

SIX KILOMETRES DOWN: THE DEEPEST-EVER SHIPWRECK DIVERS

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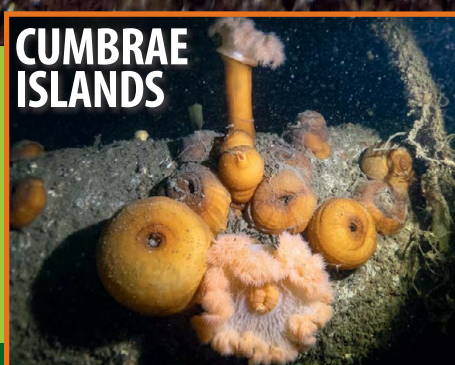
Pure sensory overload
on a return to Galapagos

CORNISH TREASURE

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It's in a Greek island cave



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A rather pale green light

I'M NOT OFTEN EAGER to listen to Transport Secretary Grant Shapps but I sat down in early May to hear his announcement about decriminalising UK holiday-makers. His "green list" of destinations that wouldn't require long, costly quarantines on return was always expected to be limited, but when he said that travel to 12 places would be allowed from 17 May, hope flared momentarily.

He named three – Portugal, Gibraltar and Israel – and shyly stopped there, the tease. I'm sure many of us then rushed to the Internet for enlightenment, but it took a while to discover the other nine.

There were two huge but distant diving destinations, Australia and New Zealand. Entry gates firmly closed. Many were remote British Overseas Territories where the diving would be interesting and, in places like the South Sandwich Islands, tricky. For most of us, these places would be about as easy to reach as Mars.

In diving terms, seasonal manta hang-out St Helena calls loudest, but quarantine on arrival, flights tricky. South-east Asia soars high on divers' wish-lists, but Brunei and Singapore, both green-listed, rarely get a mention, though some say that Brunei is OK. Closed.

Israel does offer Red Sea access, though it has always been regarded by UK divers as very much the poor relation compared to Egypt or Jordan. That's academic, because it remains closed to tourists anyway.

Looking to the cool north, Iceland has the Silfra Fissure between two continents, if it's on your bucket-list. Faroe Islands? Deeply unpopular with divers because of the annual pilot-whale slaughter there.

Air fares to Portugal and Gibraltar took off steeply on news of their green-listing, but if that, the price of tests and the risk of any change of status while you're away raises no issues, go for it!

Gibraltar has become **DIVER's** favourite kit-testing venue lately, and we have enjoyed mainland Portugal and Madeira recently too. What luck: this month we feature Daniel Brinckmann's guide to diving the Azores!

OUR NEWS PAGES reflect bids by UK diver-favoured destinations to seduce visitors. Malta, which had been expected to be on the green list but wasn't (maybe in June?) will give you 100 euros towards diving. The Maldives actually dropped onto the dreaded red list the same day as the Shapps announcement, but had plans to vaccinate tourists on arrival.

The fact that many of its vaccines were donated by Covid-ravaged India makes this idea questionable, however. While other tourists have stayed away the Maldives has welcomed mainly Indian visitors, which might explain the current bump in Covid infection rates there.

Our other top-three getaway is Egypt, and this month Paul Graham talks to people in its diving industry to see how it has coped in isolation. What really matters now is that the terrible occurrences in India are not repeated through Africa before vaccination efforts can be stepped up.

The green list will be reviewed every three weeks, so stay hopeful. My personal view, that we daren't risk another major wave of coronavirus in the UK and that it's hardly the end of the world to keep diving locally again this summer, is greatly tempered by my fears for our dive-tour operators and favourite holiday resorts.

But we've come so far, and unless the recovery effort is global it might take even longer before we can get back to the world's diving hot-spots. And none of us wants that.

FIRST IN









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EDITOR

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

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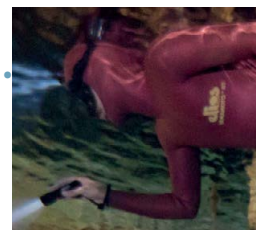
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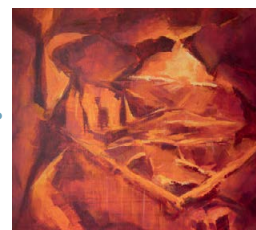
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COVER IMAGE: Marine iguana in Galapagos, by Brandi Mueller

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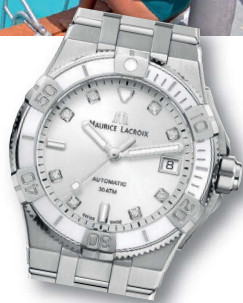
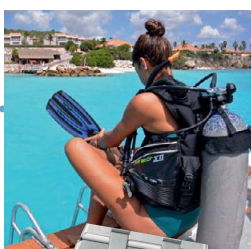
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HISTORY MADE WITH DEEPEST SHIPWRECK DIVE

US OCEAN EXPLORER Victor Vescovo has accomplished the deepest shipwreck dive by human or machine in history.

Piloting his Triton submersible *Limiting Factor*, Vescovo dived to a depth of 6.45km on the edge of Emden Deep in the Philippines Sea on 31 March to visit a wreck he was able to confirm to be the USS *Johnston*.

The dive was carried out only two days after Vescovo had completed the first manned dive to 10.045km at Emden Deep, the world's third-deepest point after Challenger Deep (Mariana Trench) and Horizon Deep (Tonga Trench). That mission was reported in **DIVER** News in May.

The WW2 warship is located off Samar island, where it had been rediscovered by the late Paul Allen's *Vulcan* deep-wreck team aboard the research vessel *Petrel* in 2019.

Vulcan's ROV had obtained video footage of the Fletcher-class destroyer, but the vehicle had been at the full extent of its 6km depth limit and so was unable to investigate the deeper-lying main part of the wreck.

For comparison, the *Titanic* lies 3.8km deep.

The new expedition was privately funded by former US Navy commander Vescovo and his company Caladan Oceanic, and organised by EYOS Expeditions.

Accompanied by another ex-naval officer, historian Lt-Cdr Parks Stephenson, Vescovo succeeded in re-locating, surveying and obtaining high-definition footage of the wreck to secure positive identification.

Vescovo carried out two eight-hour dives, accompanied on the second by senior technician Shane Eigler of Triton Submarines.

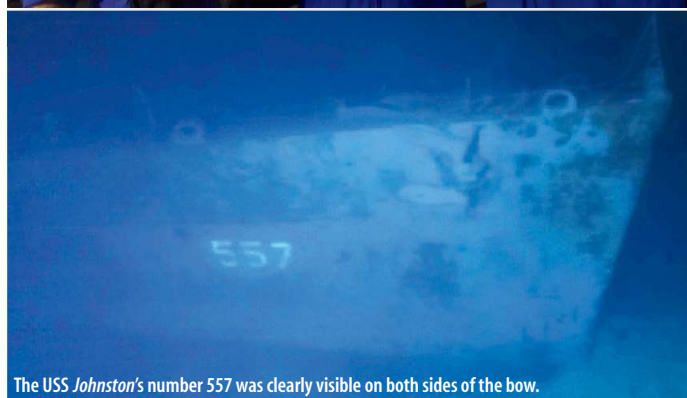
The 115m USS *Johnston* sank on 25 October, 1944, during an intense battle against vastly superior Japanese forces during the Battle of Leyte Gulf, cited as the largest naval engagement in history.

When the destroyer had been commissioned, Cdr Ernest Evans had famously told his crew that he would "never run from a fight," and that "anyone who did not want to go in harm's way had better get off now". Nobody had done so.

The *Johnston* was later awarded a Presidential Unit Citation, the highest US award available to a ship,



Victor Vescovo (centre) with co-divers Parks Stephenson (right) and Shane Eigler.



The USS *Johnston*'s number 557 was clearly visible on both sides of the bow.

while Evans was the US Navy's first Native American and only WW2 destroyer commander to be awarded a posthumous Medal of Honour.

Vescovo was able to visit all the deeper-lying upright and intact forward two-thirds of the wreck, including the bow, bridge and mid-section. The hull number 557 was clearly visible on both sides of the bow, and two full 5in gun turrets, twin

torpedo-racks and multiple gun-mounts remained in place and visible on the superstructure.

Sonar data, imagery and field-notes collected by the expedition were set to be passed on to the US Navy to disseminate at its discretion.

"We have a strict 'look, don't touch' policy but we collect a lot of material that is very useful to historians and naval archivists," said Vescovo. "I

believe it is important work, which is why I fund it privately and we deliver the material to the Navy *pro bono*."

At the end of the expedition a wreath was laid on the battlefield from *Limiting Factor*'s mother-ship DSSV *Pressure Drop*.

"In some ways we have come full circle," said Vescovo. "The *Johnston* and our own ship were built in the same shipyard, and both served in the US Navy.

"As a US Navy officer, I'm proud to have helped bring clarity and closure to the *Johnston*, its crew and the families of those who fell there." ■



Four views of the *Johnston* wreck captured from *Limiting Factor*.





'Two good mates' hit deepest point

LIMITING FACTOR, the world's only private submersible certified to dive to any ocean depth, continued its series of record-breaking Pacific dives after its Emden Deep missions, though this time the pilot was not owner Victor Vescovo, nor was it a world record that was claimed.

Instead Australian pilot Tim Macdonald and New Zealander Rob McCallum of EYOS Expeditions set depth records for their respective countries after diving to the ocean's deepest point, Challenger Deep at 10.925km in the Mariana Trench.

What was dubbed by the 34-strong expedition team "the ANZAC dive" took 12 hours and was carried out south-west of Guam on 8 April.

Its purpose was to test new acoustic navigation equipment.

Limiting Factor can withstand pressures of up to 1400 bar. "That's akin to having 11,000 tonnes per square metre at full ocean depth," said Macdonald. "The pressure on the hatch alone is equivalent to 2200 tonnes, or five fully laden 747s."

He said that the vehicle "both demonstrates our new ability to reach into the Hadal Zone, but also the importance that private funding will play in the future exploration of the deep ocean."

Macdonald was part of *Limiting Factor's* design and build team, and is engineering and underwater operations lead for Caladan Oceanic, but only recently qualified as the sub's third-ever pilot.

McCallum, a 20-year ocean exploration veteran, runs the superyacht management company that has planned and led every expedition undertaken by *Pressure Drop* and the submersible.

"It was a very ANZAC dive – two good mates from opposite sides of the Tasman working together under pressure," said Macdonald.

Pressure Drop and the expedition team then headed to Australia to conduct scientific research deep beneath the Indian Ocean. ■

Cave-diver claims deepest female record

SOUTH AFRICAN technical diver Karen van den Oever has claimed a new women's diving depth record, following her 236m descent into Boesmansgat Cave in Northern Cape province.

The 26 March dive lasted 7 hours 18 minutes, most of that time spent decompressing, and was carried out on open circuit scuba using a bottom mix of trimix 6/85.

The record is an unofficial one until verified by Guinness World Records,

which had observer Theo van Eeden at the site to witness the dive.

It has been held for nearly 17 years by fellow South African Verna van Schaik, who carried out her own 221m dive at Boesmansgat and welcomed van den Oever's dive with the words: "Congrats! It is an epic feat!"

Boesmansgat, the world's third deepest known sinkhole, lies 1.55km above sea-level.

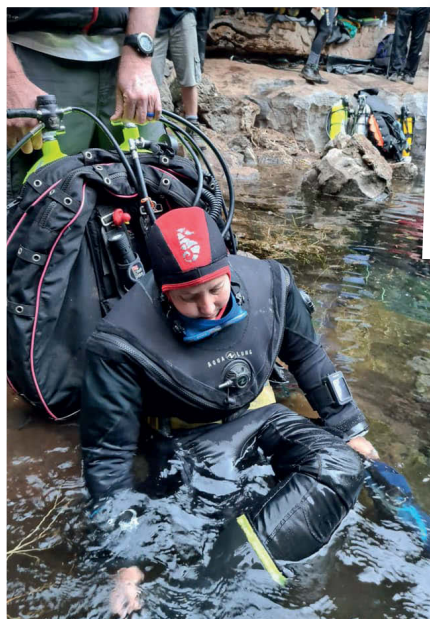
Van den Oever's previous deepest dive at the site was to 201m in

February last year. A science graduate from the University of Witwatersrand in her home town of Johannesburg, she is an instructor with technical diving school Somewhere Out There Diving (SWOT), members of which supported her record bid.

"This was a dive that I have been working towards for a long time," said van den Oever.

"It was a challenging dive. You train not for the dives that go well but for when things don't go well.

"I decided to turn at 236m, as my intuition told me that this was where I needed to stop." Van den Oever was a student of Nuno Gomes, who in 1996 took the Guinness World Record for deepest cave dive at 283m, again in Boesmansgat. ■



Karen van den Oever on her Boesmansgat deep dive.

SWOT

Children die after scuba-tank incident in pool

TWO YOUNG children died in Florida in late April after being left alone in a private swimming pool to play with a scuba tank – which investigators have since stated appeared to have contained helium.

The children were Zale Dudas, 9, and her younger brother, seven-year-old Saxon Nairne.

On the afternoon of 23 April they had accompanied their father to visit

the home of a friend who lived in the Atlantic-coast town of Jensen Beach.

Both men were said to have been experienced divers. While the owner of the house took the children's father into his garage to show him his underwater scooter, the siblings were given permission to play with a dive tank left in the pool.

When one of the adults returned he saw both children unresponsive at

the bottom of the pool near the tank.

With the help of other adults present the children were brought out and CPR was administered. They were taken to hospital in what was described as critical condition, but both of them died three and a half days later, on the morning of 27 April.

According to an emergency services report, the children could have been under water for at least 10 minutes. And an officer from Martin County sheriff's office stated that the tank was believed to have contained not the air the children might have expected but helium.

The father had told officers that the children were "experienced swimmers and proficient divers", although the official minimum age for scuba certification is 10. They were said to have visited the house often before.

Post mortems were being carried out, and the sheriff's and state attorney's offices have launched an investigation into the incident. ■



EBVABA

DAN suggests divers pause after jab

DIVERS SHOULD consider waiting at least seven days after each dose of coronavirus vaccine before engaging in scuba or freediving activities, suggests DAN Europe.

The medical and research organisation has issued updated recommendations for divers who have been vaccinated and might have suffered the sort of side-effects associated with many vaccines, such as headache, mild fever, nausea, pain at the injection site, dizziness, gastro-intestinal disorders or swollen lymph nodes.

The vast majority of side-effects experienced to date had been mild, said DAN, occurring mostly within 12-48 hours of the injection but occasionally up to seven days, and more frequently reported after the second dose. However, it said that the symptoms might be "further enhanced by diving conditions, such as immersion, pressure and hypoxic/hyperoxic environment".

It also said that anecdotal cases of symptoms in divers made it possible that some of these effects could "temporarily influence the risk of diving-related illness", while insisting that being vaccinated in line with the national roll-out plan is highly recommended.

The suggested seven-day precautionary interval should be extended to 14 days for divers who experienced side-effects persisting for

more than 48 hours, or those with personal health-risk factors including being overweight; having chronic metabolic disease (such as diabetes); smoking; or taking medication such as oral contraceptives that might increase risk of embolisms.

The 14-day recommendation also applies to divers planning to exceed no-decompression recreational diving limits. Divers were advised to consult their GP if vaccination side-effects persisted for more than 48 hours.

If they did carry out apparently low-

infection. With the current resumption of diving it has updated this advice to embrace increased knowledge of the coronavirus.

Divers who test positive but remain completely asymptomatic should wait at least 30 days from their first negative test before applying for fit-to-dive clearance and eventually resuming diving, says DAN.

Those who suffer symptomatic Covid should wait at least 60 days without symptoms before applying to a diving medicine specialist for



risk dives during the seven days after a vaccination and experienced symptoms that could be related to diving disease, they should call a diving-medicine specialist.

Protective measures such as social distancing, mask-wearing and hand-sanitising should still be observed after vaccination, stressed DAN. Read its guidelines at daneurope.org

Last May DAN published widely endorsed recommendations for divers returning to diving after a Covid-19

clearance to dive.

Divers hospitalised with or because of pulmonary symptoms related to Covid are advised to wait at least three months before applying, and need to undertake complete pulmonary-function testing, an exercise test with peripheral oxygen saturation measurement and a high-resolution CT lung scan.

The three-month application period also applies to any diver hospitalised with or because of

Covid-related cardiac problems – a cardiac evaluation including echocardiography and an exercise test are required to ascertain normal cardiac function.

DAN Europe says that members can consult specialists from its diving support network as part of their membership benefits. Consultations might be needed to assess additional potential risks for divers who have had Covid, in the event of lung barotrauma, lung bubble shunting, cardiac or other problems that could be experienced while diving.

The organisation points out that little is yet known about possible increased sensitivity of pulmonary tissue to the toxic effects of oxygen, so for technical divers extended breathing of hyperoxic gas, as in rebreather diving, should be avoided.

Nitrox diving is not thought likely to be problematic.

Even less is known about the possible alteration of the bubble-filter function of the lung after a Covid pulmonary infection, says DAN, which recommends that to reduce the risk of decompression illness divers should stay well within no-deco limits.

The recommendations are summarised in DAN's publication *Alert Diver*, alertdiver.eu. The organisation has also compiled the revealing experiences of eight of its network of diving doctors who have individually treated as many as 20 divers who had suffered from Covid-19. ■

'Vaxication' plan announced for Maldives

LEADING DIVING destination the Maldives plans to offer visitors Covid-19 vaccination on arrival, as a booster shot for its flagging visitor revenues.

The scheme, revealed by tourism minister Abdulla Mausoom to CNBC, is part of a "3V" initiative – Visit, Vaccinate and Vacation.

Referred to by the minister as a "promotion", it is to come into effect once the population have received their own first and second doses.

Some 53% of the 530,000 population had received their first doses when the announcement was made, including nearly 90% of frontline tourism workers, who had been prioritised.

Because of the small population Mausoom said he expected vaccine supplies to accommodate the plan.

However, many of its vaccines have been donated by countries such as India and China as well as the World Health Organisation, along with some bought in from Singapore.

Concerns that donors might not be well-disposed to vaccines going to tourists, or that doses do not become fully effective for about two weeks were not addressed.

First and second doses could in theory be delivered to tourists, though that would imply a stay of at least three weeks.

The Maldives has previously reported that extended holidays during which visitors are able to work remotely while away have been proving popular.

The Indian Ocean nation was one of the first to reopen to tourists last July after a four-month closure.

It had reported fewer than 30,000 coronavirus cases with 73 deaths by late April this year

With some 500 resorts open, visitors allowed to leave their own countries for holidays have only to provide a negative PCR test and proof of booked accommodation to gain entry.

Some two-thirds of the Maldives' gross domestic product normally derives from tourism, with 1.7 million people visiting annually.

More than 500,000 visited last year and a target of 1.5m arrivals is set for 2021, with around 350,000 so far recorded, many from India.

Rapid dispersal of visitors from the international airport outside off-limits capital Malé to self-contained resort islands is said to allow testing and social distancing



to be implemented more effectively than in many locations.

With most older members of the UK population likely to have received both Covid vaccinations by summer, the 3V scheme is most likely to appeal to younger divers.

It was not made clear whether visitors would be expected to pay extra for the jab. ■

BRITISH DIVE-BOAT FUGITIVES CAUGHT ON TV

A BRITISH COUPLE who became fugitives 10 years ago following the death of a scuba-diver on their Florida charter-boat were captured by police in Spain in April.

Their arrest came within four days of the pair featuring on *America's Most Wanted*, a newly revived Fox TV series that had last been on air the same year that they had evaded a US indictment.

Alison Gracey, 53, and Christopher Jones, 56, were arrested in Madrid and, according to Fox, were being held on charges of involuntary manslaughter and making a false official statement.

Gracey and Jones ran a dive-charter company called Key Largo Scuba Shack in the Florida Keys.

On 18 December, 2011 Aimee Rhoads, a 36-year-old diver on holiday from Seattle, booked a trip on their 9m boat *Get Wet*.

Carrying six passengers including Rhoads and her sister-in-law, *Get Wet* was heading towards its second Molasses reef dive-site in heavy seas when it began taking on water.

Witnesses on another dive-boat nearby said that the vessel sank within two minutes. Rhoads and another diver, Amit Rampurkar, were trapped in the cabin.



Get Wet captain John Nathaniel dived to retrieve the divers, bringing up Rampurkar first before returning for Rhoads. Both had been unconscious. The other dive-boat picked everyone up but Rhoads could not be resuscitated.

A subsequent investigation alleged that Gracey and Jones had been repeatedly informed of major safety problems with *Get Wet* but had refused to take action. In the USA vessels claimed to carry no more than six paying passengers did not need the annual safety and biennial hull inspection required by larger vessels.

The US Attorney's Office stated that Gracey and Jones, who at the time of the incident were in the Bahamas opening a Scuba Shack in Bimini,

had operated the boat in an "alleged unlawful and careless manner" that had "caused the death of an individual scuba-diver".

It also stated that they had knowingly "made a false statement to the US Coast Guard National Vessel Documentation Center about the boat's ownership". Gracey faced a maximum prison term of eight years and Jones 10.

In June 2015 the two British citizens were arrested in the Dutch Caribbean island of St Maarten, but were released

on bail by the authorities pending extradition. They fled the island and had last been reported in France in April 2017.

On *America's Most Wanted*, age-progression and appearance simulations were used to suggest how the fugitives might look a decade after their initial escape.

Gracey was described as 5ft 7in and to have weighed around 145lb at the time, and to have an Irish accent. Then blonde, she was visualised with different hair colours.

Jones, 6ft 3in, weighing 275lb and with a British accent, was shown with and without his favoured aviator sunglasses. Viewers were encouraged to call in if they could provide useful information. ■

DIVERS URGED TO JOIN SURFERS IN BIG CLEAN-UP

THE BRITISH SUB-AQUA CLUB has linked up with Surfers Against Sewage (SAS) to encourage divers to get behind the surfers' Million Mile Clean campaign.

The objective is to encourage 100,000 volunteers to get outside in 2021 and each explore at least 10 miles while litter-picking.

UK environmental charity SAS came up with the anti-pollution initiative as a way of connecting up beach, street, river, mountain, park – and now underwater – collective cleaning activities.

"It will be the biggest and most impactful clean-up event ever for clubs and members to get involved in," says BSAC, as it calls for them to organise or join in with existing underwater and/or beach-cleans.

More than half of British people think that plastic waste has increased



during the coronavirus lockdown, according to research commissioned by SAS. And more than a fifth have increased purchases of single-use plastics during the pandemic, with another fifth using disposable rather than reusable face-masks.

The majority of those polled (74%) reckon they are seeing more than 10 pieces of plastic or other litter on an average walk which, given the size of the UK population, would amount to many million of polluting items.

"The Million Mile Beach Clean, created in direct response to the pandemic, will reconnect people with the ocean and their natural surroundings, while also restoring well-being as the UK emerges from winter and the pandemic," said SAS chief executive Hugo Tagholm.

"This will come as a relief to the 41% of Brits that feel their mental health has deteriorated as a result of lockdown, with 52% of the UK population claiming that being near water improves their well-being and mental health."

The initiative is set to last through the UN Decade of Ocean Science to deliver 10 million miles by 2030, aligning with SAS's 10-year ambition of ending plastic pollution on UK beaches by 2030.

The campaign is open to all divers – find out more at sas.org.uk ■

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Divers help to ID mystery spheres

THE IDENTITY OF a mysterious 1m-diameter "blob", one of a number spotted by divers in north-east Atlantic waters over the past 36 years, has finally been revealed in a new study.

Ninety such gelatinous spheres had been reported, especially around Scandinavia and also in the Mediterranean, but only now have they been confirmed as containing embryos of the broadtail shortfin squid, at various stages of development and encased in a disintegrating bubble of mucus.

The sightings had been recorded from the surface to as deep as 70m, in temperatures from 8-24°C, and the spheres usually appeared neutrally buoyant, with more than half of them

having a dark streak running through their centre.

For decades lack of tissue samples hampered scientific identification. Then a citizen-science campaign was launched by the leaders of the international study, Halldis Ringvold of marine-zoology organisation Sea Snack Norway and Morag Taite of the National University of Ireland.

They put out a request on social media to dive-clubs and centres in the UK and Ireland as well as Norway, Sweden and France, Spain, Portugal, Italy, Malta, Cyprus and Croatia.

Their call was answered when in 2019 divers managed to secure small tissue samples from four such spheres off Norway. Containing eggs and mucus, the samples remained intact



The 'blob' that had scientists baffled until divers obtained samples.

after being collected in bottles and kept in home refrigerators.

DNA analysis confirmed the egg masses to be those of the *Illex coindetii* squid, a member of the *Ommastrephidae* family.

It is now estimated that each sphere could contain hundreds of thousands of eggs.

Ommastrephids are the most abundant and widely distributed family of cephalopods, from sub-Arctic to sub-Antarctic seas. They also represent 70% of cephalopod catches by commercial fisheries.

Broadtail shortfin females are said to be "intermittent spawners", laying eggs several times over periods of a few days and sometimes a few weeks.

The female stops growing at this time and dies shortly afterwards – their natural lifespan is thought to be

no more than a year.

Fertilisation takes place during spawning, and the mucus generated by the mother is thought to be intended to keep the eggs both buoyant and secure from predators.

The dark streak is thought to come from ink released as the eggs are fertilised, and to be present only if they were recently spawned.

One theory is that this creates a visual illusion of a large fish, as a way of warding off predators.

Going back through previous reports of spheres matching the description of those analysed, the researchers cautiously concluded that their similarity in shape and size made it likely that many were from the same species.

Their study is published in the journal *Scientific Reports*. ■



From the blob: a broadtail shortfin squid.

AN INTERACTIVE virtual tour of the protected Chesil Beach Cannon Site has been launched by the Maritime Archaeology Trust (MAT).

The 3D diver trail provides access to the two distinct sites at the Dorset location, complete with annotations, photographs, maps and underwater video footage.

The tour features a 1m grid that can be toggled on or off, optional lighting settings and additional information about the project, its location and the investigation.

The actual wreck-site can be visited by divers but only under licence from Historic England (HE).

It consists of two groups of cannon dating from 1600-1780 at depths between 12 and 15m.

The guns could be related but



are currently thought to be from two unidentified shipwrecks.

The Inshore Site at the toe of Chesil Beach includes nine variously sized English cannon cast between 1650 and 1725 that might

once have been part of a cargo. There are also gun fragments, concreted iron shot and timber fragments, thought to be the remains of a merchant ship.

There is evidence of destructive

salvage of the site in recent decades, says MAT, though it says it is likely that much remains preserved beneath the heavy concretions.

The Offshore Site 200m south comprises eight concreted cast-iron cannon, probably English. One was cast in the second half of the 17th century. Of lighter calibre than those at the Inshore Site, they were likely part of a ship's armament.

One theory is that they were jettisoned from an endangered vessel needing to lighten its load.

Since 2019 HE has funded MAT to investigate the sites with local divers and the Nautical Archaeology Society. MAT developed the interactive tour from survey to publication – it's at chesil.maritimearchaeologytrust.org ■



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'DIVING IS A WONDERFUL SPORT' – PRINCE PHILIP

THE LATE PRINCE PHILIP, the Duke of Edinburgh, a scuba-diver who became the British Sub-Aqua Club's first president in 1960, was paid a tribute by the club, the sport's governing body, soon after his death in April.

"I first put on a pair of goggles, or perhaps I should say a sub-aqua mask, 23 years ago," he had told BSAC members in his inaugural presidential address. "Snorkelling has given me endless pleasure ever since... and I am sorry I only met the acquaintance of aqua-lung diving rather more recently. I regret very much that I didn't start a great deal earlier."

Early underwater film-maker and BSAC member Ley Kenyon had taught the Duke to scuba-dive in a private pool at Buckingham Palace.

After that Prince Philip would dive when circumstances allowed from the Royal Yacht *Britannia*, making sure



Diving liveaboard: the Royal Yacht Britannia.

that the ship's complement included two Royal Navy divers with scuba equipment so that they could accompany him under water.

In an obituary on its website, BSAC said that although the Duke did not believe in holding any long-term presidencies, his association with the club was maintained after the end of his three-year term because of his conviction that the sport had a part to play in advancing science and understanding of the ocean.

His presidency instigated continuing royal patronage of the club. He was made an honorary life member, a new category at the time, and in 1974 Prince Charles took up the presidency, with his son Prince William taking on the role from 2014 to the present day.

In 1962 the Duke of Edinburgh addressed a letter to BSAC and international divers attending the World Congress of Underwater Activities in London. The conference had as its theme: "A Challenge: to Extend Man's Knowledge of the Last Large Unexplored Area of the World – the Sea."

"The great thing about underwater activities is that there remains a useful place for the amateur," wrote the Duke. "The part-time enthusiast can and does contribute to knowledge without vastly expensive equipment, and I'm sure he could contribute more if his efforts were well-guided."

"Unfortunately we in Britain do not have the same advantages as countries with warmer and calmer seas, but from what I have seen of the activities of the

British Sub-Aqua Club this in no way affects the devotion and enthusiasm of its members.

"The scope for increased knowledge of the sea and what lives in it is enormous and I am sure this knowledge, scientifically evaluated and pursued, is of the greatest importance in the future of mankind..."

"For whatever purpose, diving is a wonderful sport and occupation, and I wish all delegates many long years of enjoyable activities under water."

BSAC diver training was incorporated into the Duke of Edinburgh Award scheme in 1960,

and in 1964 Prince Philip decided to

introduce an annual award called the

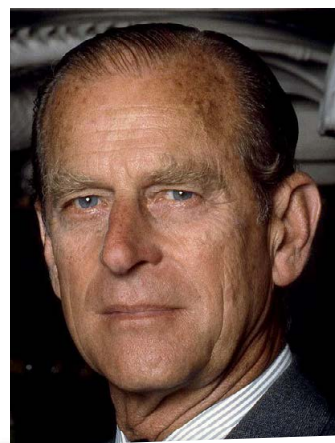
Duke of Edinburgh's Prize for scientific diving expeditions.

The British Sub-Aqua Jubilee Trust was formed to administer the prize

and to allocate grants to scientific diving projects.

Winning and commended expedition divers would receive personal congratulations from the Duke at Buckingham Palace every year for half a century.

"He continued the tradition long after the scaling back of his other duties," said the club, "with his final awards taking place in 2016, when an allotted 15 minutes turned to 45 as he savoured his exchanges with the winning teams." The Duke retired



The scope for increased knowledge of the sea and what lives in it is enormous and I am sure this knowledge, scientifically evaluated and pursued, is of the greatest importance in the future of mankind. I am therefore very glad to see the emphasis that the Congress is putting on Scientific discovery.

For whatever purpose, diving is a wonderful sport and occupation, and I wish all delegates many long years of enjoyable activities underwater.

from public duties the following year.

"Behind the banter was a passion for heritage and a belief in the alliance of science and diving," commented BSAC's chief executive Mary Tetley.

"In particular, you could see his eyes light up when he talked about the Royal Navy and naval history.

"He was our first Royal, and his association with BSAC gave us a special status. It came from his own deep fascination for diving, and his desire to share the beauty and richness of the underwater world." ■

DRINKING BEER TO SAVE THE OCEAN

OCEAN BEER has launched a range of bottled beers in the UK that it claims are the world's first designed to return 100% of all profits to ocean clean-up and conservation projects.

The three craft beers are Ocean Lager and Surfer IPA, both 4.8%, and the non-alcoholic Ocean 0.0.

The company was started in Portugal by three surfers, one Spanish, one Portuguese and one South African, who decided to brew beer on a sustainable basis to fund beach clean-ups.

They started with Surfer IPA in 2017, and last year launched Ocean Beer in Iberia as part of the Ocean Born Foundation.

The brewery says it aims for low waste and sustainable production, including labels made from

100% recycled materials, bottles made from over-70% recycled glass and all bottles and packaging being 100% recyclable. The full range is ethically brewed and vegan, it says.

"Our mission is to accelerate the pace of ocean clean-up and conservation by bringing to market an environmentally friendly product of which 100% of profits are invested into protecting the ocean," said CEO Pablo Martinez.

"By choosing Ocean Beer you are contributing to a greater good."

The beers will be available in the UK for £18 for a mixed case of six, or £72 for a case of 24, plus £7.50 delivery from retailer honestgrapes.co.uk. More on the brewer at oceanbeer.com ■



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PRASAT BUN SATHAN FOUNDATION

IN AN OPERATION with echoes of the rescue of a youth football team from the Tham Luang caves in 2018, rescue divers succeeded in extracting a Buddhist monk who had spent four days in flooded caves in northern Thailand.

Phra Ajarn Manat, 46, entered the Tham Phra Sai Ngam caves in Thung Salaeng National Park on 3 April to spend the weekend meditating.

Like the young footballers, however, he became trapped by floodwater. A sudden and unseasonal storm followed by continued rainfall cut off his exit route, forcing him to

retreat deeper and higher inside the extensive system.

Manat had visited the caves before, and it was local residents who were aware of his annual April pilgrimage to the caves who feared that he had become trapped and raised the alarm.

There was concern that he had no food with him.

Volunteers from the Prasat Bun Sathan rescue service along with police and park officials launched a rescue operation but were hampered by the adverse weather conditions and rising water levels.

After the rain had stopped, Manat

was located in a chamber some 400m from the entrance, just beyond a flooded sump about 12m long and 4m deep.

This time it was not necessary to call in international rescuers. Divers from a team of 17 from the Puen Pung Yamyak Foundation of the Thai Red Cross Society, which was also involved in the 2018 operation, dived through the sump into the chamber.

They kitted Manat out with scuba equipment and assisted him back out through the sump on 7 April.

He was said to be slightly feverish and exhausted but uninjured. ■



Diver's disappearance in Malaysia sparks debate about response

THE BODY OF a missing scuba-diver was found off Malaysian Borneo by fishermen five days after her disappearance on 17 April, 32 miles from her last known location.

The incident initially prompted criticism of an allegedly slow response by the authorities, who later launched an investigation with implied criticism of the diving arrangements.

Karen Chong, 31, had been diving in north-western Sarawak, where the Malaysian Maritime Enforcement Agency (MMEA) is responsible for search and rescue operations.

She had been with five other divers on a boat 23 nautical miles off the small island of Pulau Satang and had already dived with two men in the group. But at 4.20pm she began a solo dive said to have been intended to last for no more than half an hour.

It was not clear whether this was a continuation of the dive from which the men had surfaced.

When she failed to resurface after more than an hour, the other divers searched the area. They reported hearing a whistle early on, but could not determine the direction.

Chong's brother Brandon learnt of



her disappearance at around 7pm, and later told the *Borneo Post* that a dive-centre operator had suggested he alert the MMEA. He said that after trying its number 10 times without reply he had called 999 and was told that the agency would return his call.

Other authorities had got back to him, he said, though not the MMEA.

He said that after an hour of trying he finally made contact and reported his sister missing. He was told that the agency's nearest boat was out of fuel and that an SAR operation could not be launched until 7 the next morning.

Chong then took a boat out with other divers and searched until poor weather forced them to stop at midnight. They resumed on Sunday morning but he said there was no sign of the MMEA in the area.

The agency called him at around 11am and asked him to meet at the jetty where its boat was moored – still, according to Chong, unfuelled.

Before starting the search the MMEA wanted to hold a press conference, according to Chong, with him representing the family. It then began a boat-based search but Chong claimed that it was called off at 6pm.

"If that's really the way that the authorities are conducting their SAR operation, I'd say it's time for them to tighten their SOP [standard operating practice], because this is a matter of life and death," Chong told the paper.

His family had meanwhile arranged their own search by air.

An MMEA representative stated that it had been notified of the incident at around 8pm on Saturday through a 999 call and had begun its SAR operation at 9 the next morning.

It said that the Marine Police, Fire & Rescue Department and Civil Defence

Force were also involved.

After Chong's body was found the MMEA said it was investigating the fatality with the Royal Malaysia Police.

"The victim is believed to have dived alone without a dive-buddy," said deputy director of operations Captain Yousry Bin Yaali, adding that he did not discount her death having resulted from "human negligence."

The investigation would take in whether the boat had a valid licence for conducting diving activities and whether required safety precautions had been observed.

Scuba-divers were advised "not to be too passionate when carrying out activities to the point of ignoring their own safety," said Capt Yousry.

They should choose a "certified and authorised diving centre," not dive alone "without the presence of an experienced dive-guide" and use an SMB and also a personal locator beacon, "which really helps speed up the rescue process."

"The MMEA extends condolences to the victim's family grieving over the incident," said Capt Yousry. "May the family be strong through these difficult times." ■

MALDIVES DENIES PLANS TO PLACE SHARKS AT RISK

FOLLOWING SPECULATION in April that the Maldives was about to renege on its commitment to shark protection, the government issued a statement denying that it had any plans to lift its ban on shark-fishing.

The ban was imposed within the Maldives' 353,000sq mile Exclusive Economic Zone (EEZ) in 2010. The move came in response to concerns about shark stocks in its waters and in the wider Indian Ocean, where it was the first nation to declare its entire EEZ a shark sanctuary. It is one of only 17 such sanctuaries in the world.

The speculation had been fuelled by statements made by Minister of Fisheries, Marine Resources & Agriculture Zaha Waheed to the Maldives Parliamentary Committee on Economic Affairs.

However, she said that these had been taken out of context. She had been referring not to lifting the ban but to concerns about managing shark bycatch if the bigeye tuna longline fishery was reinstated.

Fishers targeting reef fish and yellowfin tuna had previously raised concerns about their target species suffering from more shark predation since the sanctuary was set up.

The ministry stated that, while it understood their concerns, the Maldives Marine Research Institute (MMRI) had carried out a scientific survey and preliminary results failed to indicate any significant increase in shark numbers since 2010.

Any perceived rise in predation on fish stocks could be linked to regular shark-feeding and increased disposal of biodegradable waste at sea, it suggested. These practices were

known to have a negative effect on sharks' natural hunting behaviour.

The ministry urged divers, the public and the tourism industry to avoid feeding or chumming to attract sharks.

Training agency PADI, which says that it and the wider diving industry were instrumental in establishing the sanctuary, had linked with Project AWARE and "200 concerned local and international stakeholders" to call for the ban to be maintained.

Its staff met Waheed to underline "the critical role sharks play in dive tourism," and PADI said that she had assured them that the government had no intention of overturning the ban, and remained committed to sustainable and responsible management of fisheries and marine resources.

"Sharks are a dominant force in dive tourism in the Maldives," said PADI Worldwide president and CEO Drew Richardson. "The Maldives continues to lead by example, among the most progressive countries on this critical issue."

Tourism accounts for an estimated 25% of Maldives' gross domestic product, with diving and snorkelling the most popular activity.

According to PADI, shark-fishing before the ban was worth only US \$700,000 to the economy, compared to \$2.3 million from shark tourism.

By 2018, it says, the shark sanctuary had increased dive-trip demand in the Maldives by 15%, raising an additional \$6m. According to consumer research any reopening of a shark fishery had the potential to halve dive-tourism demand. ■



Whitetip reef shark in the Maldives.

STEVE WENMAN

FREDA'S DIVER DISHES



Lasagne has never been my favourite dish but since becoming vegan I decided to re-invent it to my liking, especially as it was always one of Al's favourites. Back in the late 1990s, I would make 10 or so twelve-portion beef lasagnes at the start of each season and freeze them ready to reheat on our trips. We did a lot of 10-day charters back then, particularly to St Kilda.

I hope you enjoy this plant-based version as much as I do. It has become one of my favourite pasta dishes.

Roasted Cashew Nut Vegetable Lasagne



Ingredients

200g cashew nuts (soaked for 2-3hr); 2 leeks, roughly chopped; 2 sticks of celery, roughly chopped; 1 pointed red pepper, roughly chopped; 3 cloves of garlic, chopped; 3 large on-the-vine tomatoes; 2 tsp dried basil; 2 tsp dried oregano; 2 tsp dried marjoram; handful sundried tomatoes; 100g fresh spinach; 1 large courgette, chopped into 1cm cubes; box of lasagne sheets (pre-cooked); sea salt & pepper, olive oil; 50g plant-based butter alternative; 50g flour; 500ml milk; 150ml vegetable stock (1 veg stock cube).

Method

Soak cashew nuts with just-boiled water for 2-3hr in lidded container.

Place all vegetables and spices apart from spinach in a large deep oven dish, toss in olive oil and bake for 30min at 180°C.

Drain cashew nuts and add to roasted vegetables along with spinach. Season and cover with silver foil, then return to oven for another 30-45min at 180°C. Remember to toss vegetables halfway through. When they are soft, take the dish out of the oven and allow to cool.

To make the white sauce, melt butter in non-stick saucepan and add flour to make a roux. Mix well and continue to cook for a few minutes, adding milk slowly while mixing continuously with a whisk. Add vegetable stock and simmer for 10 min or so. Season to taste. If it seems a little thick, add a bit more milk. Scoop roasted vegetables into separate container and set aside.

Spread a layer of white sauce on the bottom of the now-empty oven dish, then add a layer of lasagne on top. Then a layer of roasted vegetables, then further layers of sauce, lasagne and roasted vegetables, followed by another layer of lasagne. Finish with the last of the white sauce and sprinkle your favourite cheese on top. Pop in the oven for 45min at 180°C.

Serve with homemade coleslaw and garlic bread.

Top Tip

If you use a vegan alternative cheese, sprinkle this on top just before serving, instead of before it goes into the oven. I use a parmesan equivalent, which is more flavoursome than standard grated vegan cheese, which basically tastes of nothing. If you have any of this lasagne left over it freezes really well and tastes even better next time around, if that's possible!

This is another sustainable meal that will turn the head of any lasagne fan.

* 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. £1 from every sale goes to Oceans Plastics Greenpeace, salutay.co.uk



Covid diver heroes in USA and Sweden

THE FOURTH AND FIFTH of Emperor Divers' eight Covid Diver Heroes have been named and, like previous winners in the dive operator's campaign to reward outstanding pandemic achievements in the global diving community, they have both been working in hospitals.

Phuong Cao won a free liveaboard dive-trip in the Maldives to be taken

Fighting Covid in NYC and Guam: diver Phuong Cao.



"when she finally takes some time off", and it was David White who tipped off Emperor about her dedication.

Phuong, 36, had been on the frontline in a New York hospital but then, on her weeks off, decided to take a second job on a Covid team working in the US Pacific island territory of Guam, treating patients under even tougher conditions, said White.

"She continues to commute 7750 miles each way and apply herself to both jobs for three months already and counting," he stated. "Her energy level has no limits and she's only happy when those in her care are on the mend. I think she definitely deserves a break!"

He suggested that the Maldives would be the best dive-location for Phuong, aware that she had previously dived in the Red Sea with Emperor.

"Wow, what a surprise!" she said on being informed of her prize. "Thank you for the recognition – holding my breath until I get back under water!"

Anaesthetist and intensive care specialist Ingrid Stubelius, 38, was also accorded a Maldives holiday. "For more than a year she has spent



Saving lives in Sweden: diver Ingrid Stubelius.

countless hours, nights and weekends helping the sickest people in intensive care at Sahlgrenska University Hospital in Gothenburg, Sweden," said her husband Fredrik in his nomination.

His wife had also provided "big support" for the entire medical team as Swedish Medical Association safety representative, he said, ensuring that "people don't get burnt out, that they get their needed and well-deserved breaks between shifts and that all people, doctors and patients, are treated in the safest way possible, at the safest places available."

Although her work had kept her away from diving Fredrik said that she would still "show up at home with a nice mask-squeeze from time to time, due to her protective equipment!"

The winner told Emperor that the prize "brought a little tear to my eye. As Fredrik says, under water is indeed a happy place for me and it is not an

exaggeration to say that the dream of diving again is one of the things that have given me energy in this long and terrible fight against the pandemic.

"And joining an Emperor liveaboard in the Maldives is truly a dream come true! The thought alone makes me want to get on a plane right away, but it will have to wait a while longer."

Emperor Divers still has two Red Sea and one Maldives holiday to give away and wants to hear from anyone who knows a heroic diver who would appreciate a free liveaboard trip.

They don't necessarily have to be hospital workers – just explain in 100-200 words why they deserve to win, and whether they would prefer the Red Sea or Maldives.

A multinational panel of Emperor staff pick a winner every two weeks but final Red Sea entries must be in by 20 May and Maldives by 5 June this year. Entries, comments and questions to heroes@emperordivers.com ■



Scuba Escape They were a bit shy about sharing the news but we like the sound of "the world's first scuba escape room" at north Wales' Vivian Quarry. Six four-hour underwater games of skill for six divers and players get the site to themselves – monthly prizes too. Sessions cost £220 for the team and you can book at scubaescape.org

Coast Diver "Why did nobody come up with this before?" asked Northern Diver when a Cornish motorhome hire company ordered a compressor to be fitted to a vehicle dedicated to roaming divers. Find out more in *Booking Now* on page 65.

Red Bulletin This 23min *Underwater Explorer* video for Red Bull concerns Danish cave-divers Klaus Thyman and Alessandro Reato, who went to check out reports of a prehistoric human skeleton in Cenote Angelita in Yucatan among other enterprises last year. Interesting.

Ocean Beer Must admit we haven't sampled this new-to-the-UK brew yet but we like the idea of drinking to aid the ocean – 100% of the profits go to ocean conservation and clean-ups. Cheers!

Diving podcast splash

UK-BASED FREEDIVING and scuba portal *DeeperBlue* has been recognised for producing the Best Sport Podcast at the international Webby Awards, which are described by the *New York Times* as the "Internet's highest honour".

The annual awards, now in their 25th year, were created to mark excellence among creators of digital content which, besides podcasts includes websites, video, advertising, media & PR, apps, mobile, voice, social media and games.

The *DeeperBlue* Podcast is a weekly half-hour magazine-style guide to underwater news, trends, equipment and events. Claire Graves, executive director of the Webby Awards, described it as "setting the standard

for innovation and creativity on the Internet.

"It is an incredible achievement to be selected among the best from the nearly 13,500 entries we received this year," said Graves. The contenders came from 70 countries.

"As a small, independent publisher competing against large internally known brands, it's truly fantastic to see our podcast honoured at this level," said *DeeperBlue* founder and host of the podcast Stephan Whelan.

Divers can subscribe via the main podcast platforms – find out more at podcast.deeperblue.com ■



SSI launches deco course and campaign

TRAINING AGENCY SSI has launched a Decompression Diving speciality to bridge the gap between its recreational diving and extended range or XR programmes.

It says it wants to give divers "a small taste" of more advanced diving without them having to commit to going technical.

The course trains divers to independently plan and conduct decompression dives to 40m with a maximum 15min accumulated deco time, using either traditional or sidemount systems, says SSI.

Its Extended Range Nitrox course remains the first choice for divers seeking twin-set training with limited decompression.

SSI is also running a campaign called *Back to the Water* to the end of June, with divers invited to support local dive-centres financially in return for a digital SSI Ambassador card and Scuba Skills Update Kit.

And the agency has revamped its website divessi.com to offer what it says are higher levels of interactivity and user-friendliness as well as profitability for its training centres and resorts. ■

Photo-artist Dray van Beeck dies in Bali

DUTCH UNDERWATER photographer Dray van Beeck, known for his imaginative digitally manipulated underwater images, died on 19 April at the age of 59, after contracting a bacterial heart infection.

Van Beeck was manager of Bali Diving Academy, a PADI 5* facility based in Pemuteran in the north of the Indonesian island, and also oversaw the centre's photographic training, conducting a wide range of workshops.

Van Beeck studied and taught art in the Netherlands but in 1997 started diving, becoming a dive professional the following year.

He went on to work as an instructor in Malaysia, the Canary Islands, Thailand, the Philippines, Indonesia and Egypt, where he conducted underwater photography workshops for six years until 2012 for Blue O Two.

A photography enthusiast from an early age, he had first taken a digital camera under water in 2002.

Combining his passion for capturing marine-life images with travel photography and digital art, he had considerable success in a range of photo-competitions from 2008 onwards.

Most recently he took first, second and third places in the creative category of the 2020 Beneath the Sea International Imaging Competition, reflecting his special interest in digital



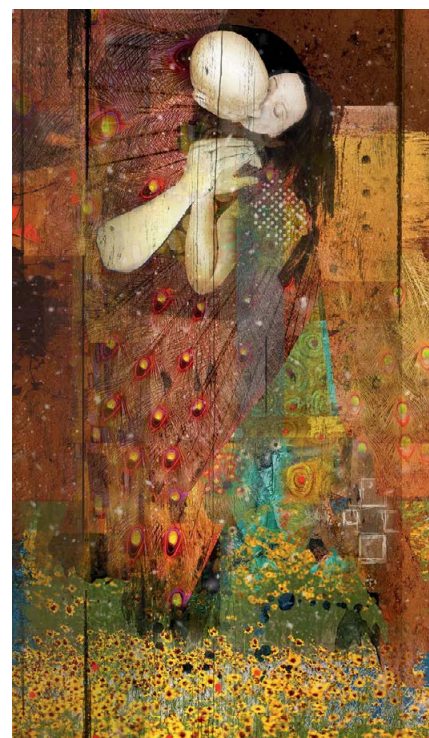
manipulation.

He wrote a book called *Creations* that exposed his "weirdest dreams, ideas and experiences", and much of his photographic work can be seen on his website aqualifephotos.com

Van Beeck's wife Karin posted on his Facebook page that he had left behind a public farewell message to be posted in the event of his death. It ran:

"Goodbye everyone, So it seems that this journey has ended for me. Don't be sad, I had a great ride. I met some amazing people in my life and some I can even call friends. You were there for me when I needed you, so thanks a lot for that.

"Meeting you, either on Facebook or in real life, was great. I learned a lot from many of you and you all made me a



DRAYVANBEECK

better person. If it was good enough, I will probably know by now. (Kicking Hitler's ass or being bored to death listening to Mother Teresa) I thank you all. Hope to see ya again.

"To the love of my life: Stay strong and continue your life. You made me a very happy man. Dray signing off."

He added what he said was his last digital manipulation, shown above.

Archaeological divers reveal more of 1760s Red Sea wreck



SUPREME COUNCIL OF ANTIQUITIES

EGYPTIAN ARCHAEOLOGICAL divers excavating an 18th-century merchant shipwreck site near Sadana Island, 22 miles south of Hurgada in the Red Sea, have reported uncovering its bow and central sections.

The 50m ship is thought to have

sunk in the 1760s but its design and construction, believed to be either Egyptian or Indian, is unlike that of any other known merchant vessel of any nation of the time.

The wreck lies on its side parallel to the reef, bow pointed inland. The stern is the best-preserved section



but other parts have broken away and slid down the slope to be buried in deep sand.

The work was carried out by divers from the Faculty of Arts of Alexandria University, supervised by Egypt's Supreme Council of Antiquities. They were continuing a series of excavations that began in 2017 to document the entire hull and use photogrammetry to produce a 3D model.

The wreck-site has been known about from before such techniques

were available. It was discovered by a US Naval Archaeology Centre expedition led by Dr Cheryl Ward in 1994. Lying 28-36m deep at the sandy base of a coral reef, it was the subject of major excavations with some 3000 dives up to 1998.

The ship appeared to have been extensively looted when found, with up to 80% of its cargo missing, so the archaeologists in the 1990s spent much of their time removing surviving artefacts for their safety.

More than 3000 items have been excavated, including Chinese porcelain, clay jars and glass bottles, coffee, Indian spices, fruit, nuts, resins and animal bones.

They are stored at a conservation laboratory in Alexandria.

The cargo showed that the vessel was heading north from the Far East when it hit the steeply sloping reef. Before the wreck's discovery there had been no record of traders with Asia sailing further up the Red Sea than Jeddah. ■

ONE OF BRITAIN'S most highly decorated post-war clearance divers, Warrant Officer Diver Terry Settle, has died at the age of 76.

In a *Daily Telegraph* obituary, military historian Capt Peter Hore RN, wrote that Settle was "remembered equally for his cool head as for his inspirational leadership."

Settle was born on 2 February, 1945 in Epping, Essex. His father, a Royal Navy diver, had helped to clear the Suez Canal in 1942/43.

Settle joined the navy as a boy seaman in 1960. With the frigate *Berwick* he took part in the Indonesia-Malaysia confrontation of 1963-66 and, with the frigate *Ajax*, the British withdrawal from Aden in 1967.

Over 25 years working as an explosive-ordnance clearance diver his awards culminated in the Queen's Gallantry Medal (QGM), and also included three Commander-in-Chief's commendations for bravery and expertise and, in 1980 the British Empire Medal for military service.

The QGM followed an outstanding exploit in September 1984, when Settle led a dive-team to investigate

'Inspirational' clearance diver Settle dies

after a number of ships had been hit by mines thought to have been laid by Libya in the Gulf of Suez.

His ship, the minehunter *Gavinton*, found an unidentified object half-buried in mud at 42m at the exit of the canal, wrote Hore. In poor visibility Settle photographed and surveyed the mine and used airbags to tow it into shallower water.

Suspecting it to be a new type of Soviet mine, he obtained a Soviet spanner from the Egyptian navy and used it to deactivate the device, which contained 600kg of explosives.

Five months later in the Persian Gulf during the Iran-Iraq war, Iraq struck the supertanker *Fellowship L* with an Exocet missile 2m above the waterline. The device ended up in the forward tank holding 23,000 tonnes

of crude oil, but failed to explode.

When asked if he could investigate within three weeks, Settle replied: "Twelve hours max." The oil was pumped out but, with France's Exocet manufacturer unhelpful, Settle had to make his own assessment to render the missile safe. He arranged its lifting from the bottom of the tank and disposed of it in deep water.

Also in 1985, Settle's Fleet Clearance Diving Team worked to clear the Grand Harbour in Valletta of wartime ordnance – though the divers had to conceal their identities because Malta's prime minister Dom Mintoff had ordered British forces off the island.

They managed to remove large amounts of weapons and explosive devices, and dismantled wrecks often



Bomb-disposal diver Terry Settle.

in difficult and dangerous conditions – with Mintoff as an occasional observer.

Settle later became an instructor at the Defence Explosive Ordnance Disposal School. He retired from the Navy in 1995, but ran his own health & safety consultancy called Settle For Safety. He died on 2 March, leaving his wife Margaret and two sons. ■

Giant trevally wanderlust and grants for shark & ray research

THE SEYCHELLES giant trevally drew the public's attention when televised attacking seabirds in *Blue Planet II*, but as a keystone species in the marine ecosystem it now needs protection, says the Save Our Seas Foundation.

The SOSF has just produced a study revealing that the fish has a wider range than previously realised.

Sea anglers prize giant trevally, which can grow to 1.7m and weigh as much as 86kg, and Seychelles is seen as prime location for catching the fish, leading to fears about its sustainability.

Geneva-based SOSF is participating in an initiative to determine which 30% of Seychelles seas should make up 13 Marine Protected Areas recently proposed by the government.

The foundation's study, carried out by its D'Arros Research Centre, indicates that giant trevally nurseries need to be conserved to safeguard the next generation, and that areas frequented by the adult fish are wider than had been suspected from previous studies elsewhere in the tropics.

Individual fish were acoustically



Dr Ryan Daly releases a tagged giant trevally.

CLARE KEATINGE / SOS FOUNDATION

tagged in 2019 and tracked across the Amirantes group of Seychelles outer islands. Juveniles stayed close to St Joseph Atoll but ranged more widely as they grew until, as adults, they were traversing the entire Amirantes Bank.

Large adults occasionally travelled even longer distances, probably driven by hunger and because their size made them more secure.

The Amirantes Bank including St Joseph Atoll has been designated a "Zone 2" protected area, in which fishing by foreign vessels is due to be banned.

The SOSF now recommends that all fishing of giant trevally other than possibly catch-and-release should be barred in this area, and that further protection measures should be

considered for the wider area.

Its study is published in the *Marine Ecology Progress Series*.

Meanwhile the SOSF is offering grants for scientists, conservationists and educators who graduated in the past five years and have plans for innovative shark & ray protection research and education projects in 2022. It says it has supported almost 400 such projects in more than 80 countries to date.

Its "Small Grants" programme is dedicated to supporting 12-month to 18-month projects, and initial applications are now open until 30 June, 2021.

You can find previous projects and complete the application form at saveourseasgrants.smapply.io ■



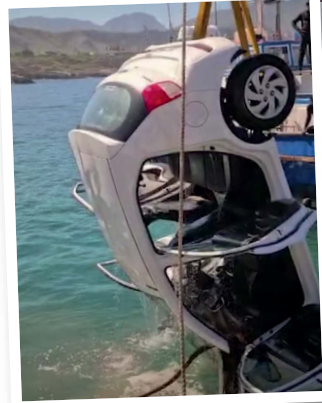
Measuring a juvenile blacktip reef shark – the SOSF has grants available.

DIVE-TRIP NO-DIP TIP

Here, with the benefit of hindsight, is some free advice for any divers leaving their car, even if only for a few moments.

Do apply the handbrake.

An American diver at the start of a nine-month road trip around South Africa had enjoyed a day out with Neptune Divers of



Hermanus New Harbour near Gansbaai, and left his scuba-gear overnight to dry.

When he came to collect it the next morning he was probably full of the joys of being on holiday.

Less so when, even before he had climbed the steps to the dive-centre,

a Neptune staffer yelled a warning.

You guessed it: his hire car, containing all his baggage including camera gear and laptop, had wheeled forward on full lock into the harbour. Now it was only his scuba-gear that was dry.

It took more than four hours to get clearance from the insurers to retrieve the car. Divers then jumped in to attach straps and the harbour crane, fortunately located nearby, hoisted the vehicle out.

The moment of immersion was captured on CCTV and is there for our education, along with the recovery, on YouTube. Handbrake. Always.

Octopus shrinks

Pleased to see *My Octopus Teacher* pick up first a BAFTA and then, the ultimate, an Oscar, both for best documentary.

The South African film beat off all competition like an octopus on a group hunting trip, and made a cephalopod a breakout Netflix megastar.

Octopuses are short-lived but this famous female lives on. Not to mention her student, freediver-on-a-mission Craig Foster. "He's a bit weird... but the octopus is amazing!" people keep saying to me.

But what I learnt only recently was that the film-makers had brought in an "octopus psychologist" (she isn't an octopus, she's Prof Jennifer Mather) to help penetrate the talent's inscrutable mind.

Prof Mather sums up octopuses as snails that have lost their shell. Their worldview she describes as one of constant tension between fear and curiosity.

Given their brief lives, Prof Mather must have quite a rapid turnover of clients.

But it's not like analysing human patients – we're relatively straightforward with our simple monobrain.

Octopuses have nine brains: their main one and another eight independent thinkers in each arm. Which is why another psychologist likens their experience of life to that of a school-teacher struggling to control a rebellious class. So weird.

Easy on the rice

Apparently I'm wildly out of date (not the first time I've been told that). I still thought

that if you flooded your underwater camera housing you needed to entomb the camera in dry rice as fast as possible to soak up every drop of moisture.

Often impractical on a dive-boat, but an expert told me recently that I couldn't be more wrong anyway, so I thought I'd share.

Don't try to switch your stricken camera on to see if it's damaged, tempting as that might be. Slip out the memory card and battery, dip the camera in fresh water and dry with paper towels.

Then leave in an airtight box full of silica-gel packets for hours, if not days. Resist charging or turning on until bone-dry. That will be one long, tense wait.



Far from being the best drying agent, I now know that uncooked rice is not at all good at absorbing moisture. As a grain made up of many layers that developed as it grew from a seed, it can suck up only limited amounts of liquid (though you would think risotto rice would be OK!).

Best in tests after silica is cat-litter, apparently, but I'd make sure to save all those gel packets which, after all, weigh nothing to keep in your dry-bag.

Smart whales

It's somehow comforting to hear that whales enjoyed some success against their human oppressors back in the bad old days when Moby Dick was a lad.

Sperm whales have the biggest brains in the animal world, and a recent study indicates that 18th-century specimens *taught each other* how to avoid harpoons.

Researchers digitised logbook entries from pioneer American whalers in the North Pacific and compared numbers of whales spotted with those harpooned.

Over 80,000 days at sea, only 2400 whales were sighted. And the whalers' strike rate plummeted by 58% within 30 months of starting to hunt. The researchers had expected the whalers to have grown smarter, but in fact it was their quarry.

The whales quickly twigged how they were being killed, shared this among their pods and changed their behaviour.

Instead of forming defensive squares as they would to beat off orcas, they swam for it – realising that by swimming against the wind they could outrun sailing ships!

Ultimately the poor old whales couldn't evolve faster than human technology – ships with engines and powered harpoons – but for a time, at least, they gave those whalers a run for their money.

Fantastic beasts

Chimeras are fantastical creatures from Greek mythology assembled from the parts of different animals, and the word has been in the news lately as scientists controversially work towards producing some sort of human-monkey hybrid.

Handy if you're a diver for climbing boat-ladders, I suppose.

The word chimera has also come up in connection with a creature that really did exist, but a long time ago.

Sharks and rays look so unlike each other that I often wonder how they got to be that way, but this newly described fossil discovery in Mexico appears to provide a significant missing link.

It's a shark with a ray's wing-like pectoral fins, and then some. It swam around in Cretaceous oceans,

by which period the elasmobranch family had already been around for some 360 million years.

It didn't know it 93 million years ago but it now has a name – the eagle shark, *Aquilolamna milarcae*. The fossil wasn't

huge at 1.65m but its wingspan was greater than its length at 1.9m. It had a big sharky tail, and its wide mouth and lack of big teeth indicate that it was that rare thing at the time, a plankton-feeder.

The find opens previously unsuspected doors to those who study shark and ray development, we're told.

What a shame we'll never get to dive with one.

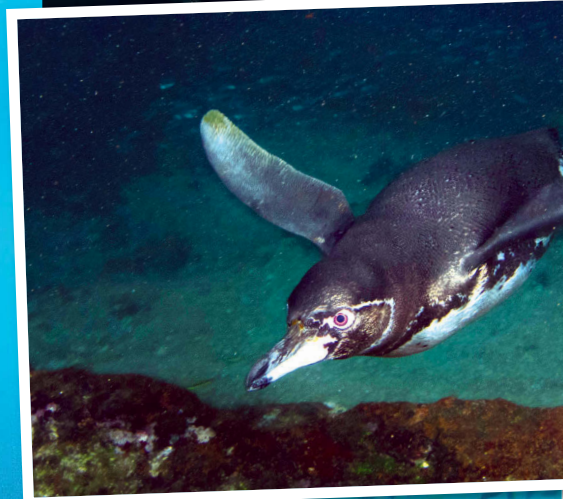


OSCAR SANISIDRO

SENSORY OVERLOAD



BRANDI MUELLER returns to Galapagos 15 years after her first visit. Would it be as good as it was then? Take a wild guess!



WE HAVE BEEN UNDER WATER for almost an hour. Our dive-guide Walter is summoning us away from the reef and into the blue for our safety-stop. I'm not ready yet, though my computer, air gauge and our dive time-limit suggests otherwise.

But another three hammerheads swim past and the hogfish that has become my sidekick for the dive is still swimming nose-to-nose with me and my mask.

I follow to 3m as requested, mentally whispering thank-you to the ocean for another amazing dive in Galapagos.

Then I'm suddenly surrounded by pink – a school of Pacific creole wrasse has engulfed our group.

I spin in a circle and they're on all sides, above and below. Through the pink curtain of zigzagging fish comes a shadow from below – a turtle slowly swimming towards us.

Aiming my camera in its direction, I notice another shadow to my other side.

A hammerhead – at 3m! The lighting is perfect, the shallow water clear and I can't decide which direction to shoot first.

The hammerhead wins.

Suddenly all the fish turn and disappear. We're alone in the blue again, until I see what has made them depart.

A yellowfin tuna longer than me (and quite a bit pudgier) cruises past me. Once it's out of sight, we're surrounded by pink again.

I see the other divers surfacing and can hear the

dinghy moving closer, but I still hold back. Already having made a habit of being the last one aboard (yeah, I'm that girl) I turn and there is another turtle, surrounded by silver pompano fish.

This is super-interesting behaviour, where it looks as if the fish are cleaning

the turtle but are in reality using its rough shell to clean themselves. They dart down onto the shell and twist sideways in a bid to remove parasites and dead skin.

I look up and the first diver is still passing up his gear, with several others still at 3m.

I have time to take a few photos. Did I mention that I'm being "that diver" yet?

I really want a shot of this behaviour. Generally I know better than to chase

Above: Turtle going up for a breather.

Opposite, clockwise from top: massed barracuda; diving penguin; Pacific creole wrasse; passing hammerhead.

Below: This sea-lion started behaving like a dolphin when the pod came past.

anything, but time is running out and I don't think anyone else has seen the turtle or will be mad if I scare it away.

I snap a few shots, but not quite close enough, before it moves away.

Then I see a hammerhead less than a metre from me. All this is happening within the haze of pink wrasse, which go on moving up and down, eating plankton and obscuring my vision beyond them.

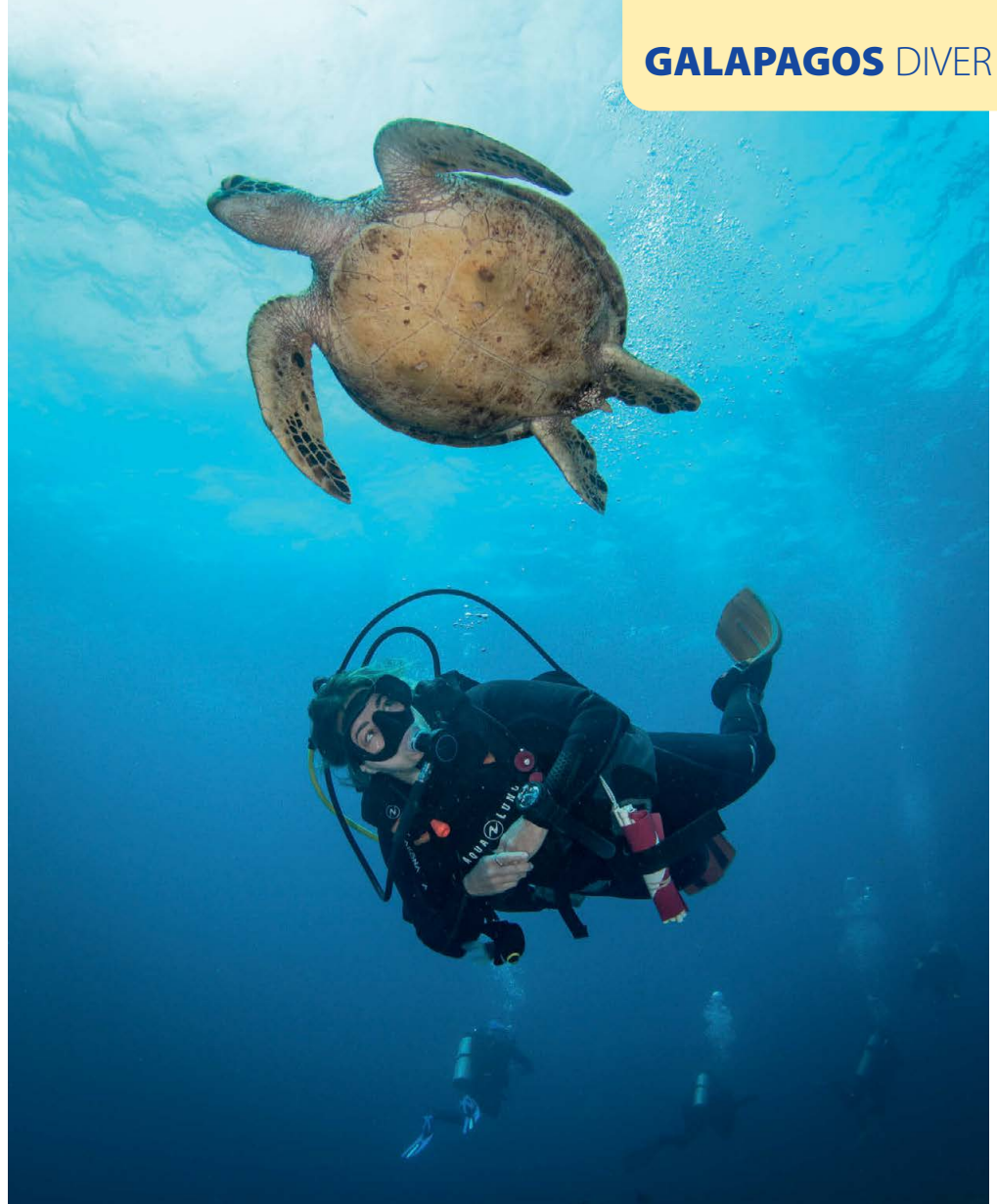
Looking to see if any divers remain under water, I see our dive-guide filming in the distance. I swim towards him – if I'm with *him*, no one can get mad at me.

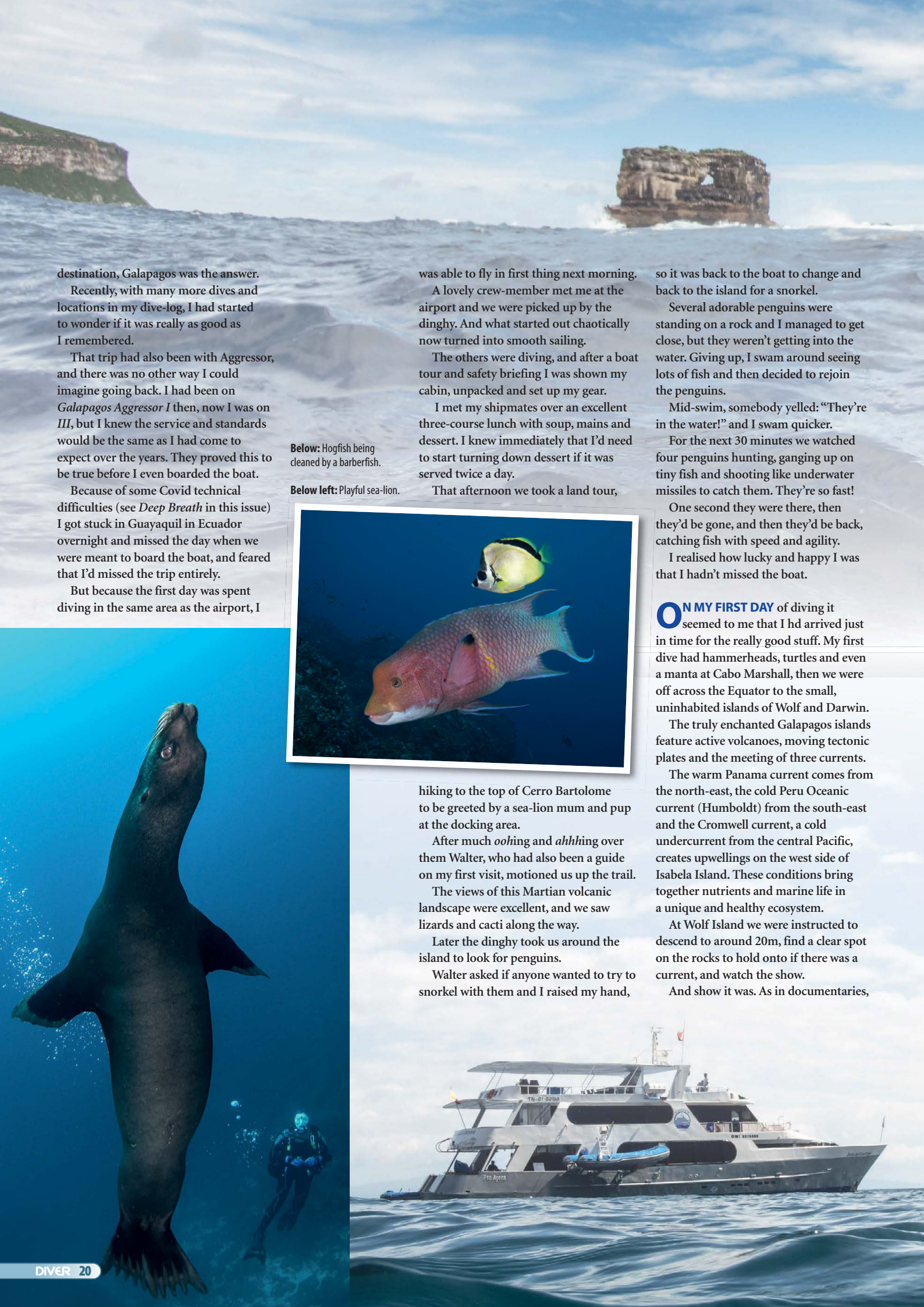
We slowly surface but keep dipping our heads to watch more hammerheads, turtles and pink fish.

I don't want to get out – and that's only the safety-stop of one dive in Galapagos.

As the dinghy takes us back to the *Galapagos Aggressor III*, dolphins jump all around us. I hope the surface interval passes quickly.

IT HAD BEEN 15 YEARS since I was last in Galapagos. That first trip had been transformative; my first dives with big animals, current and cold water. I was in my early 20s and from that point on if anyone asked about my favourite diving





destination, Galapagos was the answer.

Recently, with many more dives and locations in my dive-log, I had started to wonder if it was really as good as I remembered.

That trip had also been with Aggressor, and there was no other way I could imagine going back. I had been on *Galapagos Aggressor I* then, now I was on *III*, but I knew the service and standards would be the same as I had come to expect over the years. They proved this to be true before I even boarded the boat.

Because of some Covid technical difficulties (see *Deep Breath* in this issue) I got stuck in Guayaquil in Ecuador overnight and missed the day when we were meant to board the boat, and feared that I'd missed the trip entirely.

But because the first day was spent diving in the same area as the airport, I

was able to fly in first thing next morning.

A lovely crew-member met me at the airport and we were picked up by the dinghy. And what started out chaotically now turned into smooth sailing.

The others were diving, and after a boat tour and safety briefing I was shown my cabin, unpacked and set up my gear.

I met my shipmates over an excellent three-course lunch with soup, mains and dessert. I knew immediately that I'd need to start turning down dessert if it was served twice a day.

That afternoon we took a land tour,

so it was back to the boat to change and back to the island for a snorkel.

Several adorable penguins were standing on a rock and I managed to get close, but they weren't getting into the water. Giving up, I swam around seeing lots of fish and then decided to rejoin the penguins.

Mid-swim, somebody yelled: "They're in the water!" and I swam quicker.

For the next 30 minutes we watched four penguins hunting, ganging up on tiny fish and shooting like underwater missiles to catch them. They're so fast!

One second they were there, then they'd be gone, and then they'd be back, catching fish with speed and agility.

I realised how lucky and happy I was that I hadn't missed the boat.

ON MY FIRST DAY of diving it seemed to me that I had arrived just in time for the really good stuff. My first dive had hammerheads, turtles and even a manta at Cabo Marshall, then we were off across the Equator to the small, uninhabited islands of Wolf and Darwin.

The truly enchanted Galapagos islands feature active volcanoes, moving tectonic plates and the meeting of three currents.

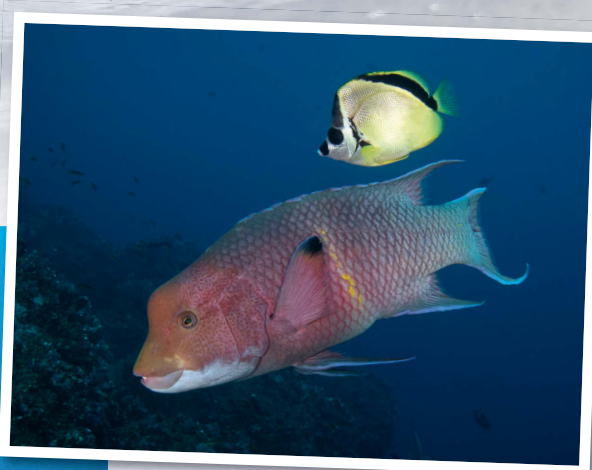
The warm Panama current comes from the north-east, the cold Peru Oceanic current (Humboldt) from the south-east and the Cromwell current, a cold undercurrent from the central Pacific, creates upwellings on the west side of Isabela Island. These conditions bring together nutrients and marine life in a unique and healthy ecosystem.

At Wolf Island we were instructed to descend to around 20m, find a clear spot on the rocks to hold onto if there was a current, and watch the show.

And show it was. As in documentaries,

Below: Hogfish being cleaned by a barberfish.

Below left: Playful sea-lion.



hiking to the top of Cerro Bartolome to be greeted by a sea-lion mum and pup at the docking area.

After much *ooohing* and *ahhhing* over them Walter, who had also been a guide on my first visit, motioned us up the trail.

The views of this Martian volcanic landscape were excellent, and we saw lizards and cacti along the way.

Later the dinghy took us around the island to look for penguins.

Walter asked if anyone wanted to try to snorkel with them and I raised my hand,





the schools of hammerheads passing before us darkened the blue water with their unique shapes. Some came close, as did Galapagos sharks and so many turtles.

The hammerheads come to the area to be cleaned by king angelfish and barberfish. It's incredible to see these big, mean-looking sharks allow the pretty purple angelfish to pick at their faces and backs to remove parasites – but they don't eat their cleaners.

ONE DIVE AT WOLF was undertaken in hopes of seeing sea-lions. There

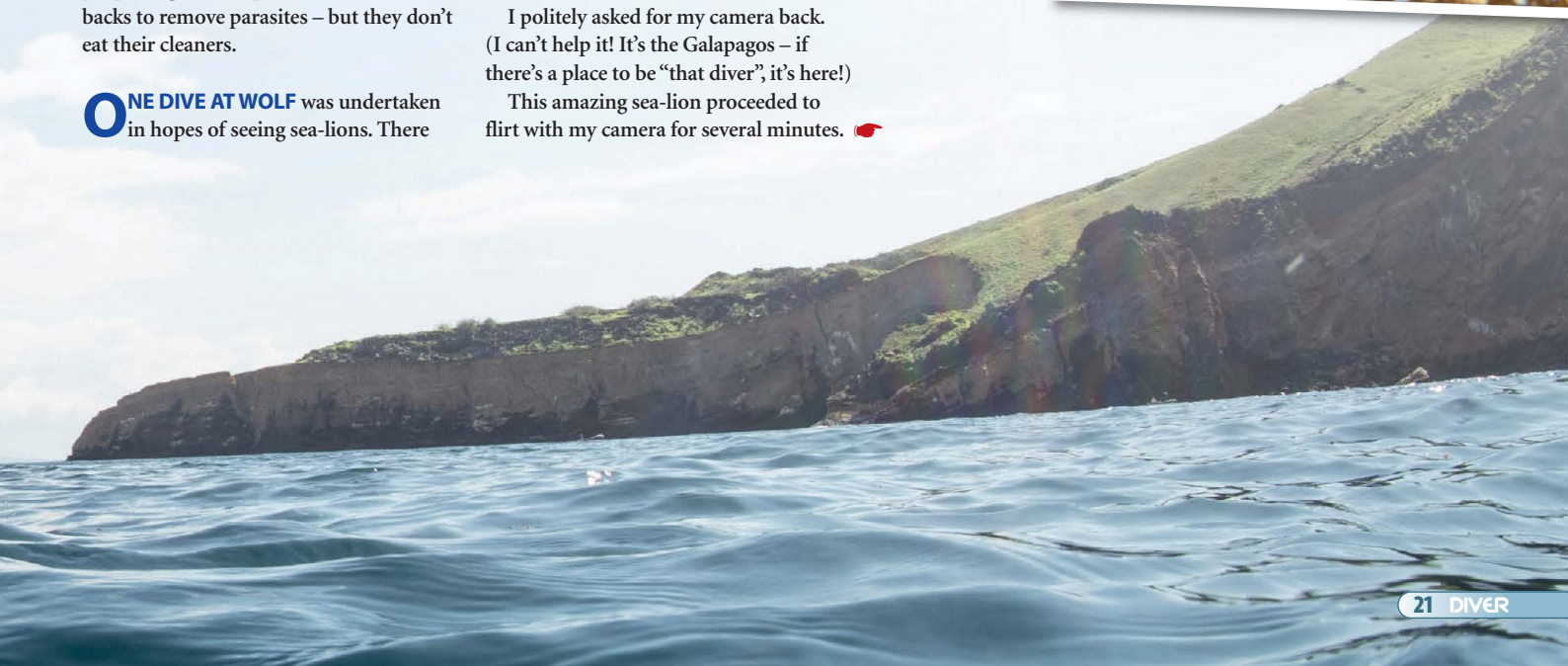
were a few, but it was the end of the day in low light and a swell was pushing us back and forth in the shallows where the sea-lions were.

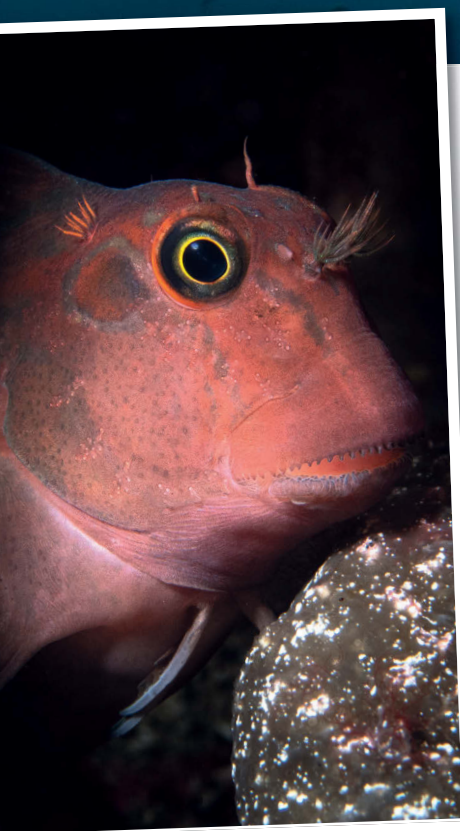
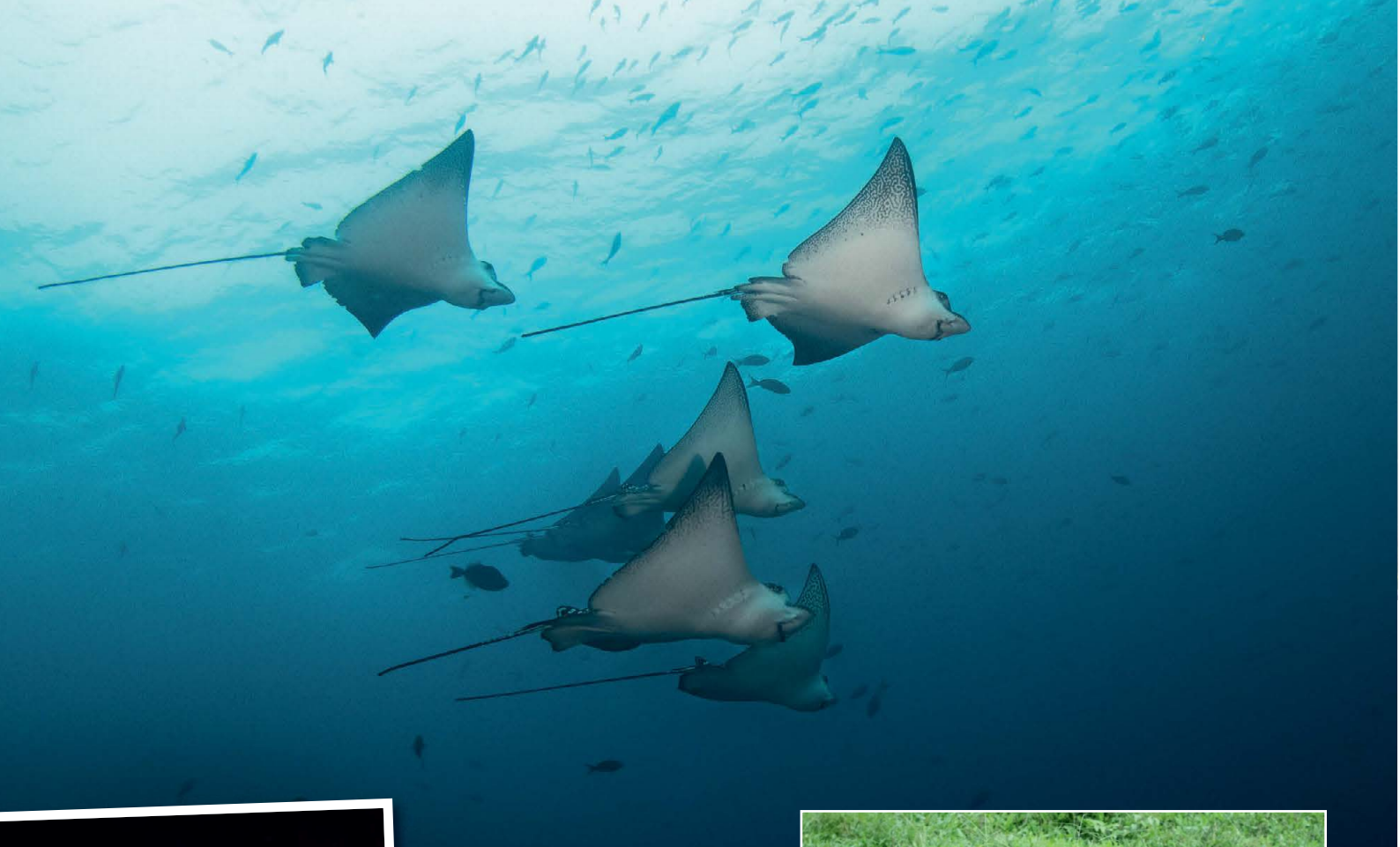
At the end of the dive everyone was back on the boat and I handed my camera up to the driver. The people on the boat gasped and pointed behind me. An adult sea-lion had surfaced not 2m behind me.

I politely asked for my camera back. (I can't help it! It's the Galapagos – if there's a place to be "that diver", it's here!)

This amazing sea-lion proceeded to flirt with my camera for several minutes. 🐾

Clockwise from above: Hammerhead sharks at Wolf; seahorse; octopus.





It would spin and blow bubbles right at it, then twist and turn away for a second before coming right back to my dome-port.

It might have been seducing its own reflection. I didn't care, it was amazing.

After getting a few shots I could be happy with, I switched to video intending to film just for a few seconds.

I was feeling guilty that the others were all waiting for me. But this sea-lion!

After perhaps 30 seconds it seemed to be leaving. I kept shooting, hoping to get that classic end shot of the animal swimming away, when I saw a shadow behind it. Straining to see what it was, there was another – and another.

The sea-lion looked back at me, as if checking that I was seeing this, as a massive pod of bottlenose dolphins swam by. The sea-lion continued to dance and spin, acting as if it was a dolphin.

Once the school disappeared into the blue (I was beside myself with emotion by



Clockwise from top: The eagle rays had been elusive but turned up eventually; Galapagos must-see – giant tortoise; the extraordinary red-lipped batfish; blenny.

now) the sea-lion came back up and stuck its face right into my camera before blowing bubbles and swimming off.

Luckily the other divers had jumped in when they saw the dolphins, so they could also enjoy this magical moment.

TOWARDS THE END of the trip we dived around the west side of Isabela Island, where colder water supports a marine ecosystem quite unlike that we had seen at the beginning of the trip.

The temperature dipped to 15°C and the underwater landscape was far more temperate, with algae-covered rocks and colder-water marine life.

I remembered this dive from my previous trip, being blown away that not only did the Galapagos have big animals but this site had seahorses and frogfish too. Thanks to Walter's excellent spotting techniques, I saw these again, as well as nudibranchs and a lot of





colourful blennies.

Another dive in the same area at Cabo Douglas around Fernandina Island felt like freezing-cold muck-diving, searching for the infamous red-lipped batfish, a strange creature with bright ruby lipstick.

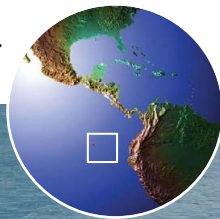
Later in the dive I saw something fly past me. It was a cormorant!

There is something so strange but amazing about seeing birds under water.

Continuing with strange things, we finished the dive in the shallows, where Godzilla's spawn were hanging out.

Marine iguanas, looking like small dinosaurs, were munching algae off rocks.

Clockwise from above: Godzilla's spawn – a marine iguana; nudibranch; surprise – a cormorant hunting under water; blue-footed booby with its egg; a dolphin performing off the bow.



FACTFILE

GETTING THERE ▶ Aggressor departs from Baltra Island (GPS) in Galapagos. Flights are from Quito (UIO) or Guayaquil (GYE) in Ecuador. Most routes from the UK transit through the USA in Miami or Houston before continuing to Quito. Aggressor staff meet passengers at the airport.

DIVING & ACCOMMODATION ▶ *Galapagos Aggressor III*, aggressor.com

WHEN TO GO ▶ Diving is year round but animal sightings are seasonal, so plan accordingly. December to May is rainy season with warmer water of 21-30°C and sightings include hammerheads, mantas and eagle rays. June-November is dry season (16-24°C) and this is the time to see whale sharks.

HEALTH ▶ Recompression chambers in Puerto Ayora, Galapagos and in Guayaquil. Current Covid requirements for Ecuador include a negative RT-PCR test within 10 days of arrival. Galapagos also requires a negative RT-PCR test within 96 hours of arrival. Aggressor recommends planning a night in Guayaquil where a Covid test can be arranged in your hotel room and the results are delivered by email within 24 hours.

MONEY ▶ US dollar. Credit cards accepted on the boat and some tourist establishments (sometimes with fees). Cash is needed for transport and smaller restaurants and shops. ATMs on Santa Cruz.

PRICES ▶ Return flights from £900. Seven-day charters from US \$6595 (two sharing). \$100 park fee and \$20 Galapagos visitor visa.

VISITOR INFORMATION ▶ galapagosislands.com




Returning to the island of Santa Cruz, on a final dive at Cousin's Rock we saw a school of eagle rays we'd been searching for all week. We spent the afternoon on a land tour, because no trip to Galapagos is final without seeing the giant tortoise.

I also spent an extra day bird-watching at Seymour Island, where the frigate birds were mating and the males were showing off their big red pouches to the females.

We spotted a few blue-footed booby birds – one even had an egg!

This is one of the best diving locations on Earth, and experiencing it with Aggressor Fleet is the way to do it.

Even in these Covid-difficult times the crew was fantastic, the service impeccable, and I left needing to go on a diet after eating so much wonderful food.

I hope it doesn't take 15 years to get back to Galapagos again. 

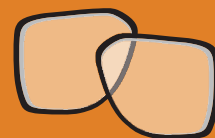


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BEN DUNSTAN dives with any number of purposes in Cornwall, but finding lost-lost shipwrecks is a primary one. Here are two



recently investigated sites of interest in the vicinity of the Manacles

COPPER & IRON

TALE OF TWO SHIPWRECKS

A **S WE CONTINUE** our search for long-lost wreck-sites off the Cornish coast we expand our search areas, and the hard work starts to pay off once again.

Along the way we find items from forgotten wrecks – several anchors, a large iron windlass and the site of an unknown sailing vessel from the early 1900s but with little left to identify it.

Many of these finds come from small

magnetometer signals and might not seem particularly significant. However, we know that many wrecks in this area were mainly timber-built and would have few iron features remaining to give bigger signals. So every hit needs to be checked out.

This leads to a lot of uneventful dives, but the area is usually pleasant enough to drift over, so even if no wreckage is located it remains an enjoyable day out.

Another approach is to ask other local divers if they have ever noticed pieces of wreckage on their reef-dives.

That's how we hear a story of an anchor sighting in an area of reef that's rarely dived, and slightly deeper than where we have been looking, at 25-30m.

Another local dive-club story from years ago involves a bell being picked up on a drift-dive not far from this area, but with no wreckage in sight.

The bell had no name but is said to have been inscribed simply with a date: 1788.

We decide it's worth checking out and start to survey the area.

A few hours in, we have picked up only one small signal, but decided to dive anyway, to satisfy our curiosity.

As we descend the shotline to almost 30m the light fades away, and our eyes slowly adjust to the surroundings.

Visibility is excellent and we are below the kelp line, making it easier to cover a large area more quickly.

The only downside is the time limitation, because we're using only single cylinders, so our no-deco times are short.

It isn't long before we see an unnatural shape on the sand in the distance. As we approach we're disappointed to realise that it's something we've seen before – a large quarry dumper-truck tyre.

Like others in the bay, this has originated from the nearby quay at Dean quarry, and would once have been used as a fender for the small coasters that would come in to pick up aggregate.

The quarry had closed years ago and the abandoned fender chains would corrode one by one, allowing the tyres to drift off in all directions with the tide.

We have found a similar one in much shallower water, the steel circular-patterned wire giving an excellent magnetometer signal.

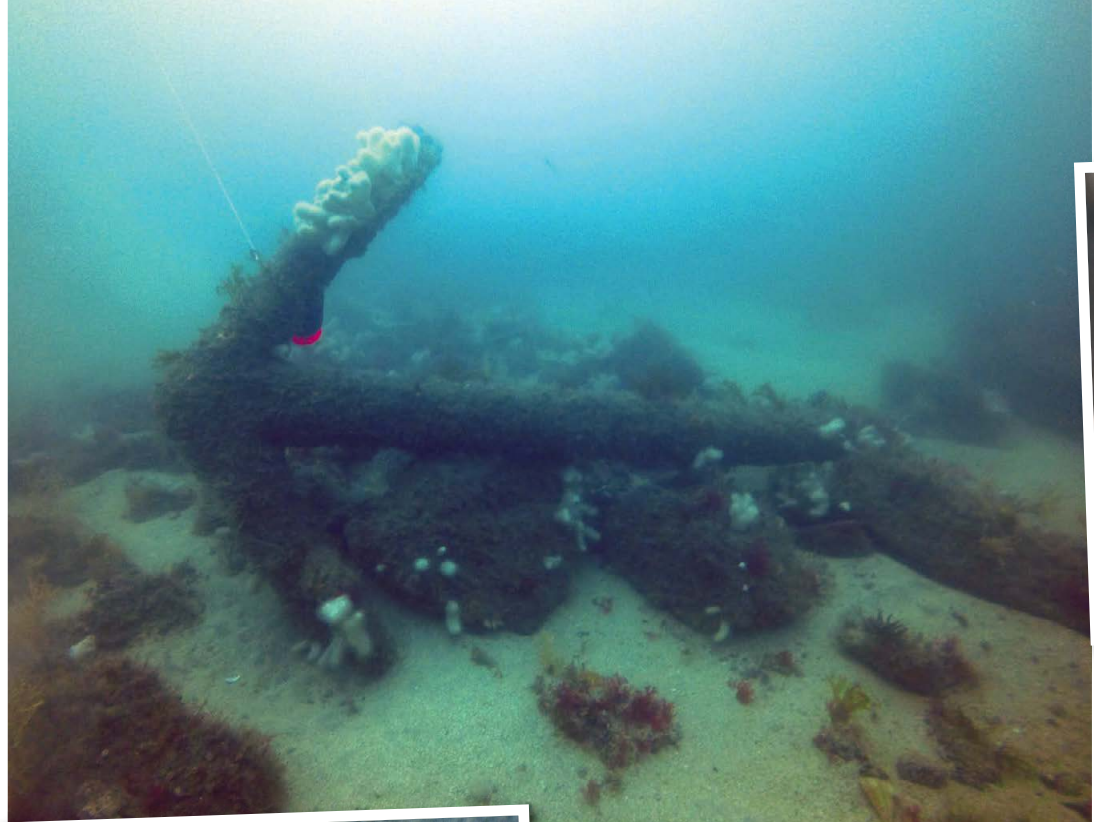
But this site is far deeper and the signal much weaker and shorter.

As we leave the tyre and its inhabitants alone and drift off, another shape catches my eye just 10m away. Is this another remnant of the quay or quarry?

I get closer and the unmistakable shape of an old anchor appears, sticking up out of the reef. Success!

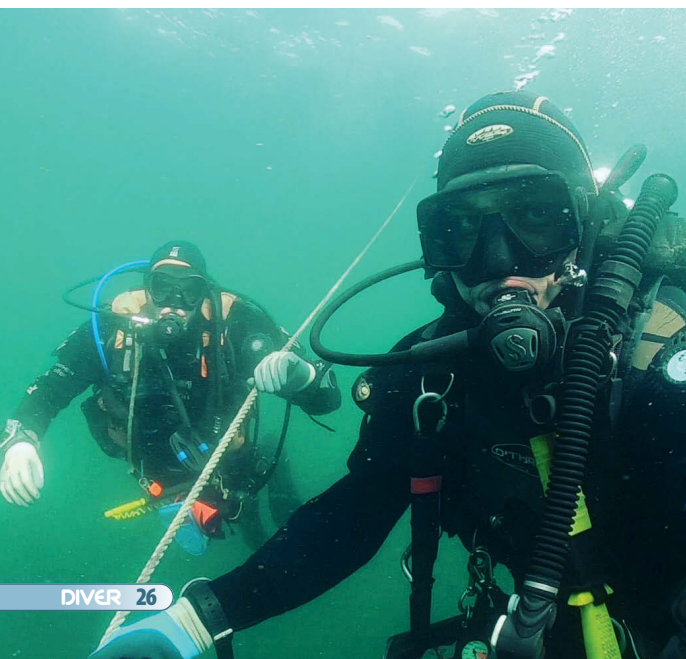
THAT TYRE JUST happens to have come to rest beside what appears to be a very old wooden wreck-site.

Little remains, but tiny clues suggest



Above, clockwise from top: The anchor at the first site discovered; copper-green slag rock; the first coin found was a George III halfpenny.

Below: Selfie on the safety stop.



that this is what's left of an uncharted and unknown ship.

We're lucky enough to spot a small copper coin on the seabed between some rocks. Coins can be a great way of determining nationality and age, though they can also be misleading.

Foreign or older coins were sometimes carried as souvenirs by ships' crew.

Another feature of the site that seems interesting is a scattering of green rocks.

Closer inspection suggests likely copper content – later analysis will show that this is likely to be copper slag or a copper industry by-product.

This is just the start of a series of copper-themed artefact finds. That first coin is corroded but reveals itself as a George III halfpenny. This gives us a likely time-frame of 1760 to 1820.

Subsequent dives reveal many more coins, though these are buried beneath the surface. The mystery of the ship's cargo begins to deepen.

Many of the coins are different, well-worn and some even seem to have been defaced, while others are in good condition but smooth blanks that never

appear to have been stamped.

There are more well-worn George III halfpennies but also earlier ones, from the reign of George II.

There are also many "Condor tokens". These would be minted around this time period by individual towns, cities and regions during national currency shortages, and we find examples from Swansea, Birmingham, Liverpool, Anglesey, Manchester and Ireland.

Why would this strange collection of coins be carried in a single cargo?

Several are in good enough condition for the dates to be read, with the latest so far being 1798, giving us a start date for searching the archives.

There are also small copper and brass items such as drawer handles, hinges, ship's fittings, musket parts and navigational tools such as a small set of dividers.

We also find the remains of telescope ends complete with guillotine shutters to protect the eye-pieces, again in keeping with a late 18th- / early 19th-century time period. There is also a small iron cannon or carronade, indicating along with the



musket remains that this was a small armed merchantman, possibly carrying some cargo of value.

Realising that this site could be historically significant we notify Historic England. We then work with HE as it sends a team to investigate the site and study the artefacts we have raised and the evidence we have collected.

We think we might have made a breakthrough after finding a small brass item that appears to be a wax-seal stamp, engraved on the end with a fine image of oak leaves and acorns, but so far this has baffled us and the experts alike.

OUR LONGEST-ESTABLISHED theory is that the ship was carrying waste from the Cornish copper industry that still contained some copper, loaded at Falmouth or Truro, along with bags of scrap copper and brass items to be melted down for its metal value.

This could have included the large amount of out-of-date and defaced coins being taken out of circulation.

The ship might have needed some armaments and security aboard to stop a potential attack from any locals who got wind that it was carrying potentially still-spensible cash.

The ship could have been heading around the Cornish coast to an area such as Swansea, where abundant coal would have made it a more suitable place for recycling such materials.

It most likely hit rocks on the Manacles rocks soon after leaving, sinking quickly into slightly deeper water and possibly



taking all the crew to the bottom.

Or the wreckage might have drifted out to sea so that the ship was simply recorded as having been lost somewhere *en route*, explaining why no obvious candidates appear in the archives.

It's an intriguing story, and we hope that further diving and research could reveal clues to the ship's identity and solve this Cornish shipwreck mystery.

And one day we hope that the artefacts will be displayed in one of our local museums.

OTHER WRECKS are less enigmatic. From shipwrecks to interesting reefs covered in life, shallow to deep, Falmouth is a perfect dive-location when the wind isn't in the south or east at any great strength or for any length of time.

Luckily most of Cornwall's prevailing weather comes from the south-west, so the Manacles reef is fully protected from the large land-mass to the west known as the Lizard Peninsula.

Covering around a square mile, it is said to have been responsible for more than 100 shipwrecks and more than 1000 lost lives.

Most of the many divers who visit the area will have dived wrecks such as the Victorian liner *Mohegan* or the WW1 cargo ship *Volnay*, but only they and two or three others are regularly dived, along

Top from left: The brass wax-seal, but the engraving has yet to be identified; a selection of the coins found at the first site.

Below, from left: The *Juno* as she sank in 1917; diving into the kelp in search of undived wreck-sites.

with a handful of impressive reef sites.

Over the past few seasons a small group of us have been trying to locate some of the missing wrecks, though we have little to go on. Many of the sinking reports are listed simply as "hit the Manacles", and with the area's strong tides pushing sinking vessels north or south, even when the impact site is known the final resting place is often a guessing game.

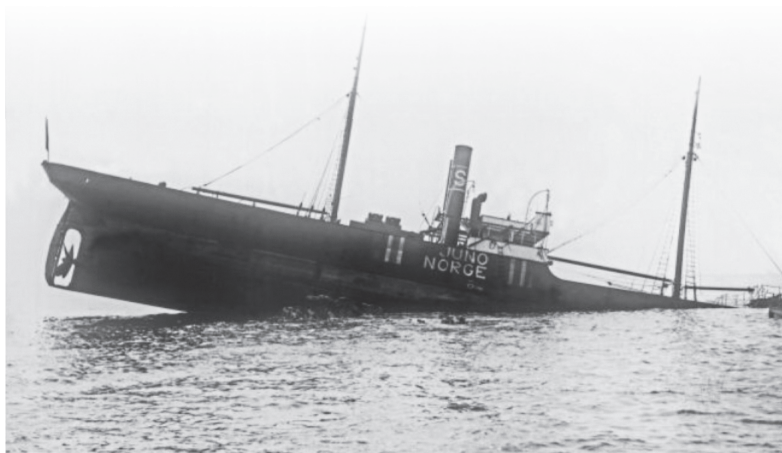
We have to rely on the magnetometer. We try a towed sidescan sonar but the rocky terrain and gullies make spotting wreckage in this way very difficult.

We soon obtain some good signals. In some cases we already know of a wreck occurring in the vicinity, such as the Norwegian steamship *Juno*, which struck Carn Du rock in fog in 1917.

We quickly find and identify the remains jammed up against the rockface rather than in deeper water as the charts would suggest. *Juno* is known to have been well-salvaged.

After a few more sessions, however, we start finding undived sites. I have heard from a charter-boat skipper whose divers have come across iron ballast-blocks in a gully but failed to locate a vessel nearby.

Could the blocks have come from one of the many sailing vessels lost off the reef? At least locating them with the magnetometer would teach us what type of signal they would provide.



The seabed consists of rough gullies and rock pinnacles. The tide roars over them, the long strands of kelp looking to be slowly flapping in the wind.

A quick search indeed reveals a scattering of iron blocks. It's hard to date – ballast like this has been used for hundreds of years, and can still be found in some fishing boats.

I continually check my compass. Large rocks loom into view, some rising almost to the surface from the 9m seabed. I think about the boat-minder, and hope he has followed my clear instructions not to follow our bubbles too close to the rocks.

It's at this point that I take a good look at one of the bigger rocks rising ahead of me. Its shape doesn't look right, nor does its colour. I'm staring at wreckage.

It's a small steam-engine smothered in kelp, but the more I look the more I can recognise: two cylinders, a flywheel with an exposed crank, the shaft still attached to the rear of the gearbox. Now we notice many more iron girders and steel plate strewn around the gully behind.

We have discovered the remains of a small iron steamship, uncharted and seemingly unsalvaged. On the end of the propshaft the iron propeller still stands, half-buried in the reef and smothered in growth. I can clearly see the stern and the

[illegible]

Below, from left: A porthole — a good sign that no rummaging has gone on before; propeller.

We take many photos and head back into deeper water before deploying our SMBs. Excitedly we discuss our discovery on the way back to Falmouth.

We soon work out what we have found, because most of the wrecks in the area are earlier sailing vessels and few early steamships are unaccounted for.

THE AURA WAS a 470-ton cargo ship heading from Plymouth to Waterford on the night of 9 April, 1869, when she struck the Manacles in hazy weather.

Every effort was made to get her off the rocks but she became a total wreck.

Of special interest is a newspaper article that describes the sinking and the events that preceded it. The captain had submitted a written statement in which he had accounted for the loss of the vessel.

He stated that under recent repairs in Plymouth 150 tons of iron ballast had been added, and that the ship's compasses were not reswung afterwards to adjust for this. This compass error of a few degrees was enough to put the vessel on a more northerly course.

Overnight and with no warning lights on the rocks, the *Aura* was set on a collision course for the deadly Manacles.

There was no loss of life or valuable cargo, so it seems that the wreck was quickly forgotten about.

Those cast-iron ballast-blocks we had first located further out could have been

We have now dived the site many times, but despite finding numerous artefacts we have yet to obtain a positive ID.

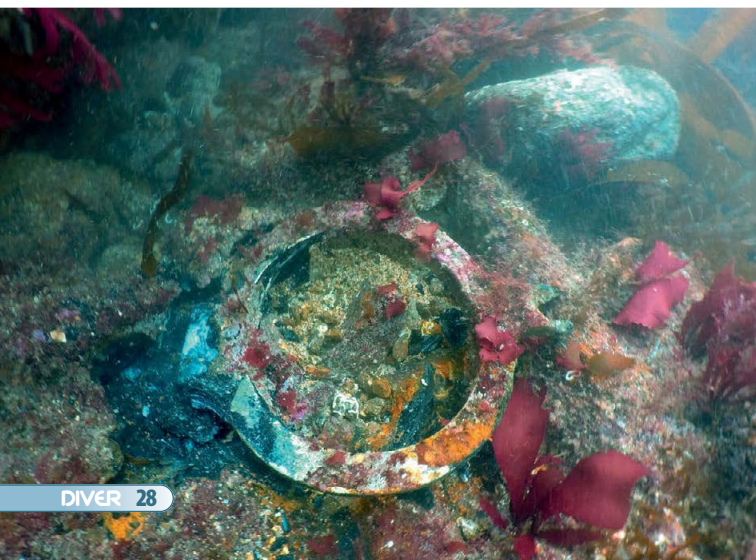
However, the engine size, age and type, the position of the engine to the rear and the size of propeller and rudder is all in keeping with the *Aura*.

THE SMALL SINGLE boiler is discovered on a later dive a short distance away, corroded and flat-packed by the action of the sea. Little remains but for end-plates and fire-boxes.

A brass object recovered from near the engine is a small oil-well, stamped Thomas Suffield & Co. London. This is interesting, because the company was active only from 1862-82, consistent with the wreck being that of the *Aura*.

The bell and bridge-gear appear to be absent. They might have been recovered shortly after the sinking, because for a time the vessel would have been above water. Or perhaps it was salvaged and unreported in the early days of wreck-diving, though I had never heard any older divers mentioning a steamship wreck in the area.

We have made other exciting discoveries and I'm sure there are many still to make. Even without definitive proof, it feels great to put shipwrecks like this firmly on the chart and tell the stories behind their loss. One day, that vital proof might just come to light.





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MARCUS GREATWOOD has claimed before in this magazine to have found the world's greatest freediving site – in Menorca. Now he's updated that claim – for one in Kefalonia. 'Bibliothèque is accessed from the sea, which is awesome – but Muddy Hole is unexplored and not accessible for scoobies,' he told us. Tell us more, we said

THE ULTIMATE FREEDIVE SITE WE FOUND BY ACCIDENT

WHILE IN GREECE, we stumbled on the "Ultimate Darkwater Freedive Site". Matt

Longbottom and I were waiting out the last two days of a freediving trip after everyone else had left, and we decided to explore a muddy cave close to where we were staying.

We were in for a surprise.

A bit about me. My job description is breath-hold photographer. I've been teaching and filming freediving for 20 years. I've held records, coached six world records, run a huge club, taught thousands of people and taken many of them around the world.

For the past 10 years I've specialised in extreme location freediving – exploring on a single breath.

So what is required to claim a freediving site as "the Ultimate"?

Four elements: crystal-clear water; technical access; being deep enough – but not too deep; and stunning vistas below and above the water.

There are a few candidates, mostly in "dark water", as we call underground lakes, where the complete darkness keeps the water impossibly clear.

On this expedition to the island of Kefalonia with six experienced NoTanx members, our initial objective had been to dive HMS *Perseus*, the spectacular British WW2 submarine wreck off the

south coast of the island. We had dived it before, as recorded in *DIVER*.

On arrival we were shocked by the devastation that had been wrought by the worst hurricane to hit the Ionian islands in 800 years. Boats had been sunk in ports and major towns left without water or electricity for days.

The resulting bad visibility in the sea meant that filming on the wreck would be virtually useless.

KEFALONIA IS traversed by huge flooded subterranean passageways or *karns* that have collapsed at several points, creating sinkholes similar to the *cenotes* found in Mexico. Several of these have become our favourite darkwater dive-sites, and we have been exploring them for several years.

During the week we had visited the site called the Duckpond, the final section of the limestone tunnels that leads out to the sea.

An unassuming entrance leads to a series of low-ceilinged caverns decorated both above and below the water with amazing speleothems that betray the historical low water-levels – stalactites can't grow under water.

As a senior-level group we were able to explore further, pushing on to an airspace we called the Toblerone – a “simple” 20m swim into a vast black

cavern lined with stalactites.

After the other four had left Kefalonia Matt and I stayed on for an extra couple of days to show a local friend of ours some caving techniques.

I had spotted a muddy hole a few years before, and we thought it would be a perfect place to practise abseiling and ascending on a single rope.

This dry hole requires a 30m abseil into a chamber, at which point there is a boulder choke – a natural dead end.

When I arrived, I looked through a small hole and saw a shard of water further below. I thought nothing of it.

When Matt abseiled down to me, he decided to slip through the small hole to explore.

At this point, everything changed. He swore. A lot. Followed by: “You have got to see this, Marcus!”

I SLIPPED THROUGH the letterbox crack at the bottom of Muddy Hole – and entered a huge chamber at ceiling height. It was covered in huge white speleothems – stalactites and curtains that fell from a ceiling and walls up to 8m high.

What we had found, by accident, was an amazing cave, visited by only a handful of cavers since 1970. As caving goes, this was the jackpot.

But even more surprising, dramatic

and exciting was the lake of crystal-clear water at the bottom of the scree slope, 25m below me. The lake appeared azure in my head-torch, leading off in both directions through heavily decorated tunnels to left and right.

We had to come back to dive, and the next day was our last day on the island.

GETTING TO THE water takes the best part of two hours, at which point we have to swap caving gear for freediving kit and prepare the underwater cameras, torches and video lighting before entering the water.

To say that we were excited would be a gross under-statement. At water level we could see into a tunnel on the left, lined with huge stalactites, columns, flowstone and curtains.

As we moved into the tunnel it opened into a chamber 10m wide and 5m high, the gin-clear water dropping off some 15m below us.

This *National Geographic*-worthy chamber had been visited by a couple of cave-diving teams in the past, but they had entered through a long underground tunnel, with easier access for scuba.

I had trouble holding the camera steady as we swam around a perfect circle of stalactites that reached down from the ceiling to form a cage



Pictured: Freediving in clear water.

Above right: The entrance.



Pictured: Chamber 3.

Left, from top: Main chamber; chamber 2; upward view; departure.

at the surface. Its gateway enticed us in. In places the formations slid effortlessly through the surface of the water, falling into the dark depths below.

The second chamber was formed of pristine ice-white flowstone, flecked black by the few bats that had made it so far underground.

We dived, filmed and stared in silence at the amazing location. We returned to the main chamber and decided that we still had time to see whether we could enter the right-hand tunnel.

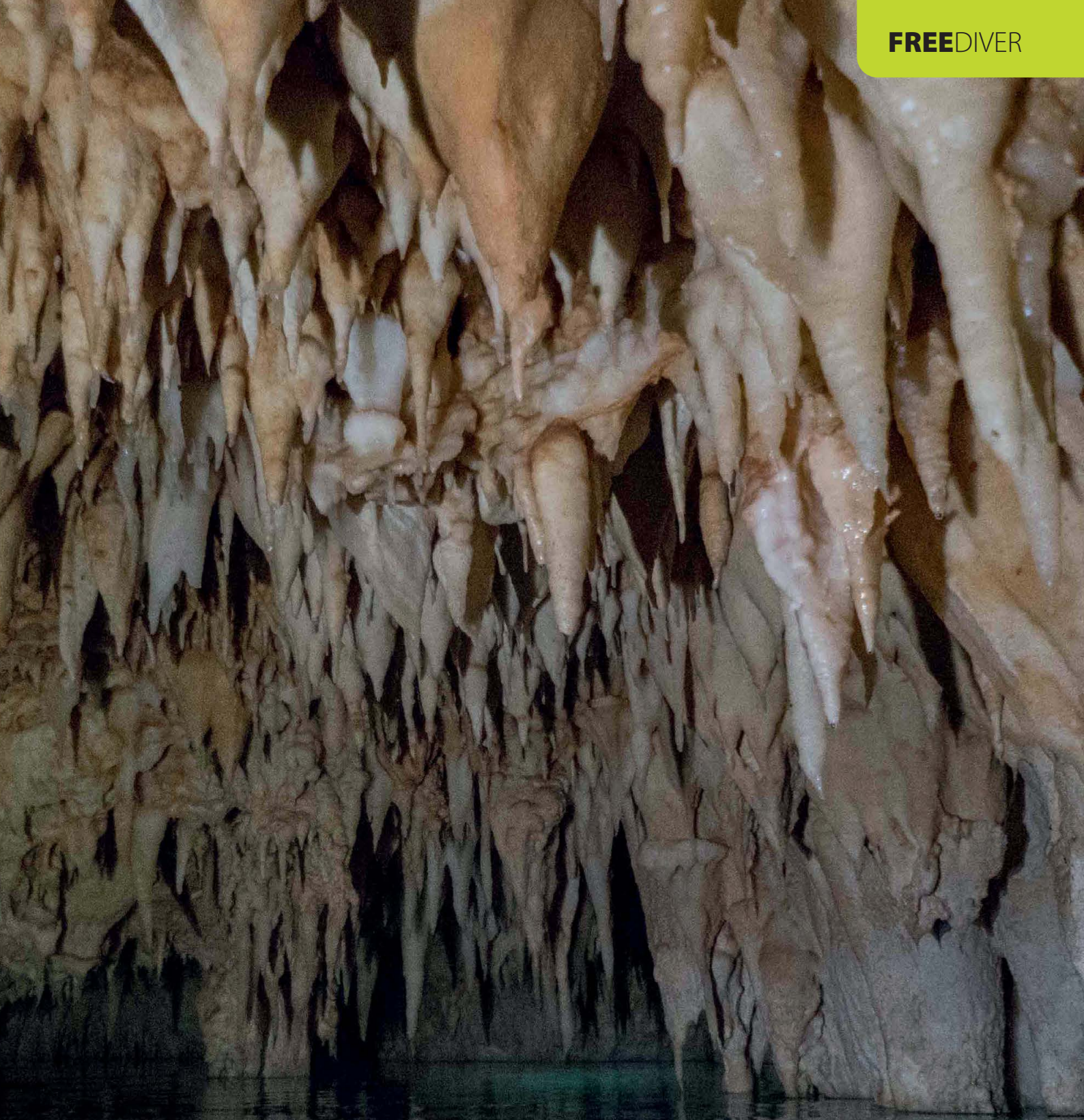
It turned out that we could. Just. Only a freediver could enter this

passage. We had to duck beneath 100 razor-sharp stalactites, the growth of which had been terminated by the water. They are formed by drips depositing their mineral loads as they fall, which means that these tunnels were once dry, or at least that the water level was once significantly lower.

The passage continued, with more and more stalactites hanging metres-long to touch the water's surface.

Our movements were governed by a head-sized path through the maze.

We knew that we were the first people ever to have entered this chamber. And



still the passage continued.

We passed through four individual chambers, each more magnificent than the last, hidden for centuries in the darkness protected by a calcium portcullis of pure, glistening white.

Below us we could see the deep tunnel and cave-line traversed by the intrepid scuba-divers from another entrance some 200m away, but they could never surface here.

Looking from beneath the surface, 1000 scimitars hung down to reach it. We identified a safe surfacing point, and only then could we safely drop into the

void below. Our chosen exit had to be lit by our buddy, because there was no way we could have located it from below.

Excitement, adrenaline, cold and the physicality had taken its toll on us. Our breath-holds were short, our dives truncated.

WE RETURNED to the beacon of light we had left at our entry-point and slowly climbed out of the water.

We knew we would be well on our way home to England within 24 hours, so we took a few moments to appreciate the spectacular location as we donned

caving harnesses and started the long climb out.

It had been an awesome experience, and one that I feel compelled to share with others through caving, single-rope techniques and darkwater training. The Ultimate Freediving Location.

Thanks to Elias and Panos from EY Sailing for making the trip happen, and to Lito for her strength. Thanks also to the freedivers whose early departure allowed us to go looking in dark holes, and to our sponsors Anchor Dive Lights, Fourth Element and Elios wetsuits, who make our adventures possible. ■

ADRIFT IN AN ICY SEA



EARLY MARCH. Another trip to the South Kuril islands. We went to sea on a small schooner and today is our second working day.

Yesterday we worked at the Deceiving Bank, not far from Polonsky, one of the islands of the Lesser Kuril Chain.

Thick fog hung over the sea. After a few hours a large ice-field began moving in our direction, threatening to cover any working divers. The crew drove around all the buoys, sending down alarm signals and picking everyone up. The vessel hastily withdrew to a safer place.

After a while we anchored near what the captain said was Polonsky Island. He offered to recce the area so that when the weather improved we could start work immediately.

I went on deck. Visibility was poor, 3-400m, hiding the banks. The waves were about 1m high, with white horses rolling everywhere, and the current was strong, as indicated by the foam sweeping along the side of the ship.

Diving should not be carried out in such weather conditions, of course, but in the urchin fishery strong waves, fog and currents are not reason enough to stop.

It takes a violent storm to drive ships into anchorage, and working in extreme conditions is common in the Kuril Islands. You get used to it.

The captain reckoned we would find a lot of sea urchins here. We just needed a quick dive to make sure of this.

We took the small boat 40-50m out from the bow of the schooner and I jumped in. I reached the seabed at 15m, where I felt the full force of the current and was swept along the rocky ridge.

There were no urchins, so I surfaced straight away but there was no sign of the boat. It must have returned to the ship.

There was no time for reflection. I went back to the bottom and threw stones into the *pitomza*, the mesh bag in which we collected the urchins. This should anchor me at the site.

Back at the surface, I was now floating on a 30m halyard, the other end of which was attached to an orange basketball with a carabiner. I looked around. The ship was

about 100m away; the boats out of sight, presumably moored on the other side.

It was 2.15pm. How long would they wait? I couldn't hold out here for long in this powerful current.

I had my SMB, 70cm high and 30cm in diameter. I inflated it and attached it to the buoy so that it could be seen from far off.

The weather was worsening and the waves increasing but the main problem was the current, which was trying to tear me off the buoy. I gripped the halyard with both hands and switched to breathing through my snorkel, but not for long, because the waves kept filling it with water that couldn't be blown out.

I switched back to scuba. I had been under water only for a short time on a full 200 bar tank, so breathing from it at the surface should give me enough air for a long time. They wouldn't keep me here for long, would they?

RAISED MY HEAD periodically, and finally saw that two boats had begun to circle around the schooner. Snow had now started to fall heavily, covering everything in a dense veil and making their movements hard to follow.

I screamed, but there was too much noise from the wind and seething waves for anyone to hear me. They couldn't see me, my orange buoy or my orange SMB.

The boats circled where I had entered the water. All the boatmen had to do was turn off their engines and drift in the current, which would have brought them to me at once. But no, they continued to circle around the ship.

My hands got tired as I fought to hang onto the line, and my fingers started to go



The Kuril Islands are a disputed volcanic archipelago, stretching 800 miles between Japan and Kamchatka in Russia and separating the Sea of Okhotsk from the northern Pacific. **VENIAMIN MANUILOV worked as a Russian professional diver collecting sea urchins for the lucrative Japanese market. Then he found himself abandoned in these unforgiving waters**

numb. My heart began to pound and I couldn't bring my breathing back down to normal. At this rate, hyperventilation would occur and would soon be followed by loss of consciousness.

I concentrated on my breathing rate. I kept my head under water, added air to my drysuit and felt my resistance to the flow reduce. A more natural breathing rhythm was gradually restored.

The snow stopped, visibility improved, but what was going on? The schooner had moved. I could see nothing in any direction. I had been hanging on the buoy for an hour now. Why had they left?

I wondered whether something had happened to my friend Vladimir, who had entered the water at the same time as me. A swarm of questions filled my head, but I had no answers.

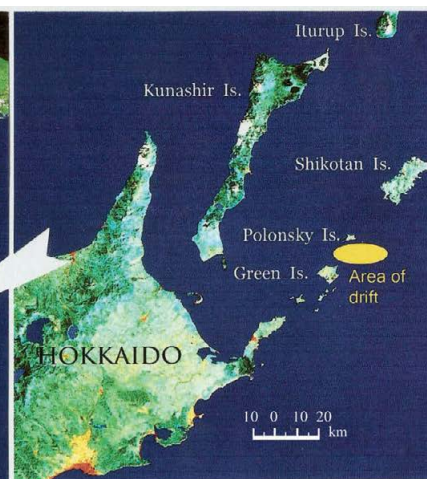
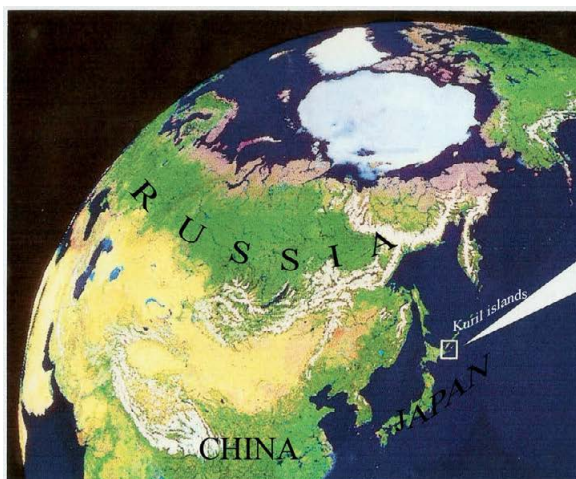
I had taught students that in no event should they leave the place where they were lost, because rescuers would begin their search there. One just had to wait. It was too early to lose heart.

The waves intensified and combined with the current to make my makeshift anchor begin to twitch and drag along the bottom. If this went on the mesh would be damaged, the stones fall out and I would have no anchor.

Should I drop my weight-belt down the halyard to make the anchor heavier? The risk was that it wouldn't slide down the inclined rope but collapse vertically, drowning the buoy.

I did have another *pitomza* with a 30m rope. If I lengthened the anchor halyard, the anchor would stop crawling along the seabed. I took out the *pitomza* and began tying one end of the halyard to the buoy, having to work with one hand as I fought to hang on with the other.

I managed it, but because of my clumsy movements the current picked up the coil



of rope and, scattering it into many loops, threw it at my feet.

The *pitomza* turned into a sail and was carried away, pulling at the rope. Its loops tightened around my feet so that I could no longer move my fins. I had to get out of this mess.

With difficulty I reached the knife attached to my leg and began to hack at the rope loops. Finally I was able to move my legs freely again.

That's when I also felt the tension of the anchor rope weaken. I had accidentally cut through the halyard that had tied me to the anchor. Holding the buoy and SMB in my hand, I was now free-swimming.

THE CLOCK SHOWED that I had spent two hours anchored. What awaited me now was unknown. I decided to head west, slightly against the waves. For some reason, I felt this was where the land was. I was wrong, as it turned out.

The weight-belt had become an extra burden so I dropped it and felt far more comfortable.

Visibility remained poor and snow fell from time to time. I fastened the buoy to

my BC shoulder-strap, re-inflated the SMB and, holding it in one hand, started paddling with my other hand and the fins.

I had wasted almost all the air in my tank battling the current and had only 30bar left. My computer showed that the water temperature was -2°C . Small ice floes constantly drifted past me.

I was wearing a 7mm Zero neoprene drysuit with an undersuit and for some time it kept me warm. My 5mm gloves and hood were wet, so insulation was minimal. My fingers and the back of my head were the coldest parts of my body.

I had no sense of fear or panic at this stage. I roared out the first song that came to mind, probably just stress. I rowed along, occasionally glancing at my watch.

Cormorants would fly a few metres overhead before disappearing into the fog.

After a couple of hours it started to get dark. The snow had stopped but the fog was still quite thick. When it got fully dark the visibility improved significantly. Stars appeared and I could make out the foam of the waves glowing in the darkness.

A wave plunged my masked face into the water and suddenly I could see thousands more lights. Bizarre marine organisms phosphoresced but I was in no mood to admire this display.

The waves were constantly knocking my SMB over so I decided to part with it, though I kept the basketball.

On my right a light flashed once. All my attention went in that direction. I saw it again but it went out after 5-10 seconds. A lighthouse? Polonsky Island?

Hope suddenly flared. I knew that light from a lighthouse on the horizon could be seen for more than a dozen kilometres, but joy still settled in my soul.

The waves were carrying me slightly east of the light so I tried to steer towards it. After a while, a floodlight flashed to my left, moving from side to side and blinding me as it passed across my vision. They were looking for me!

But then the light stopped shining in my direction and the ship went off in a different direction, illuminating its path



ahead. It wasn't searching for anyone, just watching out for ice floes.

After a while, it disappeared. I felt it must have been blocked from my view by an island to the left of the lighthouse. Apparently I was in the Polonsky Strait.

The moon had risen now. It was 9pm. I headed to the left of the lighthouse but it was difficult because the waves kept knocking me to the right. The wind was getting stronger. The height of the waves could not have been less than 3m, and often seemed higher.

The waves threw me up and down, sometimes engulfing me. I would emerge spitting out the salty water.

Strong gusts tore their crests and a grey drizzle of spray rushed along the water's surface, whipping onto my head and covering the horizon with a white mist. One squall followed another.

To the left of the lighthouse a bright spot appeared and a section of the horizon started to glow. What could it be? There was a frontier post in the interior of the island. Now I had a clear reference point.

I needed to aim between the lighthouse on my right and the outpost on my left. The wind was almost favourable but I had to sail against the waves or the current would carry me past the island.

But now a thick veil of fog hid the island and the lights. The moon illuminated the cap of clouds covering this part of the sky. I navigated by them and controlled the course on my compass.

The cold penetrated my whole body. I tried to rub my numb fingers, move them, massage them – it helped a little. My feet were also frozen. The cold made me want to urinate, and I had no choice but to pee in my suit. The undersuit that had kept me warm was wet now.

That famous diving expression "the cold is worse than a shark" played in my head, and this drew out a story I had heard the day before, about orcas blocking divers from their vessel the previous week.

Their intention was unclear, but they had frightened the divers.

Thoughts of bloodthirsty predators involuntarily fermented in my head. The white sides of killer whales seemed to be appearing among the waves. Perhaps for the first time since the beginning of my voyage, fear arose in my soul.

HOW TIRED I WAS of this water! If I could get out, I would never get into it again, or put on dive-gear. I would swim, ashore and go to the frontier post. The border guards would give me hot tea and I would go to sleep by a roaring fire.

The island was getting closer but, rising on the waves, I could see that I was being carried to the right. It was low tide, and a mass of water was rushing through the strait into the ocean, carrying me like a helpless sliver.

The lighthouse beacon went out instantly, so I knew I had passed the sector it had illuminated. Darkness fell again, only the moon illuminating the sky and water surface. It was well past midnight.

I stopped rowing, blew air into the suit and lay on my back. My legs felt noticeably warmer but the back of my head and neck, lowered into the water, quickly began to freeze. Tremors passed through my body.

I had to get upright again and move my arms vigorously to keep warm.

Suddenly, a little to the right of where the lighthouse had vanished, I saw other lights. I could see more and more as I moved away from the lighthouse.

Then I realised that they belonged to fishing vessels sheltering behind the island from the storm. They were far away but behind me was only darkness and the open ocean.

The storm was subsiding, the squalls had stopped, but there was considerable swell and the current was against me.

I rowed on for an hour, two, three, then rested. I was cold but I was getting warm. Fatigue set in and it became harder and harder to swim, but my hands were already rowing automatically.

There were eight ships. I aimed at the middle of the cluster, then switched to the

one that seemed closest. I swam towards it, but felt myself being carried away.

I reoriented to another ship. I felt myself getting closer to it; the lights grew brighter. I could even make out the superstructure, the masts and lighted windows.

I would grab the anchor-chain, rest and, if needed, hold out until morning. I would bang on the hull, shout, they would hear and take me aboard. There would be a hot shower, hot tea and all would be warm.

These thoughts gave me strength, but the lights came no closer. Soon the deck superstructures disappeared from sight, the lights became less bright – once again the current had destroyed my plans.

Despair settled in my heart now. I was tired, cold and could see no way out of this situation. Sooner or later I would freeze. Perhaps I should fill my suit with water and end it now...

I stopped rowing, dropped my hands and just drifted. I chipped the ice off my mask as the morning frost made itself felt.

Cold seeped through my body. My toes were numb and I had severe aches in my knee joints.

There was a nagging feeling in my groin, the sensation felt by every man in icy water. Even my stomach had become cold. An icy hoop tightened around my chest. I said goodbye to my family and closed my eyes, my body shaking.

Abruptly I came out of this torpor and began to work my arms and legs vigorously. I was swimming against the waves but the main thing was to work, to keep warm. After a while I succeeded. I didn't want to die yet.

DAWN. THE CLOCK showed the start of the 7th. I looked around. Where I had been carried there was no island, no lighthouse, but ahead were two groups of high rocks – the uninhabited islands of Fox and Shishka.

When it got warmer, sea-lions and seals would appear on these rocks. They were empty now but it was land, and I was heading for it.

The sun had risen between the rocks. The sight was beautiful. I sailed towards the islands for at least an hour, but it was all in vain because the current carried me past them. Another unattainable goal.

But now, across almost the entire horizon, a white surface appeared, rising slightly above the water. These were more islands, very low and covered with snow.

Then I realised that it was not land ahead but a huge ice-field. I needed to climb onto a hard surface, lie down, relax. But I understood that if I climbed onto the ice-floe I would surely freeze. The air temperature would be -5°C or less on the floe, and the wind would blow over me, intensifying the cooling of my body and I would soon turn into an ice-block.





No, it was much warmer here in the water. I was better off here.

The wind had risen. The ice surface, so much bigger than me, worked like a sail and the ice moved away until I could no longer see it.

The current and wind were now carrying me south-east into open ocean. What to do? My body was losing its ability to fight the cold. I kept thinking about my relatives, and how much grief my death would cause. They wouldn't be able to find out what had happened to me.

What was left for me to do? I needed to swim in a direction that would at least give them a chance of finding my body.

On the right, on the horizon, I could now see the low, snow-covered coast of Green Island. It was far away, but I swam towards it.

Soon a schooner appeared from afar, similar to mine. It passed through the strait towards Polonsky Island. Was it looking for me? It kept straight on and disappeared from view.

After some time, another vessel appeared from behind the cape heading in the same direction, not stopping or making any search tacks.

So my captain had not reported me missing. My hopes were dashed. I could rely only on myself.

Low tide was over, the current had disappeared and my movement into open ocean stopped. A reverse tidal movement could be expected soon.

I swam slowly, stopping often to rest. My strength was running out.

A seagull settled near my bobbing head, then several more birds joined it. They surrounded me, the ring narrowing.

I waved my arms but this didn't seem to frighten the birds. They understood the hopelessness of my situation and were in no rush to leave their prey.

Then suddenly they all took off at once. What had scared them? On my left I saw a ship approaching from Green Island. I had to swim faster in its direction!

I worked my arms and legs desperately. The ship was passing 50-80m away and I could read its name – *Sviritsa*.

I screamed as loudly as I could and waved my orange ball overhead, but with a headwind blowing they couldn't hear me. Another failure.

The *Sviritsa* carried on in the direction, I assumed, of Polonsky Island, and anchored in the distance.

Now, from behind Green Island, another ship was heading towards me.

The schooner passed very close but my cries for help and swinging of the ball were again in vain.

Had a radio alert been put out the crew would have been looking out for me. I was alone with my problems again.

The second schooner soon neared the *Sviritsa*, and now I could see the coast of Polonsky Island, which meant that the current was carrying me in that direction. I could see more schooners near the cape, with small boats scurrying alongside – diving for sea urchins, I assumed.

I headed for the *Sviritsa*, the ship closest to me, again swimming against the waves. After more than an hour of this I could see people working on the deck. I imagined myself under a hot shower, or with a cup of scalding tea in my hands.

Suddenly the *Sviritsa*, which had been anchored side on to me, turned its stern in my direction. The current had changed. The ship had turned its bow into the flow – and I began to be carried away.

I WAS TRAPPED. The current would never release its prey. Despair again. I had no strength left. The joints in my arms and legs ached from incessant movement, never mind the cold. And although the movements warmed me, my fingers and toes felt nothing.

But when I stopped, chills ran through my body. The cold diuresis continued too, every half-hour or so. It's amazing how much water there is in the body. At the same time, I didn't feel like drinking at all.

There were ships just a kilometre or two away, and people working aboard them. It was not fair...

The cold brought me out of my stupor again. My shaking body required heat that could be obtained only by moving, so I sailed on.

I decided not to focus on the ships any more. Their habit of eluding me at the last moment was too frustrating. Ahead lay the width of Polonsky Island – not close, but I decided to swim towards it.

I had to row, as always, against the waves. It took a lot of energy but warmed me up and gave at least some hope. Maybe I could reach the island before nightfall.

After a couple of hours I was able to distinguish individual objects ashore, pillars and a mast. This made me happy.

From the corner of my eye I noticed two ships heading in my direction. Should I continue towards the island or turn in the direction of the ships? I could lose all that I had achieved moving towards land.

One vessel was sailing on the windward side, and I would have needed to swim towards it against the waves. However, the other one was on the leeward side, and to meet it I could raft along the waves, hardly working. The temptation was great.

I decided to risk it. I even slowed down a little so as not to slip over the waves and miss the ship. The crew should notice me. I wasn't that far away, right in its path.

Suddenly the ship stopped 300m off. Two boats were launched, taking off at once in different directions, but the ship didn't anchor, it just drifted.

Its sailing capacity was far higher than mine and as it was carried along by the wind and waves, I couldn't keep up with it.

I screamed, waved the ball, but once again in vain. So I tried heading towards the boats, which were driving around from one surfaced diver to another.

But they were moving ever further from me, following their ship, and nobody heard my calls for help.

Bad luck hung over me. I could no longer see the island, but the schooner hadn't budged, so was at anchor.

If it didn't leave, perhaps I would be able to swim to it. If not, I would have to think about the island again.

Straining to find the strength I rowed, trying to make fewer rest stops. I let air out of my suit and the buoyancy decreased but I was able to move more efficiently.

I glanced at my watch. It was noon, so lunchtime on the schooner. If only they'd extend the meal, rest after it – sleep, even – perhaps I would have time to reach it.

I had been swimming for more than an hour. The bow was facing me, which meant that the current would help me.

Then I saw a man walk along the deck and stop at the bow. The anchor would be raised and the ship would leave.

Why was I so desperately unlucky? The schooner was only 100m away. I screamed as best I could, though my voice had been affected by the cold.

I blew up my suit to make myself bigger and waved the orange ball.

The wind was blowing almost towards the schooner. The man stopped and was slowly turning his head in all directions.

Another man came out onto the wing of the captain's bridge and also began to look around. Then he pointed in my direction.

I continued to shout and wave. A few minutes later a boat detached from the side of the ship.

I GRABBED ONTO the side of the boat, trying to unfasten my scuba gear, but my insensible fingers couldn't find the buckle.

The boatman, a tough guy, pulled me out of the water along with the cylinder.

I couldn't climb aboard the ship on its small storm ladder, so I was pulled out from above and put on the deck. My legs gave way and I fell.

I got my breath back and came to my senses. Questions poured in. Which ship was I from, how long had I been in the water?

I named my ship and told them I had been adrift since 2pm the previous day. It turned out that I had spent 23 hours in icy water. Almost a day.

I asked if my disappearance had been reported over the radio. As expected, there had been no announcement.

The guys from the *Delta*, as this schooner was called, pulled off my suit and undersuit and finally my dream came true – I got into a hot shower. I soon got warm, though I couldn't feel my toes.

They gave me dry clothes, wrapped me up, invited me to dinner. I didn't feel like eating, but was dehydrated and just kept drinking hot tea, refusing the alcohol they persisted in offering me. I only added a couple of teaspoons of brandy to my tea.

A diving physiologist came over from the *Sviritsa*. He examined me and found everything in order. He made me drink a whole can of sweet condensed milk.

My schooner had been called by radio. It approached and I went aboard.

Veniamin Manuilov is a doctor of geography, and has long worked at Russia's Far Eastern Federal University in Vladivostok, carrying out research into coastal underwater topography.

The experience he recalls here occurred in what he describes as difficult times for the country. "The economy was collapsing. Scientific research was not funded. There was no money to feed the family. Scientists were engaged in all kinds of part-time jobs.

"Our diving brotherhood survived by fishing for sea urchins. Japan bought them in thousands of tonnes, and only divers could catch them. The pay was good, but the work was hard and without adherence to any rules and regulations.

"I no longer work there. Times have changed and I'm doing science again. Things are good. I wrote this article to describe the tough conditions in which Russian divers had to work.

"And perhaps my case study will make some contribution to knowledge of survival at sea – and add some optimism for any divers who find themselves in this sort of situation."

NEXT DAY WE WENT to Shikotan island, passing the islands and the strait where I had been the day before. The entire area was now packed with dense ice, with no clear water anywhere.

I learnt that when I had been lost in the fog, the captain had called the schooner's owner to ask whether he should report a missing person.

The owner had ordered him to keep silent and look for me by themselves.

The schooner had not had all the documents necessary for its work, and had it attracted any attention over the radio it could have been barred from fishing and possibly detained. It had been easier to forget about me. I had not been bound by any contractual obligations, as was accepted in fishing at that time.

My experience should inspire optimism in any divers who find themselves in a similar situation. After returning home, I read up to see if anyone had had an experience like my own.

I have yet to find a description of such a long stay in icy water. Diving standards

determine one hour as the permissible time that can be spent under water in a diving suit at a temperature of 1-3°C, with a break of four hours between dives in such cold water.

Staying longer, with the likelihood of hypothermia, overload, exhaustion and dehydration, would inevitably lead to a hypoglycaemic coma with a sharp drop in blood sugar. There would be memory disorder, convulsions, loss of consciousness and respiratory failure.

I had not reached this stage, followed by death, but had probably been very close to it. I had managed to hold out for longer than the established critical norms.

I had probably developed an adaptation to the cold over 10 years of work in the Kuril Islands. This is possible, according to specialist literature.

The damage to the health of my 56-year-old body after "my adventure" was minimal – mild bronchitis, cold sores on my lips and frostbite on my skin where it had been unprotected by the hood.

That skin peeled off and renewed in a week, and I quickly recovered from the bronchitis and the herpes. But my toes regained their sensation only after two months, without any treatment.


What's more, for several months not a night passed when, if I closed my eyes, I wasn't back on my endless journey through the waves.

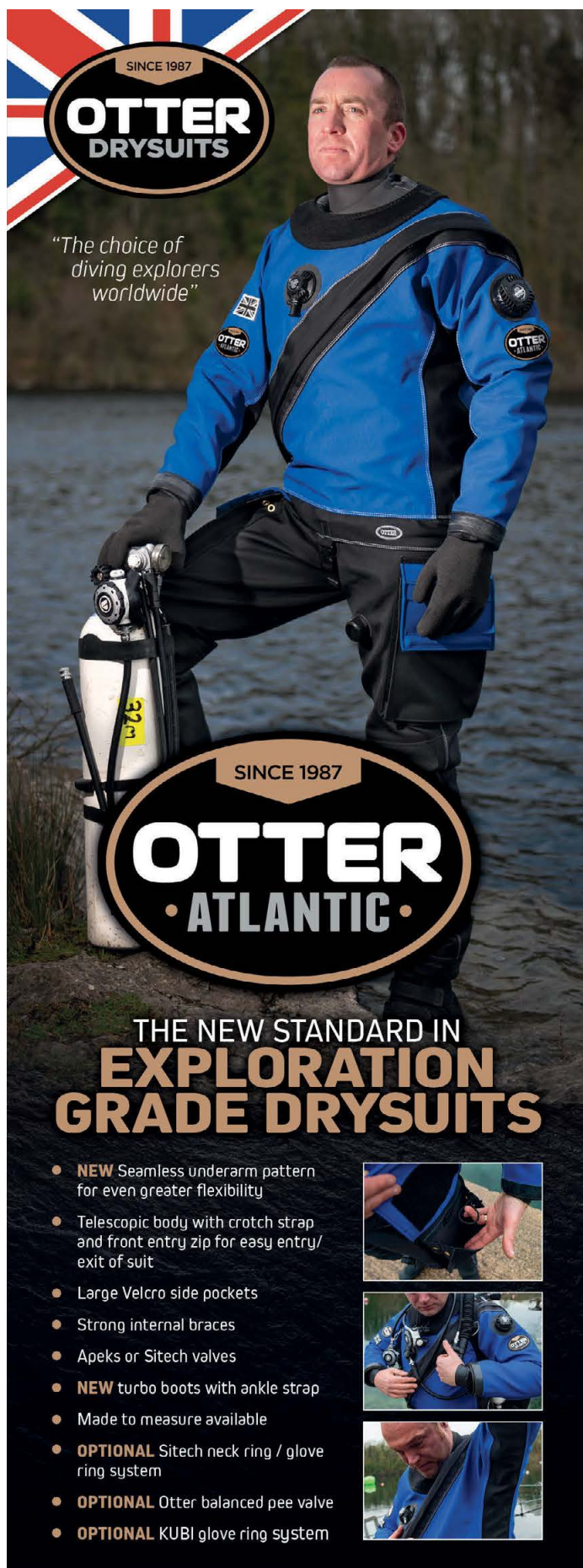
As for my struggle with the elements, current and waves, the assessment is ambiguous. I resisted their effects as best I could and didn't give up.

Could I have reached the island (they picked me up three miles from it) and made it ashore or would the current have thrown my exhausted body back into the open ocean? I'm not sure.

I was helped by a favourable set of circumstances and my past experience. So there was no panic or hysterics. There was at times a kind of fatalism, when it seemed that even my thoughts froze in my head. This was most likely mental retardation caused by hypothermic stress.

Back home I rested and calmed down. I didn't keep my promise to throw away my diving equipment.

After some time had elapsed, I returned to the Kuriles and the Polonsky Strait... 



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Scandi noir

I CAN'T TAKE MY EYES OFF IT. The scene is subdued, the muted colours almost monochrome. The leading characters appear fleetingly. Their expression betrays little. Their outfit is familiar, yet distinctive to the point of iconic.

The pictures show that something both terrible and fascinating has occurred.

The stillness of each image belies an underlying act of violence. Transfixed, I hunger for the small clues on offer. It's classic Scandi Noir.

But this is not *Borgen*. No chunky jumpers, just clunky old-school black rubber fins with steel spring straps, and the instantly recognisable snaking shape of rebreather breathing loops.

What has captured my attention is the work of Swedish technical divers exploring wrecks in the Baltic, at depth and mostly in darkness. Low light, low salinity and low water temperatures provide ideal conditions to leave these wrecks untouched and astonishingly well-preserved.

Their haunting images, published in *Ghost Ships of the Baltic Sea*, will steal your diver's heart clean out of your chest in admiration.

The photos in this book are quietly brilliant, taken with the care and imagination of a crime-scene investigation.

Some focus on clearly recognisable objects and details – a key still poised in the lock of a fallen door, a pile of slowly decaying gold watches, a woman's shoe.

My gaze deciphers the unspoken pointers before me. Images of the shallower wrecks still pick up the vaguely green hue of the ambient light. Gloom around the deeper wrecks almost threatens to consume them, as torches and camera strobes briefly reveal timbered forms.

From these photos I can almost touch the backscattered particles, know the weight of that depth and feel the deadening chill that sucks away energy – even through a heavy drysuit.

These are clever, carefully executed shots. The carved figurehead of a seahorse stares unblinkingly from the prow against the inky backdrop. A gnarled and ancient cannon protrudes through the square hatch of a gun-port, lit by the divers' torches.

This is not IKEA's cheerful "the wonderful everyday". This is the totally gobsmacking. It's once in a lifetime – if you're lucky. Carl Douglas and Jonas Dahm, *utomordentlig!* Top job.

IT'S INSPIRING TO SEE divers uncovering these amazing but hidden wrecks. It shows the possibilities of technical diving; it wordlessly explains why some of us are willing to go through all the faff, discomfort and complexity.

The quantity of wrecks out there far exceeds the recorded number. How do we come to comprehend that void in understanding?

Much of the time those with the will to search for wrecks that might or might not be there are simply picking up anomalies on the seabed. Checking out different theories; trying to decipher the clues.

A wreck-shaped hole is our "dark matter", something we hope and imagine might be there. Something that when found would make sense of all that we know, but haven't yet been able to join up.

Our "dark energy" might be that mysterious, extra force of nature that enables some people to leap into the cold and dark, take a look and record what they find. If water is the Fourth Element, then technical diving is effectively the "Fifth Force".

LOUISE TREWAVAS





DIVING OXFORD STREET



Diving instructor **LAURA PARKER** is also an artist, inspired by the underwater seascapes of Grenada. Recognition on the street came by surprise with an unusual display in London

I'VE ALWAYS BEEN a water-baby, jumping into the sea at any opportunity, but I discovered the underwater world only in 2006, when I completed my PADI Open Water Diver course and started my Advanced qualifications in the lovely clear, warm seas of the British Virgin Islands.

On returning home, I decided to complete the Advanced course in the UK.

My goodness, what a shock that was – from those crystalline, balmy waters to a murky, bone-chilling soup – or so it seemed at first.

I persevered, and was bitten by the scuba-diving bug. I decided that I'd love to teach others to dive and within 18 months of my first proper dives, at the age of 55, became a PADI instructor.

Art is another strand of my life that has developed as I've grown older. For many years it was something I loved and studied, but it had never occurred to me to try to create my own work.

At 50 I began painting portraits and the human figure. I explored landscape painting, going outside to paint *en plein air*, often waking at 4am to capture the sun rising over the River Thames.

While diving the Red Sea with my Course Director Paul Toomer, I discovered the fascinating world of underwater wrecks – rusting hulls, pierced with jagged holes and with strange silhouettes of skeletal fingers reaching towards the surface.

The artist in me was inspired to portray these structures that were slowly

decaying under the waves. Using the underwater photographs I had taken, I began experimenting with paints, and my *En Pleine Mer* series was born.

A few years later, the wrecks lying in the Caribbean Sea off Grenada became the focus of my underwater paintings. These really are my muses.

Originally, I created works that were fairly realistic. Over time, abstracting these forms became a natural progression, and I feel adds mystery and fascination to their depiction.

Now I let the shapes take on a life of their own, using colours that don't necessarily correspond directly to what we see beneath the waves.

In Deep was my first work with this abstract quality, and was selected recently to be part of the W1 Curates "Light It Blue" campaign in support of the National Health Service.

The painting was illuminated on the expansive glazed frontage of Flannels' flagship store in iconic Oxford Street in London, turning the street into a blissful dive-site or giant aquarium.

During the first lockdown in 2020, I imagined escaping into the quiet underwater world, and went out to my studio, picked up my brushes and began painting.

I wanted to create that sense of being deep in the sea, far away from the pandemic's challenges, gazing upwards towards light and hope.

Lit up on Thursday evenings over such a large expanse in Oxford Street, it was



eye-catching and, I hope, uplifting for passers-by.

Since I created *In Deep* I've explored and experimented with other ways of painting the world below the waves. I am particularly inspired by the Grenadian dive-sites of the *Veronica L*, *Shakem* and *Bianca C* wrecks, all deep influences on my artwork.

More works in this series, all in acrylics on canvas, are shown here.

As a diver I'm fascinated by the underwater world, and as a painter I'm drawn to the strange shapes that loom up in those deep waters, where colour fades and light reflects and refracts in unexpected ways.

By combining both pursuits I hope to create a dynamic personal perspective and vision that is both intriguing and uplifting, and can transport others to my world beneath the waves.

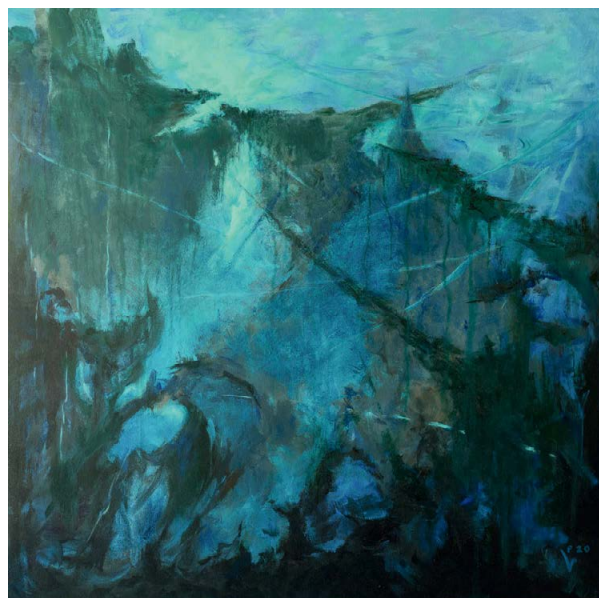
Wrecked

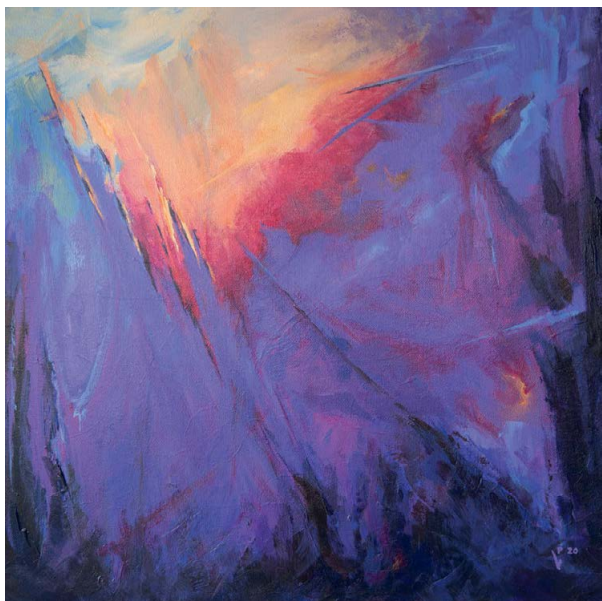
The painting below is based on the *Bianca C*, a cruise-ship lying in deep waters, and combines a feeling of reality with that of abstraction. The wreck sits upright on its keel in nearly 60m of water and is a hugely impressive sight.

The site is a haunting place and fascinates me every time I dive there and notice annual changes each year as the wreck slowly disintegrates.

To capture these effects I used a limited palette of blues, while diagonals break up the surface and lead the eye around the canvas.

I began working on *Wrecked* in the early stages of lockdown, and somehow this mysterious site seemed also to reflect some of the confusion created by the Covid-19 pandemic.





Veronica Remembered

This painting (left) focuses on a small part of the *Veronica L*'s structure – simple shapes that intrigued me.

I began with a small pencil sketch based on a photo, then disregarded the photo and let the shapes take on a life of their own on the canvas.

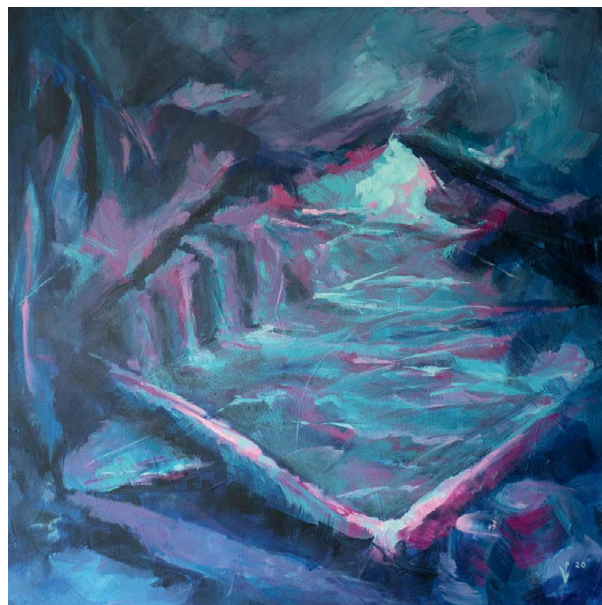
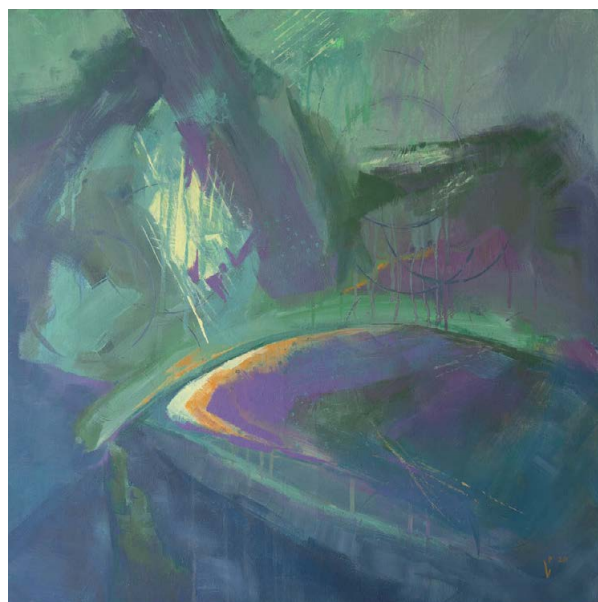
In the end this painting could be anything – a landscape or just an abstract artwork – but it really is based on a piece of encrusted metal on a shipwreck.

Shifting

Shifting (below) lives up to its title, as it was a shift away from wrecks, and its shifting light (in the end the subject of this painting) doesn't shout its origin.

My starting point was a barrel sponge. I loved the flowing lines and curving shapes created by nature, so I dribbled and blobbed fluid paint onto the canvas in similarly flowing lines, creating shapes reminiscent of that huge sponge but with a rhythm of their own.

Gradually the inspirational barrel sponge disappeared as the abstract shapes united into one harmonised and dynamic composition, but for me it left its personality behind in those glowing colours and shapes.



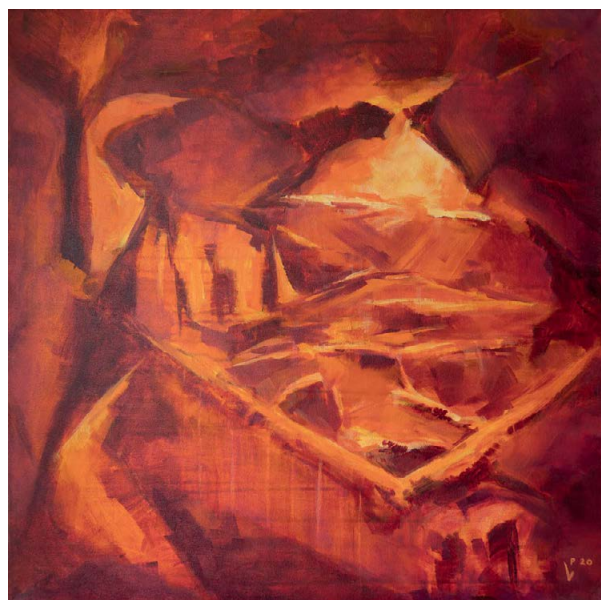
Rusting & Rusted

These works (left) are also about

the *Veronica L*. By its nature, a wreck lying on the seabed has been radically transformed, from a seaworthy vessel navigating the surface of the oceans to a coral-covered, rusting habitat for all sorts of marine life, constantly changing as the deep sea eats away at it and sea-life grows on it.

I painted *Rusting* first. It's based on a view up through the cargo ship's fallen crane towards the light shining on the surface of the water. I chose cool blues and magentas to give the feeling of being under the waves, and captured the strange shapes created by the disintegrating metal.

As I worked on the painting, I thought about doing another version of the same view but this time with very warm colours – oranges, yellows and crimsons – and so *Rusted*, a tonal transformation of *Rusting*, came into being. This time, instead of being drawn to a coolly lit opening, it seems more as if we're gazing into a fiery furnace – quite a transformation.



To see more of Laura Parker's work, sign up to her newsletter or find out what she's up to, go to lauraparkerart.com. You can also follow her on Instagram, on Twitter @lauraparker_uk or on Facebook @laura.parker.artist



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DANCING ON THE MID.



A few hours' flight south-west of the UK lie the Azores, and if you're in the vicinity of the right sea-mount or shoal at the right time of the year, expect some spectacular experiences. **DANIEL BRINCKMANN** has been getting to know the islands

Pictured: Mobula rays on Princess Alice Bank.

Right, from top: Hogfish; bluewater descent on the bank; ...to be greeted by amberjack in numbers.

-ATLANTIC RIDGE

NO MATTER HOW MUCH grouper and octopuses vie for attention, what sets the Azores apart from any other European diving hotspot are the offshore peaks. No fewer than four full-on seamounts are within the range of scuba-divers, as well as dozens of shoals between the nine islands, all of them topside peaks of the Mid-Atlantic Ridge.

In fact, shoals (*baixas*) are far too numerous to be covered in one article, so I'll stick to the most popular ones in the central and eastern group of the archipelago – and some little secrets.

The Azores' location on the verge of two continental plates bring with it extremes. In many places the continental shelf ends only a few hundred metres from the coastline, before plunging into four-digit depths.

Strong currents from the deep supply the habitats on the isolated seamounts with plenty of nutrients and stimulate a food-chain unusual for today's European conditions. Loggerhead and leatherback turtles seek the protection of such places on their Atlantic migrations, while plankton and jellyfish-eating ocean-dwellers such as sunfish, pelagic mantas and schools of mobula rays roam the open water above the reefs.

Predators such as bottlenose dolphins, yellowfin and bigeye tuna, marlin and jack, as well as Galapagos, blue, smooth hammerhead and mako sharks, lurk in the vicinity.

The areas around seamounts are under severe fishing pressure but, with a bit of luck, the right timing and favourable conditions, spectacular encounters with ocean heavyweights are still more likely in the Azores than anywhere else in European waters.

Tip: during the sometimes long trips, keep your eyes open and perhaps invest in polarising sunglasses.

Everything that the temperate Atlantic has to offer hangs out between the islands and the offshore banks!

CENTRAL AZORES

Because of the frequent encounters with whales and dolphins, wildlife and diving tourism is concentrated on the adjacent islands of Faial and Pico. From there, sites off the neighbouring island of São Jorge to the north are occasionally approached, especially with the latest trend in Azores diving – liveaboards.

In the main season from July to

September, tours to the offshore banks are offered from land at least once a week, although the weather always has the last word. There are also small dive centres on the islands of Graciosa and Terceira.

Princess Alice Banks

This offshore dive-site is rightly most famous. Located about 44 miles south-west of Faial in open sea, it became known 15 years ago with the sudden arrival of schools of mobula rays, which often show up when a boat is being moored.

On average days, squadrons of 15-20, and sometimes more than 50, glide through water shallow enough for snorkellers.

The huge schools of pelagic fish can be just as spectacular. On a good day, various species of amberjack, bonito, triggerfish, barracuda and sometimes even bigeye tuna form living curtains. That's when this becomes the most exciting seamount for divers in Europe!

Occasionally during dives, surface breaks or on the move encounters with sunfish, pelagic manta rays, marlin, whale sharks and other unexpected ocean dwellers occur. It's important never to let the anchor rope get out of sight because of sudden currents – in fact it's safest not to leave it at all.

Experienced divers familiar with deep open-water descents, thermoclines, changing currents and visibility can advance along the anchor-rope to the seamount's summit in about 37m.

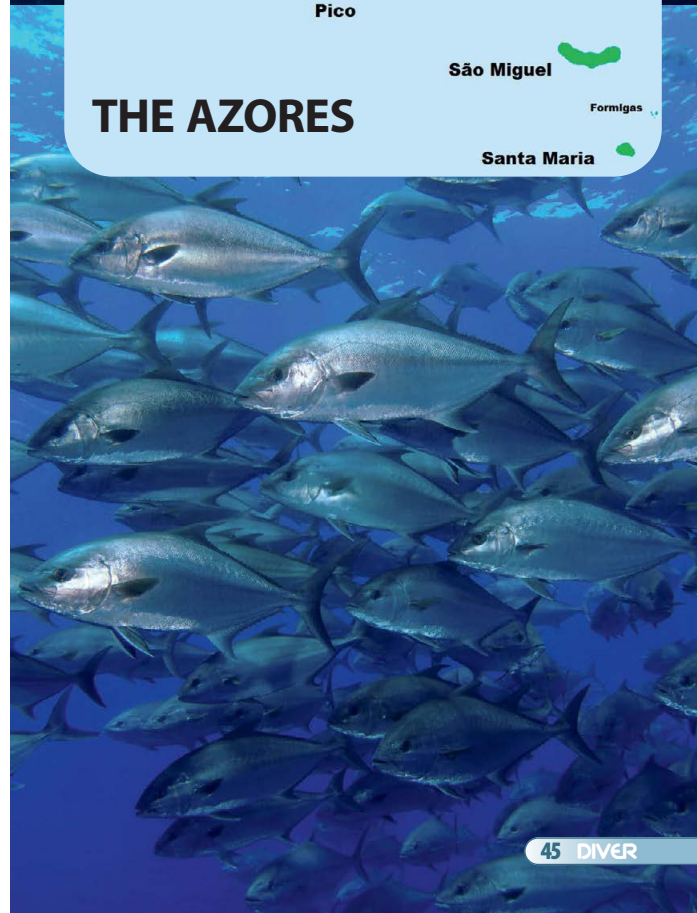
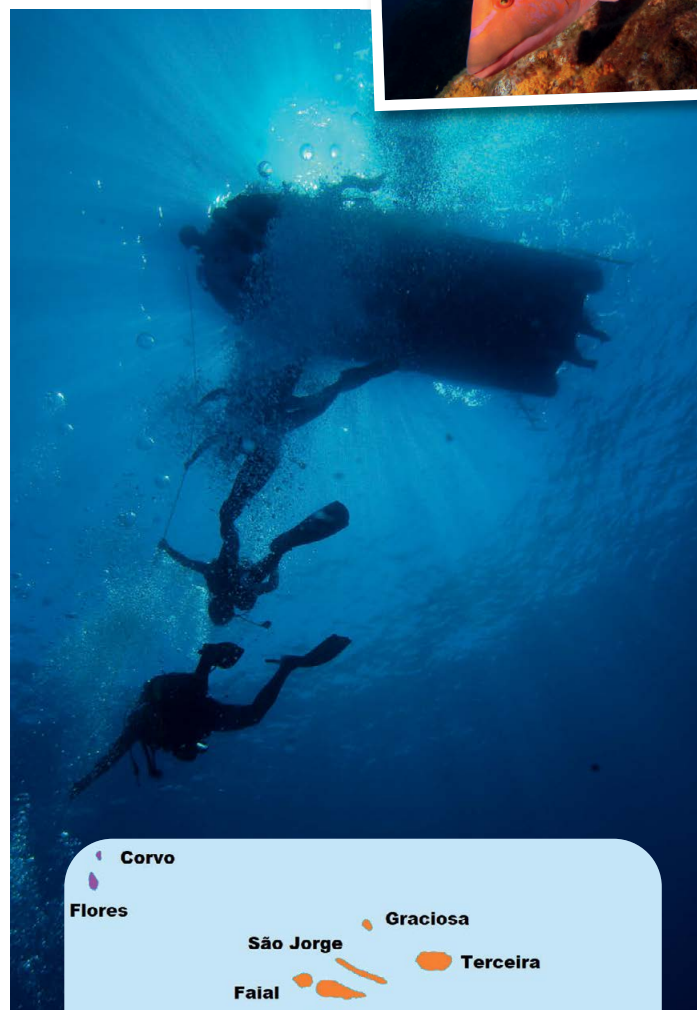
Sharks are surprisingly rare but big sting rays, hake, grouper, morays and amberjack are common.

It's not worth sacrificing too much bottom time, because the real action plays out between the surface and 20m, which is why less-experienced divers and even snorkellers can get their money's worth with one hand on the anchor-line. It's mesmerising, if eerie, hanging in the blue.

Princess Alice Bank is approached from the ports of Horta (Faial) and Madalena (Pico) as part of a full-day two-dive excursion, or overnight stays if on a liveaboard. **Trip time from Faial or Pico, 2-3hr**

Baixas do Canal

Three shoals are located in the four-mile-wide, current-rich channel between Faial and Pico. Biologically, they are in a grey area between coast and open sea and can be subject to strong tidal currents.



Typical Azores coastal species such as bream, parrotfish, moray eels, sting and eagle rays meet pelagics like jack and schools of barracuda there.

The sites differ significantly from each other. Starting at about 6m Baixa do Sul, a flat basalt plateau covered with brown algae, slopes down in steps to 50m, and is perfect for getting your first deep-sea diving experience, while the deeper and more demanding Baixa do Norte offers more schooling fish, black coral and clouds of red anthias.

The Baixa da Barca begins only at 20m, with walls overgrown by hundreds of fan-worms dropping quickly into the realm of huge grouper below the spearfishing depth range. At nearby Fumaroles Square, gas bubbles rise from the 40m-deep sandy soil – a legacy of the volcanic creation of the archipelago. **Faial 30min, Pico 20min**

Condor Bank & Azores Bank

With the highest elevations in the range of 200m, both these seamounts are pure bluewater diving locations.

Popular with deep-sea fishers and biologists alike, they are approached for diving with blue sharks, which have a nursery around 100 miles further west, which is why many young animals appear.

Bait-bins filled with mackerel are dropped into the water on arrival. After

Right: Blue shark at Condor Bank.

Below: Round sting ray in the channel between Faial and Pico.

Below right: Common dolphins at Faial.

Inset: Blue shark head-on.



15-30min waiting time, divers enter and wait on weighted ropes for the appearance of the magnificent predators with their bright blue shimmering backs.

Even if the inquisitive animals tempt you to let yourself drift, divers should again watch out for currents here.

They can be difficult to detect with no reef in sight. If the blues suddenly vanish, check the entire water column, because this might indicate the arrival of a mako shark.

The sites are usually visited once a week in high season, with two dives included, or even on special trips for skilled freedivers. **Faial 1.5hr, Pico 2hr**



Left, from top: Barracuda on Princess Alice Bank; Mediterranean moray eel between Faial and Pico; hydrothermal vents in the same area.

Above: Island grouper at Dollabarat.

watching the procession of deep-sea fish.

Schools of barracuda, Atlantic bonito, horse mackerel, bluefish, Bermuda sea chub and amberjack along with coastal fish such as bogues add to the fish soup.

The hilly reef teems with small scorpionfish, so watch your fingers.

If you ignore the open-water swarming and follow the rocks down to 30m, you'll probably also encounter scorpionfish at least a foot long as well as nudibranchs.

Pico 1hr, Faial 1.5hr

Banco Dom João de Castro

This seldom-dived seamount rises from around 1000m and is considered difficult to access because of its distance, halfway between Terceira and São Miguel.

However, in the past three years it has been dived regularly on day-trips from the latter island.

The active underwater volcano rising from great depths is known for its hydrothermal springs, gas-bubble curtains and extremely clear water.

The flattest of the four peaks forms a plateau that has been smoothed by the current at a depth of 13m and is often swarmed by sting rays and deep-sea fish such as bonito, sea chub, barracuda, wahoo and various types of mackerel.

Azores reef fish are also present in numbers.

Along with a few places off Santa Maria, this seamount boasts the most regular encounters with loggerhead turtles, which enjoy well-deserved naps under the many overhangs during their transatlantic migrations.

Dives should be carried out only when the tide is stationary, and every free minute between dives should be spent slowly cruising around the bank, because encounters with dolphins, whales, turtles and hammerheads are always possible.

Even baitballs might be spotted in late summer. **Terceira & São Miguel 3hr**



Pé de Sousa

This deep-sea peak between Pico and São Jorge is also a dive-site without reef contact. Compared to the traditional shark spots on Condor Bank, there have been more sightings of blue and mako sharks there in recent years and the journey is shorter.

The procedure is the same. Because of fishing pressure, shark populations have decreased significantly in recent years, which is why at least two trips to the

shark spots should be included.

Pico 30min, Faial 1hr

Baixa do Rosais

This shoal lies three miles off the western tip of São Jorge and rises to a range of 15m.

On days with high currents, it's advisable to bring a current-hook, to reduce air consumption and effortlessly float in the open water above the reef top,



EASTERN AZORES

Located south of the main island of São Miguel, Santa Maria is the only island of non-volcanic origin and has the most diveable seamounts in the entire archipelago. Sharks have become rare around the climate-spoiled “sunny island” and dolphins and whales are seldom spotted, compared to the central group 190 miles away.

However, the underwater life is more colourful and diverse thanks to slightly higher water temperatures, and visibility is usually a little better, too.

Whale sharks can be spotted in summer too, Santa Maria being the only place in Europe where encounters with these gentle giants are relatively common!

Formigas

The Formigas (“Ants”) are not a seamount but a group of eight rocky cliffs

about halfway between São Miguel and Santa Maria 25 miles to the north. The largest island, Formigão, has a lighthouse almost 20m high, and its beacon can be seen from Santa Maria at night.

A shallow shelf with a high biomass extends around the Formigas, barely exceeding 100m deep and accommodating at least five dive-sites and perhaps the most diverse coastal fauna of the Azorean deep-sea spots.

Most famous is the steep wall, Formigas Parede, immediately in front of the east side of the largest cliff.

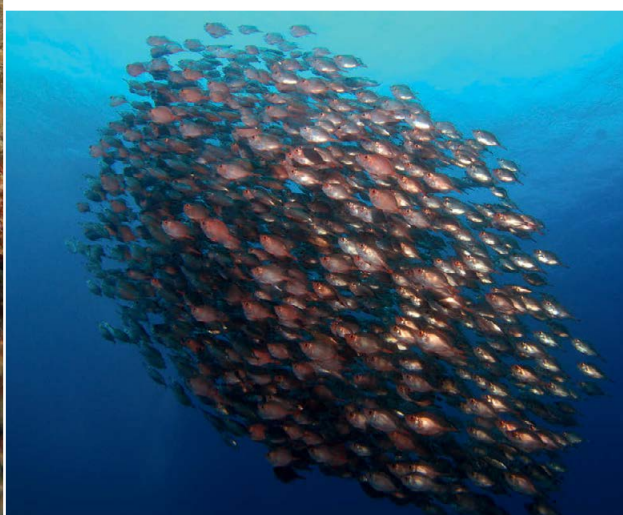
In the shady overhangs, some of the largest colonies of black coral in the Azores grow, and in open water and in the rugged flat area amberjack, barracuda and guelly jack are frequent visitors.

Exceptionally large sting rays, island grouper, bream and moray eel live on the seabed, which is quite reminiscent of the Med. As well as the wreck of the *Olimpia*, the fish-rich shoal in the south is of particular interest. There are several tame grouper in the canyons and mobula rays regularly sail over the rocks.

Once regarded as “shark-infested” – sightings of porbeagles, makos, hammerheads, blues, tope and Galapagos sharks still occurred when 19-year-old me first dived the Formigas in 1999 – the grey

Above: Tame dusky group at Formigas.

Below from left: Black coral at Formigas; a school of the deep-sea species of boarfish halfway between Faial and Pico.



predators mostly fell victim to bycatch and spearfishers.

That said, Galapagos sharks can still be encountered in late spring and the dorsal fins of the odd hammerhead shark still cut the water surface on calm summer days – especially if your boat is the first onsite. **Santa Maria 1.5-2hr**

Dollabarat

The platform reef, four miles east of the Formigas, rises to a few metres below the water's surface. From the boat it resembles a typical Red Sea offshore reef – think a mini-version of Daedalus.

Often swept by notable current, the basalt outside reef drops over steep edges and overhangs to around 50m.

Large brown and island grouper as well as pigfish live in the canyons.

Even if the scenery and mood almost scream it out, encounters with deep-sea fish depend on timing and luck, thanks to the illegal commercial fishing that was tolerated for years.

Some days there is little more to be enjoyed than what is possibly the best visibility in the Azores.

On others, huge schools of amberjack or bonito rush by, clouds of Bermuda sea chub hang in the water column, or sunfish and sharks put in appearances.

Both Formigas and Dollabarat can be reached from Vila do Porto on full-day,



Above left: White jack at Formigas.

Left: Lighthouse at Formigas.

Above: Mobula at Santa Maria.

Below: São Lourenço Bay, Santa Maria.

two-dive trips or, since last year, by liveaboard, allowing for a stay of several nights. When water temperatures reach their maximum, this area and the range between Santa Maria and Formigas are the place to look for whale sharks.

Santa Maria, 1.5-2hr

Baixa Ambrosio

This mini-seamount six miles offshore was discovered about 20 years ago and quickly became legendary as another playground



for mobulas, the “little manta rays”, and as the most exciting dive-site in Santa Maria.

In the summer months, squadrons of up to 20 devil rays regularly approach the divers, who can safely enjoy the spectacle with one hand on the buoy rope. Really experienced divers can also take a short detour to the summit at 50m, depending on the operator and prior arrangement.

Anthias swarm over rock overgrown with pink sponges, along with fully grown amberjack, solitary barracuda and bluefish. Large scorpionfish and Mediterranean morays often lie unprotected on the reef.

On the way back up, schools of bonito and barracuda can often be spotted in the blue water, and occasionally even yellowfin tuna. **Santa Maria, 45min**

Baixa do São Lourenço

Local marine biologists consider the shoal just over a mile before the stunning half-

moon bay of São Lourenço to be one of the Azores' biodiversity hotspots.

The two peaks at about 20m are often graced by groups of more than 20 teenage island grouper.

Schools of triggerfish, horse mackerel and barracuda accompany divers as they descend into the chilly 40m area, where large brown grouper loom as well as sting rays, nudibranchs and squat lobsters.

Look over your shoulder and you might even come across the loggerhead turtle that occasionally takes its nap here.

In midsummer, prepare for a proper *bouillabaisse*, along with hunting jack during the deep stop.

Caution: given the site's profile, it's all too easy to slip into deco, and the shallowest points being at 20m doesn't exactly help, especially in case of current. But in Baixa da Maia, Pedrinha or Banco João Lopes there are lighter alternatives to be explored around the island.

Santa Maria, 40min



FACTFILE

GETTING THERE ▶ Direct flights from UK to São Miguel plus a domestic flight (often requiring an overnight stay), or fly via Lisbon to São Miguel or Horta (Faial), Pico and Santa Maria.

DIVING ▶ Pico - Pico Sport, pico-sport.com. Faial - Norberto Diver, norbertodiver.pt. Santa Maria - Wahoo Diving, wahoo-diving.com & Pico Sport. São Miguel - Azores Sub, azoressub.com. SMBs mandatory and a current-hook and personal beacon such as Enos or Nautilus Lifeline advisable. Pico Sport operates liveaboards off Pico and Santa Maria.

ACCOMMODATION ▶ Hotels in all tourist destinations but self-catering private rooms, apartments or *quintas* (summer houses) for groups of four or more with rental car, scooter or bike are a good alternative.

WHEN TO GO ▶ Late June to September.

MONEY ▶ Euro.

PRICES ▶ Returns flights London to São Miguel from £115. Self-catering 60-180 euros per night, peaks July & August. Seamount day-trips with two dives 180-260 euros. Shark dive 175 euros.

VISITOR INFORMATION ▶ visitazores.com








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EGYPT



How has UK divers' favourite overseas dive destination fared during Covid, and where does it go from here? asks **PAUL GRAHAM**. Photos by **ABDO ELHABASHY**

WAITING FOR THE GO SIGN



OVER THE PAST 10 YEARS, Egypt's tourist industry has sustained blow after blow. Since the 2009 global economic crisis the country that has long been the favourite overseas destination of so many UK divers has reeled through the 2011 revolution, the terrorist downing of a Russian passenger plane in October 2015 and, more recently, the global coronavirus pandemic of 2020.

As a result the country has experienced a decade-long battle to recover an industry that should account for 15% of its national income.

In 2020 only 3.5 million tourists visited Egypt, compared to 13.1 million in 2019, meaning a 70% downfall in tourist revenue.

In a normal year some 500 businesses provide diving and snorkelling activities in the Red Sea and an estimated three million divers and snorkellers are among the visitors.

Diving is big business in Egypt, and without tourists dive-businesses struggle to stay afloat.

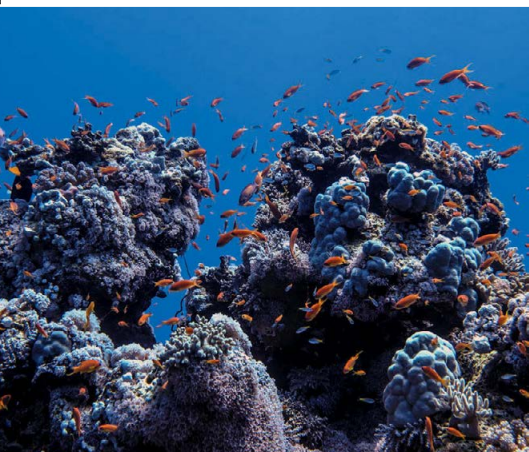
In response to the crisis, the Chamber of Diving & Water Sports (CDWS), which oversees and regulates the industry, appointed a committee headed by the Egyptian Tourism Federation and said that a labour emergency fund would provide financial compensation for dive-centres and staff.

In April 2020 it said it would halve dive-centre membership fees and exempt employees from fees through the year. The labour fund would enable dive-centres to apply for employee compensation of 600-1000 Egyptian pounds (£30-50) a month.

Though welcomed, this would cover only a fraction of monthly operating costs and payroll.

With no furlough schemes in Egypt, many centres had to make redundancies or dock dive-boats because of the reduced demand for dive excursions. Some faced permanent closure.

2020 was supposed to be the 45th-anniversary



celebration of Sinai Divers in Sharm el Sheikh. Instead, owners Rolf & Petra Schmidt had to make the tough decision to close the dive-centre for good, a direct result of the Covid pandemic.

During their long time in business they experienced and survived many events leading to lowered tourism, they noted, but this time it was different.

"We've had 12 months without any revenue but have continued to pay our staff a wage," they said. "Now, with all the financial obligations, the



economic burden is simply too high; we have no other option." The couple will however be keeping open their centres in Dahab and Aqaba.

Lidija Cupar, co-owner of Dutch dive-centre New Son Bijou, says that in 2020 it was closed from mid-February until mid-July and, once re-opened, was able to operate at no more than 50% capacity because of Covid regulations.

"Most of the dive-centres in Hurghada are still working, just not as frequently and not at full capacity," she told me. "We have been hit badly in Egypt because we're so reliant on tourism."

"We're lucky to have a number of regular Egyptian and expat clients who have kept us afloat during these challenging times," said Cupar.

"In January 2021 we noticed that fewer Egyptians were diving, and more foreign tourists began arriving again. At present we are mostly welcoming divers from Switzerland, Germany, Serbia, Poland, Slovenia but as of yesterday [31 March] they're all on lockdown again, so we're expecting a drop-off again from the eastern European countries."

She concluded by saying that she was glad the business was not reliant on liveaboards. "Never have we seen so many liveboard boats parked up in the various marinas," she said.

THE WELL-ESTABLISHED dive-centres connected to popular hotels have been best placed to benefit from the few visitors Egypt has received in the past year.

Ahmed Salem, owner of Master Diving Centre at the Serenity Hotel just south of Hurghada in Makadi Bay, told me that the hotel was operating at only 25% of its capacity during 2020, and that this had dropped to 8-12% at the start of 2021.

"Only a small percentage of guests will want to

take part in a Discover Scuba Diving experience or sign up for their Open Water Diver certification, so we have virtually been solely reliant on those divers resident in Hurghada," he told me. "We have found ourselves having to consolidate dive-trips with neighbouring dive-centres, but these have become weekly, not daily."

When I visited Egypt in December 2020, there was evidence of five dive-centres all sharing one boat. PADI Divemaster Mahmoud Ali, who has worked as a guide in the Red Sea for more than 10 years, told me that he had never experienced anything like this before, and that the experience had been far worse than the tourist declines of 2015/16.

Talking to him again recently, he told me that he was lucky to be diving once a week, because only a few locals and expats were out.

"Normally we would be operating full daily dive-trips on our own boats," he said. "DSD trips and upgrades to OWD courses are the staple for most dive-centres in Egypt."

These activities, interspersed with already certified divers enjoying fun dives and others continuing with their dive education, produced a well-rounded portfolio of clients. Without the pool of customers from the hotels, dive-centres are left with a huge deficit in their income.

Ibraheem Wagih, a recreational diver from Dahab, told me that during the summer months of 2020 he had seen many more Egyptian divers – mainly those who were already certified, taking advantage of the quieter boats.

The local dive community appears to have been something of a lifeline in keeping businesses alive.

THE VAST MAJORITY of tourists of course arrive in Egypt by air, and with many countries closing borders and stopping foreign



travel, 2020 presented a 74% drop in international arrivals, with foreign occupancy rates in Egyptian hotels dropping to 10-15% of 2019 levels.

Many countries are still limiting overseas travel to legitimate and essential business travel. The British government's Covid-19 lockdown exit road map originally indicated that international travel would resume at the earliest from 17 May, but legislation has since been drafted to legally extend the national travel ban to 30 June, so we await developments on holiday departures.

In normal times it isn't always easy for flight operators to flex and adapt quickly to changes in government policy, but easyJet, one of the main airlines providing flights to the Red Sea, says it has consolidated travel hubs to fewer UK airports, giving it the ability to cancel and reschedule flights at the drop of a hat.

As frustrating as this is for the consumer, it is an effective way to ensure that airlines maximise the number of planes they have in the air against supply and demand of travellers.

To maintain cash-flow, airlines have been releasing scheduled flights right through to autumn 2022.

This is unheard of, because usually they work only about 8-10 months in advance.

Pushing out attractive deals but at the same



So if the UK resumes international travel by the end of June, the Egyptian tourist industry might just salvage most of its summer tourist season.

Emperor Divers, one of the oldest dive companies in the Red Sea, has bought the Sinai Divers dive-centre in Sharm el Sheikh and added it to its existing business.

It has also agreed to hire the Egyptian staff previously employed by the centre. Investment of this nature doesn't usually occur in industries that are about to collapse.

There will be casualties, although brutally this can benefit the reputable dive-centres if it weeds out the operations you would rather not see offering dive-trips.

UNDERWATER photographer and dive instructor Abdo Elhabashy is confident that the dive industry can bounce back.

Working as a divemaster during the tourist slump of 2015/16, he remembers the worrying times when the work dried up.

"There is no doubt that it has been a struggle over the past 12 months, but we have just had to tighten our belts and get through it," he told me.

"We've survived before and can do it again. The workforce is ready and waiting – all we need now is people."

Positive news for the industry came on 25 April when Russia was reported to have agreed to resume flights between the two countries after that five-year suspension that followed the 2015 plane crash that killed the 224 people aboard.

The news of a resumption of flights is very welcome for the Egyptian dive industry and should provide a boost for tourism while it waits for the other countries to follow suit post-pandemic.

The progress of a vaccination programme is one of the measures the UK government

uses in assessing whether or not travel to a particular country can resume. Hala Zayed, Egypt's Ministry of Health & Population, announced that vaccination of workers in the tourism sector in Sharm and South Sinai was due for completion by the end of April.



time affording customers the opportunity to move and change flights has become an effective strategy in ensuring that airlines have the income to maintain operations on the assumption that things can only get better.

I for one have taken advantage of reduced flight prices to book future trips to Hurghada.

Paul Charles, CEO of travel PR company PC Agency, predicted in March that by the end of June most European and short-haul countries would once again be accessible from the UK.

The big question, he said, was how the government travel taskforce would open up the options for returning to the UK. Will Egypt appear on the green, amber or red travel list?

Typically, Egypt relies on four main markets – the UK, Russia, Germany and Italy – making up around 75% of its annual tourism revenues.



The vaccine roll-out in Egypt has not followed age priority as in the UK – with so much at stake, being a tourist-facing worker trumps being aged.

Egypt was expecting to receive about 4.5 million doses of the AstraZeneca vaccine in May –

just as well, because by the start of May fewer than one in 100 Egyptians had been vaccinated.

To protect and reassure returning tourists including divers, the CDWS has produced comprehensive sets of protocols regarding sanitisation of diving equipment and facilities that must be followed by all licensed dive-centres.

In place since July 2020, these are to continue to be enforced until further notice.

It might take a good 12 months from now for the Egyptian dive industry to get back to full capacity, and this year could still be a struggle – though I would foresee the 2022 tourist season looking a whole lot healthier.



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SET FAIR FOR CUMBRAE



WITH SOMEWHERE IN the region of 900 islands, it's safe to say that we have more than our fair share in Scotland. So you can be forgiven if you can't name all of them, or haven't heard of the Cumbrae Islands.

Also, most of those people who have heard of them probably haven't done so in the context of scuba-diving.

Lying off the west coast, the Cumbrae are often in the shadow of their bigger, more famous neighbour the Isle of Arran. The two small islands, creatively named Great Cumbrae and Little Cumbrae, lie in the Clyde estuary just across from the popular tourist town of Largs.

Great Cumbrae, also known as Millport, is only an eight-minute (I timed it) ferry ride from Largs and is popular during the summer.

It's well known for its "Crocodile Rock" and traditional 10-mile circumnavigating cycle route – it might be traditional, but during my childhood it felt as if it was verging on child abuse!

If you did a quick search online for dives around the islands you'd be forgiven for wondering why I'm writing about it. I've found only two – three at a



Our regular guide to Scottish diving ROSS MCLAREN takes us over to some easily accessible islands that he feels deserve more recognition

push – dive-sites "written up" on my goto diving information page.

However, local knowledge is key when it comes to diving these wee hidden gems, and a quick count in my head brings up at least 10 sites, ranging from wrecks to wall-dives.

Some require a boat, but with the help of Jason Coles and Wreckspeditions just north in Dunoon it's possible to do a full day's diving around both islands and get in a variety of dives and marine life.

If you're lucky you might even see the odd porpoise coming alongside the boat to say hello.

STARTING ON Great Cumbrae, the first dive is from the shore. Heading south from the ferry slipway you head towards the small village of Millport, and about halfway there on the left is a lay-by with enough room for around four cars.

The site is called Wishing Well and it's fantastic for divers at all levels.

Climbing down the seawall, very well-placed for balancing kit and "stepping into it", you walk out over a pebbly beach into the water. From here, the dive couldn't be easier.

Saying that, and speaking from experience, depth is important here.

Go too deep and you'll miss the sights so, sticking to 8-10m, head left, keeping the slope on your left and swim until you hit rocks and boulders that absolutely teem with life.

Once you've found these you can head a little deeper to 15-20m if you want. Continue to swim out, keeping the slope on your left.

The rocks are covered in life from anemones to starfish, but it's the nooks and crannies that really make this site.

Take your time and check as many of

Above: Cumbrae Islands

Right, from top: Dahlia anemone, velvet swimming crab; another colourful dahlia anemone; nudibranch.

Far right: Nudibranch.



the cracks as possible, because there are often lobsters to be found, along with eels and even an octopus.

The latter was a particular highlight for me, although it was rather shy and wouldn't come out for a photograph.

Once you've reached the "end" of the rocks, or it's time to turn back, it's important that you head up a bit shallower before turning back.

Why? Because there are even more rocks to explore!

Heading to about 8m on the return journey, you'll find yourself next to what appear to be some beautiful "cliffs". In reality, these are just massive boulders, but again they're covered in life.

The anemones clinging to them are particularly incredible.

The only major hazards on this dive, as with most in and around Cumbrae, are the tides and currents. Be aware that the currents can pull you a bit further along than you might realise, so take this into account for the return leg.



THE SECOND DIVE on Cumbrae is one I've been privileged to do with a good friend, and it might not always be possible.

Continuing south from Wishing Well you soon come to the FSC Millport research station on the right side of the road and some buildings on the left, as well as a pier.

That friend of mine is one of the staff-members here, so diving the pier was not an issue, but if you plan to do this dive I would strongly recommend that you ask permission to use the slipway beforehand, and certainly don't park in the car-park unless you have checked.

If you can get permission to visit the site, it's well worth it. It's a prime example of not needing to go deep to have a great dive. The last time I was here we clocked only a maximum of 4.6m, but what a 4.6m it was!

From the slipway where we entered the water it's a bit of a swim to the pier itself.

This can obviously be done under water but I'd suggest a surface-swim before dropping to give yourself the maximum time possible around the legs which, trust me, are covered with life.

The anemones are some of the most colourful I've seen in Scotland.

The seabed around the legs looks to be crawling with velvet crabs, hermit crabs, starfish and much more.

If you're eagle-eyed and take extra time around the legs, you could be lucky enough to spot some incredible nudibranchs as well.

Once you've bimbled around, simply head back south towards the slip, taking time to look around the seabed and among the seaweed for even more

critters. As at Wishing Well, the main issue here is tide and current, which can be strong around the pier. Care also needs to be taken in and around the slipway, because it can be very slippery.

FOR THE NEXT couple of dives we leave Great Cumbrae behind and take a very short trip south to the east side of Little Cumbrae until we reach another small island with a wee castle on it.

This is Trail Island, and just south of it the jagged rocky coast of Little Cumbrae continues into the sea, dropping about 30m to the seabed.

This makes for an excellent wall-dive. You drop from the boat onto the precipice of the cliff and follow it down to your chosen depth, taking a moment to look back up the wall to where you've come from.

On a sunny day (we do get them occasionally in Scotland), seeing the light gradually penetrating the water and silhouetting the cliffs is incredible.



Then head south, keeping the wall on your right, and again taking time to check every crack and crevice.

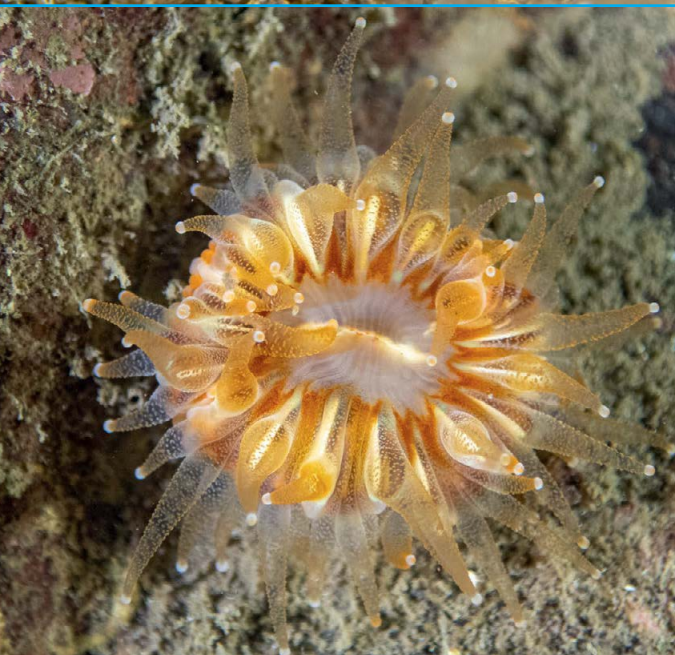
The wall is covered in life ranging from anemones to langoustines and, if you're lucky, perhaps the odd octopus.

Once you've reached your turnaround time, do a 180° and head back with the rocks on your left, gradually coming shallower as you take in the spectacular orange and yellow colours of the soft corals.

Although I've counted around 11 recorded wrecks in and around the Cumbrae Islands, I'm aware of only two that are regularly dived. These are the *Beagle*, lying off the north-west tip of Great Cumbrae, and the *Lady Isabella* on the south-west tip of Little Cumbrae.

For anyone interested in diving West Coast wrecks, the go-to book has to be Peter Moir and Ian Crawford's *Clyde Shipwrecks*.

It's an invaluable source for histories, positions and descriptions of how



they lie today – especially helpful in the sometimes murky waters of the Clyde.

The *Beagle* was launched on the Clyde in July 1864. The 56m steamer had a regular route between Glasgow and Belfast. In fact, according to advertisements of the time, for 30 shillings you could get a return trip in a first-class cabin. Sounds good value, but that's £190 in today's money.

Beagle had not been in service long before she met her end. On 8 November, 1865 as she steamed towards Glasgow she was struck by another vessel, the *Napoli*, on her port side.

All aboard were saved, but nothing could be done for the stricken *Beagle*, which quickly took on water from the gash in her hull and sank nine minutes later.

Lying between 30 and 40m, much of the deck and superstructure has collapsed over time but at the bow you can still make out both the anchor and winch lying atop the remaining deck.

As you head back towards the stern the port hull drops away almost at once, leaving the jagged gash where the *Napoli* struck.

Despite the collapsed decks you can clearly make out the vessel's skeleton.

Continuing along either side of the hull you eventually come to the now-collapsed remnants of what was once the superstructure, with the wheelhouse, stacks and where the boilers once were.

Fin out over the chasm that is now the aft hold, into which decking has fallen over the years, and you finally reach the stern. This is perhaps the most interesting and eye-catching section to explore.

If you drop to the seabed, the propeller, rudder and overhanging stern make for a stirring sight. The wreck is covered in white and orange plumose anemones, with the odd eel lurking among the silt and debris in the holds.

FOR SOME DIVERS the depth puts this wreck just out of reach, but it's a different story for the *Lady Isabella*.

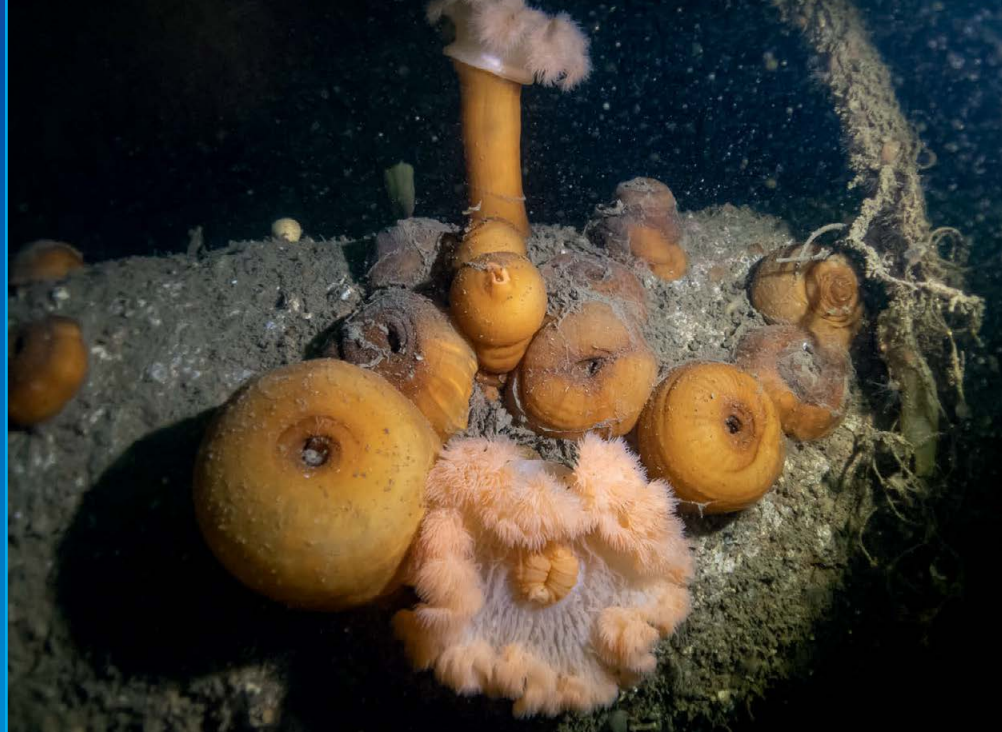
Built in Dumbarton in 1882, this large iron barque had a career that spanned the globe, so perhaps it's fitting that it was her first trip back to the Clyde in August 1902 that would also be her last.

Having sailed all the way from New Caledonia in the South Pacific, a violent squall forced her to run aground just off the shore of Little Cumbrae.

The crew felt they weren't in immediate danger – until the captain was swept overboard by a wave, only to be swept back aboard by another one.

I think that's what you call lucky!

Today the wreck sits just 200m out from shore, its highest point in only 5m of water, and offers a great dive for all,



Above: Anemones on the *Beagle* wreck.

Below from top: Illustration of the *Beagle*, and of the wreck as it is now.

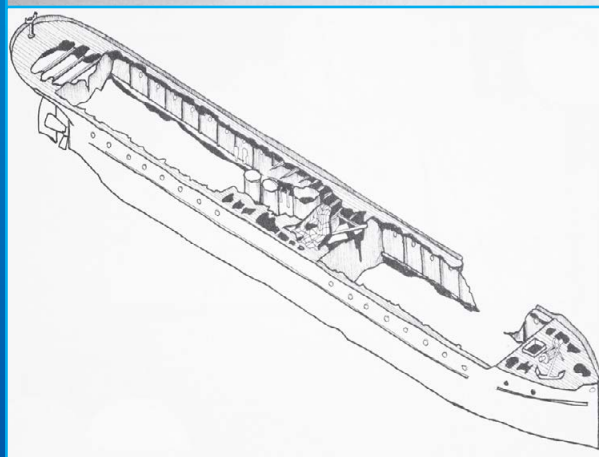
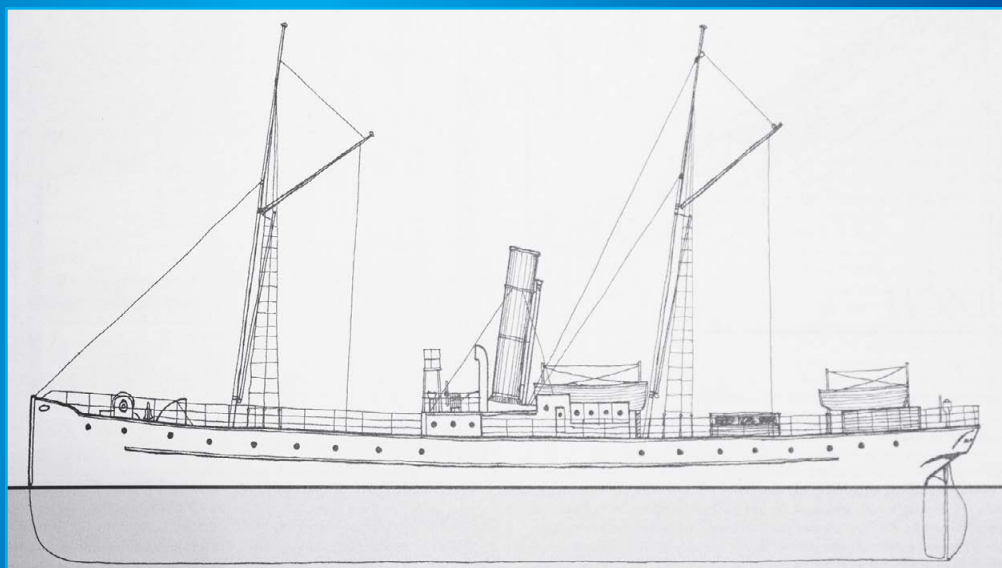
levels, and an excellent habitat for marine life. It's home to soft corals and dead men's fingers, and fish often swim between the remnants of the hull.

In such shallow waters, even on a dull day the ambient light that reaches the wreck makes for a good dive. On a sunny day, the light effects can be incredible.

If there's time on your return trip, or between dives, an abandoned lighthouse

with a small harbour on the west side of Little Cumbrae makes for a perfect surface interval adventure or picnic.

Often when people think of the west coast of Scotland they think of places such as Oban, Skye or Ullapool, all of which are beautiful, but you don't have to travel too far from the central belt and Glasgow to find equally incredible vistas and diving.



AIR-FILLS

West Coast Diving (Knockentiber)
C & C Marine Services (Fairlie)
Aquatron Dive Centre (Glasgow)
K-Dive (Coatbridge)

BOAT CHARTERS

Wreckspeditions (& air-fills)

REFRESHMENTS

Largs has a wide variety of cafes, fish & chip shops and restaurants, though one of my major recommendations would be an ice cream (or two!) from Nardini's!

REFERENCE

Clyde Shipwrecks, Peter Moir & Ian Crawford

5 WAYS TO SEASTUFF

ARE YOU ONE OF those divers who wonders why you seldom seem to see the marine life that's always being featured in magazines like **DIVER**?

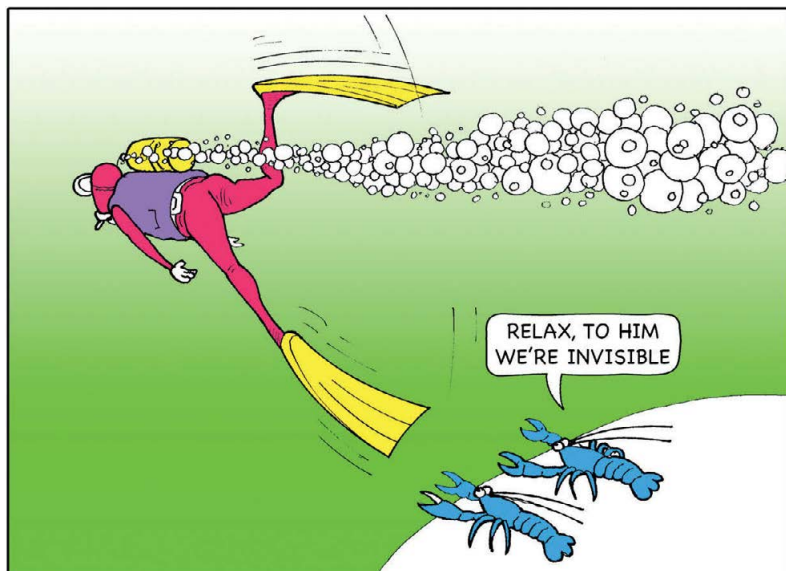
Diving and snorkelling gives us a window into a completely different world of strange and unfamiliar animals and plants. Seeing marine life can be a fascinating and rewarding part of every dive.

Buddying up with many different divers and pointing out various species, I soon realised that many of these divers were looking but simply not seeing the marine life around them. This article highlights five simple tips to help those



Too many divers look but don't really see, says **BOB EARLL**, who has more than a few ideas on how to make us more observant and our dives more satisfying. Cartoons by **RICO**

who want to see more. And if some of them might seem obvious, it's surprising how often people miss things simply because they don't follow them.



1 Slow down, relax, look around

If you're zooming around at high speed 3-4m off the seabed, especially in the waters around the UK, you miss seeing a great deal. One reason that photographers see more is that they slow down and often stop altogether.

A perfect example of this occurred on a dive off Gozo. The dive-guide, thoroughly relaxed and perfectly buoyant, hovered Zen-like just off the sandy seafloor, seeing things and pointing them out to me – the burrowing cuttlefish, the seahorses and an octopus in its stone-entranced home – while the rest of the group of divers, for some reason best known to them, stayed 3m above him and missed everything.

At the Azure Window on Gozo there are some big ledges. You can stop there, relax and look out into the blue with massive shoals of small fish all around.

Then you see the predatory jack patrolling and swooping, looking for their next meal.

Two pairs of eyes are better than one, and a great memory while on these ledges is of my daughter pointing out a barracuda she had spotted in the far distance swimming towards us.

The way our bodies orientate naturally in the water, whether diving or snorkelling, means that we're often looking ahead and slightly down.

Looking up to the surface, straight 

ahead and behind you, especially in the tropics, can repay the effort.

Looking into the far distance, you often see the larger species. Similarly, looking very closely – an old friend of mine would take a magnifying glass on his dives – enables you to see lots of smaller things.

Those fish that follow you as your fins disturb the seabed and then are caught out when you turn around are a good example of looking in a different way.

Don't look, you don't see. You can often see fantastic marine life while on your way to and from the dive-site, before even getting into the water.

I recall sitting looking over the side of a whale-watching boat in the Pacific, seeing all sorts of amazing things as we returned from the Farallon Islands to San Francisco.

Etched into my memory is a blue shark shying away, a tuna jumping and a gaggle of sea-lions looking for all the world like a multi-headed serpent – all seen while most of the people on the trip were inside the cabin and missing it!

You do need to actively look to see things.

2 Get your eye in

There is a difference between looking and seeing. It's a strange feature of the way our brains work that once you know what you're looking for, you tend to see it more often.

Marine-life identification guides are a great help with this – especially those with photos rather than illustrations.

As you flick backwards and forwards through the guide to find what you want to identify, you get to see other species you might come across.

That process repeated routinely, in an almost subliminal way, enables you to become familiar with the variety of life you'll see on your dive.

This is the idea of my Seastuff website. If you know which common species to expect to see in an area and can watch action-cam videos of what they look like in their natural environment, you are far more likely to see them on your dive.

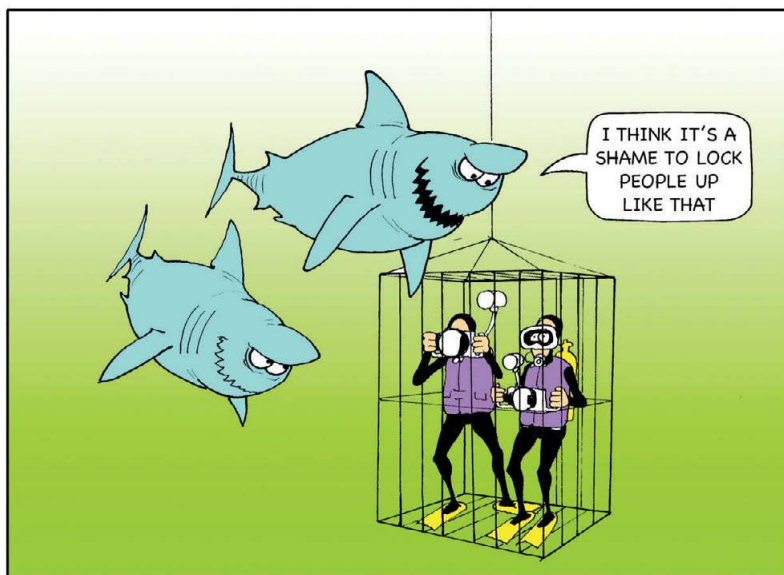
Only two parts of the world are covered so far on the site – Malta & Gozo and Antigua in the Caribbean – but it's there to develop as opportunities arise.

As you get your eye in, you'll start to understand more about where to look and what to look out for. Birdwatchers have a name for this: "the jizz".

This is the overall impression of a bird, garnered from features such as its size, shape, flight or other specific behaviours.

It's similar with seeing marine life. Off Gozo, for example, two species of grouper are common.

YOU'LL BE LUCKY TO SEE MORE THAN 10 SPECIES OF FISH ON A DIVE IN THE UK



The dusky grouper is often seen lying horizontally on a rock waiting to ambush passing fish.

By contrast, I've noticed that the golden grouper often orientates vertically, looking up to the fish shoals on which it is about to prey. Looking down on it, often all you see is the triangular shape of the fish in cross-section.

You can be trained to look for the signs of the different species. In the early days of the Marine Conservation Society (MCS), we ran training courses at the marine station at Millport in the Clyde.

One of the dives was devised to get people to look for and collect specimens that were buried in the sand.

The tell-tale signs might be an arm from a burrowing brittlestar protruding above the sand, the respiratory holes of a heart urchin or the explosion of sand when you touched the siphon of a giant clam.

Armed with the knowledge of what to look for, the course divers usually came back with their target species.

3 Shine a light

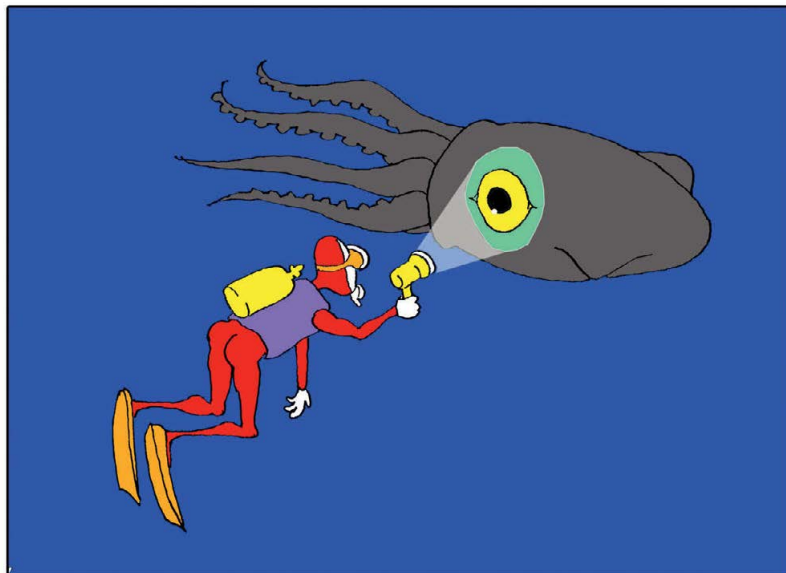
We know that torches are a great way to bring back the colours absorbed by water. They will highlight the colours you see in the photographs of marine life taken with flash.

Another important aspect of using a torch is that it provides a focused beam that concentrates your attention, and in the process often highlights wildlife you might otherwise miss.

This also helps you to share what you've seen with your buddy.

A torch is also really handy for dives during the day, because all sorts of species live in cracks and caves in the rocks and the light helps to reveal them.

We knew little of the ecology of the leopard-spotted goby before diving began, and it was interesting that during the night dives on the Millport courses the divers would often see these gobies for the first time highlighted by the torch, knowing that they lived in crevices in the rock.





KEITH HISCOCK

4 Location, location, location

The marine life we see on our dives varies hugely depending on geography. Divers soon develop a world view, with different destinations often featuring big-name wildlife.

If you want to see particular species you have to know where to go, for example diving with the seals in the Farne Islands, wolf-fish at Eyemouth & St Abbs or basking sharks in the Isle of Man.

Much of our diving tourism is determined by knowing what we're going to find at particular locations.

Another take is to go diving with people who dive their favourite sites regularly. Dive on dive, they learn where to look to see the wildlife that makes the

dive special. If I was going on a shore-dive with Lawson Wood at Eyemouth, he knew exactly the cave where the wolf-fish lived and, lo and behold, there it was, waiting to have its picture taken.

The diversity of marine life, the number of species you are likely to see on any dive, varies markedly in different parts of the world.

You'll be lucky to see more than 10 species of fish on a dive in the UK, for example, while off Gozo in the Mediterranean 20-30 species would be possible.

Off Marsa Alam in the Egyptian Red Sea you could lose track, counting more than 50 species of reef fish in a single dive. The warmer tropical seas are more diverse than the cooler seas.

Similarly, the Atlantic region is less

diverse than the Indo-Pacific region.

I've often heard the phrase "the Med is dead". Well, it isn't by a long way but seeing the different species means getting your eye in, and once it is there is much greater diversity than in the UK for groups such as the fishes.

5 Build experience, know your quarry

As divers build experience they see and recognise more and more. They become more attuned to what to expect.

The list below, which is far from complete, illustrates the sort of things that become apparent for those who get better at actively seeing marine life.

Many of the major groups of underwater animals are attached to the seabed.

They include the sponges, anemones and corals, hydroids, bryozoans and sea squirts and the many seaweeds.

They are unfamiliar to us because they are found only in the sea, so ID books can be a big help.

Much marine life is really small. To see many of the most beautiful sea slugs, for example, you need to look really closely at the rock. Sea slugs are predators and have very specific food preferences. Find their favourite food and you find the slug.

The seafan snail (*Simnia hiscocki*) is cryptic and coloured to mimic the seafan, camouflaged to help avoid predators. This species was discovered only recently by Keith Hiscock.

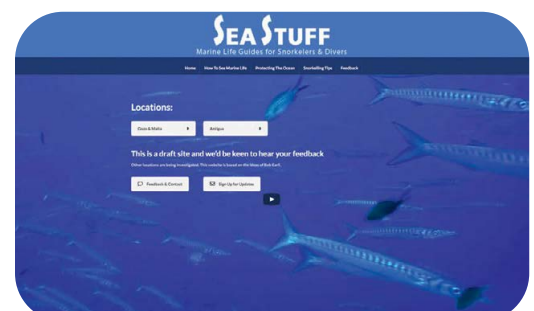
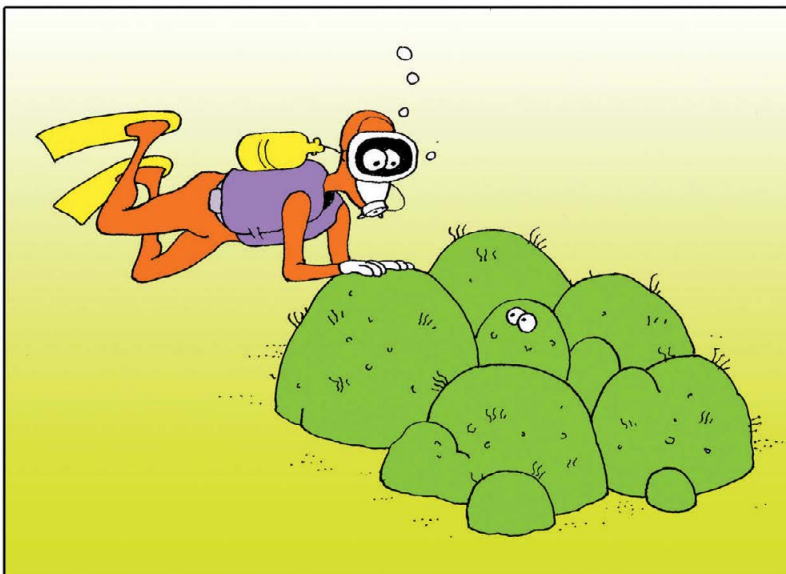
The species we see are often highly adapted to specific types of habitat with marked differences between rock and sediments, and the many gradations in between. Knowing the seabed habitat is key to knowing where to find species.

The spectacular firework anemone *Pachyserianthus* is a good example of this, because it can be seen by divers only in the deeper muddy areas of sheltered sea-lochs.

Species behaviour can help to reveal what to look for. Off Gozo a grouper-like species called a comber often follows octopuses out hunting. See one and you often see the other.

Above: The well-camouflaged seafan snail, *Simnia hiscocki*

Below: The work in progress at seastuff.com



DIVING ON THE EDGE

**Tanked Up:
A Diver's Story**
by Ben Thompson

BEN THOMPSON was raised in Yorkshire, and it was perhaps prophetic for a life with more than its share of close shaves that when as a small boy he was swept off Cornish rocks by a freak wave, the next one swept him right back onto them.

That holiday experience must have encouraged him to think he might enjoy good fortune at sea, because he has worked as a diving instructor and yacht captain for the past 30 years. A Master Scuba Diver Trainer, he also has a marine environmental management degree and is an enthusiastic conservationist.

Readers will get a good idea from this autobiography's contents page of its wide geographical range, as Thompson moves from early diving days in England and Spain to turning professional in Thailand.

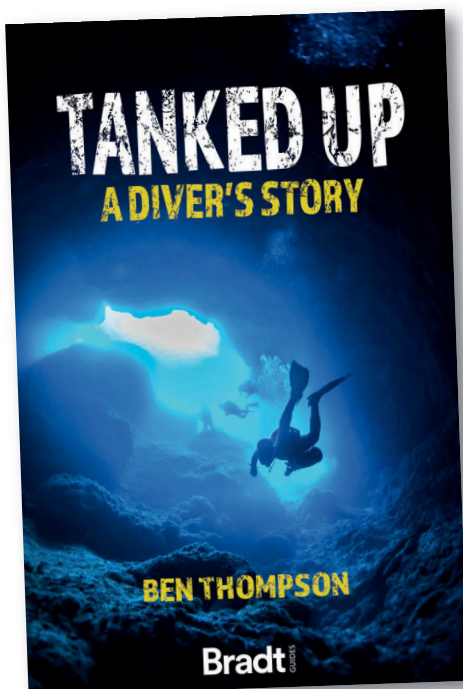
The book then takes in his adventures in Australia, Indonesia and the Philippines, before switching west to the Caribbean in South Caicos and Cuba, returning east to Thailand and finally descending on east Africa as he continues his search for a place to put down roots with his own dive-centre.

Tanked Up takes us only to 2002, leaving open the question of whether he and his long-time partner and dive-buddy Vicky Page did settle down to run a diving business in Mozambique – and, if so, whether there is a volume two to be written.

However, we do know that today he and Vic own and operate a diving training centre in St Lucia.

Sequel or not, this book is packed with excellent diving descriptions of unusual and often virgin locations and more than a lifetime's worth of exciting adventures above and below the surface as we follow Thompson's restless wanderings.

He clearly preferred off-the-beaten-track diving challenges to easy options. Much of the book covers the scoping out of possible locations, notably aboard a pirate ship in the Far East and by coast road in a Mozambique emerging from civil war.



The problem lies in attracting enough customers to such places to make a business economically viable, and the troubles that arise when he and Vic go into business with a motley crew in Koh Chang, Thailand, provide quite an insight into the challenges of dive-centre management.

As with another good recent dive-pro autobiography, Mark R Wilson's *Irma*, I appreciated the author's recognition that a life, however dedicated to diving, is also shaped by many other aspects.

Hard drinking and drug use frequently crop up, for example, as the *Tanked Up* title might suggest, though not necessarily his own.

Although the book is extremely well-written and will carry you along as on a vigorous drift-dive, it is essentially introspective.

Thompson's strength isn't in bringing to life other characters, however colourful their personalities might promise to be, and I felt I was offered only sketchy portraits of the

many individuals he encounters, and that includes Vic.

But to be fair, fleshing them out might have compromised the hectic momentum of this very enjoyable book. It's published by a company more usually associated with guide-books, and I warmly recommend it.

Bradt Travel Guides
ISBN: 9781784778118
Softback, 320pp, 13x20cm, £9.99
Kindle £7.99

THOUGHTS FOR THE DAY

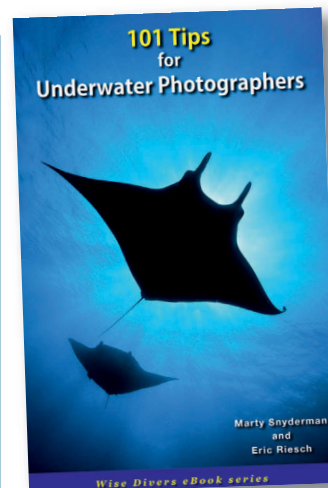
101 Tips for Underwater Photographers
by Marty Snyderman
& Eric Riesch

AS I OFTEN OBSERVE, stick a number in your book title and you should be halfway to success.

Heaps of underwater photographic advice is freely available online, so this little eBook, which is essentially a set of digital flash-cards, might seem costly for what it is.

Essentially it's a rough guide for divers who already know their way around a camera, are aware of what an aperture or focal length are and just fancy some easily digested tips that might help them to get better photos with their chosen set-up.

The authors are Marty Snyderman, a well-established pro underwater photographer often associated with



holiday workshops, and Eric Riesch, who did the design and editing.

101 Tips is the first in a planned series of *Wise Divers* eBooks on various topics of interest to divers. Next up will be marine life.

This one is described as a "great refresher before any dive trip", though personally I'd find a return to the camera manual more useful.

And that indeed is one of the 101 tips. Another I quite liked was to go through 20 of what you consider your best and 20 of your worst shots and analyse the reasons for your success or failure. Sounds like a long job.

The tips are not arranged in any logical sequence. Some of them are vague commonsense wisdom of the "luck follows effort" or "complacency is the enemy!" variety.

However there is plenty of more specific advice in there too, and the authors avoid becoming overly

judgmental, acknowledging that some divers' approaches are not right or wrong but simply different.

So there is useful advice on, say, realising that over-use of diffusers comes at a price; that times change so it's no longer necessary to keep

defaulting to the lowest possible ISO; that TTL still has limitations (listed); and that you're taking a risk by filling media cards above 80% capacity.

There isn't too much on post-production, other than that it pays to learn to use histograms and to avoid going mad with the saturation or sharpening controls.

I'm sure many underwater photographers would pick up bits and pieces and salutary reminders here, but others are likely to prefer

#5 Get low, get close, and shoot up.

While this is not an absolute rule set in stone, it is a guideline that will often serve you well when photographing big animals, wide-angle scenes, macro subjects, seascapes, and a myriad of other subjects in a variety of settings.

Getting low and shooting at an upward angle of orientation to your subject, often causes that subject to stand out against an inviting background of blue water, instead of blending into a dark background, such as a reef or shipwreck.

Getting close to your subjects helps create crisper images with colors that are richer and pleasingly saturated.



TOP 10 BEST-SELLING SCUBA-DIVING BOOKS

as listed by [amazon.co.uk](https://www.amazon.co.uk) (12 April, 2021)

1. Reef Life: An Underwater Memoir, by Callum Roberts
2. 100 Dives of a Lifetime: World's Ultimate Underwater Destinations, by Carrie Miller & Brian Skerry
3. Amazing Diving Stories – Incredible Tales from Deep Beneath the Sea, by John Bantin
4. To Unplumbed Depths, by Hans Hass
5. Wild and Temperate Seas: 50 Favourite UK Dives, by Will Appleyard
6. Diving & Snorkelling Puerto Rico, by Steve Simonsen
7. Shark Bytes: Tales of Diving with the Bizarre and the Beautiful, by John Bantin
8. The Silent World, by Jacques-Yves Cousteau & Frederic Dumas
9. Underwater Photography: A Step-by-Step Guide, by Maria Munn
10. Dive Dorset, by John Hinchcliffe

either a more comprehensive primer or a detailed guide to making their work more artistic. This reminds me of those tiny "thought for the day" inspirational books people leave in their loos. They have their place but they aren't essential.

And of course this is a book about images, so I should mention that it's full of fine (and some deliberately weak) photography to illustrate the authors' advice!

Wisedivers.com
ISBN: 9781792360732
eBook, 125pp, US \$14.99
Kindle or Apple Book Store

TOUGH LOVE

Wildlife Photographer of the Year: Unforgettable Photojournalism
Edited by Rosamund Kidman Cox

I'LL BE HONEST, I found this book difficult to review. The photography it contains is wonderful, but the content of the assembled pictures is too brutal to make it a celebration.

These powerful images have been selected from past years of the renowned Wildlife Photographer of the Year competition, organised by London's Natural History Museum. But these are pictures that fall into the category of environmental reportage,

and the 50-plus winning or highly commended photographers from some 20 countries represented here have found little to celebrate.

They had points to make about the current state of the natural world.

Like most divers I feel considerable empathy with marine life – and animals generally – so found it difficult to dwell too long on the finer points of many of these pictures.

The seahorse perched on the cotton bud on the cover, which you'll probably recognise, is one of the less directly upsetting images, which are overwhelmingly related to the unthinking cruelty of humans.

And in fact only a dozen or so of these pictures even relate to marine life. There is the haunting *A Tale of Boom and Bust*, Kim Westerskov's shot of a netful of orange roughly with a single baleful fish-eye capturing the viewer's attention. Or Brian Skerry's graphic illustration of what "by-catch" really means in procuring a handful of shrimp, and the same photographer's depiction of a netted thresher shark.

Similarly we find an entangled loggerhead snapped by Jordi Chias – though in this case the story had a happy ending, because he later managed to cut the turtle free.

There is Paul Hilton's sea of severed shark fins, and brief relief in Thomas Peschak's silhouettes of a surfer and shark side by side, designed to stress how remote the danger of a shark attack is.

You need a strong stomach for this book, so it wouldn't exactly be the ideal gift for everyone, but it's fine photo-journalism and for and conservationists who might need to stiffen their resolve, it's all you would ever need.

Natural History Museum
ISBN: 9780565095062
Hardback, 128pp, 25x26cm, £25

Reviews by
Steve Weinman



TOP 10 MOST GIFTED SCUBA-DIVING BOOKS

as listed by amazon.co.uk (12 April, 2021)

- 100 Dives of a Lifetime: World's Ultimate Underwater Destinations, by Carrie Miller & Brian Skerry
- Wild and Temperate Seas: 50 Favourite UK Dives, by Will Appleyard
- Amazing Diving Stories – Incredible Tales from Deep Beneath the Sea, by John Bantin
- Fifty Places to Dive Before You Die, by Chris Santella
- Scuba Diving Hand Signals: Pocket Companion for Recreational Scuba Divers, by Lars Behnke
- Reef Life: An Underwater Memoir, by Callum Roberts
- The Third Dive: An Investigation Into the Death of Rob Stewart, by Robert Osborne
- Fishes of the Maldives, Indian Ocean, by Rudie H Kuiter & Tim Godfrey
- The Last Dive: A Father and Son's Fatal Descent (audiobook) by Bernie Chowdhury
- Underwater Foraging – Freediving for Food, by Ian Donald

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This is the fourth edition of a popular guide-book for a popular destination, and this big bright volume shows

continued evolution in terms of up-to-date diving details, new photography and more sites than before, including *Tugboat 2* and *Middle Finger* on Gozo. The author, Peter G. Lemon, dives tirelessly to provide his readers with all they need to know, whether for shore- or boat-dives.



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OR go to <https://divernet.com/product/scuba-diving-malta-gozo-comino-the-ultimate-guide-to-diving-the-maltese-islands/>

RESPECT TO VAX ODYSSEY



Micronesia liveaboard *Odyssey*, which operates in Truk Lagoon, has donated the use of the 40m vessel to provide housing and logistical support to local medical personnel administering Covid vaccinations to people living on remote islands and in distant villages.

Each week the crew have been taking the medical team to a different island. The cycle will then repeat to administer the second doses, and it is expected to take about three months

to reach all the islands without healthcare facilities in the lagoon.

The medical team lives on the boat for five days at a time and sets up temporary clinics on the islands. Each day the medics, supported by *Odyssey* crew, set up in a different village.

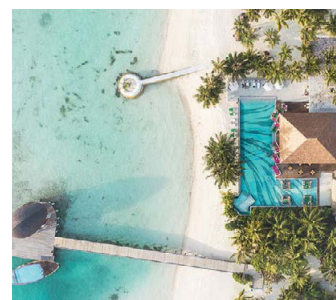
For the initial trip, *Odyssey* and its crew brought 10 members from Chuuk Public Health to the island of Uman. The team not only vaccinated for Covid-19 but also administered

MMR vaccines to children.

Florida-based Odyssey Adventures approached the health department to volunteer use of the boat and crew and the initiative is expected to reduce the initial vaccination timeline by more than half.

If you fancy diving Truk aboard the vessel when normal service resumes, prices start from US \$3495pp (two sharing) on a seven-night trip.

► trukodyssey.com



Your office in the Maldives

The OZEN Collection from Atmosphere Hotels & Resorts has launched its first long-stay package for guests who can afford to work remotely or simply enjoy an extended stay at its OZEN Life Maadhoo (OLM) or the new OZEN Reserve Bolifushi resorts in the Maldives' South Malé Atoll.

The luxury resort is offering 40% discounts for guests staying for 30 days or longer.

The arrangement is all-inclusive, with additional benefits such as IT support to set up a remote office, watersports, three meals at the M6m under water restaurant, laundry, 16 spa vouchers for every 30 nights with another for every additional four nights, dedicated butler, personal trainer sessions and so on.

At OLM guests can choose between scuba-diving and spa treatments to be included in the package during their stay. The discounted price for an Earth Pool Pavilion there is £1386 a night for two until the end of October.

At Bolifushi the diving is not part of the package, but it was previously a scuba resort so there is certainly diving to be had.

A Sunrise Earth Pool Villa there would cost £1470 for two a night. All taxes are included in both cases, in case that's a deal-breaker!

► atmospherehotelsandresorts.com

PADI's new Dive Guides

With its latest set of PADI Dive Guides, the training agency says that a new feature makes it easier for divers to discover, explore and plan their next adventure, whether it's far away or local.

Users can now book dives or snorkel excursions, holidays and training courses with dive-centres and resorts directly through the integrated PADI Adventures platform, says the agency.

Dive-shops can be contacted for further information on dive-sites in their areas.

Both the number of individual guides and the level of detail has been increased, according to PADI, with the resource continuing to expand daily as centres, resorts and professionals add new pages to what are already thousands of guides.

Included are marine-life calendars, seasonal weather data and travel information.

Users can investigate diving opportunities by



continent and country, or drill down to specific destinations and "a mosaic of dive-sites" in each location, with insights provided by local experts as well as site reviews from other users.

► padi.com

Package stay at Bonaire's famed Habitat

Situated well south as it is, Bonaire is one of the few Caribbean destinations where you can dive 365 days of the year, making it a popular destination for divers, says Ultimate Diving.



It has an early-booking offer for Captain Don's Habitat, the resort founded in 1976 by Don Stewart, a pioneer in bringing environmentally sound developments to the island. "The pristine house-reef accessible from the beach is awash with colourful parrotfish, angelfish, feisty sergeant-majors, butterflyfish, scrawled filefish, grunt, gobies and grouper," says the operator.

You can book seven nights from £1885pp, which includes return flights from London, transfers and 10 dives each. Single supplements apply and regional departures are an option.

► ultimatediving.co.uk



At home on Cornish roads – air-fills and all!



How's this for a rolling staycation idea? A Cornish business has launched what it describes as the UK's first dedicated motorhome for scuba-divers – and it says users will no longer need to find dive-centres to refill their tanks.

Diver David Hanlon set up Coast 2 Coast Motorhome Hire of Truro three years ago and his fleet of eight has just risen to nine with the addition of the *Coast Diver*, which he reckons is ideal for divers looking to drive from cove to cove exploring promising dive-sites.



Coast Diver can accommodate four to six people with their dive-gear and comes with a Coltrill MS6 compressor. Divers receive a thorough briefing in its safe use along with their motorhome familiarisation, says Hanlon. A 10-litre tank takes about 20min to fill.

The themed interior includes a library of diving books and DVDs, and the exterior paintwork is inspired by a German barque wreck near Falmouth, the *Hera*.

Hanlon's father dived it back in the 1970s, promising that any artefacts would be given to the local community – and they're still there.

Further wreck-themed motorhomes are planned. You can hire *Coast Diver* for a week or just for a long weekend – rates are £300 for three



nights off-season rising to £395 in summer (this July and August are already fully booked).

► coast2coastmotorhomehire.co.uk

All yours (with a few friends) for under \$1m!

US \$930,000 sounds like a lot for three nights in the Maldives, even at a 5* resort, but think about it – if you can persuade more than 200 friends, family and chance acquaintances to stump up for a welcome break, perhaps around a major celebration,

it wouldn't cost them more than about \$4500 apiece (in sterling that's about £3200).

The proposition comes from Mövenpick Resort Kuredhivaru Maldives in Noonu Atoll, 45min north of Male airport, and now available for hire as a "private tropical adventure playground".

Your party would have access to no fewer than 105 villas, suites and residences over water and on the beach; four restaurants, lounge bars and cafes on an all-inclusive meal plan, a 5* PADI dive and watersports centre, spa, tennis and volleyball courts, yoga sessions and more. They don't specify free scuba, mind you.

The price is for stays up to 30 September; the price rises north of a million dollars in October, then falls to \$999,000 up to Christmas.

If you do take on masterminding this spree in 2021, you should be somebody who enjoys a fair bit of admin. And what do you do with the rest of the week?

► movenpick.com



Curaçao Blue

The Coral Estate Luxury Resort on the ABC island of Curaçao in the southern Caribbean includes a 5* PADI dive-school, Coral Divers. Apartments range from the Deluxe Suite Garden View at US \$89 a night (two sharing) to the Superior Apartment for five for \$159.

Apartments include kitchenette, bathroom and terrace or balcony. There are restaurants, wellness centre, shops and a car hire service within the complex.

More than 40 dive-sites are dotted around the island, many of them easily accessible from shore. Two-tank guided dives cost from \$68pp or you can book an unlimited air package and a vehicle and be self-sufficient 24/7 from \$110 for three days.

► coralestateluxuryresort.com



Sail & dive the Azores

Sailing Azores archipelago waters in the 13m catamaran *Water and Wind* you can get to dive what Portugal Dive boldly claims as the Atlantic's most pristine waters, with numerous marine-life species and big pelagics a two-hour flight out from Lisbon in Portugal.

The maximum number of guests is eight and the package is all-inclusive, meaning accommodation, food, four meals a day onboard, soft drinks and insurance. You pay from 2585 euros per diver for a 10-day trip, with eight days onboard, two onshore, at a 4* hotel, 15 dives, all transfers, an island excursion and local support.

Two share accommodation and there need to be at least five divers among the guests onboard.

► portugaldive.com

WELL AND TRULY TESTED



It's time for **STEVE WARREN** and a buddy to work up a head of steam with another demanding double-breathing session on a 30m-deep wreck. Yes, another regulator needs a thorough testing...

REGULATOR ZEAGLE **ONYX 11** & **ENVOY OCTOPUS**

ZEAGLE IS AN INTERESTING US scuba manufacturer. It isn't a "big" brand. Almost all of today's best-known leisure-diving equipment names began as small partnerships or family businesses, then expanded hugely.

We're seeing a similar trend with the emergence of tech-diving companies, with a lot of start-ups coming to maturity in recent years.

Many suppliers with good product ideas have been bought out by the major players and disappeared. Zeagle is something of an outlier. It's been in business for more than 40 years and can lay claim to designing technical wings long before the term was coined.

It also builds some very specialised BCs and redundant air equipment for public-safety dive teams. It has form. Yet it seems content to run like a family business, despite being owned by Huish Outdoors, a giant with brands including Oceanic, Atomic Aquatics and Bare in its portfolio.

It's not that Zeagle appears unambitious, just that it doesn't seem to feel compelled to move much outside its comfort zone.

So what happens when I give one of its lower-cost regulators a pounding that puts me way outside mine? Read on.

The First Stage

The Onyx 11 is EN250A-certified, so it meets the EU's highest standard for ease of breathing. Zeagle's figures claim that it exceeds these by some margin, and I have no reason to doubt it.

This regulator shares many design similarities with the top-of-the-line F8, which earned a highly favourable review in February.

These include an environmentally sealed balanced-diaphragm first stage and pneumatically balanced, adjustable second stage, a common combination in many high-performance regulators.

As a balanced-diaphragm model, falling tank pressure has a negligible effect on ease of inhalation. The design also allows for wide airways to be used, allowing for high, fast flow-rates under excessive demand, such as when octopus-sharing.



Diaphragm regulators use a flexible cap that's open to the water on one side. Water pressure presses down on it when you inhale, causing air pressure in the first stage to drop.

The diaphragm moving down pushes on a rod that, in turn, opens the first-stage valve, allowing air to flow from your tank, through the first stage and onto your second stage.

A spring assists the water pressure acting on the diaphragm to open the valve.

The spring sets the intermediate air pressure, ensuring that around 9 bar of air pressure is sent to the second stage.

Because the spring is fixed-strength it can set the intermediate or medium pressure only at 9 bar above sea-level pressure.

The diaphragm is needed to increase this as you descend. It senses and adds the weight of the water as you dive deeper, at the rate of about 1 bar per 10m depth.

This is how a scuba regulator automatically "regulates" the pressure sent to the second stage regardless of depth.

In a non-environmentally sealed diaphragm first stage, the spring is open to the water and the exposed spring chamber can be vulnerable to ice-formation. A regulator freezing can cause

a complete air stoppage or violent freeflow.

The EN standard met by the Onyx 11 is based on testing in fresh 4°C water.

Regulators that can't meet this standard are certified for use only at water temperatures above 10°.

As air passes from tank to mouth, it drops in pressure and expands, causing a huge drop in temperature that can reach 30° below ambient.

The greatest drop occurs in the first stage, where pressure can plunge



Well-arranged medium-pressure ports lead off the hoses without binding.

from 300 to 9 bar with your first breath.

As the metal first stage begins to supercool from the inside out, water on its outside can freeze. The spring and the spring chamber in which it sits are the parts of a diaphragm first stage most at risk.

In the Onyx 11 a second protective diaphragm sits over the first diaphragm and spring chamber, with the space between them filled with moisture-free air. Water pressure is transmitted through this to the main diaphragm, eliminating external icing.

The large first stage also provides a greater surface area to exchange cold from inside it for warmth from the surrounding water.

A 4°C temperature is common enough at UK inland sites in winter at the surface, and deeper year-round, so meeting the coldwater EN standard is important. It also protects against problems from sand or mud in the water for anyone diving in low-vis environments.

For hose-management there are two adjacent hp ports for pressure gauges and/or transmitters and five mp ports for primary and octopus second stages, air tools and direct feeds.

These ports are fixed and arranged in a semi-circle around the first-stage body. This naturally angles the ports to lead hoses over your shoulders or under your arms without kinking.

The Second Stage

The second-stage main body is made using thermoplastics, time-proven for qualities that include strength, durability and low weight.

A steel heat-exchanger is provided to help prevent icing. The already super-cooled air from the first stage chills further as it flows through the second stage, and also comes into contact with surfaces made wet by saliva and moisture from the diver's exhalations and any water that has seeped past the mouthpiece.

It's these liquids that can form ice and prevent a second-stage valve from opening or closing properly. The heat-exchanger and other components in the valve encourage cold to leave the second stage and be absorbed by the warmer water, while drawing heat into the second stage from it, much as the first stage does.

It's an engineer's delaying tactic, designed to prolong the time it takes for a regulator to freeze.

The EN test is quite harsh, requiring the reg to work without freezing for five minutes at 50m while passing 375 litres of air per minute. That's a considerable workload and it would probably hurt to inhale because of the cold. Four degrees is chosen because little usable warmth can be extracted from the water below that temperature.

As a pneumatically balanced second stage, air pressure is harnessed to make inhalation easier at all depths than with an unbalanced unit, in which a spring holds back the air coming from the second stage until you inhale.

The air pressure coming from the first stage increases as you dive deeper, so the spring must be strong enough always to hold it back.

In the shallows, the spring is stronger than it needs to be. You have to use lung-power to open the valve against the spring's closing force to get a breath.



Top: Onyx 11 adjustable cracking control and venturi switch.
Above: Dive/predive lever on the Envoy octopus.

It all adds to the work of breathing, so you'll use more air.

In the Onyx 11, an air-chamber surrounds the spring. Air pressure acting with the spring helps it to close the valve.

The air pressure changes automatically according to depth, so a lighter spring can be used. In effect the air varies the spring's closing strength, so it's always optimised for the easiest-possible inhalation, regardless of depth.

To inhale, you need to crack the valve by opening it against the opposing force of the spring. Normally you want your reg to breathe as easily as possible, but you can adjust the Onyx 11's cracking effort using a dial on the side of the second stage to compress the spring and increase breathing resistance.

Zeagle makes clear in its excellent manual that this should never be done without a very good reason, such as the sort of heavy surf entries that are common enough in California.

The valve cracked, a venturi force is created as the air flows into your mouth. The resulting vacuum helps to keep the valve open, reducing the effort you need to maintain air-flow.

A switch enables you to turn off the venturi to prevent freeflows when the regulator is out of your mouth at the surface, as when snorkelling out to the dive-site. It should never be set in the predive position for breathing under water.

A very supple and tough braided hose that's easy to coil for stowage links the stages.

This also helps to warm the air on its route to the second stage.

The hose-protectors that sit over the first-stage connection and the second-stage swivel easily slip back, making it inexcusable not to wash salt from this vulnerable area – a small but nice touch.

You can use the Onyx 11 with 40% nitrox out of the box.

In Use

The chunky, non-slip 300 bar DIN connector is easy to connect and disconnect with wet hands. A yoke version is available.

The Onyx 11 came supplied with imperial port plugs but luckily my co-tester had a set of US

Allen keys to remove these. I like to route my octopus from the right so that it faces me as my primary does. I ran my BC and drysuit inflators from the left, leaving the centre mp port unused. The hoses laid out nicely, with no binding.

The second stage is very comfortable on the jaw, thanks to a combination of light weight, chin-rest, mouthpiece (which has different levels of softness in the bite tabs) and the flexihose.

The exhaust T is effective at dispersing bubbles out of your field of view in most positions.

The Onyx 11 is a very easy breathe, letting you sip air when you're virtually inactive, such as while waiting out a subject for your camera.

But if you need to breathe hard because you upped your workload, perhaps confronting a head-on current in the Maldives, it delivers lots of air with minimal effort.

I'll qualify that, using our deepwater sharing exercise as an example. The A suffix attached to the 250 EN standard confirms that a regulator has passed EU requirements for use with an octopus.

EN reg tests use costly computer-controlled machines to calculate work of breathing, but they don't give you a sense of how breathing from a regulator feels under high demand. For that you need humans, in this case instructor and former Navy diver Dennis Santos and me.

We can't replicate and measure EN standards but we can see what happens at the EN test depth of 30m when we try to get our combined breathing rate up to the specified 500 litres per minute.

The octopus supplied was a Zeagle Envoy 11, the second stage used with Zeagle's least-expensive regulator package. It has a lightweight thermoplastics body like the Onyx 11 but lacks the heat-exchanger (though it's still coldwater-certified) and is not pneumatically balanced.

There is no cracking adjustment, only a dive/predive lever. Zeagle suggests leaving the octopus in predive mode under water, though I would strongly disagree.

It's equipped with a standard rather than a flexihose and is black, so you might want to put a yellow hose-wrap around it to make ID easier.

We scooted down to a wreck at 30m, held on to it and finned like crazy.

Covid restrictions meant that Gibraltar SAC, which hosted my visit, could not legally organise anything more than small dive-teams so we had no record-keeper to monitor time and pressure-drop, but previous tests indicate that we do hit the 500lpm benchmark briefly.

I was on the Onyx 11 primary and found it an excellent breathe while Dennis, hauling on the Envoy 11 octopus, got as much air as he wanted.

A few nasty factors potentially plague over-exertion exercises. Is the regulator itself creating resistance that noticeably impairs ease of breathing in and out?

At 30m, air is four times denser than at the surface, and nitrox, which we were using, is a little denser, so any lack of performance from the regulator is exacerbated by this.

This is a performance issue, and what we try to determine on our user trial.

You really build up CO₂, probably the limiting factor when using a high-performance reg like this one rather than the reg itself.

The Onyx 11 and Envoy 11 sailed through with flying colours.

Both also cleared easily when inverted, either by exhaling or purging. It can happen in the confusion of emergency-sharing.

The exhaust Ts didn't interfere with my mask-seal either during this exercise, the last thing you want in an emergency.

Conclusion

The Zeagle Onyx 11 is an excellent regulator. You get high-end ease of breathing, comfort, durability, a nice port layout and certified coldwater performance.

The Envoy 11 safe second is no slouch, either. There's a lot to like with this Zeagle package and I highly recommend it. ■

SPECS

PRICE ► £440, Envoy £156

FIRST STAGE ► Balanced diaphragm, Envoy downstream

SECOND STAGES ► Pneumatically balanced

PORTS ► 2hp, 5mp

WEIGHTS ► 1.2kg, Envoy 0.5kg

CONTACT ► zeagle.com

BC SCUBAPRO HYDROS X

SCUBAPRO'S HYDROS BC PROJECT has produced two very interesting BC designs, the impressive back-inflation Hydros Pro and, reviewed here, the jacket-styled Hydros X.

BC design would seem to have plateaued in terms of basic function, controls, harness and, of course, air-cell type, whether jacket or wing.

What makes the Hydros models stand out is the choice of Monprene for much of their construction. We'll look at the claims made for this material a little later.

As a jacket BC, the Hydros X falls into the category that tends to be provided by dive-schools and chosen by single-cylinder recreational divers.

Although the air-cell is one-piece, it's shaped to divide lift. A properly weighted diver under water will have a relatively small amount of air in the BC to neutralise buoyancy. When prone, this air will run along either side of the cylinder, helping to maintain trim.

In a head-up attitude, when descending feet first or ascending, air rises to the shoulders, holding the user upright. A wing behaves in much the same way. However, on the surface, adding air to a jacket-style BC sees it forced into the lobes around the waist.

The effect can be to push divers higher and again, if properly weighted and trimmed, to hold them upright. Early wings had a reputation for pushing single-cylinder divers onto their faces at the surface.

I own a wing designed for twin cylinders and, when used incorrectly with one tank, it does do that. But in the past three years of testing BCs for **DIVER**, every back-inflation model designed for single-tank diving has supported me safely at the surface.

In fact the first jacket BC I ever tried, back in the 1980s, face-planted me! Things move on, and the pros and cons between back-inflation and jacket-style BCs for single-tank recreational diving are no longer clear to me.

If you don't want to spend hours with bits of string, a book of knots, lots of bungee and a tech guru on Zoom teaching you to stow your must-have accessories DIR-style, pockets are a benefit, and it's here that wings are usually remiss.

The Hydros X sports proper cargo-pockets.

The Design

The air-cell is made from Edurortex, a 420-denier nylon composite. Lift varies from 13 to 20kg for men and 13-17kg in women's sizes.

For buoyancy control, there is Scubapro's time-proven balanced inflator with oral-inflation pipette.

A rapid exhaust built into the oral-inflation hose shoulder can also be activated by a small trigger at the elbow connection, so a rescuing diver ascending with a casualty held from behind can dump the Hydros X without having to reach around to the front of the BC.

This is backed up by a dump on the opposite shoulder and a bum-dump at the lower left.

This BC is weight-integrated, with zipped weight-pouches that slide in over the pockets.



The squeeze release is coloured red, making it easy for a buddy to identify the weight-ditching mechanism.



They are released by squeezing Fastex-type buckles.

In back, adjacent to your lower shoulder-blades, are non-ditchable trim-weight pockets.

Accessory management is accounted for by the two waist-pockets and a small, pre-bent stainless-steel D-ring above each shoulder break and a medium-sized steel D-ring that hangs from each hip.

There are also mounting points for a knife above each weight-pouch. So far, a conventional Scubapro BC, so on to the "unique selling point."

Monprene

This combination of rubber and thermoplastics has recently been used in one-piece fins, because it's very tough and can be moulded to be rigid for the foot-pocket, yet flex progressively along the blade.

It's resistant to extremes of heat and cold,



Hinged shoulder holds the harness open for easy donning. The Monprene lining 'sticks' to your dive-suit for security.

sunlight and detergents, all of which your kit might encounter, and is employed extensively in the Hydros Pro and X harnesses.

It allows, for example, the backpack plate to flex a little, helping it to mould into your upper shoulders and lumbar region.

The upper shoulder-straps also incorporate Monprene, and there are panels on the waist-strap. The material has non-slip properties and tends to "stick" to other surfaces such as your suit.

Scubapro reckons that this prevents the BC slipping under water, improving stability and doing away with the need for elasticated cummerbunds and cinching-up straps at depth to account for suit compression.

Monprene is also used extensively on the outer body of the Hydros X, leading to another claim – that it dries almost instantly, or can be quickly wiped dry for storage.

In Use

For packing, the Hydros X has hinges built into the upper shoulder-straps. You can flatten the straps to reduce the BC's footprint but, when kitting-up, this helps to hold the harness open for you.

The air-cell is separate to the harness and slides freely on the shoulder and single waist-strap. Shoulder-buckles swivel to prevent chafing. Eschewing a cummerbund, there is only a wide waist-strap which, like the shoulder-buckles, is closed with a squeeze-release buckle.

The cylinder is attached via Scubapro's time-proven Cinch tank-band. Unlike the usual over-centre plastics cam-buckle, Scubapro uses a stainless-steel hook-and-eye closure.

You adjust the length of the nylon tank-strap by pulling it through a D-ring, then securing the free end of the webbing to the strap with Velcro.

An adjustable loop goes around the cylinder-neck so that the Hydros X always sits at the same height on your cylinder. A handle is built into the back for carrying your set, though I could get only three fingers into it, not my full hand.

The main weights can be easily loaded after you kit up. A nice touch is that the press-to-release switches are marked in red for easier identification by a buddy.

Even so, it's important to discuss weight-ditching with your partner. Simply pulling on the D-rings doesn't work, which might not be obvious to someone unfamiliar with the system.

Will the weights slide out easily if the pockets are packed out? They did.

I did a few dives that involved a fair amount of walking, including on steep slopes and flights of steps. I used 300-bar 12-litre steel cylinders and 8kg of lead, so the all-up weight exceeded 35kg with the reg and the 4.4kg of the BC, but I have only praise for the comfort the Hydros X provides.

Surface Flotation

I made my first test-dive about 2kg overweighted. I was also starting my dive about 4.5kg heavy through the weight of the air. I measured the distance from my lower lip to the sea surface and found that the Hydros X held me a very creditable 16cm above the water.

Surface support was also very good, holding me upright with no tendency to pitch me forwards or backwards. It's important that your mouth and nose should be high enough to let you breathe easily at the surface if you're out of air. This also allows you to scan for a lost buddy or approaching boats.

Under water the Hydros X clung to me as claimed, so I didn't need to adjust the harness for suit compression.

Nor did I feel I was moving around within the harness, which can cause instability. The trim, unsurprisingly, was superb. I could easily maintain a perfectly prone position just off the seabed without needing to fin to adjust my pitch.

Such streamlining saves effort and prolongs your gas supply. Against current, it minimises drag and, for underwater photography, it means you can work with subjects very near the seabed without contacting it, if your spatial awareness and skills match the Hydros X's own performance! You can also easily hang upside-down to show off.

Inflation & Deflation

A risk with BCs is that the direct-feed can jam open, usually because sand has got into the mechanism, or it's iced up on a coldwater dive.

My usual underwater inflation and deflation tests confirm, as per CE requirements, that if this happens, the BC dumps can vent air faster than the direct-feed can supply it. This allows competent divers to control their ascent-rate, even if they can't disconnect the inflation hose.

Both the rapid exhaust and shoulder-dump achieve this, if you position yourself properly. I normally do a runaway ascent test, fully inflating



Rapid exhaust on the left can be activated by pulling down on the hose or depressing the switch on the elbow fitting.

a BC at 10m while holding onto an anchor, then letting go. This simulates getting caught out by a direct-feed freeflow and being pulled towards the surface which, of course, means that the air in the BC will be rapidly expanding. I didn't complete this test because one of the divers I was with was low on air and we had to surface.

Previous experience with many BCs, including a number of Scubapro's, is that stopping distance is typically 1m using the shoulder-dump, 1.5m using rapid exhausts. Gibraltar went into severe lockdowns, including a curfew, that prevented me from making a further dive to confirm this.

The pull-tabs for the shoulder and bum-dumps are easy to locate and brightly coloured for identification by a buddy in poor visibility.

Pockets

The pockets are capacious and easy to use. I like to carry a main and back-up full-size DSMB, one with 45m enclosed compact reel and one with a finger spool. I could pack a buoy and its reel into one pocket and still have room for a folding snorkel and a decent-sized torch.

The zippers arch from the top rear all the way to your front hip, so open really wide to allow you to reach a gloved hand right inside. This makes it easy to stow and remove items during your dive.

The large zip-tab provides a good grip with gloves and the zip closes towards the front, so it's easy to check that you've secured the pocket after use.

Conclusion

One claim made for the Hydros range is durability, and the Scubapro's air-cell and Monprene certainly feel tough. Other claims made specifically for the Monprene also stand up. It does "stick" to you, so you don't need a cummerbund to prevent ride-up and shouldn't need to tighten straps at depth. It does dry near-instantly too.

The price you pay for Monprene is weight for travelling. Comfort and, crucially, surface and underwater buoyancy characteristics, are excellent.

This is a BC I can highly recommend. ■



Power-inflator controls are easily told apart by colour and shape.

SPECS

PRICE ► £715

SIZES & LIFT ► Men's S (13.2kg), M (17.3kg), L (20.3kg), XL (20.3kg). Women's XS/S (13.2kg), M (17.3kg), L (17.3kg)

WEIGHT ► 4.2-4.7kg

CONTACT ► scubapro.com

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NEW BUT UNTESTED

The latest kit to hit the dive shops



Scubapro Nova 850 TEC

◀◀◀◀

With 850 lumens output and a tight 8° beam, Scubapro reckons its latest addition to the Nova range is a winner. Featuring a warm 4200k LED bulb, the aluminium spotlight can be used to 300m, has a rotating switch and is powered by a trio of recyclable or rechargeable C-cells. It is priced at £125.

▶▶ scubapro.com



Hammond CoreTex Base Pullover ▶▶▶▶

The £15 Hammond CoreTex Base pullover is sold as ideal for wearing under your drysuit on warmer days or as an additional layer when dives turn colder. It also doubles up for casual surface wear. The 100% polyester construction keeps it easy to care for, says Hammond, while the brushed finish ensures comfort next to the skin.

▶▶ hammond-drysuits.co.uk

Maurice Lacroix Aikon Venturer 38mm Watch ▶▶▶▶

The distinctive white-liveried Aikon Venturer 38 is a 300m-proof women's dive-watch. The stainless-steel casing has a satin and polished finish. The one-way ceramic bezel has six arms designed for easy setting, even with gloves. An automatic 26-jewel movement with 38-hour power reserve drives this £2250 timepiece.

▶▶ mauricelacroix.com



AP Diving Rebreather Safety Mouthpiece ▶▶▶▶

Now standard on Inspiration closed-circuit rebreathers, the new AP RBMS rebreather safety mouthpiece is also now available as a £55 retrofit. Advantages are said to include reduced risk of mouthpiece loss in the event of unconsciousness, the result of a quick-release security neck-strap, and a mouth-seal improved by an enhanced lip flange. Greater comfort is also promised, with less effort said to be needed to grip the mouthpiece in the jaws in normal use.

▶▶ apdiving.com

Nautisport Pro Universal Smartphone Housing ▶▶▶▶

Claimed to work with nearly all Android and Apple smartphones as a result of its controls design, this mobile phone housing costs £189. It is 60m-rated, and an M67 filter adapter is anticipated soon to allow for use of close-up and wide-angle lenses.

▶▶ mikesdivecameras.com



Paralenz Vaquita Pistol Grip

Paralenz's deep-diving, automatic colour-correcting Vaquita video and stills action-cam can now be equipped with a matched pistol grip to provide greater stability for hand-holding. It has a "record" on/off trigger built in, and costs £35.

►► paralenz.com



Contact Patch

Contact Patch is an alternative to emergency medical-information bracelets and electronic devices that might be forgotten by the user or overlooked by helpers. Containing a plastic strip with pre-printed fields that the wearer fills in to provide emergency contact, existing medical conditions and insurance information, the patch attaches to the diver's suit or other kit where it should be obvious to rescuers. Available in a choice of languages, it costs £10.

►► contact-patch.co.uk

Christopher Ward Sealander C63 Elite

The latest model to join Christopher Ward's fleet of dive-watches is the Sealander C63 Elite, which is based on a Swiss Sellita SW200 automatic chronometer movement. It is 150m-rated. Premium grade 2 titanium ensures a strong, lightweight casing, says the maker, and the crown retracts for protection from knocks. The dial features Super-LumiNova markings for easy reading in poor light and there are cut-outs so that you can see the mechanism at work. Prices start at £1150.

►► christopherward.com



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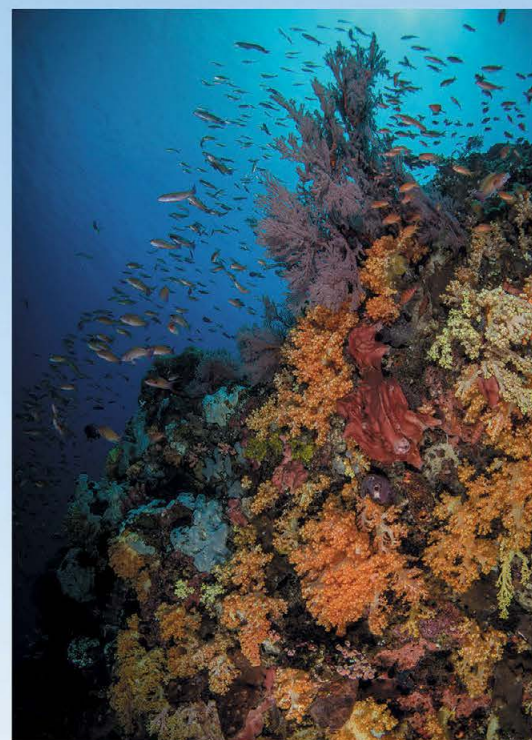


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DIVING MEDICALS

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: mclmp@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. Tel: 01788 579555 www.midlandsdivingchamber.co.uk (72756)

CLUB NOTICES

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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 799364. (68370)

Appledore Sub-Aqua Club (SAA 35) Friendly 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. (69308)

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. Tel 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 855 725. (65792)

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)

Buckingham Dive Centre. A small friendly club welcoming all divers and those wanting to learn. We dive throughout the year and run trips in the UK and abroad. www.stowe-subaqua.co.uk Tel: Roger 07802 765366. (69433)

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 (68620)

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, Larkwood Leisure Centre E4 9EY. Information: www.dive365.co.uk Email: loughtondivers365@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. www.cotswoldbsac332.co.uk (68577)

Darlington Dolphins Sub Aqua Club, small friendly BSAC/PADI, open to new and experienced divers. Meet Friday night in Dolphin Centre at 8.30. Tel: 07773 075631 or email robkilday@hotmail.co.uk (72665)

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 (69699)

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 (68413)

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 (65609)

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 174125. (68663)

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 (69411)

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 our website: www.esacdivers.co.uk (65879)

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. (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. (67287)

Hartford Scuba BSAC 0522, based in Northwich, Cheshire. A friendly, active diving club. Compressor for air and Nitrox fills. RIB stored in Anglesey. www.hartfordscuba.co.uk (67287)

Hereford Sub Aqua Club, is looking for new members. Regular diving off the Pembrokeshire coast on own RIBs. Training and social nights. Contact: rusaqua@goolemail.com (69146)

HGSAC, South Manchester based friendly, non-political club welcomes newcomers and qualified divers. Lots of diving and social events. Family. Three RIBs and compressor. www.hgsac.com (68501)

High Wycombe SAC. Come and dive with us - all welcome. Active club with RIB on South coast. Contact Len: 07867 544 738. www.wycombesubaqua.com (69131)

HUGSAC - BSAC 380. Experienced club, based around Hertfordshire, with RIB on the South coast. Members dive with passion for all underwater exploration. All agencies welcome. www.hugsac.co.uk (63275)

Ifield Divers. Crawley-based club. Twin engine dive boat with stern lift in Brighton Marina. Training for novices, diving for the experienced - all qualifications welcome. www.ifield-divers.org.uk Email: info@ifield-divers.org.uk or tel: 01883 731532. (64514)

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 tel: (01293) 612989. (68335)

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)

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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.lwsc.co.uk (70043)

Leeds based Rothwell & Stanley SAC welcomes new and experienced divers, full SAA training given. Purpose built clubhouse with bar, RIB, compressor. Meet Tuesday evenings: 07738 060567 kevin.odd@talktalk.net

Mansfield and District Scuba Diving Club. 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 & Compressor/Nitrox/Trimix. Meeting every Thursday 7pm till late. All divers welcome. www.merseydivers.com or call Steve on 07570 015685.

Merseyside training club, new and active divers from all agencies, weekly pool session. Own Rib towing vehicle Contact www.wapsac.org.uk or wapsac@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)

Mole Valley Sub Aqua Club. Surrey based SDI club, own RIB, active diving UK & Abroad, training and social events. Trainees/crossovers welcome. Contact: 07410 949268 or email: info@mvsac.org.uk (68691)

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 training.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.nwsac.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 (68483)

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: craighray31@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@plymouthdivers.org.uk to join a dive. (72219)

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)

Reading Diving Club. Experience the best of UK diving with a friendly and active club. All welcome. Tel: 01183 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.robinhooddiverclub.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. (65103)

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)

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. 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)

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)

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 141250. (69653)

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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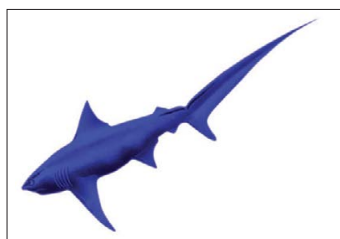


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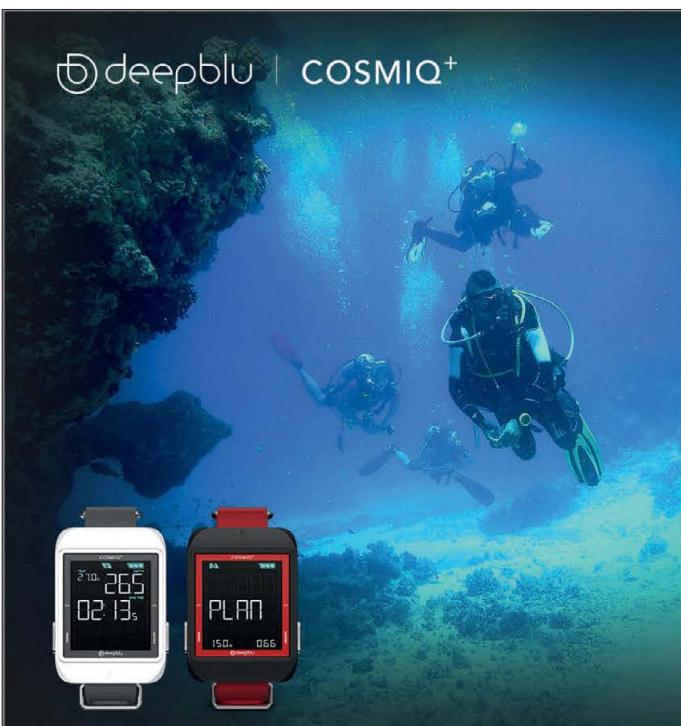
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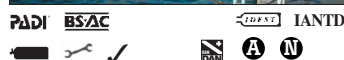
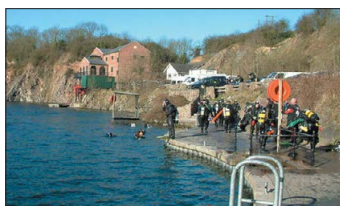
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Elsewhere in this issue you can read about the enviable recent diving adventures of BRANDI MUELLER in Galapagos, but she almost missed the trip, as Beachcomber mentioned back in April. Here she tells the story of the Covid test that went wrong, and how her liveaboard rep's willingness to take a chance saved the day

Stranded at the airport with a worthless Covid test result

DISCLAIMER: *The following is unlikely to happen to you. During these crazy times, if you decide to travel, follow the recommendation of your tour or dive operation...*

In my case, Aggressor Fleet had offered to arrange the needed Covid test before entering Galapagos. But I was already in Ecuador and didn't want to stay extra days in Guayaquil, so I arranged it on my own.

Good travel-disaster stories are usually the best – who cares if you had a great time on your trip with no delays, lost luggage, robberies, injuries, bad weather or any problems at all?

But that decision of mine added a story to my repertoire that I couldn't have dreamt up.

I have travelled a little during Covid, as regular readers will know. Travel is my way of life and my income and it's been a tough time.

While hesitant to travel I was also desperate to get back to life as I know it (or the new life of tests, masks, face-shields, hand sanitiser, quarantines and social distancing – all of which I accept.)

Before entering Ecuador, a negative Covid test is required within 10 days of arrival. Galapagos requires a test within three days of arrival.

Because of the time it takes to get results, this usually means two tests but as I was already in Ecuador I got a test at a lab recommended by other people who had not had any problems.

ARRIVING AT THE AIRPORT three hours early, I was asked for my passport, boarding pass and Covid test.

About this time Roxana, an Aggressor representative showed up, and as we introduced ourselves it became apparent that the check-in lady and a colleague she had called in were unimpressed by my test.

I showed my results, emails from the lab and even my WhatsApp conversations with the lab. The woman called the lab to ask how it had processed the test.

Clearly things weren't going well, but I have learnt to sit back and wait. My usual usually works eventually but, if not, crying is my second method.

With 90 minutes to take-off, the staff decided I should get another test, though I knew there was no way we could get a taxi, get a test and have it processed before my flight left.

But if this was the game we had to play, I'd get the taxi (perhaps driven by the lady's brother) and get another test at a lab that promised results in unrealistic times.

The ride took at least 20 minutes. It was 10.30 now and check-in closed at 11.

There was a queue for the tests. They wanted to charge me \$150 (the going rate is \$80), which made me start to think that this might be a scam.

Was I just the lucky person they pulled out of the airport line that day to get more money for somebody's friend's Covid lab?



Meanwhile I had been messaging the lab where I had taken the test two days earlier. It replied that it had administered the tests but then sent them to another "approved" lab, and they were trying to get a document from that lab.

Not wanting to be part of the \$150 test scam, I asked to go back to the airport.

In more than 70 countries I had never failed to board a flight despite whatever nonsense someone might be giving me. Usually at the last minute – amid tears – I would end up on the plane.

New plan: get back to the airport before the plane left. They weren't really going to keep me off it... right? (*Spoiler alert, I was wrong about this.*)

I can say good morning and order drinks in Spanish, but this was way over my head. I was so thankful to have Roxana to help me out.

We got back to the airport at 10.50, with take-off at 11.45. The same lady told me they still wouldn't accept my test.

She called the lab again – and suddenly started yelling at the phone.

It was translated to me that she had threatened to set the authorities on the lab for charging for tests, administering them but not processing them. She handed the phone to Roxana, who told me that the lab was offering me a refund plus costs for my hotel, a new test and a flight the next day.

I didn't believe this. How would that happen? I wasn't driving five hours back up the coast to collect a refund. She told me they would transfer it to my bank account. They just needed my details.

I was hardly giving these to a lab that might have already cheated me!

I was about done – I just wanted a hotel room and a coffee. The flight was leaving in 10 minutes and I wasn't going to be on it.

TOLD ROXANA that I wasn't giving out my bank details, but if she wanted to give the lab hers and they transferred the money she could have \$100 of it.

Then I sat on the ground outside the airport in the 30° heat and opened my laptop to book a hotel and a flight for the next day.

If I could catch the first flight the boat might still be close enough to pick me up. Then I had to arrange to get a Covid test with results available before 7am.

As I was doing this, Roxana told me the lab had just sent her the money.

They... Sent... Her... The... Money!

I couldn't fathom this. Was this not a total admission of guilt in faking my test? It really was a scam!

Aggressor's lovely Roxana came with me to an "approved lab" to get another test. Of the many I'd had so far, this guy made me fear that he was doing internal damage to my nose and throat... and eyes.

Then we went to the bank to withdraw money. I gave her more than the promised \$100 and she dropped me off at my hotel.

My test results arrived around 2am.

I caught the early-morning flight and the crew were waiting for me at the airport.

I still can't quite wrap my mind around this situation, but I was so thankful for it to end up with me Covid-negative and diving in Galapagos.

If there are lessons to be learned, one might be that staying home is still a good option. If you do travel, it's in your best interests to follow the recommendations of the dive and travel operators on how to make travel as seamless as possible.

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