed it. The positioning of the seals could not be surpassed. Each of the four compositions are superb in relation to the image frame. 'Peak of the Action' at its very best."

## Macro Winner Goby Goodness Hannes Klostermann (Germany)

"During the dive that I took this image on I swam a grand total of about 30m. I had dropped down from the surface and descended towards the shallow, pristine coral reef on Little Cayman in the Cayman Islands when I spotted this little fella posing right at the top of a coral-head. I noticed the purple seafan in the background and suspected it would look pleasing with a shallow depth of field, a look I really like in macro photography.

"After I had taken the first image and reviewed it, I knew I would spend the entire dive with this goby, as the complementary colours of the fan and coral-head worked very well together.

"Thankfully, the goby really seemed to enjoy the prime spot at the top of the coralhead so it kept coming back to have its picture taken, not minding my close approach a bit."

Taken with a Nikon D500, Nikon 105 f/2.8 VR lens, Nauticam NA D500 housing, two Inon Z-240 strobes. ISO 64,f/4.8, 1/250th

MARTIN EDGE: "This image was a winner right from the outset. The bokeh is nothing short of

outstanding. The balance of the colours are superb, the eye contact is perfect, but what really caught my eye was the composition!

Let us ask ourselves, how many of us viewing this image right now would have had the forethought to place the subject in the very bottom left-hand corner? One of my favourites from the entire competition."

## Wrecks Winner The Engine Tobias Friedrich (Germany)



"Panoramic image of the engine-room of the Chrisoula K at Abu Nuhas in the Egyptian Red Sea, with six video lights placed behind the engines. I went there on several trips with a liveaboard to check out the possibilities of creating some different lighting in the wrecks. But usually the boats do only one or two dives per wreck, so I had to make quick decisions.

"The space between the engine and the wreck is very narrow and the angle for a single photo was just not enough, so I thought the best idea was to create a panoramic image to display the machine-room in one shot.

"Placing the lights took some time as well, to find the right mix of ambience and light from the outside. Because the wreck is dived a lot, I had to wait for a good slot when nobody else was inside it."

Taken with a Canon EOS 1DX Mk II, Canon 8-15mm Fisheye lens, Seacam Silver housing, Keldan & SeaDragon video lights. ISO 3200, f/4, 1/40th

MARTIN EDGE: "One amazing panoramic image. The consistency of light and shade is stunning. The blue water colour in the far background gives the viewer a huge sense of depth perspective. The eye becomes absorbed by the panoramic from left to right, with all the machinery of the wreck in full view. When I set eyes on this image I knew it would go far in this competition. A most deserved winner."



)RICH / UPY 2020



#### **Behaviour Winner Octopus Training** Pasquale Vassallo (Italy)

"At the end of a session of freediving in the Tyrrhenian Sea near Naples, I noticed a soccer ball in the distance and on the surface. Intrigued, I approached it, then noticed that below it was an octopus being pulled along by the current. I don't know what it was doing under the ball, but I think it's training for the next World Cup! There was time for me to take a couple of shots before the octopus let go of

the ball and dropped back to the seabed."

Taken with a Canon 5DSR, Canon 8-15 lens, Seacam Canon 5DSR housing, Inon Z240 strobe. ISO 200, f/20, 1/100th

ALEX MUSTARD: "This image provokes a rollercoaster ride of emotions: at first it makes me happy, then sad. It's impossible not to laugh at this composition, seemingly showing an octopus with a ball for a head. As you think, you enjoy seeing the cephalopod playfully investigating this strange object in its environment, happily waving its arms in the

> water. Then the photo poignantly reminds us that oceans have, for too long, been a rubbish-dump for all our old trash."

#### **Portrait Winner Butterfly Effect Lilian Koh (Singapore)**

"Having been immersed mostly in creative macro, this was the first time I had used a snoot technique on a larger scale. Maintaining a shallow depth to capture the reflection, the snoot brings focus to the model while the blue light catches the flowing veil that frames around her, creating a butterfly effect." The photograph was taken at Tulamben in Bali, Indonesia.

Taken with a Canon EOS 5D Mark IV, Canon EF 16-35mm f/2.8L III USM lens, Nauticam NA-5DMIV housing, Inon Z-330 & Retra LSD & Fix Neo 1200 DX Blue, ISO 200, f/6.3, 1/160th

PETER ROWLANDS: "Some images have instant appeal but it takes a quality one to sustain it. Winning images must continue to grow in

appeal through the stages to rise above the pack. This image kept coming back and kept getting promoted for its originality, its perfection and delicacy.

"Our guidelines say 'We hope to recognise and reward excellence and creativity in underwater photography within its various disciplines.' This is a prime example and a unanimous winner."

#### Black & White Winner **Layered Thoughts Mok Wai Hoe (Singapore)**

"The creation of this image in Komodo, Indonesia, was inspired by in-camera doubleexposure photography. This abstract style typically involves re-exposing the silhouette of a person against a textured background such as urban landscape. I was mesmerised by the aesthetics as well as the extensive possibilities of interpreting this form of visual art, but found no examples applied under water.

"I spent a year researching and experimenting to marry this technique with underwater photography. This image was made by first shooting a silhouette against a cloudy afternoon sky. The picture was then reexposed against the image of a coral garden.

"While it pays homage to subjects most dear to me, I hope that viewers can find their own meaning as they juxtapose the elements and textures."

Taken with a Canon 5D Mk III, Canon EF 24-70mm f/2.8L II + Canon EF 16-35mm f/4L lenses, Nauticam NA-5DMKIII housing, two Seacam Seaflash 150D strobes. ISO 100, f/9, 1/160th

ALEX MUSTARD: "They say the best ideas are the simplest, and this stunning and original photo is one of the most memorable in the contest. The minimalism of the concept marries perfectly with the monochrome presentation. An exquisite piece of competition photography."





#### **Compact Winner Uluna Lily** Man Bd (Malaysia)

"Uluna Lake in North Sulawesi, Indonesia, located 670m above sea level, is a place I've always wanted to visit. When I got the opportunity to dive in this freshwater lake at the end of last year, I knew what I wanted to shoot.

"I stayed at YOS Dive Lembeh Eco Resort and the journey to the lake took less than two hours. This crystal-clear springs lake is famous for its water lilies, which bloom only in the morning, and blue sky gave a good contrast when shooting.

"Geared up with a mini-dome, I did my level best to shoot a split-shot and stay very still to find the right angle and moment."

Taken with an Olympus TG4, Inon UWL-S100 ZM80 lens, Sea Frog housing, Inon S2000 strobe. ISO 100, f/4.5, 1/800th

PETER ROWLANDS: "Split-level shots with compact housings and their small domes are not easy, but this perfectly lined split has a freshness and brightness that was always appealing. I have to admit I hadn't spotted the diver (did you?!) but when it was pointed out to me, that was the icing on the cake."



"Eleuthera in the Bahamas has been a shark sanctuary since 2011 but the mangroves aren't protected yet, and that's where these lemon



shark pups spend the first five-to-eight years of their lives

"I was standing in knee-high water, trying to hold my camera still, waiting for the sharks. Trying not to move when you have mosquitoes and sand-flies buzzing around you was probably the part I struggled with the most.

"After less than an hour the little predators came closer and finally swam around my feet and my camera, bumping against me and trying to taste my strobes. They are curious little fellas but you need time to gain their trust. I love observing them in their natural habitat and that's what I wanted to capture.

"They are such characters, and we need to

protect their nurseries in order to make sure that their population is not declining."

Taken with a Nikon D300s, Tokina 10-17 lens, Nauticam NA D300s housing, Sea & Sea YS-D2 strobes ISO 200, f/13, 1/200th

PETER ROWLANDS: "As someone who is adored by mosquitoes and sand-flies I have to applaud Anita's tenacity first and then her imagery in equal measure. Her perseverance has definitely paid off, with a beautifully balanced and observed image. It's one we dwelt on for quite a while; not because we were unsure about it but just because we liked looking at it."

#### **British Waters Macro** Like Water for Silk Laura Storm (UK)

"Over the past couple of years, I've been photographing British freshwater habitats under water. One of the stories that has captivated me is that of the common frog. During its lifetime it has an estimated 0.25% chance of survival. It morphs like no other creature and, along the way, experiences the most fantastic journey.

"This tiny common froglet, photographed in an urban wildlife pond in Surrey, is less than 1cm in length. It is so weightless that it can balance on single, silken stands of spirogyra.

"These algae filaments, an abundant and vital first link in freshwater food webs. reproduce rapidly, leading to thousands of individual strands. They are a simple life-form that combine into a tangled labyrinth known as water silk.

"To highlight the water-silk habitat, I used two off-camera lights strategically placed, one to help light the froglet and the other to allow the tangle of algae strands to shine through."

Taken with a Canon EOS 550D, Canon EF-S 60mm f/2.8 Macro USM lens, Sea and Sea RDX-550D housing, Light & Motion SOLA 800 & 1200, two Inon S2000s, ISO 100, f/8.1/200th

MARTIN EDGE: "Flawless composition. The eye of the frog and the back left leg illustrate the time old 'rule of thirds'. But you have gone one step extra by using your two off-camera lights to creatively light both the frog and the algae all at the same time. A very deserved winner of British Waters Macro."





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British Waters
Wide Angle
Jewel Reef
Arthur Kingdon
(UK)

"The Isles of Scilly offer underwater photographers some of the best opportunities for wide-angle photography in the UK, so I was determined to make the most of it when I visited for a week in September 2019.

"This image was shot at a site the location of which is known only to the excellent skipper of Dive Scilly, and it proved to be a stunning site with jewel anemones everywhere.

"This was the first dive of the week and it was my first dive with my new camera and housing. After a shot to check exposure and lighting, I took this one and it proved to be the best of the week!

"I was helped by some fine modelling by Paula, who had opted to leave her camera behind on this dive. Her offer to model was very gratefully accepted."

Taken with a Nikon D500, Tokina 10-17mm lens, Aquatica AD500 housing, two Inon Z240 strobes. ISO 200, f/11, 1/30th





ALEX MUSTARD: "This year's winner combines familiar subject matter to last year's winner of this category, yet there was no denying this impressive capture from the title. It celebrates British seas, packed with colour, texture, depth and perfectly posed model. Exemplary."

## British Waters Living Together Pier Nursery Dan Bolt (UK)

"This image shows how important man-made structures can be for marine life. Paignton Pier, in South Devon is no exception. The pier legs are home to many sponges, anemones and molluscs, while in the summer months many hundreds of juvenile fish use the structure as shelter from larger predators.

"Diving under the pier with the sun shining through the shallow water, it can be hard to believe you're in the UK!"

Taken with an Olympus OM-D E-M1, Panasonic 8mm fisheye lens, Aquatica AE-M1housing, two Sea & Sea YS-D1 strobes. ISO 400, f/7.1, 1/100th

MARTIN EDGE: "Great use of wide-angle underwater photography. The stanchion itself and the shape of the pier legs provide so much depth in this image. It appears circular and, once the viewer has followed the school of fish, I too begin to follow them around and around, again and again. All of this is made possible by the circular position of the stanchions."

## British Waters Compact Smile Colin Garrett (UK)



"Early in April 2019, sightings of a lone male bottlenose dolphin had started to be reported in and around Portland Harbour in Dorset. I had been out on a local wreck-dive with Dale Spree and Jessica Hannah and had had a strange feeling beforehand that the chances of meeting him were quite high.

"The dive itself came and went with no sighting. But fortune was to be on our side, for on our return across the harbour Dale spotted the distinctive dorsal fin.

"As the animal approached us, Jessica and I slipped in with just snorkelling equipment and waited, hoping...

"It turned out he wasn't nervous in the slightest and swam straight to the camera. I cannot recall whose smile was the largest – his or mine?"

Taken with a GoPro Hero 5 Black, Telesin Dome Port housing, natural light. ISO 219, f/2.8, 1/125th

ALEX MUSTARD: "Quite simply a shot that anyone who takes any camera under water in British waters would be thrilled to produce.



Dolphins often move fast and are actually a real challenge to produce such sharp images of in dark green seas."

Up & Coming Runner Up & Most Promising British Underwater Photographer of the Year

#### Commotion in the Ocean Nur Tucker (UK)

"This image shows my very favourite of the species, the thorny seahorse. Over time, I have tried many different techniques, with varying degrees of success, including backlighting, side lighting, snooting, panning, double exposure and silhouette shots. I love experimenting even if it's at the expense of a wasted dive.

"On this particular dive, in Dumaguete in the Philippines, I was keen to aim for something different and potentially offbeat. "I began with a panning shot of the seahorse, captured with a 1/4 second shutter speed and a small, f/25 aperture. Then I used the same settings to capture a panning shot of a shiny scouring pad, carried in my pocket.

"Both images were merged, in-camera, for the resulting double-exposure shot. I must have repeated this sequence 50 times before eventually achieving this one when he made eye contact, which pleased me."

Taken with a Nikon D500, Nikon 60mm AF-S Micro Nikkor f2.8 G ED lens, Subal housing, Inon Z240 strobe at full power. ISO 80, f/25, 1/4th

ALEX MUSTARD: "An arresting image that draws you in with its mix of shapes and textures. The effect in the background elevates this image far beyond a standard portrait, creating a feeling of movement and makes me want to savour the eye-contact before the moment passes. I love the texture and muted colours that blend perfectly in the frame."



Wide Angle Highly Commended & British Underwater Photographer of the Year

#### Rabbitfish Zoom Blur Nicholas More (UK)



"I have been taking motion-blur pictures for a few years now. I like how the technique adds dynamism to pictures. The picture was taken in Raja Ampat, Indonesia, in November 2019. I spent the morning taking fish-portrait images.

"I came across a school of very friendly rabbitfish under a jetty and took lots of schooling shots. I started using the extensive zoom range of my Sigma 17-70 combined with a slow shutter-speed to create zoom blur images.

"The picture came together when the school bunched tightly together in a vertical tower, with them all facing onto the camera.

"I hit the shutter and zoomed in at the same time, the flash freezing the central fish with the ambient light creating a Pop Artlike effect."

Taken with a Nikon D500, Sigma Zoom 17-70mm F/2.8-4.0 lens, Nauticam housing, Inon Z330 strobe. ISO 200, f/20, 1/8th

MARTIN EDGE: "I would like to thank Nicholas More for the in-depth narrative regarding how this particular shot was taken. He has explained in detail from start to finish. Superb underwater imagery."



NUR TUCKER / UPY 2020

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Marine Conservation Winner & Marine Conservation Photographer of the Year Last Dawn, **Last Gasp Pasquale** Vassallo (Italy)

"This winter, I went diving with some local fishermen in the Tyrrhenian Sea at Bacoli, Naples. At 6am I was already in the water, as the nets were raised at first light.

"During the dive I followed the path of the fishing nets from the bottom to the surface. As the fishermen quickly hauled in the nets.

I tried to take some shots of trapped fish still suffering in the mesh, such as this tuna (Euthynnus alletteratus)."



Taken with a Canon 5DSR, Canon 8/15 lens, Seacam Canon 5DSR housing, Inon Z240 strobe. ISO 200, f/14, 1/320th

PETER ROWLANDS: "If a picture paints a thousand words, a great one asks a thousand questions. You know those questions; so do I. All we can do is show the truth to those who live above but can't envisage the world below and hope that they start asking questions."

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## INNER CIRCLE



When KEN
O'SULLIVAN found
himself among
a restless ring of
basking sharks

with uncharacteristically closed mouths to the west of Ireland, he became the first diver to record what appears to have been a mysterious courtship ritual

HAT AN ODD THING IT IS to want to swim with a shark. In the sea. Us humans, we're usually close to the surface and looking down, into darkness, considering what lurks below.

All our instinctual fears tell us that this might not be good.

But it's an interest I've developed over the years, so I've spent a fair bit of time trying to film sharks in our North Atlantic waters around Ireland.

The reality, I discovered, was somewhat different to what my fear implied. Watching an approaching shark, your mind focuses, a heightened sense of awareness comes over you but, passing through the fight-or-flight response, you go on to observe a marvellous marine creature, hundreds of millions of years old, inquisitive and just doing what it does to survive – searching for food.

But not all shark species are as docile as those I've encountered in Ireland. I wouldn't wish to meet a bull shark in murky waters or great white in dawn surf.



In Ireland I've managed to film basking and blue sharks, as well as the smaller tope shark and various dogfish species, our smallest sharks.

I've made attempts to document makos and angel sharks, always unsuccessfully, and seen flashes of the hugely elusive porbeagle, Ireland's largest predatory shark, slightly smaller than, though unnervingly similar in appearance to, a great white, but I have yet to get close enough to film a porbeagle.

I used to be scared – and you should be respectfully cautious encountering any shark. The ocean is an alien environment for humans and most sharks haven't seen many of us and are perhaps unsure how to respond. So it's important to know how to behave around these animals, to understand their behaviour and, most

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importantly, to know when to leave them alone.

When I first tried to film basking sharks, it took a while to realise that finning after them while pushing a camera is a bit like trying to pedal a penny-farthing up a steep hill.

Like all wild animals, in my experience, if they're moving away from you it's best to let them go.

With a bit of help from my old friend John Boyle, who spent years filming basking sharks in Cornwall, and from my own observations, I realised that you need to spend enough time watching their paths as they repeatedly trawl the same area to eventually judge where they'll be, and then sit still on that line.

Basking sharks appear in our inshore waters in spring to feed on zooplankton, a collection of tiny eggs and animals that then feed on phytoplankton, the tiny plants that bloom in the sunlight of longer spring days. So the sharks are chasing "seams" of zooplankton, often running with tidal currents.

Their snouts and part of their heads are covered with arrays of sensors known as ampullae of Lorenzini, gel-filled pores that can detect the bioelectric fields all organisms produce.

They can track the movements of zooplankton even, amazingly, through their nightly migration between deep and surface waters.

So if these sharks can detect the movements of 1.5mm-sized pieces of plankton, a human will need to stay very still to avoid spooking them.

In the spring tides of early May 2012, I spent several days filming sharks at the south end of the Cliffs of Moher, off Ireland's Atlantic coast.

Some of the biggest tides of the year occur at that point, a 5m tidal difference, and because this is during a spring plankton bloom, special things can happen in coastal waters.

NTHE THIRD DAY, as the tide was at its peak and flowing fastest around the "corner" of the cliffs, the surface water was pinkish in colour from the density of plankton, like a kind of pasta soup – big hollow pieces, some more than 1cm wide. You felt you could scoop up a saucepanful and cook them.

The basking sharks, preoccupied with this bonanza, seemed to lose all caution in my presence and regularly swam within 1m of my camera.

Then a huge shoal of juvenile mackerel appeared below me in the water, drawn by the same bounty, their rich green and silvery pigmentation pulsing and flashing as maybe 10,000 of them flicked and

swam in perfect synchronised formation, like an underwater murmuration of starlings.

After five or so hours of this, we decided to drive the six miles back to our harbour in Liscannor to get some sandwiches and fuel.

On our return, perhaps 40 minutes later, the sharks and mackerel had vanished. The climactic stage of tide and consequent feeding had passed.

N 2016, WE WERE in full production for *Ireland's Deep Atlantic*, an ambitious natural history TV series about my journeys out into the deep, open waters of the North Atlantic in search of whales, sharks and any other creatures.

I was hopeful about finding certain whale species, but in terms of sharks it was a real unknown.

I know many of the underwater cameramen around Europe, but none had been in these offshore waters to the west of Ireland and out to the edge of the continental shelf.

Shark scientists would smile when I'd ask what I might find in offshore waters. Blue sharks were obvious but after that, hmm...

No one had spent the time looking for sharks in these areas. I guess there are easier places to find large ocean animals!

I've spent 10 years pulling RIBs to remote parts of Ireland, days at a time searching for whales and sharks in places like the Saltee Islands off Wexford, the coastal waters of Waterford, West Cork and the Blasket Islands off West Kerry, but for a few years now, I'd been



watching a section of the ocean off Clare, where I live.

I'd seen signs from shore, flocks of birds diving perhaps 9-12 miles out.

Sailing home from a two-week expedition on the open Atlantic on a research ship, I spotted baitball activity west of Mutton Island, west of Clare, but after two weeks at sea and with our home port of Galway almost in sight, it would have been awkward asking the captain and 35 other sailors to stop the ship so that I could wait to spot a whale blow.

On a sailing trip that summer, I'd seen a single large whale blow in the midst of lots of birds; again, we were in a hurry for our port and couldn't stop, but there was clearly a fertile area out there somewhere.

**SO FINALLY IN MID-AUGUST** we ventured about six miles offshore in our RIB where, given the above activity, I felt there could be a coastal front.

This is a phenomenon in which the thermocline reaches surface waters and causes an upwelling of nutrient-rich water. So we drove transects in the RIB, that is 2km north, then 4km west, 1km south, then east and north again etc, for about five hours. Apart from a flurry of excitement with a few common dolphins and some storm petrels, there were no animals to be seen.

But we love being at sea, and with good friends the time flies, just three of us, bigwave surfer Peter Conroy driving the RIB and drone cameraman Kev L Smith.

Just as we were thinking of leaving, someone said: "Sure, let's try a small bit longer." The wind had dropped and the sky darkened, making a deadened, contrast-less, surreal scene.

We saw some minke whales, and though I repeatedly swam about trying to get in their paths, 400-500m from the RIB, it was futile.

Back at the boat the lads were laughing hysterically, telling me the minkes had kept swimming under the RIB. I gave up.

Turning for home, I saw some large fins travelling slowly in the water. It was the unmistakable sideways finning of a

basking shark, possibly even two. We killed the engine and I slipped into the water, swimming the last few hundred metres.

The sea was thick with plankton, and I thought: "I know what's going on here, sure I'll get a couple of shots at least."

The sharks swam past me, first a couple, then more, and then more again, all huge animals, perhaps 8m long, three layers deep and moving almost in formation. It was like a train in a scene from a children's animation film, where seemingly endless carriages bank around and around an unrealistically long curve in the landscape. When would it pass?

Then it dawned on me that the sharks were circling. The plankton was so thick that I couldn't see the other side of what was probably a 20m-wide circle.

Round and round they went: this was unlike anything I'd ever encountered; I'd never even seen a basking shark under water without its mouth open. Their heads looked so different this way.

AS A CAMERAMAN, your first instinct is to shoot as well as you can and document the scene. In the water you might get one chance to film a passing shark or whale, a few short seconds, and your focus, exposure, composition etc. better all be good.

But this was the most improbable of scenes. I'd never been so close to so many basking sharks. As they drifted gracefully through the water I could see all the exquisite detail of the pigmentation on their skin, their moving, inquisitive eyes, and most of the animals bearing scars

from cookiecutter-shark bites. Cookiecutters are Tasmanian devil-like animals that rise from the deep, take a cookie-sized bite and disappear again: what a way to make a living!

The sharks kept coming, all with lamprey eels – sometimes several – attached mostly behind their pelvic fins, near the reproductive organs.

At times it was difficult to tell the males' claspers apart from the eels, but this clearly was the sheltered spot favoured by the eels – less drag, I guess – though not great for the sharks.

Staggering as it was to witness this scene, it was only later, when viewing Kev's drone shots, that we realised the uniqueness of the gathering.

Kev is an amazing, skilled, brave cameraman. I had asked him to come into the water and try to get some underwater shots of me with the sharks. It was only later in a Q&A session at a college screening of the documentary that I realised what I'd actually asked him to do.

In answer to an audience question Kev said: "Yeah, I'd never swum in water that deep [100m] or so far offshore or with a shark, never mind 16 of them.

"Ken's going: 'Come on, come on, get closer, you have to shoot the detail!' and I'm looking at these 8m sharks and my swim momentum is taking me right into their line. I'm trying to back up and he's going: 'Come in closer..."

The crowd were in hysterics, and I felt like a right selfish eejit.

HAD NOTICED that there was an even mix of male and female sharks and that the males' claspers, where they hold their sperm, were swollen, but I still hadn't quite figured out what they were all doing: could it be courtship?

Kev went researching and found something to suggest that it could be a mating or pre-mating ritual.

I did some more reading and emailed Prof David Simms in the UK, the world expert on basking sharks.

He replied in a matter of minutes. This was to become an important moment in our understanding of the animals.

Researchers had seen the circling activity from an aircraft in Canada in 1998, and shark-hunters had reported





similar activity off Cornwall in the 1940s and '50s, but as no one had been in the water to identify the sexes, this was likely the first documented instance of basking shark courtship behaviour.

Of course, without seeing actual copulation, we can't be 100% sure.

I could have stayed longer in the water, though I felt the half-hour I was with the sharks was enough, and disturbing them was the last thing I'd want to do, but it's difficult to think of another reason for their behaviour.

On viewing the video footage, David Simms was hugely enthusiastic and set about writing a research paper on the activity. Later that summer, some scubadivers photographed similar activity just north of where we were, and in a similar water depth, so we can now say that this area is an important habitat for basking sharks, but huge gaps remain in our knowledge of these animals, and consequently our ability to protect them.

Pleast 200 years in Ireland. Their livers, which take up almost a third of their body, made a highly valued and versatile oil. Coastal communities hunted them, and it was said that their oil could light a whole village for a year. Indeed, there was



Ken O'Sullivan has a new book out called Stories From the Deep (ISBN: 978071718 6525, £16.99) a time when the streets of Dublin and Cork were lit with basking-shark oil.

In later times their oil was used in cosmetics and even aeronautical engineering, because its consistency remains the same under fluctuating pressure levels when other oils coagulate.

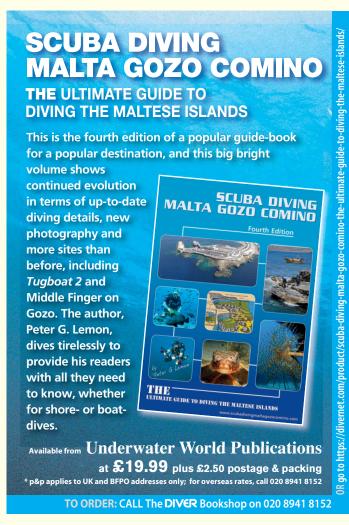
Nine thousand sharks were killed in the Achill Island station alone between 1940 and 1954, and it appears that Norwegian boats hunted them in EU and Irish waters until as recently as 2006.

The north-east Atlantic basking shark is listed as Vulnerable in the International Union for Conservation of Nature Red List, is on the OSPAR list of threatened or declining species, and appears in the Convention on International Trade in Endangered Species (CITES) Appendix II.

In Ireland wild animals are protected under the 1976 Wildlife Act but, for some odd reason, this act excludes marine fish and invertebrates, meaning that legally these creatures are not classified as "wildlife".

Basking sharks, being fish, are therefore a legally unprotected species in Irish waters, although it is illegal to land them, and under EU law it is forbidden to target-fish them.

Clearly, much more needs to be done to conserve basking sharks in Ireland.







TWAS A BEAUTIFUL tropical morning, perfect for diving, but Anna was not having a good day – far from it. She was confused.

Water had started to seep into her mask and, although she knew very well how to clear it, somehow she lacked the coordination to get the water out.

Her brain was befuddled and she didn't know what was going on. She was normally so comfortable in the water. A thought nagged insistently at the corner of her mind telling her to "get out of here", and she started to ascend.

Seeing Anna head for the surface, the dive-guide became concerned. He turned



Carbon monoxide poses a danger but there are simple precautions that every scuba diver can take.

SIMON PRIDMORE looks at what can go wrong, and what you can do

**Above:** A professional (and spotless) fill-station. They *should* all be like this.

**Below:** A carbon-monoxide detector.



to Pauline, the other diver in his charge, pointed at Anna and signalled that he was going up. Pauline asked if she should go with him, but he indicated that she should stay where she was and he would come back and find her.

Once on the surface, Anna removed her regulator, took a few deep breaths, adjusted her mask and gathered her thoughts. She still didn't feel completely well, but her moment of anxiety had passed and she thought of Pauline.

She didn't want to abandon the dive and let her friend down. So, when the guide swam over, she flashed him an OK and told him she was ready to continue.

However, as soon as they were back at depth, Anna started to feel very ill and completely disorientated. Worse, Pauline was nowhere to be found. Anna's anxiety returned and, on the verge of panic, she grabbed hold of the guide.

However, he was having his own problems. "I was dizzy," he said. "I don't remember much, but I know my eyes closed at some point and, right before we reached the surface, I had a pain in my chest. I felt terrible."

Somehow they both survived. The boat

picked them up and other divers went down to see if they could find Pauline, but to no avail. The captain sent out a missing diver alert and more boats arrived to join the search, which went on for a few days, but Pauline was gone.

An enquiry ensued. Anna and the guide were interviewed and the investigators quickly zeroed in on what they had experienced during the dive, guessing that Pauline might have succumbed to similar symptoms.

Medical examinations revealed nothing abnormal but by then, of course, time had passed and both Anna and the guide were now feeling absolutely fine.

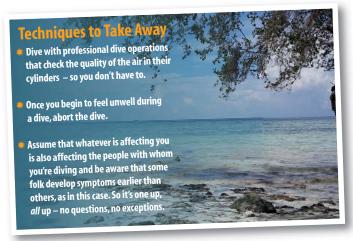
The enquiry turned its focus to the dive-centre with which Anna and Pauline had gone out. The equipment they had been using had already been cleaned and stowed away, and there was no way of tracing exactly which cylinders they had used. But the investigators started directing their attention to a nearby compressor station, where the centre often had its cylinders filled.

They had no firm evidence as yet, but strongly suspected that the culprit behind this tragedy was one of diving's "black" gases, carbon monoxide.

### WHAT IS CARBON MONOXIDE?

Carbon monoxide (CO) is an invisible, tasteless and odourless gas that's formed when fuels such as gas, oil, coal and wood do not burn fully. It is very poisonous, has

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an immediately harmful effect on your respiratory system and is potentially fatal if it gets into your scuba cylinder, even in very small quantities.

#### **WHY IS THIS?**

The reasons for the toxicity of carbon monoxide are poorly understood. It is well-known that it bonds with the haemoglobin in the bloodstream much better than oxygen, so the presence of CO can lead to a reduction in the carriage of oxygen to body tissues.

However, at mild to moderate levels this can be compensated for by an increase in blood flow so that, although the blood contains less oxygen, oxygen delivery is maintained.

It seems that CO also has other effects on cells within tissues (particularly the brain) and that these effects produce the toxic symptoms.

### HOW CAN IT GET INTO A SCUBA CYLINDER?

Carbon monoxide can get into a cylinder while it is being filled if there is an engine exhaust close to the compressor's air-intake. The source might be the exhaust from the compressor engine itself if it is broken or poorly located.

On a liveaboard, it could be fumes from the boat engine. On land, the CO could simply come from a car with its engine running parked close to the dive-centre's compressor-room.

#### **HOW WILL YOU KNOW?**

To be blunt, without deploying a little technology, you won't know, at least not until it is almost too late.

Analysers are now available that can be used to detect the presence of CO. For a couple of hundred pounds, you can buy one and use it before a dive to check that the air in your cylinder is not tainted.

Similar devices are available that divecentres and fill-stations can use to warn them if CO is present in their compressor system. Logic suggests that if you dive with an operation that uses detectors, you don't have to deploy your own.

Otherwise, the first indication you get that you have CO in your breathing-gas will be that you start to feel unwell during a dive. If there is CO in your cylinder, the deeper you go, the more of it you will be inhaling with each breath.

The symptoms are headaches, irritability, dizziness, confusion and shortness of breath. The confusion is a complicating factor, of course, because it means that your judgement can be impaired and you may not take the necessary remedial action in time.

#### Read more from Simon Pridmore in:

Scuba Confidential – An Insider's Guide to Becoming a Better Diver

Scuba Professional – Insights into Sport Diver Training & Operations

Scuba Fundamental – Start Diving the Right Way

Scuba Physiological – Think You Know All About Scuba Medicine? Think Again!

Scuba Exceptional – Become the Best Diver You Can Be

All are available on Amazon in a variety of formats.



## 20TH-CENTURY TIME CAPSULE

The Guns and Armour of Scapa Flow by Thomas A Easop

THIS HANDSOME-LOOKING, large-format, all-monochrome book had me confused for a while after it had landed unexpectedly in the DIVER office. Leafing through the second half of it, a portfolio of detail-shots of guns and other features taken under water on long exposures, I at first thought it was some sort of wreck-art project.

Reading the preface and introduction didn't answer all of my questions. It was only after reading the book properly and seeking clarification from the author that I understood that there was rather more to it than I had presumed.

Subtitled A Modern Photographic Quest to the Shipwrecks of an Imperial Naval Saga, this book isn't that modern now, because the photos were shot more than 20 years ago, and on film.

"The book is a product of the photo project that spanned 1998 to 2002; with historic-image research, writing and design following that and completed in 2005," Tom Easop told me. "It was then printed first only in 2019. The delays in production could make for an interesting book in their

So what we have after this hiatus is a document that's likely to be of considerable interest to serious wreckdivers and maritime-history students, because the fact that the pictures were taken at the back end of the 20th century now gives the book added value. One picture is indeed captioned *Rust Never Sleeps*, underlining that the wrecks will have decayed further still since these images were captured.

Easop is an American professional photographer and rebreather diver of long standing. During the project he would concentrate on taking only two shots on each Scapa wreck-dive, using a tripod-mounted large-format camera he had constructed specially for the purpose.

The book is divided into sections, starting with an overview of naval armament and armour from the days of the ram-bow onwards.

The second section is a potted history of World War One at sea, culminating in 1919's "Grand Scuttle" of the German Imperial High Seas Fleet and the subsequent salvage

THE GUNS AND ARMOUR OF GESCHÜTZE UND PANZERUNG IN SCAPA FLOW OR RENEY SEOTEAND

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**Below:** Gun on deck of the *Karlsruhe*.



operations that left behind the Scapa wrecks we know today.

That story has been frequently told in many books, and Easop's version is well-written but a relatively cursory treatment. However, it sets the scene for the pictures the book is really about, and the opening two sections are generously illustrated with historical images.

These also serve the purpose, through strategic positioning, of making up for the big difference in length between English and German text, because the book contains both to maximise its appeal to all markets.

The third section comprises Easop's whole-plate photographs. After that, what pulls everything together is a fourth section with plans of each wreck-site and reference points so that we can tell exactly where each of

his pictures (and some details in the historic pictures) were taken. So if you were to dive, say, the *Karlsruhe* next week, you could look out for the guns, capstans and pinnace illustrated and compare their condition.

THOMAS A. EASOP

A mild gripe with this book would be that, in view of the very specific title, I might have expected a bit more detail in the text about the naval weaponry itself, even if at the expense of some of that general scene-setting. It didn't particularly bother me – I'm just putting myself in the place of the target market!

From the acknowledgments, it's apparent that the Scapa diving community was hugely supportive of Easop's project at the time, so I'm glad that age hasn't withered, and probably enhanced, the outcome.

This sort of book isn't required

reading for everybody but it is a unique and hard-won take on one of the world's greatest diving locations.

Derek & Crane WMP ISBN: 9780972806503 scapa-guns-armour.com Hardback, 144pp, 30x24cm, £37

#### **GOOD SPIRITS**

#### She Down There, by Lynton Francois Burger

This book appeared out of nowhere and I'm very glad it did, because for my money it's one of the best-written works of diving fiction to appear for some time.

Lynton Francois Burger is a South African and, it seems, the sort of all-rounder whose CV leaves you feeling mildly breathless. He's a diver, a gifted underwater photographer (judging by his online gallery), a sculptor and also describes himself as an "impact investment specialist" – which ties in with what seems to be an over-riding interest in ocean conservation.

He is also more than at home with words. "As a writer, I delight in exploring the beauty and the essence of our oceans, and the relationships people have with Nature and each other when Nature is at the centre," he says – which neatly sums up the content of *She Down There*.

The author has travelled a lot and been based in Canada among other places. This is reflected in the book, which is set in British Columbia, South Africa and Mozambique in the 1980s and '90s. It's a love story for the sea, and although from the outset I had concerns with the spirituality of the first chapter, albeit well-expressed, this mysticism turned out to be finely balanced with reality as the book progressed.



#### **TOP 10 BEST-SELLING SCUBA-DIVING BOOKS**

as listed by amazon.co.uk (2 March, 2020)

- 1. Fifty Places to Dive Before You Die, by Chris Santella
- 2. Scuba Confidential: An Insider's Guide to Becoming a Better Diver, by Simon Pridmore
- 3. Snorkelling Guide to Marine Life: Florida, Caribbean, Bahamas, by Paul Humann & Ned DeLoach
- 4. Underwater Photography: A Step-by-Step Guide, by Maria Munn
- $5. \, \textbf{Scuba Diving and Snorkelling For Dummies,} \, \textbf{by John Newman}$
- 6. Dark Descent, by Kevin F McMurray
- 7. 100 Dives of a Lifetime: World's Ultimate Underwater Destinations, by Carrie Miller & Brian Skerry
- 8. Dorset Dives: A Guide to Scuba Diving Along the Jurassic Coast, by Will Appleyard
- 9. Scuba Diving Hand Signals: Pocket Companion for Recreational Scuba Divers, by Lars Behnke
- 10. Deco for Divers: A Diver's Guide to Decompression Theory and Physiology, by Mark Powell



The plot revolves around two young divers with indigenous backgrounds that seem to give them a natural affinity with the sea.

Claire Lutrísque has grown up in north-west Canada and her oneness with the northern Pacific and its creatures is shaped by the beliefs of her forebears, the people of Haida Gwaii (formerly the Queen Charlotte Islands). The book's title refers to Sedna, the Inuit goddess of the sea, who haunts Claire's dreams.

Klaas Afrikaner, meanwhile, is the product of his Saan or Bushman blood and rebellious ancestors as he grows up in South Africa.

Unusually in the dying days of Apartheid he joins the Navy to learn to dive, becomes engaged in illegal covert operations in Mozambique (to which the author hints in the acknowledgments he was a witness) but goes on to become a dive pro.

Inevitably the paths of these two

free spirits are fated to cross, but along the way there are environmental challenges to negotiate, and remarkably vivid descriptions of dives made on open-circuit, rebreather, breath-hold and in dreams.

What makes this book so good is that as an experienced diver Burger never seems to put a foot wrong on the detail, and brings a poetic sensibility into play while managing to avoid shooting over the top.

His pleasure in playing with words and his appreciation of the natural world are evident, and the characters and situations he conjures up seem natural and unforced.

It's a satisfying, surprising book. I'm already looking forward to his next.

**Penguin Random House** ISBN 9781485904359 Softback, 240pp, 23x15cm, 275 rand (around £14)

**Reviews by Steve Weinman** 

# BARE INTRODUCING THE NEW LIGHTWEIGHT AND LAYERABLE



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#### **TOP 10 MOST GIFTED SCUBA-DIVING BOOKS**

as listed by amazon.co.uk (2 March, 2020)

- 1. Glass and Water: The Essential Guide to Freediving for Underwater Photography, by Mark Harris
- 2. Fifty Places to Dive Before You Die, by Chris Santella
- 3. Snorkelling Guide to Marine Life: Florida, Caribbean, Bahamas, by Paul Humann & Ned DeLoach
- 4. North Sea Divers: A Requiem, by Jim Limbrick
- 5. Diving the World, by Beth & Shaun Tierney
- 6. 100 Dives of a Lifetime: World's Ultimate Underwater Destinations, by Carrie Miller & Brian Skerry
- 7. Scuba Diving Hand Signals: Pocket Companion for Recreational Scuba Divers, by Lars Behnke
- 8. Underwater Guide to the Red Sea, by Lawson Wood
- 9. Maltese Islands Diving Guide, by Ned Middleton
- 10. Amazing Diving Stories Incredible Tales from Deep Beneath the Sea, by John Bantin

#### Fun-packed Tec Week in Roatan GREEN FINS



Anthony's Key Resort in Roatan, Honduras is holding a "Tec Week" with two-for-one rates for divers from 29 August to 5 September, and the programme seems action-packed.

Its "Dive Package" includes a resort package consisting of seven nights' full-board with airport transfers and a host of extras such as excursions and resort activities such as kayaking – if you have any time for these, with a diving programme that provides two boat-dives a day, one boat night-dive during the week, shore-diving during dive-centre opening hours, air and a range of workshops run by guest technical divers.

The price is US \$2299 for two

(\$200 more if you opt for deluxe accommodation), and nitrox costs from \$12 a fill depending on the mix.

There is also a separate two-for-one offer on various resort activities from horse-riding and shark-diving to dolphin swims and happy hour in the bar. Flights are extra.

>> anthonyskey.com

## **Elpida, the new hot site for Cyprus**

Oonasdivers has teamed up with Cyprus Diving Adventures, a PADI 5\* dive-centre in the village of Pissouri, to arrange recreational and technical diving across the island along with a wide range of accommodation.

And the latest attraction is the Elpida, a 63m Greek commercial vessel sunk last December as an artificial reef.

The wreck lies at just under 30m, the main deck at 20-22m and the two mast-tops at 10m. Divers can explore the large bridge, accommodation areas, deck and masts, and explore inside the container, engine-

room and three decks of quarters.

Large shoals of fish and hundreds of hunting amberjack are reported to have been drawn in, with triggerfish, bream, trumpetfish and grouper among species spotted on deck.

cDA offers on any single day either two-dive trips to Elpida, or one Elpida and one Zenobia wreck-dive. Oonasdivers can create bespoke "Wreck Week" itineraries, but a seven-night self-catering stay starts from £850pp including flights, transfers and 10 dives.

>> oonasdivers.com





#### GREEN FINS STEPS IT UP IN EGYPT

Divers and snorkellers visiting
Egypt are being asked to book
their dives with a Green Fins
accredited centre where possible.
Following a pilot programme in
South Sinai the environmental
standards, designed to protect
coral reefs from negative impacts
from diving, are now available to
centres across the Red Sea region
that volunteer to adopt them.

Marine-conservation charity
Reef-World Foundation is working
with Egypt's Chamber of Diving &
Watersports (CDWS) to implement
the UN Environment Programme
initiative.

It will take time to persuade dive-centres to sign up to the Green Fins standards but six assessors have now been trained to consider applications.

"To date, nine Egyptian dive and snorkel operators have already joined the global network of nearly 600 trained and assessed Green Fins members, with significant interest from other operators who are awaiting their training and assessment," reported CDWS chair Hesham Gabr in early March.

"In the coming year, we aim to certify 30 marine-tourism operators, train 150 dive-guides and raise awareness of sustainability best practice among 30,000 tourists."

Green Fins has previously been associated mainly with the Asia-Pacific area.

Member-operators pay fees to be assessed annually on their adherence to a 15-point code of conduct designed to minimise their impact on coral reefs.

>> greenfins.net, cdws.travel



#### **DIVE, WORK & LEARN IN FIJI**

Want to spend some good diving time in the South Pacific? Volunteer organisation GVI is offering marine-conservation internships at Caqalai in Fiji. Participants on the programme, which is designed to assist with local conservation efforts in marine protected areas, focus on collecting research data through daily dives.

Existing PADI Open Water Divers can gain their Advanced certification during their stay, while learning about survey techniques, coral-reef ecology and tropical conservation issues. GVI describes the local ecosystem as "vibrant", and says there is a good possibility of seeing endangered species such as



whales, rays, sharks and humphead wrasse.

The programmes run over a period of months but a four-week segment costs from £2845, including accommodation, board, diving and training.

→ gvi.co.uk



In Egyptian Red Sea location Marsa Alam, known for its shore-diving and access to Elphinstone Reef, UK tour operator Ultimate Diving has added the 4\* Sunrise Marina Resort Port Ghalib, which has an Emperor Divers centre close by. Prices start from £865pp including flights, transfers and accommodation, says Ultimate

Further up the coast in Hurghada, the operator has added to its roster the 5\* Steigenberger Al Dau Beach Hotel, serviced daily by the well-known Diver's Lodge. In this case flights, transfers and accommodation commence at £1015pp.

And with Sharm el Sheikh and Ras Mohammed National Park now back on divers' radar, Ultimate says it can also arrange a diving holiday at longestablished Camel Dive Club Resort, the Hilton Fayrouz or the Hilton Sharm Dreams from £815pp.

>> ultimatediving.co.uk

#### **TWO CHURCH OUTINGS**

Divers are invited to join the well-known Cathy Church, now in her 50th year of teaching underwater photography, for 10 days in the Solomons Islands. She clearly likes the place as this will be her 20th trip, and it's a long way from her base in the Cayman Islands.

Diving from the *Bilikiki*liveaboard, the trip takes place
from 3-13 October this year, and
the price is US \$6250pp (two
sharing).

If that's a bit rich for the blood, you could always consider joining Church in the Maldives a year later when she leads a 10-night underwater photography tour on Maldives Aggressor's Best of the Maldives itinerary from 21-31 October, 2021.

That one is priced at US \$4450pp, also twin-share. Flights are not included with either liveaboard package.

>> cathychurch.com



#### MEANWHILE, IN THE PHILIPPINES



## The dive-centre behind the mask

The dive-centre at Amun Ini Beach Resort in Anda, Bohol, claims to be the first in the Philippines to offer diving with full-face masks, and is providing PADI Speciality training in their use.

German owner Bigs
Eggert cites the advantages
of full-face masks as being
better visibility, including an
enlarged field of vision; no
ingress of water or fogging;
and the ability to breathe
through the nose as at the
surface, because the
regulator is integrated with
the mask. A microphone can

also be built in for communication during more demanding dives.

She also says that fullface snorkelling masks offer the benefit of a built-in "Snorky Talky" comms device allowing guidance to points of interest from the boat. "Many divers are surprised how easy it is to use the mask," she says.

A seven-night B&B package with 10 dives and airport transfers costs US \$1555, and the full-face mask course \$199.

**→** amunini.com

## TWO-CENTRE PURA VIDA

Regaldive claims to have one of the most comprehensive scuba-diving portfolios for the Philippines, which it says offers exceptional opportunities from both liveaboards and diveresorts.

Its latest offering is an 11-night moving feast that's priced from £2195pp (two sharing). Guests spend five nights each at the Pura Vida resorts at Cabilao and Dumaguete, along with one night in Cebu.

Sixteen dives, breakfasts and transfers are included.

>> regal-diving.co.uk



#### THE PHILIPPINES CONTINUED



Philippines island-hopping will bring you unparalleled variety and diversity, from sumptuous reefs and world-class wreck diving, whale sharks in the



morning and pygmy seahorses in the afternoon.

So says UK tour operator Dive Worldwide, which is putting its money on the "Magic Dive Experience", which hops between Cebu and the Magic Island Resort at Moalboal and the Bohol's Magic Ocean Resort at Anda.

You get six nights' accommodation with breakfast at each resort, transfers and a 15-dive pack across both locations from £2495pp (two sharing).

▶ diveworldwide.com

## **'BEST OF ALL WORLDS' WITH ATLANTIS**

Atlantis Philippines is planning to run special nine-night "Malapascua" trips on the Atlantis Azores liveaboard this summer. It says the itinerary offers the best of all worlds, because the hotspot tour could take "several weeks" on land.

Included are the whale sharks of Oslob, Moalboal's sardine ball, Malapascua's thresher sharks, the nearby walls of Gato Island and Monad Shoal, Balicasag and Panglao islands with an option for a land tour to visit Bohol's Chocolate Hills, and finishing either on the walls of Siquijor or Apo Island's reef.

The liveaboard is set to depart on 11 July and 1 August and the price is US \$3495pp (two sharing a deluxe cabin) or \$4125pp for a suite.

Atlantis says it is also offering general savings to guests at its Puerto Galera and Dumaguete resorts this summer, with fourth (or fourth and eighth) nights free for new reservations on all-inclusive stays between 1 June and 30 September.

**→** atlantishotel.com





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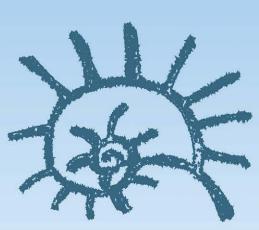


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## WELL AND TRULY TESTED



STEVE WARREN goes in-depth with a new BC and computer, while MIKE WARD homes in on the sort of



item we rarely give a full test – a dive-watch



**WAY BACK IN 1977 MIKE TODD, DIVER**'s then technical editor, conducted a consumer test of nine state-of-the-art BCs. One was more state-of-the-art than the others, a back-inflation unit, or wing, with integrated weights, called the BCP.

All the others were horse-collar BCs, modelled on inflatable emergency life-jackets used for sea survival. The principles had been modified for diving with the addition of large oral inflation hoses and either one-shot carbon dioxide cartridges or, standard in the UK, mini air-cylinders you filled from your main tank for back-up inflation, and dump-valves to let the air out.

You wore a separate weight-belt and cylinder harness. As you added air to neutralise your buoyancy, it collected behind your neck, pitching your head up and feet down. Your dead weight was taken on a jock-strap. I had my first horse-collar BC when I was 15. For a teenage boy, that jock-strap proved a huge incentive to use the minimum weight possible.

At that time, leisure divers didn't use back-inflation BCs much, especially in the ultra-conservative UK. The horse-collar BC, considered to be a life-jacket, was presumed rather optimistically to be able to float you face-up if you had the presence of mind to inflate it before passing out.

The mini-cylinder also provided an independent supply of air that could be breathed through the bag in an emergency. It even doubled up as a linebacker when riding to and from the dive-site in small boats.

Divers simply ignored the sloppy buoyancy characteristics of horse-collar BCs when submerged.

Of the BCP, Mike noted presciently: "It was found to be the most comfortable system for adjusting buoyancy while diving." Wings would remain largely the preserve of cave-divers until the 1990s saw the emergence of technical diving, and the wing slowly migrated from cave to tech and on to recreational users.

It's easy to associate early back-inflation BCs with small specialist cave- and technical-diving brands and think the big scuba manufacturers climbed aboard the bandwagon only recently,

but that's not the reality.

Because in 1977 the BCP wing, with its built-in weights and so far ahead of its time, was made by one of sport diving's best-known companies, Scubapro.

Some 40 years down the line, what does Scubapro's Hydros Pro back-inflation BC offer to tempt recreational divers?

The Design

The Hydros Pro is a highend BC designed for single-cylinder diving. It uses a single-bladder air-cell made from 420-denier nylon-coated PU, providing 16-18kg lift depending on size.

The air-cell is the doughnut type rather than a horseshoe, so air can circulate around it regardless of your position in the water.

If you're head-down, the air will collect where it is easily vented through a single bum-dump.

Horseshoe air-cells don't connect at the base, where technical divers often want to use the saved space to carry light canisters, for instance,

Hydros Pro weight release.



Both doughnut and horseshoe cells have their advocates, so it's probably reasonable to assume that neither is significantly superior to the other for most sports divers.

To help keep the wing streamlined when only partially inflated, three sets of bungees collapse the bladder. These are mounted internally, rather than wrapping around the outer air-cell, where they could create a snag hazard.

Along with Scubapro's time-proven balanced power inflator, with its oral-inflation/dump, there is a rapid exhaust-dump activated by pulling down on the oral-inflation hose, shoulder-dump and bum-dump.

Two quick-release side-pouches take your main weights of up to 4kg each. Trim-weight pockets holding up to 2kg each are mounted at the rear. Scubapro uses its regular stainless-steel buckle for the tank camband and provides a loop for setting the height at which you want your cylinder to sit. There are no accessory pockets, but two small and four large stainless-steel D-rings are provided.

Instead, the Hydros Pro is factory-prepared to accept a choice of accessory mounts that attach



through holes above and below the weightpouches. Scubapro uses these not just for bolting on a knife but also to fit additional screw-on D-rings and bungee loops.

The designers of the Hydros Pro aren't wild about BC pockets (some are made for the Hydros, though I suspect somewhat under protest). The feeling is that they can be difficult to use when movement is restricted by a divesuit, and sit over loaded weight-pouches.

Instead, tech-style, they prefer an external place for everything, and everything in its place and in easy reach.

These Hydros Pro system accessories were not supplied for test but they look efficient.

The harness shoulder-buckles have a swivel action to encourage them to assume the most comfortable position as you move around, and have pinch-clip releases. They attach to the backpack with hinges that allow you to fold the shoulder-straps flat for packing.

When the BC is deflated, they also help to hold the straps open for you to make it easier to don. A sternum-strap, again closed with a pinch-clip, can be adjusted for height to accommodate different torso lengths, prevent interference with a drysuit direct-feed or for comfort for women (Scubapro has produced a version tailored for the female form). There is no cummerbund, only a waist-strap with another pinch-clip buckle. A jock-strap can be added.

If you don't want to use the weightintegration pouches, you can quickly replace them with a simple belt, also equipped with a pinch-clip release and stainless D-rings. It's included, and you can switch back and forth in seconds by removing a clip – no tools required.

Small weight-pouches are available as an extra. The idea is that when using a lot of lead to offset a coldwater suit's buoyancy, the bulkier weight-pouches are really your best choice, but when visiting the tropics, where a couple of kilos might suffice, you can dispense with these in favour of the more compact waist-strap and smaller and lighter weight-pouches. This seems a good concept.

#### **Material Differences**

So far these are all good features, but many are found on other premium BCs. The difference lies in Scubapro's choice of materials and it lays strong claims for their advantages.

One of the main ones is the generous use of a compound called Monoprene for the backpack. The main pack is plastic, providing rigidity to stabilise your tank, but it's combined with Monoprene. While fairly rigid over most of your back, the pack becomes progressively more supple at hips and shoulders, allowing it to mould to your build.

This close fit should, according to Scubapro, improve comfort out of the water by ensuring that the weight of your cylinder and weights is

optimally distributed. Monoprene also lines the harness. Under water, Monoprene's 'stickiness' is said to keep the Hydros Pro body-hugging and help to prevent the BC shifting and destabilising the diver – a pain for underwater photographers lining up a shot, for example.

Scubapro also claims that the air-cell is not only rugged enough to stand up to hard use for years but, like the harness, rapid-drying. This is a nod towards the needs of travelling divers who don't want to deal with the increased weight and hassle factor of transporting wet kit.

The Hydros Pro is also designed to fold in on itself to minimise its footprint for packing.

In fact, Scubapro includes a BC rucksack that's supposed to be small enough to travel as carryon and can also take your reg, mask, wetsuit and, hung on the outside, your fins,.

The Hydros Pro is built in South Africa. It seems to share some of the "make do and mend" philosophy I've come to associate with friends from there, who abhor waste.

Touting the tagline BC 4 Life, almost every part of the Hydros Pro is designed to be field-replaceable by the owner. For example, webbing ends are not stitched around their mooring points, so break a buckle and you can easily change it over with no need to reach for a sewing-machine.

#### **First Impressions**

When you pick up the Hydros Pro, the first thing you notice is the Monoprene. It feels very different from the usual nylon materials found in BCs. It's also a midweight BC. Scubapro rightly describes it as "travel-friendly", maintaining that making it any lighter would significantly compromise its durability and working life.

The single tank-band is adjusted by changing

the length of a Velcro-lined strap that passes through a D-ring. The stainless-steel over-centre buckle closes through this and is very secure. Scubapro has used variations on this fastener for decades. It's not quite as convenient to alter if changing tank diameters as a standard buckle, but once set it works very well.

The integrated weights are jettisoned by releasing squeeze-buckles. Most BCs employ either a variation on squeeze-buckles or have pull handles, and each has its fans. The part of the pinch-

buckle you need to squeeze is identified with a hi-vis colour. Squeeze the release and springloading takes over and opens the buckle. It's easy to use with thick gloves.

There are D-rings to help you pull out a recalcitrant weight, but in my tests the block weights I had loaded slid out as soon as the release was popped. The D-rings also make it easy to hand up the weights to boat-cover.

I found it easy to load weights into the Hydros Pro after I'd kitted up, for those who prefer not to don a fully loaded scuba-set.

The two D-rings on the shoulder-straps are quickly adjusted, but I didn't bother. I clipped off my pressure-gauge to one and found it sitting where I could see it perfectly just by glancing down. The webbing edges aren't stitched, so you can easily add more D-rings if you wish to.

With a 15-litre steel cylinder fitted and equipped with 6kg of main weights and a pair of 1kg trim-weights, I was packing around 35kg on the half-kilometre walk to the dive-site.

I was wearing a 7mm wetsuit and can confirm that the Hydros Pro was very comfortable.

In the water, I measured how high the wing would float me by checking the distance from the waterline to my mouth. I was properly weighted, so I was loaded down by about 4kg of air I would not have at the end of the dive.

The Hydros Pro raised me a very creditable 18cm out of the water, and surface-stability was excellent, with no tendency to tip me forwards or backwards.

This is the ideal floating position while waiting for other divers to join you in the water, take a compass-bearing or await a boat pick-up.

#### **Under Water**

Under water, the Hydros Pro put me into a prone position and supported me horizontally, so I was streamlined without any head-up and fins-down incline. This is great for photographers needing to work low to the seabed without contacting it.

I had my harness-straps cinched down, but the snug fit also seems to owe much to the Monoprene, which does seem to grip you.

I felt that this contributed to preventing any sideways roll from the 15-litre tank. I've never got on with them, finding that with my build they tend to roll me, creating irritating instability. There was none of that nonsense wearing the Hydros Pro.

#### Control

The Scubapro Balanced Power Inflator (*left*)
has been around for a long time, with minor
mods made over the years. It's progressive,
so you control the speed of the flow-rate with
lighter or harder presses, and very precise. It's

clearly differentiated from the dumpbutton by shape and colour. Oral inflation is via the usual pipette.

On full blast, on tests in 10m, the BPI filled the Hydros Pro in about 8sec. Because a high-flow direct-feed that sticks can quickly send a diver surfacewards, it's important that you can

bring an unintended ascent back under control quickly. Both the shoulder-dump and rapid exhaust, activated by pulling down on the BPI, will dump air faster than the BPI can deliver it.

I also tested stopping distance by fully inflating the Hydros Pro at 10m while hanging onto some wreckage, then letting go. I could dump all the air and stop the ascent within a metre using the shoulder-dump, or 1.2ms using the RE valve, so no worries about runaway ascents there.

Hydros Pro in its rucksack.

The rapid exhaust valve has a small builtin switch that can be activated by the wearer reaching back, or by a rescuer making a controlled buoyant lift from the rear, as advocated by some

training agencies. The pull-cords on the shoulder and bum-dump are easy to reach, and the tabs are hi-vis for easy identification by a rescuer.

Conclusion

Scubapro makes a lot of claims for the Hydros Pro and these are borne out by my experience of using it. Performance above and below the water can't be faulted. The innovation

is in the clever use of Monoprene. The other features and benefits are mostly time-proven, but consummately combined in the Hydros Pro.

This is a very impressive BC and one I highly recommend. I think Mike Todd would have agreed. ■

#### **SPECS**

**TESTER** → Steve Warren

PRICES → £570

SIZES >> Male 4 (S-XXL), Female 3 (XS-L)

BUOYANCY → 18kg (M)
WEIGHT → 4kg (M)

DUMP VALVES >> 3

**COLOUR** >> Black with optional colour trim kits

**CONTACT** → scubapro.com

# CHRISTOPHER WAI C60 ELITE 1000 TITANIUM

#### FOR MY FIRST TWO SEASONS OF DIVING

I used the then-new BSAC-88 tables. These came with a handy waterproof slate to tuck into a BC pocket, the idea being to plan the dive using the full set before dropping into the water with the slate so that the plan could be updated on the fly if things changed.

Which they usually did. Depth was monitored using the gauge on my instrument console; time was kept using a Casio diver's watch.

It was a grand piece of kit, that Casio; inexpensive at £40, sturdy (it went through the washing machine in my undersuit pocket more than once), and with a strap long enough to go around a drysuit cuff. It did the job perfectly well.

True, the bezel had no one-way mechanism to stop it being accidentally altered to show a shorter time than I'd really completed, but that didn't matter because it was hard enough to shift even when you wanted it to move.

The Casio was bargain-basement, but I've always been fiscally prudent.

The only flaw in the whole watch and depthgauge scenario, apart from the restriction of adhering to a predefined plan, was user-error.

I would be so excited to be diving that I'd forget to reset the maximum-depth indicator on the depth-gauge between dives, and rarely remembered to alter the bezel on my watch on entry, so I never had more than a best-guess about depth and time. Which isn't good.

All this ran through my mind in an instant when Christopher Ward asked me if I'd like to test its latest C60 Elite 1000 Titanium dive-watch.

A few days later a parcel arrived, marked

Christopher Ward but a bit thin if it contained a watch.

It didn't. It held the latest issue of the manufacturer's magazine for watch-owners, Loupe.

Printed on luxurious heavyweight matt paper and with inspiring articles about butterflies and electric vehicles, it was a sign

that Christopher Ward watches offer something different from my old Casio.

Then the watch arrived. If I have suggested in previous reviews that items of diving equipment ooze quality they haven't, not compared with the C60 Elite 1000, which is gorgeous from the get-go.

A matt-black logo-embossed card sleeve slid off to uncover a beautifully crafted wood-and-leather inner box that opened like a long-thin drawer.

In the top of that was a warranty card, user-manual and another folded envelope with a soft fabric storage pouch inside and, beneath, nestling in the black cut-out interior of the box, the watch itself.

For the sort of wedge you'll need to buy one of these, a little theatre is to be

expected but the C60 Elite is a thing of beauty. Its polished titanium case has a 1000m depth-rating and houses a Sellita SW220 COSC movement designed to deliver chronometer standard timekeeping.

Turn the watch over and you can see the innards busily doing their thing through a clear window.
The face is a model of

simplicity, always best in

situations in which stress might be a factor, such as a dive-related manure/ fan-interface scenario. It is marked with simple divisions at five-minute intervals; no numbers, just a double marker at the hour position so you know which way up it is.

There is a short, fat, pointed hour hand and a longer oblong minute hand. Quite why I liked it so much I don't know, but the second hand has a tiny trident at the non-reading end, perfect for a



DIVER 70 DIVERNET.COM



dive-watch. Hands and markers are luminous: Super-LumiNova Grade X1 GL C1 if you want to know.

A day and date window sits at the right of the face at the three o'clock position, beside the winding crown, which you unscrew, pull out and turn in various ways to make adjustments or wind. There's an automatic helium release valve on the left of the case.

You shouldn't need to wind the watch more than once if you wear it regularly because an auto-winding mechanism should keep it going.

Put the fully wound watch aside and it should run for 38 hours or so before stopping.

To set the bezel, rotate anti-clockwise until the orange triangle aligns with the minute hand and you're good to go. As time elapses the minute hand moves, and by reading the bezel markings opposite the minute hand you can measure your elapsed time.

The bezel has large, easily read numbers clearly marked and turns only anti-clockwise, so if it does get moved it'll suggest you've been in the water for longer than you actually have, for safety. It marks the first 15 minutes of your dive with an orange segment, then reverts to the same navy blue as the main watch face.

You can specify the watch in black with red highlights if you prefer.

The supplied bracelet was titanium, with a hinged clasp that had two reassuringly positive catches to stop it opening when not required.

The strap was a little large on my bare wrist, fitted well on a wet-glove or neoprene wrist-seal but was too small for a drysuit forearm.

Bracelet length is adjustable by adding or removing links, or you could opt for a colour-coordinated rubber/Cordura hybrid strap.

Or buy both straps and use the quick-release mechanism to switch according to the occasion. I found the quick release very positive in use, if a touch fiddly.

#### In Use

The C60 Elite only has to do two things, keep good time and be easy to read. As a dive-watch the bezel has to move positively and stay put when set.

I set the time using the BBC pips. Christopher Ward claims timekeeping accuracy will be somewhere within -4 to +6 seconds per day, and 48 hours later I could report its claim to be fully justified.

As for ease of reading, the merest glance is all you need. I loved this watch's simplicity.

The outer edge of the bezel is knurled just enough to be easily turned with bare or gloved

hands, without being likely to catch and turn once set. The ratchet weight is equally well-chosen, enough to make setting the bezel positive but without making it hard to turn or easy to overshoot where you want it.

Christopher Ward makes much of what it says is the relatively light weight of the C60 for a titanium dive-watch, though it still felt both heavy and bulky to me. I don't wear a wristwatch, so that might have something to do with it.

Under the cuff of a dress shirt it fitted nicely, so should you need to dress for dinner on your next liveaboard you won't need to remove it.

#### Conclusion

Last year my other half and I cruised to Iceland with Cunard (great, after I'd got used to not jumping off the boat three or four times a day) and I overheard two guys discussing divewatches outside an on-board jewellery shop.

Neither was a diver, but both apparently owned multiple diving watches, and both were considering spending four-figure sums on new ones to add to their collections.

Also last year, I used multiple dive-boats and visited a few inland sites, seeing thousands of divers, and not one had a diving watch on their arm. Divers today do not use watches when diving, even as back-up dive-timers.

Which means that in 2020 I don't know how to definitively score the C60 Elite Titanium. It's lovely to look at and hold and wear. It feels classy and it does what it's supposed to do very well. It's just



The C60 Elite sits nicely on a wet-glove wrist or the wrist-seal of a wetsuit.

that I no longer know anyone who wants to do what the C60 does in the water.

Does that matter? If you want a dive-watch, the C60 Elite is beautifully made, solid and desirable. I can't imagine buyer's remorse occurring post-purchase.

All I'd suggest is that Christopher Ward throw in a longer strap as standard, so that drysuit divers can use one, if they want to.

#### **SPECS**

TESTER → Mike Ward

PRICE >> £1470 with titanium strap, £1250 with rubber/cordura strap

WEIGHT → 130g as tested

SIZE >> Case 45mm diameter by 15mm thick

**COLOUR** >> Navy blue with orange or black with red highlights

**CONTACT** >>> christopherward.com

0 1460 A FEW YEARS AGO, I owned an early Oceanic Veo computer. But not for long.

Much as I liked it, someone else liked it more and stole it. Two features I had much enjoyed were the easily read displays and,

Oceanic describes the Veo 4.0 as entry-level, but this is a clear case of under-promising and, as my report confirms, over-delivering.

Oceanic has a lot of experience in dive-computer design, going back to the late 1980s. It set up a division, Pelagic Pressure Systems, to develop and manufacture diving instruments to be marketed by Oceanic or, in slightly modified form, under different names by other scuba brands.

The Veo 4.0 is a full-size rather than watchstyle computer, allowing for large and well-



presented information displays, ideal for equipment-testers in their mid-50s.

It isn't gas-integrated, but shares many of the features and benefits of the Oceanic ProPlus 4.0, which I rated highly.

In this review, I'll concentrate on the features of most importance to recreational scubadivers: ability to compute and manage your air and nitrox dive-profiles automatically.

However, the Veo 4.0 also has comprehensive Gauge and Freediving modes, so is suitable for table-led technical dives or serious snorkelling no deeper than 100m.

#### **Algorithms**

The first of a choice of two algorithms long used in Oceanic computers was developed for PADI's RDP by DSAT, and is now proven over more than three decades.

The RDP is a no-deco table but the algorithm used in the Veo uses extended half-times and other modifications to enable decompression diving.

The second algorithm is the Pelagic Z+ Buhlmann ZHL-16C. Using the DSAT model will allow for longer no-stop times than Buhlmann, but shortens repeat dives for the same surface interval.

The choice lets you match your Veo 4.0 nostop and deco times to most other computers, so if your buddy depends on another popular brand you can probably obtain an exact or close match. It also provides for divers who expect to progress from rec to rec-tech.

The Veo is also well specified for such progression with its ability to handle one main air/nitrox mix plus the option to switch to two nitrox blends or 100% pure oxygen for deco.

You can choose to modify the algorithms by including deep stops or adding a caution zone. Altitude correction is set automatically.

#### **Features**

A range of audible and visual alarms can be custom-set by the user. These include warnings on reaching a given maximum depth – a nice feature for wall-diving, for instance – and an elapsed-time alarm to remind you when you're expected to begin surfacing to please your boat- or shore-cover.

Other warnings are automatic, unless you deliberately turn them off, such as entering decompression or switching to nitrox or oxygen at the wrong depth.

You get to program other functions, within sensible limits, such as maximum oxygen partial pressures, or safety-stop depth and duration.

The built-in backlight can be set to stay on for up to 10 seconds after pressing the button, giving you or a buddy time to assimilate readouts in dark conditions. For rental use, the memory can be zeroed.

The simple dive-planner allows you to check no-decompression schedules for a given mix and depth, but you can't run a simulated decodive to see what stops you'll incur if you go over them.

I have an HSE set limit of 20 minutes on stops for working dives and calculate my air based on this, then ascend when my total ascent time hits this deco limit. So for me the simple plan is workable.

The logbook functions are comprehensive and the Veo 4.0 is Bluetooth-enabled and can be linked to the free DiverLog+ app for uploading, as well as changing some of the Veo's functions from your phone or downloading firmware upgrades.

When turned on, the Veo displays details of your last dive. Having once sent a friend to the chamber with my computer so that his profile could be checked, provided the attendant could figure out how to access the hidden logs, I welcomed its clarity.

The battery is a user-changeable CR2450 lithium cell.

#### In Use

I spent 10 hours over eight dives using the Veo 4.0, which is set using two buttons. Changing some functions requires either a short or long press, an approach I have never liked.

Using another make, I could never remember



the right sequence to reset my nitrox mix after it timed out, once just as I was about to leap from the boat.

However, I found that almost all the Veo 4.0's settings are selected and confirmed intuitively.

I hadn't even realised that I was using the long presses until after my trip, when I was going through the Veo at my desk and looking at the manual while writing my report.

I mostly used nitrox on the Veo dives, and was pleased to find that I could quickly change the mix without needing a crib sheet.

It's as easy to program in defaults you probably won't adjust routinely, such as partial pressure, as it is to reset mixes or depth and time alerts that you might wish to change from dive to dive.

The information layout is bold, clear and uncluttered. I'm often testing masks and have

to forego reading lenses, so if I can figure out a computer's read-outs well enough to surface without the machine screaming: "Get back down, you've missed your stops!" I'm a happy bunny not to be going in the pot.

Two main graphic bar displays run up either side of the screen. Segments light up to show how much of your NDL has been used up or by how much you are exceeding your ascent rate.

A smaller graphic shows battery state. Everything else is shown digitally, which I prefer.

During a no-stop dive, it's very easy to assimilate key information, such as remaining no-stop time and current depth, as well as elapsed dive-time, which might be necessary if you've agreed how long you'll be down, typical of boat-diving.

You can also see your maximum reached depth and temperature – useful in my experience only for confirming that you really are as cold as you feel, or for making you feel superior in the tropics.

Once you reach your safety stop level, the Veo 4.0 begins counting down your time in minutes and seconds.

Enter decompression and the display is unambiguous. You're shown your ceiling depth and total ascent time, so you can manage your gas supply appropriately.

If using additional deco mixes, you'll be prompted to switch to these as you reach the correct depth. I didn't test this function. I had flooded the battery chamber and written off my own computer that I use as a reference.

While I had a second test computer alongside, I didn't feel I was familiar enough with either to feed in gas-mix misinformation just to see the change-mix displays during real deco dives!

Gas-switching with the Veo 4.0 can't be simulated at the surface, but it looks straightforward.

The screen was easy to read in the sunlit shallows, where I was making safety or deco stops. At depth in poor light I could see well enough without using the backlight.

While I wasn't able to do any night or wreckpenetration dives with the Veo, I had done both with the ProPlus and it was an easy read, so I'd expect the same of the Veo.

#### Conclusion

The Oceanic Veo 4.0 is a very capable computer for advanced recreational and entry-level rectech diving. It's easy to set and easy to read, important attributes that won me over. Highly recommended. ■

#### SPECS

**TESTER** → Steve Warren

PRICE → £270

**ALGORITHM → Dual DSAT and Buhlmann** 

ZHL-16C

BLUETOOTH → Yes

GASES >> Three

CONTACT → oceanicworldwide.com





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# NEW BUT

The latest kit to hit the dive shops



Hollis Katana 2 Sidemount BC 4444

Capable of carrying open-circuit sidemount cylinders but also claimed to be the first purposedesigned BC for the KISS

> Sidewinder closed-circuit rebreather, the Katana 2 is new from Hollis. The harness is quickly adjusted for all body sizes, says the manufacturer, suiting it well for schools. Designed in collaboration with caveexplorer Edd Sorenson, it costs £530.

→ hollis.com



Providing warmth up to 45°C, Saanti's heated vest works only with its external batterypacks and combined drysuit inflator and power-lead connectors. Made from Climashield, which is said to help maintain heat next to the body, and featuring a windproof polyester outer, the vest also has provision for P-valve

routeing. Vest only, the price is £235.

>> saantidiving.com



The distinctive orange dial adorning this timepiece celebrates Certina's role in the 1959 Man in the Sea Tektite missions, according to the manufacturer. The aquanauts living in that underwater habitat more than 60 years ago wore specialedition Certina watches. The new 500m-rated automatic watch features a DS Double Seal crown lock, date display, Super-LumiNova hands and indices and a

>> certina.com



one-way bezel. It is priced at £796.

## Scubapro Mk25 Evo / D420 Regulator

Scubapro's latest second-stage design development, Progressive Flow Control, is claimed to provide breathing as smooth under water as in air. It's featured in the D420, with its futuristic styling and right- or left-hand hose-routeing, seen here combined with the Mk25 Evo balanced-piston first stage with Extended Thermal Insulating System for coldwater diving protection, and one in-line and four swivelling medium-pressure ports, designed for easy hose-management. The set is priced at £695.

>> scubapro.com

## **Beaver** Spectre Black Silicone Mask >>>>

New to Beaver's range is the inexpensive Spectre, a low-volume single-lens model said to give good all-around vision. The frameless design reduces weight while the black silicone skirt is intended to eliminate distracting peripheral light. It costs £42.

**>>** beaversports.co.uk



## Mares Psycho Calavera BC \*\*\*\*

Weighing in at only 2.7kg, the distinctively named Limited Edition Psycho Calavera wing will set you back £539. From the Mares XR technical-diving line, it features a doughnut air-cell with 16kg lift, alloy backplate and dual cam-bands with metal buckles. The harness comes with six stainless-steel D-rings for stages and other accessories.

**→** mares.com





## **Ocean Wrap**

Helping divers avoid using plastics is this range of reusable and long-lasting bio-degradable beeswax-based wraps, developed by Freda Wright of Salutay liveaboard and DIVER monthly recipe fame. Said to be perfect for keeping sandwiches fresh and dry at the dive-site or on the boat, preventing toiletries from leaking into your luggage and many other uses, a pack of three different sizes costs £15.

>> itssawrap.co.uk

## Bia Rosie Dive Series Watch

This new line of women's dive-watches from the USA is said to be inspired by fictional character Rosie the Riveter, referring to female factory workers who supported the war effort during WW2. Quartz-driven, the Bia Rosie comes with a choice of dials, each using Visible247 light-receptive crystals claimed to make the watch readable in total darkness for 10 hours after just 10 minutes' exposure to light. The stainless-steel casing is 200m-rated. Price £170.

>> sea-sea.com





## **NEXTISSUE**

## **Beneath the Ruhr**

Diving a Nazi weapons dump

## **Seychelles Odyssey**It's Lisa Collins against the weather – so what's new?

## The Mars Project 2 Diving right up to date on the historic Baltic wreck

## Dreams of Bangka The third way in North Sulawesi











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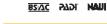




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Diving Medicals - Nottingham. Sport Diving medicals: £55. HSE Commercial Diving medicals: £120. OGUK Offshore medicals: £110. HGV/PSV medicals £55. Student and Group discounts. Combine any two medicals and pay only £5 extra for the cheaper of the two. Tel: 07802 850084 for appointment. Email: mclamp@doctors.org.uk(70407)

## **HSE MEDICALS** and phone advice — Poole

Dr Gerry Roberts and Dr Mark Bettley-Smith. Tel: (01202) 741370

Diving Medicals - Midlands (Rugby) - HSE, Sports Medicals and advice at Midlands Diving Chamber. 01788 579555 www.midlandsdivingchamber.co.uk

## **CLUB NOTICES**

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Arnewood Divers, Christchurch - where diving is safe and fun from our own hard boat. Training from beginner to Instructor. Find us on Facebook or https:// sites.google.com/view/adsac/home

Active and friendly BSAC club. All year diving in local lake. New and qualified divers of all agencies welcome. Own clubhouse with 7m RIB and compressor. For further information visit www.mksac.co.uk (64403) **Alfreton (Derbys)** BSAC 302. Welcomes new members

and qualified divers. A small but active club with own RIB, wreck diving a speciality. Contact Angela on 07866 (68370)

Appledore Sub-Aqua Club (SAA 35) Friendy club welcomes experienced divers from all agencies . Regularly dives Lundy island, own hard boat / compressor. Contact Damian 07831 152021.

Banbury SAC. Friendly, active club with weekly meetings and training sessions, own boat, compressor and equipment. Welcome divers/non-divers. www.bansac.org or call 07787 097 289.

**Birmingham Underwater Exploration Club.** Friendly, active dive club. Weekly pool sessions. Regular trips. Own RIB based in south Devon. Training and equipment loan available to members. Tim 07775 580033. Bracknell Sub Aqua Club welcomes new and experienced divers from all agencies. Meets poolside at Bracknell Sports Centre, Thursdays from 8.30pm. Diving, training and social calendar: www.bracknellscuba.org.uk or tel: 07951

**Braintree Riverside** Sub Aqua Club based in Braintree, Essex. A friendly club, we welcome divers of all abilities and have an active diving and social programme. Come and join us! email: denise.f.wright2@btinternet.com www.braintreeriversidesac.co.uk (69397) **Bromley/Lewisham** Active divers required. Full

programme of hardboat diving throughout the year. Check out Nekton SAC www.nekton.org.uk or contact Jackie (01689) 850130. (68537)

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Chelmsford and District SAC meet at 8pm every Friday at Riverside Pool. New and qualified divers are welcome See our website for details: www.chelmsforddiveclub.co.uk

Cockleshell Divers, Portsmouth, Hants. Small, friendly club welcomes new and experienced divers from all agencies. Meets at Cockleshell Community Centre, Fridays at 8pm. Email: cockleshell.divers@aol.co.uk (64762) Colchester Sub-Aqua Club welcomes experienced divers and beginners. Sub-Aqua Association training. Diving at home and abroad. Meets at Leisure World Friday evenings. Contact Tony (01787) 475803. (68263) **Chingford, London** BSAC 365. Friendly and active club

welcomes divers from all agencies and trainees. Meet Wednesday 8pm, Larkswood Leisure Centre E4 9EY. Information: www.dive365.co.uk Email: loughton divers365@gmail.com (69208) **Cotswold BSAC**, a friendly club based at Brockworth

Pool, Nr Cheltenham, Fridays 8pm. Regular inland diving and coast trips. Tel: 07711 312078. and coast trips. T www.cotswoldbsac332.co.uk

Darlington Dolphins Sub Aqua Club, small friendly BSAC/PADI, open to new and experienced divers. Meet

or email robkildav@hotmail.co.uk

Darwen SAC, in Lancashire, with an active diving programme, Own RIB, new members welcome regardless of agency/training. We provide BSAC training. Weekly pool sessions. www.darwensac.org.uk (69161)

**Dream Divers.** Very friendly dive club in Rotherham welcomes divers of any level/club. Meet at the Ring O Bells, Swinton, last Thursday of the month at 19.30. Email: info@dreamdiversltd.co.uk

Ealing SAC, BSAC 514. Friendly, active club, own RIBs; welcomes new and experienced divers. Meets Highgrove Pool, Eastcote, Tuesday nights 8.30pm. www.esac.org.uk

East Cheshire Sub Aqua. Macclesfield based BSAC club. Purpose-built clubhouse, bar, two RIBs, minibus, nitrox, compressor. Lower Bank Street, Macclesfield, SK11 7HL. Tel: 01625 502367. www.scubadivingmacclesfield.com

East Durham Divers SAA welcome new/experienced divers of any agency. Comprehensive facilities with own premises half a mile from the sea. Contact: John: 07857

East Lancs Diving Club based in Blackburn. Friendly, active club welcomes new members at all levels of diving from all organisations. Tel: 07784 828961 or email: ELDC@ hotmail.co.uk www.eastlancsdivers.co.uk

Eastbourne BSAC; RIB, Banked air (free) to 300bar, Nitrox, Trimix. Enjoy some of the best diving on the South Coast, all qualifications welcome. www.sovereigndivers.co.uk (65695)

Eastern Sub Aqua Club SAA 1073. We are a small friendly dive club and welcome new and experienced divers alike. We are situated north of Norwich for training. For more information please see out website: www.esacdivers.co.uk

Ellon Sub Aqua Club, Aberdeenshire, welcomes newcomers and experienced divers. We dive year round and meet on Thursday evenings. Contact www.ellonsubaquaclub.co.uk (65523) Fife Scuba Divers Tel: 07575 372575. www.fifescubadivers.com. SAA Club No203. Meetings:

Thu 19.30, 81 East Way, Hillend, KY11 9JF. Training Club Crossovers welcome.

Crossovers welcome. (72380) Flintshire Sub Aqua Club based in Holywell, Flintshire, welcomes new and experienced divers from all agencies. Full dive programme. Meet Wednesdays. See us at www.flintsac.co.uk or call 01352 731425. (64293) Guildford BSAC 53. Welcomes new and qualified divers. Friendly, active club with 2 RIBs, compressor, Nitrox, meets Tuesday at clubhouse with bar. www.guildford-bsac.com or call 07787 141857.

bsac.com or call 01/87/141857.

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Hereford Sub Aqua Club, is looking for new members.

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**HGSAC. South Manchester based** friendly, non-political club welcomes newcomers and qualified divers. Lots of diving and social events. Family. Three RIBs and ompressor. www.hgsac.com **High Wycombe SAC.** Come and dive with us - all

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of tei: 01883 / 31332. (64314) Ilkeston & Kimberley SAA 945, between Nottingham and Derby, welcomes beginners and experienced divers. We meet every Friday night at Kimberley Leisure Centre at 8.30pm. Contact through www.iksac.co.uk (68559) K2 Divers, covering West Sussex/Surrey. A friendly BSAC club, but all qualifications welcome. Training in Crawley, boat at Littlehampton. Email: k2divers@yahoo.co.uk or

**Kingston BSAC, Surrey.** Two RIBs , clubhouse and bar, active dive programme, two compressors, Nitrox, Trimix, full training offered at all levels. All very welcome. www.kingstonsac.org or tel: 07842 622193. (69176) **Lincoln - Imp Divers.** Small, friendly, non-political diving club with our own RIB are looking to welcome new and experienced divers. Contact Richard: 07931 170205

(69383)

Lincoln and District BSAC. Active club with own RIB, compressor and other facilities. Regular trips and training. www.lincolndivingclub.co.uk (69336)

**Lincs Divers BSAC 1940.** Friendly, active dive club offering dive trips and training for new/experienced divers. Lincoln based, www.lincsdivers.co.uk

Llantrisant SAC, two RIBs, towing vehicle, welcomes new and experienced divers. Meet at Llantrisant Leisure Centre 8pm Mondays. Contact Phil: (01443) 227667. www.llantrisantdivers.com (68519)

Lutterworth Dive Club, active, social, friendly. Own RIB, regular trips. Welcomes qualified divers, any agency. Training at all levels. Most Tuesdays, Lutterworth Sports Centre, www.lsac.co.uk

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www.scubamad.co.uk. Sub Aqua Association - club 942.

8 Beech Avenue, Mansfield, Notts. NG18 1EY. (71643) Manta Divers. Norfolk wreck & reef diving. Small, friendly, experienced club. All agencies welcome. SAA

training, www.mantadivers.org (64088)

Mercian Divers (BSAC 2463) Active & Friendly club. New, experienced & junior divers welcome. Own RIB. Based in Bromsgrove, West Midlands. Tel: 01905 773406 www.mercian-divers.org.uk (65391) Merseydivers (BSAC 5) Friendly & active club with 2 RIBs

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Merseyside training club, new and active divers from all agencies, weekly pool session. Own Rib towing vehicle Contact www.wapsac.org.uk or wapsacsac@gmail.com Millennium Divers. Active, friendly club for all levels and certifications of diver, based in Portland, Dorset. UK diving and holidays. Club social nights www.millenniumdivers.org (68351)

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Monastery Dive Club (Dunkerton Branch). New divers

Monastery Dive Club (Dunkerton Branch). New divers welcome to join our club. Trips to Plymouth and NDAC. GSOH is a must. South Wales area (Crosskeys, Risca.) Text: Flinty 07971 432803 or email: welshflinty@ hotmail.com (65305)

Nekton SAC. Based in Bromley, we are a friendly and active SAA Club that welcomes experienced and new divers alike. Info@nekton.org.uk or call Steve: 020 8467 4599. (68387)

Nemo Diving Club. Small friendly dive club offering dive trips and training for non/experienced divers in Retford and surrounding areas. Contact: www.nemodiver trainine.co.uk (69640)

North Wales Sub Aqua Club. Llandudno based and open to new and experienced divers. Fun, friendly and active SAA affiliated club. Training every weekend. www.nwsa.wales (70688)

North Glos BSAC 80. Friendly, active club welcomes new and experienced divers. Own boat and equipment with weekly pool sessions, Thursdays, 8.30pm at GL1 Gloucester, (Gloucester Leisure Centre), www.nglos.co.uk

Nuneaton. Marlin BSAC welcomes experienced divers to Pingles pool every Thursday. Active training, diving, social programme in a flourishing club with no politics allowed. www.marlinsac.com (69322)

Orkney SAC. Small, friendly active dive club, based in Kirkwall, welcomes divers of any level or club. Own RIB and compressor. Contact Craig: 07888 690 986 or email: craigbarclay31@hotmail.com (69735)

Plymouth Sound Dive Club welcomes qualified and experienced guest divers. See www.plymouthdivers. org.uk for more information/weekly club notices. Contact relevant dive manager or divingofficer@plymouth divers.org.uk to join a dive. (72219)

Preston Divers SAA 30. The friendliest dive club. Come

Preston Divers SAA 30. The friendliest dive club. Come and meet us at Fulwood Leisure Centre, Preston on Monday nights between 8.00pm - 9.00pm. www. prestondivers.co.uk (64198)

(04179)
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216310 or email: info@thedivingclub.co.uk www.
thedivingclub.co.uk (69447)

Reading Sub-Aqua Club (BSAC 28). Active, friendly, based Palmer Park. Clubhouse, licenced bar, compressor, 2 RIBs. Club night Thurs, all grades/agencies. Training to Adv Diver +. rbsacinfo@gmail.com www.rbsac.org.uk Tel: Colin 07939 066524. (72402)

Richmond Sub-Aqua Club (Surrey) welcomes new and experienced divers. Very active diving, training and social calendar for about 100 members. Contact: contact.rsac@gmail.com, www.richmondsubaqua.club, 07843 959 775.

Robin Hood Dive Club. Yorkshire based and one of the most active in the country with a full 2019 calendar of trips. All agencies and grades welcome. No training or pool, just a growing bunch of regular divers. www.robinhooddiveclub.com or find us on Facebook. (59245) Rochdale Sub-Aqua Club. Beginners and experienced divers welcome. Full training provided. Pool session every Wednesday. Club has two boats. More info at www.RochdaleDivers.co.uk or call Mick 07951 834 903.

Ruislip & Northwood BSAC. Friendly, active club, RIB, welcomes new and qualified divers. Meets Highgrove Pool Thursday nights 8.30pm. www.rnbsac.co.uk Tel: 07843 738 646 for details. (69469)

Scotland Plug Divers. Small, friendly dive club welcomes newly qualified and experienced divers to join us. Regular hardboat diving around Bass Rock/Firth of Forth/ Eyemouth and trips abroad. Tel George: 07793 018 540. Email: plugdivers@btinternet.com (64638)

Eyemoutt and trips abroad. 1et George: 07/93-018-340.

Famil: plugdivers@btinternet.com (64638)

Selby Aquanauts SAA 1117. Family friendly club, welcomes new and qualified divers. Regular trips UK & abroad. Meet every Thursday, Albion Vaults, Selby at 9pm.

Contact Mark: 07831.295.655. (69261)

Sutton Coldfield SAC, friendly BSAC club, welcomes all divers from trainee to advanced. All agencies. Own RIBs and compressor. Meet every Wednesday, 8.15pm at Wyndley (3.4m pool). For free try dive call Alan: 07970 573638 or Mark: 07787 106191. (64974)

Sheffield BSAC36. Friendly, social and active dive club welcomes newcomers or qualified divers. Trips, socials, weekly pool and club/pub meetings, club RIB. See www.bsac36.org.uk (69191)

Slough 491 BSAC; small friendly club welcomes divers at all levels. Meet at Beechwood School Fridays 19.30. Diving holidays and South Coast. Email: malcolm@uv.net or tel: Tony (01344) 884 596. (69722) SOS Divers (SAA 263), Stourport, Worcestershire.

SOS Divers (SAA 263), Stourport, Worcestershire. Founded 1979. Friendly family club welcomes qualified and trainee divers. Own RIB. Contact Althea by email: arannie123@outlook.com (57542)

South Coast Divers (SAA 1150) Portsmouth. A friendly and active club welcomes new and experienced divers from all agencies. Email: southcoastdivers@hotmail.co.uk or call Darren: 07449 794 804. (69224)

Totnes SAC (Devon). We are an active multi-agency club and welcome new members and qualified divers from all organisations. Two RIBs and own compressor/nitrox, plus club 4WD. Diving all round South Devon and Cornwall. Visit www.totnes-bsac.co.uk for details. (68319)

Visit www.totnes-bsac.co.uk for details.

South Queensferry SAC, near Edinburgh. Two RIBs, gear for hire. Pool training during the Winter; trips & expeditions in the Summer. Pub meeting at Hawes Inn. Call Warren: 07980 981 380. www.sqsac.co.uk (64861)

Steyning Scuba Club, West Sussex. All divers welcome. Steyning Pool, Monday evenings at 8.30pm. Contact Andy Willett on 07786 243 763. www.seaurchin divers@hotmail.co.uk (63956)

divers@hotmail.co.uk (63956) The Bath Bubble Club SAA777 seeks new members. New and qualified divers of all agencies welcome. Weekly pool training, every Wednesday at 9pm, Culverhay Sport Centre, Rush Hill, Bath. Regular diving programme from club RIB. www.bathbubbleclubuk.co.uk (68434)

Wells Dive Group. Friendly, active club in Somerset welcomes new or experienced divers. Meeting/training at The Little Theatre or the pool on Thursdays, try dives available. Regular RIB diving, trips around the UK and abroad. Visit: www.wellsdivers.co.uk or Tel: Rob, 07832

**TridentDivers.co.uk** (find us on Facebook) Cardiff-based SAA club taking on new trainees and crossover members contact us on 07547 398802. (71656)

Wiltshire's newest Scuba Diving Club - JC Scuba Dive Club. Friendly active dive club based in Swindon, all affiliations welcome. Pool sessions, UK & Worldwide trips, shore, boat & liveaboard diving, regular socials. Affiliated training school, fully insured. Exclusive member benefits. www.jcscubadiveclub.co.uk

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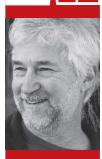
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Last month's column dealt with extreme currents in a cave - now we turn to strong flows in open water. MIKE BERNHARDT is an awardwinning writer who lives in the San Francisco Bay area with his wife Yvonne and the couple were somewhat taken by surprise recently while diving in Raja Ampat!

## 'All we have to do is breathe and have fun!'

XPERIENCED DIVERS dream of visiting Raja Ampat, off the coast of West Papua, Indonesia. But my wife Yvonne and I were most certainly not experienced when we embarked on a 12-day liveaboard trip there recently.

We had only about 40 dives between us, the most recent six years ago. We could have gone to Belize, but if we were going to spend the money anyway, why not go for the best diving on Earth? They'll help us into our BCs and take care of us, I thought. All we have to do is breathe and have fun. What could go wrong?

Most of the other 10 passengers had been diving forever. One said, incredulously: "You two have guts. Most people don't come here until they've done hundreds of dives." Did

I detect a note of disdain?

Our naïve confidence soon melted into a puddle of concern as the veterans exchanged war stories.

"The last time I was here, I was the only one who didn't get an ear infection from all the plankton and bacteria in the water. I told them to put vinegar or peroxide in their ears every day, but they didn't listen. They couldn't dive at all the last four days."

"It was a pretty wild driftdive. One lady got out of control and was doing

somersaults while the current carried her out to open sea. She was pretty shaken up."

Wild currents that make you turn somersaults? Critters infecting our ears? Why didn't our dive-shop mention this stuff when we asked what to bring? Because the owner had never been to Raja Ampat. We hadn't looked elsewhere for information; we didn't know we needed to.

YVONNE MADE A LIST of items we should have brought: current-hook, muck-stick, peroxide, whistle, squeaker, SMB, dive-socks, a long list of prescription medications. Oh, and fins that wouldn't give us blisters.

But from the first dive, we knew we'd made the right decision in coming.

Yvonne and I have dived in Hawaii, Fiji and Bora Bora. Raja Ampat was on a scale of wonder all its own. Endless varieties of hard and soft coral swayed or bathed in the bluish-green light. Cute-faced clownfish darted in and out of bubbletip anemones.

Camouflaged pygmy seahorses hid in fan corals, visible only when our divemaster Sadat pointed them out to us.

Wrasse, damselfish and fusiliers, some in schools of thousands, were everywhere, flying this way and that like a three-dimensional underwater version of Shibuya crossing in Tokyo.

**SADAT UNDERSTOOD** our experience level and kept a watchful eye on us and two other less-experienced divers. We weren't always as skillful as we could have been, but we improved a lot as the days passed.

On day nine, we did a morning dive at Magic Mountain. An army of sergeantmajors cruised by as a curious leopard coral grouper posed for my camera. pull me free, I looked around for Yvonne. She was gone.

What had happened? She'd been right next to me! Sadat returned and signalled me to ascend.

Pushed by the current, I surfaced far from the reef. I handed up my equipment and climbed into the tender, but Yvonne wasn't there. Sadat was still below, and the other three passengers hadn't seen her. Numb with disbelief, I could only wait.

After several long minutes, Yvonne surfaced. Another diver in the second group had seen her soaring by in the current, upside-down and rising fast, trying to dump air with her deflator.

The diver had banged an alarm on her

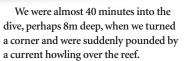
tank. Like Superman, her divemaster flew after Yvonne and with powerful legs pulled her back down to the reef.

Back on the liveaboard, we all talked about her close-call. "Why didn't you use the dump-valve? You can't use the deflator upside-down."

And where was Yvonne's buddy? Meaning me. "It's your job to stay with your buddy," someone admonished me.

Might I have had the presence of mind to help Yvonne? Maybe. But I'd been in survival mode, with no more experience than she. I promised myself that I was not letting her go next time.

If anything happened again, live or die, it would happen to both of us together.



It was inexorable, a wall of water that bulldozed everything not rooted into coral or stone. Even the fish vanished.

Yvonne and I kicked like hell, trying to get back to the ridge only a few metres in front of us. I forgot all about my wife as I inched forward, getting tired, finally grabbing something hard.

Another diver had a current-hook anchored into the coral and he hung there in space, bobbing like a kite on the end of the taut rope.

I pulled out my borrowed muck-stick and tried to find a hole or a crack, anything to lock into.

Out of nowhere, Sadat appeared. He grabbed my hand and shoved the stick deep into some crevice I couldn't see, then vanished again. As the stainless-steel rod bowed with the force of water trying to

ON THE DIVES that followed, I was Yvonne's wing-man and she was my wingwoman, never more than an instant away from physical contact, always near Sadat.

Sometimes I felt frustrated when I wanted to check out something cool, but wandering off wasn't worth the risk.

Not long after Magic Mountain, near the end of another dive, another current rose up. Yvonne and I locked into the coral with our muck-sticks and looked around at the scenery until Sadat signalled us to ascend.

We had to do our safety-stop, so we knew we'd be blown into open water.

But as Yvonne held my wrist, we also knew we'd be fine. After all, we'd experienced strong currents before.



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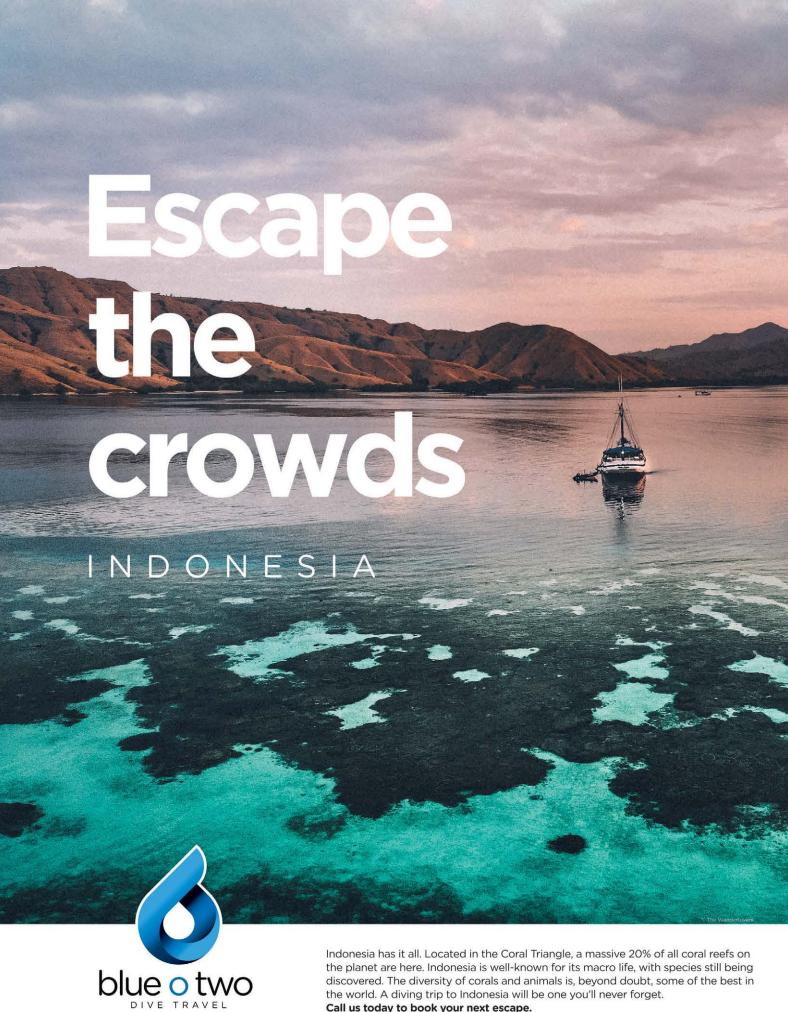
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