Underwater Photography
Jul/Aug 2020
Issue 115

Background Image by Stewart L. Sy/SLS Photography

AQUATICA™ Digital

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Underwater Photography *2001 - 2020*
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Cover shot by Mark Kirkland

Underwater Photography

A web magazine UwP115 July/Aug 2020

Editorial

DEMA Show cancelled

It was sad but inevitable to read that the annual DEMA dive show 2020 has been cancelled and doubly sad because it was going to held in New Orleans this year.

In recent years the alternating venues of Las Vegas and Orlando had become a bit 'samey' so 2020 was shaping up to be a great chance to combine work and play in equal measures but, sadly not to be.

For me, DEMA, wherever the venue, was a chance to meet up with friends and business colleagues old and new at the Image Centre and especially to have plenty of time to spend with Phil Rudin, our Senior Reviewer, chewing the cud and making plans for gear to review over the coming year.

Sure, there's e mail and Skype but there's no substitute for face to face get togethers with like minded enthusiasts and that's what makes them so enjoyable and productive.

I'm sure UwP issues over the coming 12 months will be as interesting and varied as ever but DEMA was a great time to get the new year off to an exciting start.

Fingers crossed all will be well at DEMA 2021.

Backyard surprise

I have to admit, when I coined up the name 'My Backyard' as a new feature for UwP, I really wasn't thinking of Glasgow; or any other big city come to that. And yet Mark Kirkland's extraordinary images in this issue are testament to how many photographic possibilities there are, literally, on our doorstep.

Initially I had hopes of images taken shore diving, perhaps, on a calm sunny day where the combination was pleasant and images productive. Dan Bolt's excellent article in UwP114 fits that bill excatly but when it's 2am on a chilly March morning I wasn't expecting great images but how totally wrong was I.

I think Mark's images are world class in terms of photographic story telling and from a site most people would drive straight past on the way to the coast.

When I read up about Mark and his professional approach to try to make a living from underwater photography I, for the first time in a long while, insisted on paying industry rates for the right to use his images and text :-)

Olympus cameras

It's difficult to find any cheery news these days and the news that Olympus is looking to sell off it's camera division is testament to that.

It seems the Japanese equity firm JIP, Japan Industrial Partners, are possibly in the running so there may still be some development light at the end of the tunnel but it just goes to show how photographic equipment sales and camera manufacturers have been so badly affected by the ubiquitous mobile phone and that was even before Covid.

The new normal

This is the term being banded about, now that the worldwide economy has been thrown into freefall. Social distancing is making a lot of companies unviable so they are pressurising the powers that be to relax the restrictions including overseas travel without quarantine upon return.

The dive industry is part of that lobby but in doing so they could be delivering the next wave of virus around the world which could lead to a second lockdown with even more frightening economic consequences.

Stay safe. Enjoy your backyard.

Covid competitions

The sudden arrival of the Covid lockdown, internationally, brought about several schemes to keep us occupied within our four walls and in the underwater photography world there were two competitions which captured the essence of the situation.

Unfortunately there were other competitions who saw it as an opportunity but they'll get no air space here.

The superbly British "Underbathwater Photographer of the Year 2020" got it just right. Free to enter, category free and the perfect combination of silly and serious.

UBWPY was the brainchild of Jim Standing of Fourth Element who got together the right team of organisers, publicists and judges in a very short space of time and got over 450 images all of which must have been taken specifically for the competition. Enjoy the creative winners later in this issue.

The other well thought out competition was Allison Vitsky's "Share our Air" but unfortunately the winners hadn't been chosen by the time UwP had to be published.

Watch UwP116 for those winners.

Peter Rowlands
peter@uwpmag.com

News, Travel & Events

Manta Ray Bay Resort & Yap Divers Giving Free Vacations to Frontline Healthcare Workers

Diving into the warm waters of a tropical island surrounded by gentle manta rays and colorful reef fish may sound like the makings of a sleep-inducing dream machine for frontline healthcare workers right now. But that dream will become reality for 20 deserving individuals when they head to the remote island of Yap for a weeklong, stress-free journey of a lifetime.

Manta Ray Bay Resort & Yap Divers is inviting its past and current guests and Facebook followers to submit the names of people they know who have been working hard in the fight against COVID-19 for the chance to relax and refresh during seven nights and five days of diving at this award-winning hotel.

Submerging into the lush flora and fauna of the island's protected reef, lounging by the infinity pool, experiencing the unique culture of this tropical paradise, enjoying a pint of the resort's award-winning, brewed-on-the-premises Stone Money Beer, and more will be in store for these special guests during their stay.

"We're looking forward to pampering a few of the many thousands of people around the world who have worked so hard for so long caring for patients during this pandemic," said the resort's owner, Bill Acker. "It's a small but heartfelt gesture on our part in comparison to the sacrifices they have been making."

www.mantaray.com

Marlin Hunt with Henley Spiers

20-30 October 2020

Join me in Baja California to witness one of the most elusive marine events on the planet.

It is extremely rare to encounter marlin in the water but for a few weeks every year, a large aggregation of striped marlin occurs on the Pacific side of Mexico. The marlin are there to hunt down fish baitballs, and we will venture offshore to track down this pelagic action.

As if that wasn't enough, we will also visit whale sharks, mobula rays, and California sea lions at my favourite dive site in the world!

A renowned underwater photographer, trip-leader, and writer, Henley Spiers' reputation escalated rapidly in recent years with a prolific series of winning shots in a multitude of prestigious photographic competitions.

thephotographer@henleyspiers.com

DEMA Show 2020 in New Orleans cancelled

The DEMA Show 2020 trade event, which was scheduled to be in New Orleans in November for the first time since the early 2000s, has been cancelled due to COVID-19.

DEMA Show 2021 will take place in person as scheduled from Tuesday, 16 November to Friday, 19 November 2021, in Las Vegas, Nevada, with additional measures taken to ensure the health and safety of all.

www.dema.org

Smithsonian 18th Annual Photo Contest

Smithsonian magazine 18th Annual Photo Contest begins March 31, 2020, and ends November 30, 2020, at 5:00 PM Eastern Standard Time. By submitting an entry, each contestant agrees to the rules of the contest and states that he or she is 18 years old or older.

The Grand Prize, Readers' Choice prize, Natural World, Travel, People, The American Experience, Altered Images and Mobile category prizes are open to photographers who are 18 years old or older. Individuals affiliated with the Smithsonian Institution, including employees, emeriti, Regents, trustees, interns, volunteers, fellows, research associates and their immediate families (children, parents, siblings and spouses) and others living in their households are not eligible for any prize. The Smithsonian will determine winners' eligibility in its sole discretion.

The following six contest categories are drawn from subjects of special interest to Smithsonian magazine:

1. NATURAL WORLD: Animals, plants and landscapes; geological or climatological features; and scientific processes and endeavors.

2. TRAVEL: Locales, peoples or activities in the United States and abroad that convey a sense of place.

3. PEOPLE: Portraits and photos of groups or individuals.

4. THE AMERICAN EXPERIENCE: Events, objects or activities connecting the American people to their history or their cultural heritage; photographs that tell us what it means to be an American and provide a sense of what it is like to live in this country.

5. ALTERED IMAGES: Photographs manipulated for artistic purposes by applying digital and/or traditional special effects.

6. MOBILE: Any photograph taken with a mobile device (phone or tablet).

To be eligible for any category, a photograph must have been shot by the entrant since January 1, 2018. This date applies to all images in a composite. The contestant certifies that he/she is the sole creator and copyright owner of the submitted photograph.

www.smithsonianmag.com/photocontest/submission/

A time for adventures closer to home!?

BASKING SHARK SCOTLAND

With the current crisis, many people around the UK & Europe are considering their far flung travel plans and what could be an alternative.

With Scotland being opened on 15th July for tourism, this coincides well with our first basking shark, wildlife & adventure week starting on the 18th July.

We've been working on Covid-safe plans with much reduced boat numbers, cleaning regimes and specific procedures.

Our accommodation providers are all doing the same and we're hoping for a safe resumption of our industry.

However our message to our UK/European friends, that we have championed for many years, is now more relevant than ever. You don't have to travel half way around the world for a great wildlife experience, when one lies on your doorstep!

Although for our friends that do live halfway around the world, you do have to travel a long way and we'll be there when you can visit us when it's safe to do so!

www.baskingsharkscotland.co.uk

SHIPPING NOW

OLYMPUS OM-D E-M1 III

READ MORE

ikelite

New Products

Aquatica Z Cam housing

The Z Cam cameras have specs such as C4K captured in 10-bit ProRes 422HQ or ZRAW at up to 120FPS, which makes the Z Cam range of cameras a great choice for underwater video capture.

This Aquatica housing will be using our MFT port opening, the same one used on our GH5 and EMI MKII housings, so we have a wide variety of ports, gears and extension rings.

Real mission control:

Using the excellent Amphibico style grips, this housing will be the most ergonomic housing on the market. With 10 push buttons and 2 rotary wheels, there will be no need to remove your hands from the grips since all the main camera controls will be right where you want them. Unlike a mechanical housing, your hands can remain on the grips when pushing multiple buttons and scrolling up or down.

Priced at only $ 2,425 USD ($1,940 If ordered before July 31st,2020) and matched up with our 5HD Monitor at only $1,436 USD, this package will be a great choice for the underwater videographer.

www.aquatica.ca

Nauticam NA-2020 housing for Sony A9II/A7RIV Camera (with HDMI 2.0 support)

Nauticam has supported the Sony Alpha full-frame line since the original a7 with professional grade aluminum housings that offer intuitive access to all the controls and functions of the cameras. As the cameras have evolved, so have the Nauticam housings. The Nauticam NA-α2020 takes our commitment to the Sony full-frame mirrorless line to another level by delivering the first housing that will support both the a9 II and the a7R II with full access to all controls without modification or restriction.

Integrated DSLR-housing styled handles with ergonomic rubberized grips and stainless steel stiffening brackets add stability and accessory mounting points. The NA-α2020 also features dual rear thumb-levers that are easily reached from the handle that access three of the most-used controls on the rear of the camera. The right lever actuates the AF-ON and RECORD buttons while the left lever is mapped to the PLAY button.

Atop the housing on the left side are controls specific to the a9II in the form of a MODE dial and FOCUS mode lever. The C1, C2 buttons as well as the EV compensation dial also have direct access from the top of the housing. The C3, which is typically assigned to control switching between the EVF and the LCD screen is easily reachable on the rear of the housing from the left handle.

www.nauticam.com

Ikelite 200DL Underwater Housing for Canon EOS 850D Rebel T8i, Kiss X10i DSLR Cameras

A full featured and durable waterproof housing for Canon EOS 850D Rebel T8i and Kiss X10i DSLR cameras. Suitable for scuba, snorkel, surf, pool, and any application in or around the water.

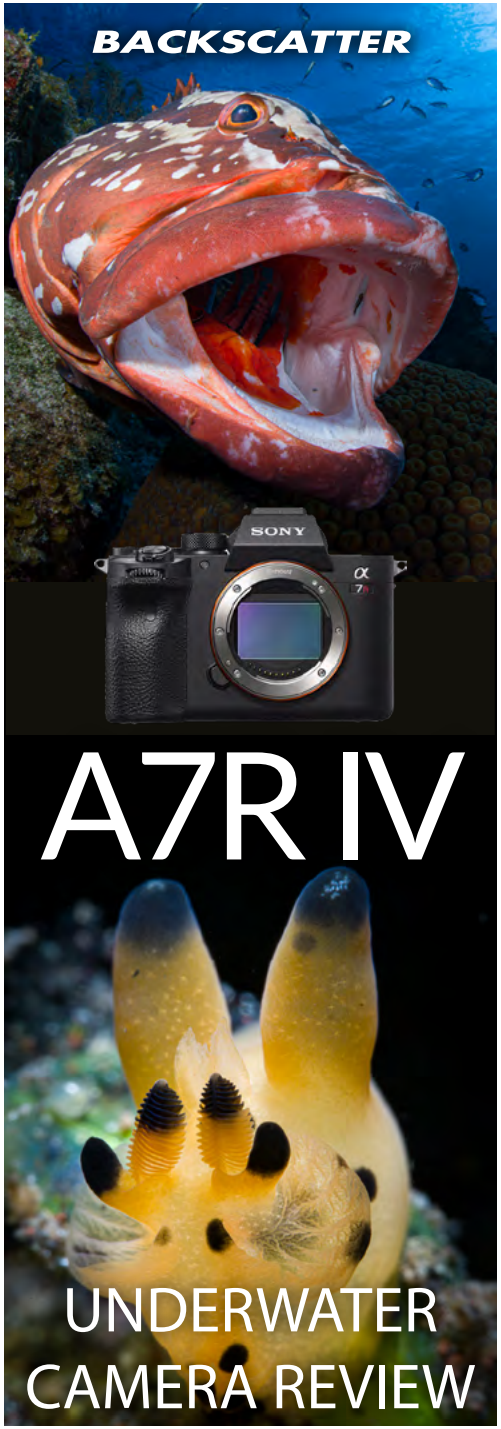
The Canon EOS Rebel T8i (EOS 850D / EOS Kiss X10i) is the latest camera at the top of the entry level line. Released in early 2020, it features an 24 megapixel APS-C sensor, DIGIC 8 processor, and 45-point all-cross-type AF system when shooting through the viewfinder.

The T8i is capable of capturing 4K video at 24p and full HD at 60p. A CIPA battery life rating of 800 shots per charge is impressive for a camera of this size.

This housing features our robust Dry Lock (DL) port system. "Dry Lock" refers to the placement of the o-ring on the outside of the port mount. This improves visibility and reduces the chances of water dropping onto your precious camera sensor. DL ports are the lightest on the market, yet robust and capable of standing up to rough surf. Attachment is quick and secure. A system of extensions can accommodate a huge variety of lenses with ease.

Movement of camera controls and lens placement prevent this model from operating in housings built for prior generation Canon cameras.

www.ikelite.com



Sea & Sea Optical Dome Port II

The Sea & Sea Optical Dome Port II is made from high quality BK7 crystal glass.

Two different anti-reflective coatings are employed to optimize image quality, one for the exterior and the other for the interior of the Optical Dome.

A multi-layer coating is used on the dome exterior and the interior of the dome is coated with silicon-dioxide to effectively suppress flare and ghosting. As a result, the refractive index of each port is reduced to less than 0.01% and the dome produces extremely high-contrast images.

There are three versions:

OPTICAL DOME PORT II 100 S

Designed exclusively for Nikon AF DX Fisheye Nikkor ED 10.5mm F2.8G. This is a Made-to-order item

OPTICAL DOME PORT II 100 M

Designed exclusively for Tokina AT-X 107 DX Fisheye 10-17mm F3.5-4.5, for Nikon and Canon cameras.

OPTICAL DOME PORT II 100 L

Designed exclusively for Canon EF 8-15mm F4L USM and Nikon AF-S Fisheye Nikkor 8-15mm F3.5-4.5 E ED

The Dimensions of all versions

are:

(DIAxD): 130 x 91 mm

Weight: Approx. 450g

SRP: £1365.95

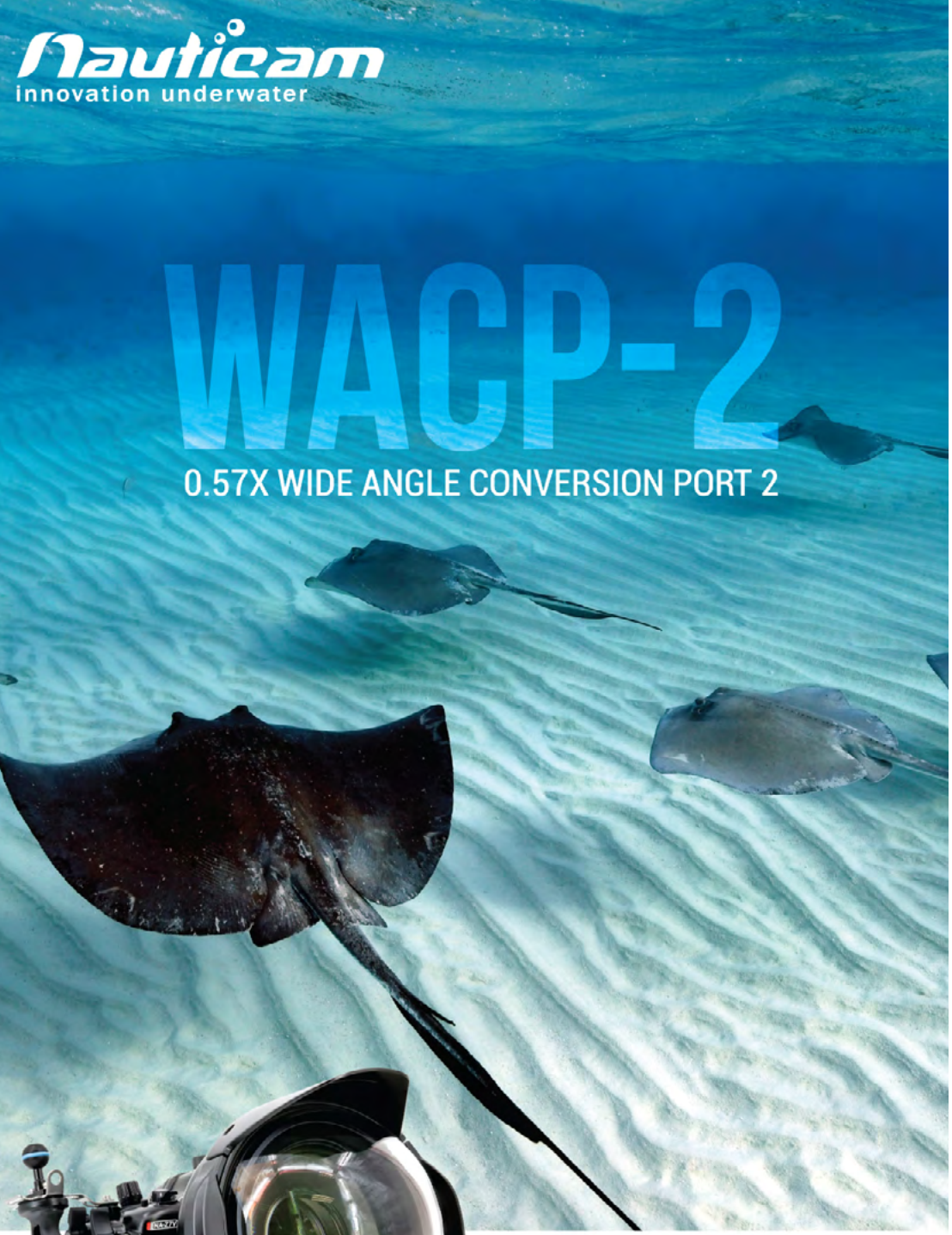
CODE: 30135

Depth Rating: 100m

Construction: POM resin, BK7 crystal glass dome and corrosion-resistant aluminium alloy shade

Included Accessories: Instruction Manual, Port Cover, Port Case

www.sea-sea.net



Ikelite 200DL Underwater Housing for Fujifilm X-T4

A full featured and durable waterproof housing for Fujifilm X-T4 mirrorless digital cameras. Suitable for scuba, snorkel, surf, pool, and any application in or around the water.

The Fujifilm X-T4 features a 26 megapixel BSI X-Trans CMOS APS-C sensor and is capable of 4K/60p 10bit video recording.

In-body image stabilization claims to reduce shake by up to 6.5 stops and autofocus algorithms have been improved since the release of the X-T3. Battery life has also been improved with a CIPA battery life rating of 600 shots when used in the 'Economy' mode. Like it's predecessor, the weather-sealed body includes analog controls for shutter speed, ISO, and exposure compensation, and allows customization of 9 buttons and control dials.

Most popular zoom lenses and select lens focus rings can be engaged using simple gearing that puts adjustment right at your fingertips. A large, soft-touch knob on the side of the housing makes fine tuned adjustments a breeze. Zoom and focus gears differ depending on which lens you are using. Zoom gears sold separately.

The unique rear seal design prevents accidental twisting or stretching of the o-ring for simple and confident assembly. We have eliminated the need for an o-ring groove or channel which can trap sand, dirt, or debris. Three double-passivated stainless steel locking lid snaps are simple to use and virtually unbreakable. The clear back allows you to see the o-ring form a solid, watertight seal as it closes.

www.ikelite.com

Balanzza Mini USB Premium Luggage Scale

Not sure if your bags are under the airlines limits??? Take along a mini digital luggage scale and know for sure! Displays weight in lbs or kgs.

The Balanzza Digital Luggage Scale features a simple way of weighing heavy items without the need to read the weight while lifting it.

Simply attach the strap of the Balanzza to the object or luggage, lift it of the ground for a few seconds until you hear a beep sound that indicates the weight has been locked on the display; set the object down, and read the weight on the screen.

The Luggage Scale USB is a step forward in digital scales design, compact functionality and can be recharged via USB connection, No more changing batteries .

With a screen on the top and a strong strap to secure the luggage it offers the most natural way to lift heavy objects. The screen is located on the upper side of the scale, making it easier to see the weight while lifting it with one hand, the user can also wait for the beep to set it down if lifted with 2 hands.

Its ergonomic and compact shape lets you lift the objects easily and with less stress to your hands. Its patented structure and functionality make it easy to lift, wait for the beep, and set it down.

You can also use it at home to weigh your children's backpack, or the holiday gifts you are planning to ship, or that occasional parcel that needs to be sent.

Price $24.95

www.backscatter.com

Nauticam EMWL

Nauticam is dedicated to designing the finest underwater imaging products available. The new EMWL - Extended Macro Wide Lens - takes that innovation to the next level.

The EMWL allows you to shoot macro, wide angle and combine the styles to create images we only dreamed about previously!

The EMWL was built to work with several popular macro lenses and is optimized for both stills and video.

It is a wet mount design so the lens can be attached and removed underwater. This increases the versatility of the entire system and other accessories like SMC and CMC macro converters can also be used.

It is a modular design with three individual pieces that make up the EMWL, the Focusing Unit, the Relay Module and the Objective Lens.

Nauticam has made components optimized to work with different camera manufacturers and their macro lenses, as well as choices for three unique perspectives.

www.nauticam.com

Nauticam NA-1DXIII housing for Canon 1DX Mark III Camera

The Canon EOS-1D X Mark II was the first DSLR to offer high quality 60p 4K recording in a pro-level body. Coupled to the camera's amazing Dual Pixel autofocus and wide-ranging custom white balance capability, the 1D X Mark II was the benchmark for underwater DSLR video. With the EOS-1D X Mark III, Canon is introducing a new 20.1 MP CMOS Sensor with the widest ISO range of any EOS camera, 20FPS live-view Servo AF shooting, and 12-bit 5.5K RAW or DCI/UHD 4K at up to 60p recording. The EOS-1D X Mark III is a true all-in-one capture platform with incredible still and video performance.

While the EOS-1D X Mark III can capture incredible 5.5K 12-bit RAW internally, it can also output uncompressed DCI or UHD 4K video over HDMI at up to 30p. For those that prefer to use a more edit-friendly codec such as ProRes or DNX, the addition of an external monitor or recorder is an option. The NA-1DXIII features the large-bore M28 bulkhead that supports Nauticam's HDMI 2.0 cable system and supported monitors/recorders such as the Atomos Ninja V. The system also supports the HDMI 1.4 standard for use with non-recording monitor solutions such as the SmallHD 502 Bright and comes with an M28 to M16 step-down adapter pre-installed.

The NA-1DXIII supports flash triggering via the built-in fiber-optic bulkheads atop the housing through the use of Nauticam's Manual or TTL flash triggers.

www.nauticam.com

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Erin Quigley's Amazing Underwater Images & How She Shot Them

Your Top Olympus TG Questions Answered

Face to Face with Big Animals featuring Ron Watkins

Five Great Underwater Images & How They Were Shot

New Underwater Lenses from Nauticam & How To Use Them

Five More Great Underwater Images & How They Were Shot

www.backscatter.com

Nauticam NA-EM1III Housing for Olympus OM-D EM1 III Camera

The Olympus OM-D E-M1 is characterized by its combination of extreme customizability and impressive stabilization in a compact hybrid-shooting package. The Nauticam NA-EM1III, similar to the E-M1 Mark III is a refinement of it's predecessors. Nauticam has produced housings for wide range of Olympus cameras from the compact Tough TG series to the PEN and OM-D lines. Throughout the evolution of Olympus' cameras, Nauticam has adapted our design to help image makers get take full advantage of every camera advancement. More than a simple waterproof case, the NA-EM1III integrates with the EM-1 Mark III to adapt and improve upon the camera's features for underwater shooting.

Regardless of where a dial or button may be found on the camera body, Nauticam engineers make sure it is located where it is needed most on the housing. This Mission Control philosophy drives the design of every housing and provides for the most intuitive and easy to use housings available. The NA-EM1III features a thumb lever, easily accessed from the ergonomic rubberized right handle that actuates the customizable AEL/AFL control. Typically, for underwater use, this control is assigned to trigger momentary autofocus. This back-button autofocus method prevents the camera from refocusing between shots, allowing the user fine control over a shot's focus and is critical whether shooting macro or fast moving wide-angle subjects.

www.nauticam.com

Isotta Nikon Z 7/6 housing

An ergonomic highly professional product entirely made in Italy that offers the highest quality and enhanced performance underwater.

The durable anodized aluminum protects the camera from water and other damaging elements and its stylish, compact and ergonomic design has been specifically created for the breakthrough models of mirrorless Nikon Z7 and 6.

The perfect handling of the Isotta signature-red color Nikon Z7/6 housing is possible by means of adjustable handles crafted to match the human hand and make holding the camera very comfortable even throughout long dives.

Easy access to all key/main camera controls by means of clearly labelled laser-engraved longlasting buttons, even with gloves and drysuit gloves. A quick release camera mounting plate allows the camera positioning and a lever locks the tray inside the housing.

The back door has a large window anti-scratch glass for a fine camera display and optical viewfinder view and it is entirely detached from the front body to make easier the camera fitting.

External viewfinders can be mounted, INON X-2 compatible.

The housing for Nikon Z7/6 is closed with Isotta's single handed one-turn knob. It's the only single latch closing mechanism in the DSLR housing market. It's fast, simple and secure thanks to its double steel pins at the bottom of the housing.

www.backscatter.com

AquaTech Collaborates with Hasselblad to Create Underwater Solution for X1D II 50C

AquaTech Imaging Solutions, a global leader in photographic accessories, is proud to announce the release of its new REFLEX Water Housing for the Hasselblad X1D II 50C, a culmination of 20 years of design and field testing by the AquaTech Team.

As the first official water housing for Hasselblad's X System, the REFLEX Water Housing, together with the X1D II 50C and XCD Lens range, offers the highest optical performance and unparalleled image quality that Hasselblad is renowned for.

"To combine a medium format digital camera of this calibre with our new REFLEX Water Housing is a dream of ours, and we are very excited to share this new collaboration with the Hasselblad and AquaTech global communities," says Managing Director of AquaTech Alan Love.

The REFLEX Water Housing features the interchangeable P-Series and PD-Series Lens Port System which supports the full range of XCD lenses.

Camera control is offered via tactile push button controls on the housings backplate, allowing simple and intuitive control over important camera settings.

The REFLEX Water Housing weighs only 1.6kg (3.52 lbs), is waterproof down to 10 meters (33ft) and is highly portable, making it the perfect water housing for the Hasselblad X1D II 50C camera.

www.aquatech.net

www.uwpmag.com

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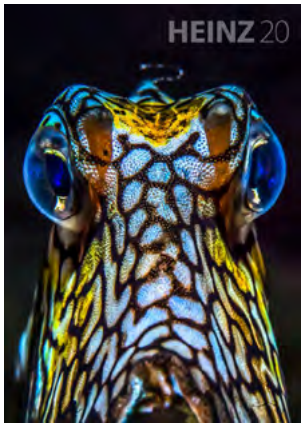
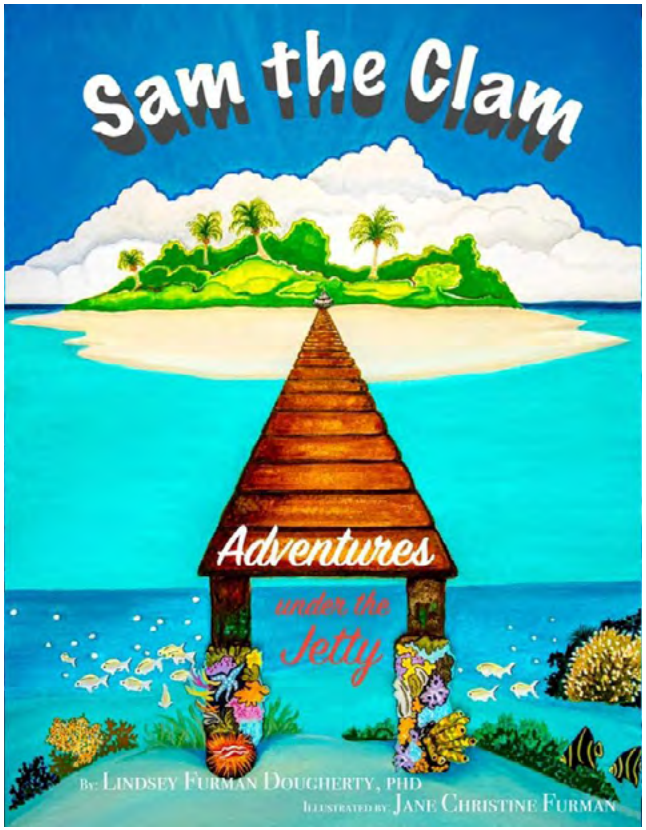


Sam the Clam

by Lindsey Dougherty with illustrations by Jane Christine Furman



One Christmas morning, after a "little" champagne, my mom and I decided to write a children's book. Two and a half years later – it's FINISHED! We are so excited to announce Sam the Clam: Adventures Under the Jetty.

It's a story about a disco clam (the subject of my PhD research) and what his class finds during a field trip to the Trench with their octopus teacher Dr. O. It contains cast introductions, as all the characters are based on real marine animals my mom and I have seen while diving. It also has some wonderful tips on how to help protect our oceans.

Part of the proceeds will be donated to the Ocean First Institute, for which I am a Scientific Advisory Board Member. They do amazing work, including trips with students (last summer we fed high school students to sharks! err...let high school students tag sharks! haha). I wrote the book and took the photos, and my mom Christy Furman did the beautiful illustrations. We hope you enjoy it!

You can buy the paperback and/or e-book version here:

https://www.amazon.com/dp/179444176X

Underbathwater Photographer of the Year 2020

The competition was something that came to me as a mad idea of how to keep people engaged with diving and using their dive gear - photo equipment was an obvious choice here and I hoped it would bring out the creative side of people while in lockdown. To be fair, most of our team thought i was going a bit crazy, so who else could I contact for a reality check? Saeed - his reaction, "Hell, yes" told me everything I needed to know: that there would be people out there similarly inspired. He helped me to put the fine tuning on the idea, roped in (Sir) Alex Mustard, and then the frankly amazing fourth element marketing team, took the idea and ran with it - developing a concept and identity.

We decided on a short term format so it was more like a splash-in event but we had no idea it would be so popular

We had just under 450 entries from all over the world and the level of input and creativity was way beyond what either of us anticipated. So, we enlisted the help of Franco Banfi as a judge as well, and we had quite a tough job to work out the winners and there were so many to which we wanted to give recognition.

There was no doubt about the winner though - all three of us picked it for its likeness to real life, the ingenuity of the ice blocks and the composition

Mikko Paasi

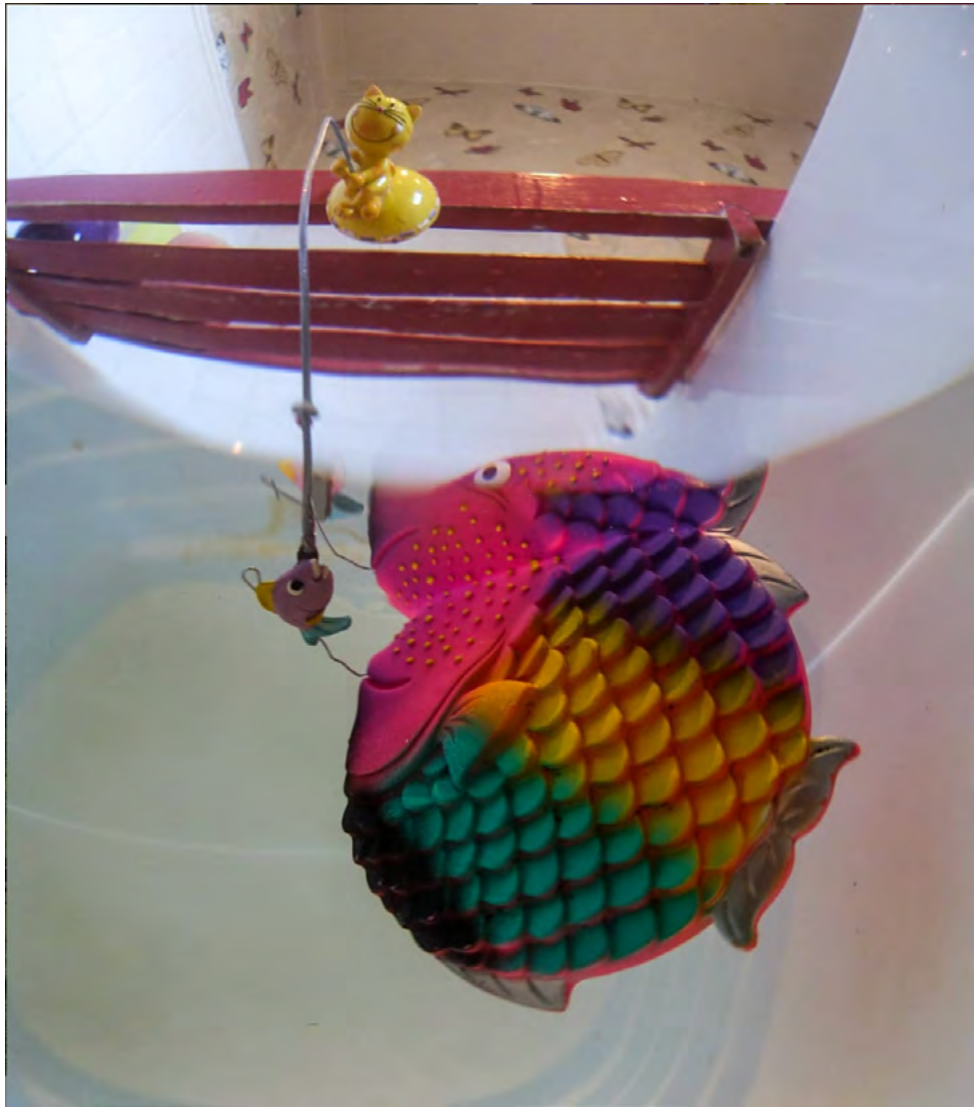
This image captured all three judges' imaginations as at first glance, one is not sure if it is a real image. Great lighting and composition has utilised sofnolime canisters to double as remarkable atmospheric ice cubes, and the seal itself is looking down the camera. Fantastic image.

www.instagram.com/mikkokohtaodivers/

Simon Yates

This image showed great creativity with some of the props underwater and the split level image well composed. The stand-out feature was the curious cat who appears to be wondering just what on earth is going on down there.
This split level shot was so reminiscent of a sunset and the atmospheric use of light and colour distracted from the very obvious bathroom scenery. It nearly has the power to transport us to a warm and sunny tropical destination. Great escapism for many of us.

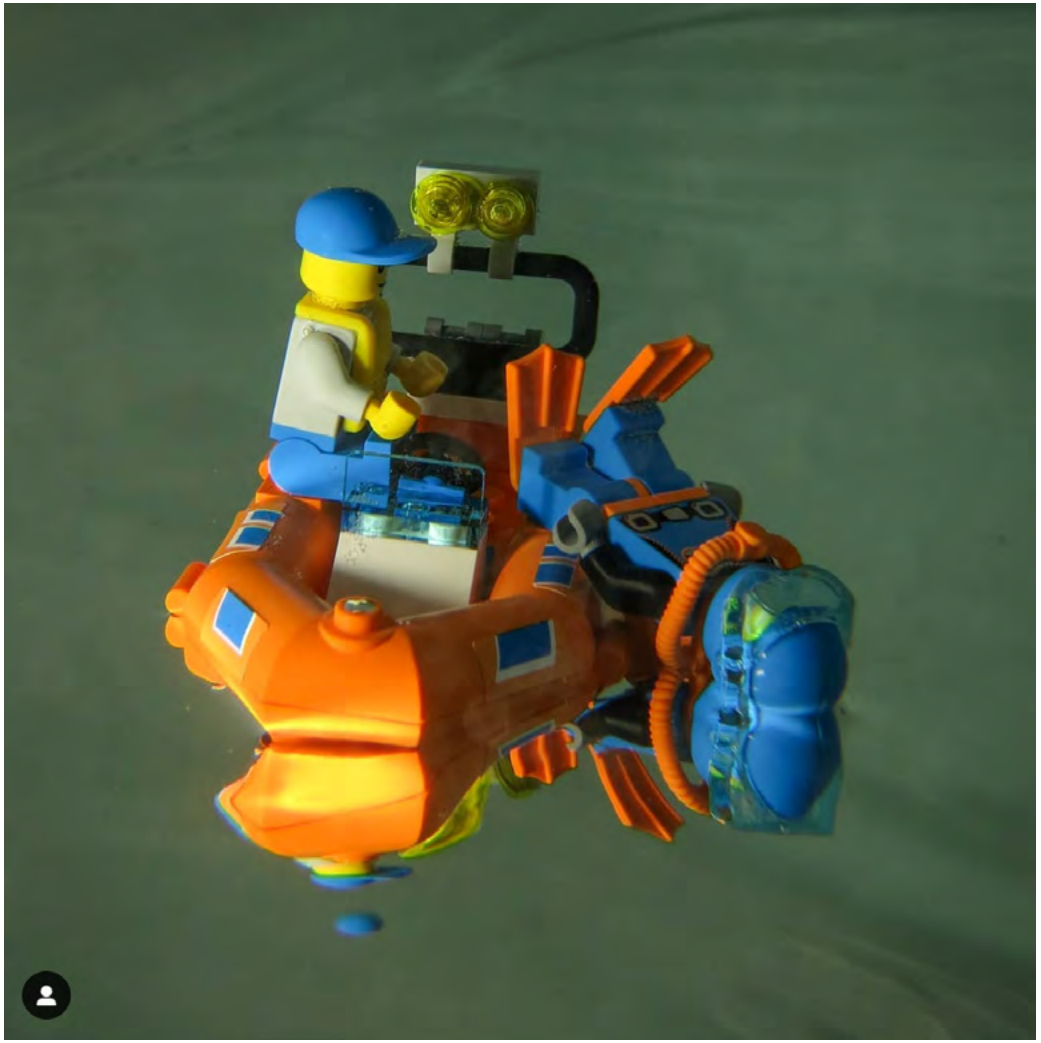
www.instagram.com/simon.yates.79/



Sheilagh Adam

The Cat fishing made us chuckle. The twist comes when you look closer and realise that the cat appears to have been pulled into the water: looking at the expression on the fish's face makes you wonder who is predator and who is prey.

www.instagram.com/sheilaghadam/



Joe Hyland

A very clever concept using the surface of the water to double as the surface from above, giving the impression of a perfectly timed shot of a diver rolling into the water. Beautifully still surface, which anyone who tried this will agree is difficult in itself combined with the perfect capture. The magic was injected by rotating the image 180 degrees.

www.instagram.com/chat2joe/

Nicolas Winkler

We loved this for the sheer effort that went into creating this photo. So many entries showed huge effort and creativity, and this showed great use of real ice as well as capturing the feel of polar waters. The fourth element logo swayed one of the judges too.

www.instagram.com/nicolaswinklerphotography/

of the image itself which really drew us in. Mikko Paasi is a Finninsh cave diver who is based in Ko Tao in Thailand and is one of the heroes of the Thai Cave Rescue. He was one of the first guys on the scene and assisted through the rescue mission. It's fantastic that this was the first competition he has entered and he credits his daughter for the loan of the stuffed seal.

Jim Standing

www.fourthelement.com
www.fourthelement.com/ubwpoty

United Nations World Oceans Day winners

DPG is very pleased to announce the winners and finalists of the Seventh Annual United Nations World Oceans Day Photo Competition, jointly organized by the UN Division for Ocean Affairs and the Law of the Sea Office of Legal Affairs, World Ocean Network, Oceanic Global, Blancpain and DPG. The judges were tasked with selecting 1st, 2nd and 3rd place images from hundreds of entries in 10 categories. A 2020 World Oceans Day Theme winner was also selected by the organizers.

The winners were announced by the judges during today's UN World Oceans Day 2020 Virtual Event. Finalists' images will be further featured in a UN virtual exhibit, and physical exhibits are also planned as part of the UN's awareness-raising activities.

The contest partners would like to thank competition curator Ellen Cuylaerts and this year's judges—Adriana Basques, Adam Hanlon, Jill Heinerth, Darren Jew, Jane Morgan, Amos Nachoum, Miriam Stein Battles, David Salvatori, and John Thet—as well as theme category "Innovation for a Sustainable Ocean" judge Jim Standing.

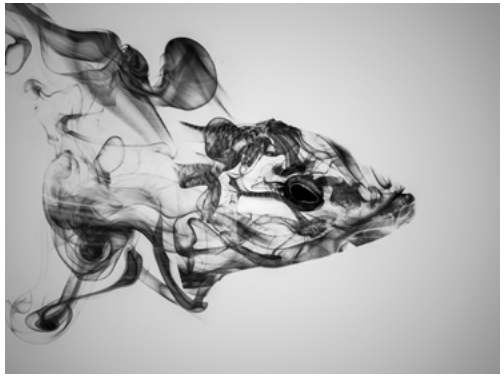
Innovation for a Sustainable Ocean and 2020 World Oceans Day Theme winner:
Joanna Smart (Australia)

Underwater Seascapes – Winner: Hannes Klostermann (Germany)

Human Interaction: Making a Difference – Winner: Renata Romeo (Italy)

Clean Our Ocean – Winner: Sirachai Arunrugstichai (Thailand)

Digital Ocean Photo Art – Winner: Francisco Sedano (Spain)



Underwater Life – 3rd Place: Celia Kujala (USA)

Science in Action – Winner: Matthew Potenski (USA)

www.divephotoguide.com

Simply effective

by Terry Crocker

In September 2012, with the price of slide film and its processing suddenly taking an upward turn, I reluctantly decided that I would have to covert to digital for my underwater photography.

I already had a Nikon D90 DSLR for my land photography, so I looked to putting that into an underwater housing, however, with a cost in excess of £4,000 for the necessary housing, ports and lenses, at the time, and, in addition, the fact that I was used to using the compact Nikonos V system, I decided that I would purchase a digital compact camera system. Another influencing factor, with the DSLR option, was the significant weight and "drag" in the water (plus the associated airline excess baggage charges).

What I wanted was a system that worked in a similar manner to my Nikonos system, i.e. I could set it to manual, meter the ambient light, set the aperture to give an exposure of around -1.0 and set the flash to sTTL to take care of the foreground, for wide angle – my favorite type of photography.

I read many compact camera specifications and reviews carefully looking for a camera that:

a) Was capable of operating in manual mode
b) Was able to control the flash output via sTTL, whilst in manual – with many of the camera specifications that I looked at, once in manual mode, everything was in manual mode, which was not what I wanted.
c) 28 mm lens – 35 mm film equivalent
d) Maximum of x 4 zoom

This latter requirement significantly "narrowed" my "field of choice". I eventually decided on the system as shown below:

- Olympus XZ-1 compact camera
- Olympus PT050 underwater housing
- Sea & Sea YS-D1 underwater flashgun with fibre optic cable
- Sea & Sea, Sea Arm 7 tray & flash arm
- Inon UCL 165 M67 wet macro lens
- Inon UWL H100 M67 wet wide-angle lens

- 2 docking points for the above Inon lens

One of the major advantages, of this system, is the availability of 3 different lens (or more) underwater on every dive, i.e. the cameras native zoom lens, a wide-angle lens & a macro lens. This allows one to quickly change the focal length of the lens if one sees a completely different type of shot than the one you have just taken.

All the underwater photos, shown in this article, have been taken with the above camera system, which has proven to be very effective in the areas of underwater photography that I like to pursue; the camera's specifications are given as an appendix to this article.

When I first bought my system, I would have liked to have purchased a Nauticam housing for the camera, but Nauticam had stopped production in June 2012 and hence none were available. However, whilst looking on eBay in April 2015, I found a new Nauticam XZ-1 underwater camera housing for sale by Reef Photo & Video in Fort Lauderdale, Florida; I turned out to be the only bidder and I have been using it ever since.

Also, at that time, I upgraded my tray, flash arms and clamps, as the new housing had 2 screw attachment points. In addition, around the

Reef at Batfish Wall, Sawa Island, Wakatobi, Olympus XZ-1, Nauticam XZ-1 Housing, Inon UWL H100 M67 wet wide-angle lens, Sea & Sea YS-D1, ISO 100, f 6.3, 1/60 sec, manual

same time I purchased a couple more secondhand Olympus XZ-1 compact cameras off eBay so that I had spares "should the worst happen!!"

With the Nauticam housing and the new tray etc., many of my frustrations with my previous set up disappeared, e.g. if I forgot to "pop up" the inbuilt flash on the camera, the Olympus housing had no facility to "pop it up" once the housing was

Green Turtle with Remoras, Wakatobi House Reef, Tolendono Island, Wakatobi, Olympus XZ-1, Olympus PT 050 Housing, Inon UWL H100 M67 wet wide-angle lens, Sea & Sea YS-D1, ISO 100, f 6.3, 1/60 sec, manual

closed. Usually the first time that you were aware of that was when you tried to take the first shot!! Also, the housing gave me direct access to all of the controls on the camera (with the exception of the touch screen), and the tray cannot rotate as it is attached by 2 set screws.

The one of the downsides, of the Nauticam housing, is the position of the main "O" ring grove, i.e. on the main housing body and not on the back (as in the Olympus housing); this means that part of the main "O" ring grove is obscured by the rotating locking mechanism. I have overcome this issue by acquiring long handled interdental brushes that fit into the grove to make sure that it is clear of particles; I also use a cloth to ensure the grove is dry.

The other, which is only down to when it was produced, is that there is no leak detection system available. However, to date, thankfully, I have not

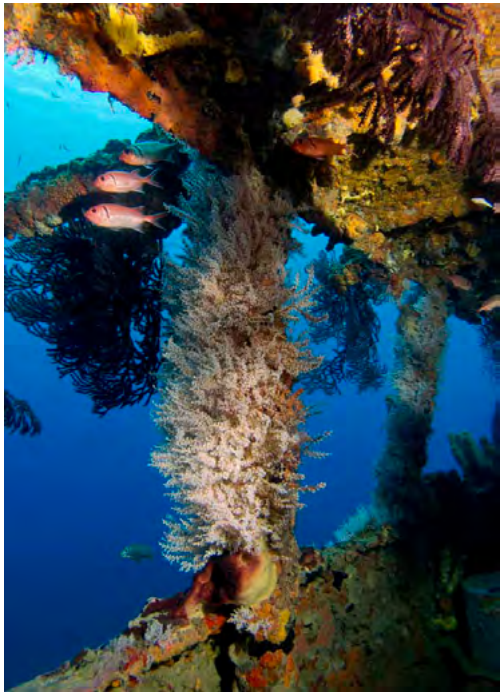
Orbicular Damselfish, Table Coral City, Tomia Island, Wakatobi, Olympus XZ-1, Nauticam XZ-1 Housing, Inon UCL 165 M67 wet macro lens, Sea & Sea YS-D1, ISO 100, f 7.1, neutral density filter engaged, 1/60 sec, manual

had any leaks – you know what they say: "famous last words".

The camera itself is easy and intuitive to set up, with a comprehensive, but quickly understood menu (unlike its successor, the XZ-2, whose menu is vastly over complex and its sTTL mode is exceptional poor in my experience). All the menu settings, that you might wish to change underwater, are accessible via the "OK" button and then the directional buttons. The upward directional button on its own, also allow you to change the shutter speed; the aperture is adjusted by a ring around the lens.

The following modes of taking the photographs are available and controlled via a dial on the top of the camera:

- Program
- Aperture priority
- Shutter priority



Wreck of the Lesleem M, Anse Cochon, St. Lucia, Olympus XZ-1, Nauticam XZ-1 Housing, Inon UWL H100 M67 wet wide-angle lens, Sea & Sea YS-D1, ISO 200, f 6.3, 1/60 sec, manual

Spine cheeked anemonefish, North Wall, Hoga Island, Wakatobi, Olympus XZ-1, Olympus PT 050 Housing, Inon UCL 165 M67 wet macro lens, Sea & Sea YS-D1, ISO 100, f 8.0, neutral density filter engaged, 1/60 sec, manual

•Manual
•Custom
•Low Light
•Scene – 18 different scene options, including 2 underwater options
•Art filters – 6 different filters are available.
•Auto

The auto-focus system on the camera works really well as can be seen with the accompanying photos. You have the ability to move the main focal point around the composition if you wish, however, I tend to set the focus with my subject in the middle and kept the shutter half depressed whilst I compose the shot.

When I acquired my first XZ-1, my good friend Bryan Radford and I did some experimentation with respect to the settings of the sTTL flash control. The camera flash only guarantees to fire when the flash is set to "fill in". Now when used for routine land photography, fill in flash typically gives around 1.5 stops of underexposure compared with the available light. Underwater where the flash is being used as the sole light source for the foreground, the subject matter was underexposed by approx. 1.5 stops. Happily, the XZ-1 has a flash compensation facility and we found that using a setting of +1.7 gave very good control of the flash output to achieve correct exposure. Obviously, from time to time, I change this to get the desired results.

The camera also has the facility for 2nd (rear) curtain sync. – a setting that I tend to use most of the time. This is to avoid dark aberrations in front of moving fish, as a result of the fish continuing to move forward after the flash has fired and before the shutter closes. Using the 2nd curtain sync. Results in the dark aberration being behind the fish and giving an impression of forward movement.

I do tend to break the underwater photography "cardinal rule" of not pointing my flash directly at the subject, as with only one flash. I would not be able to illuminate the whole scene using my wide-angle lens. I prevent most potential "hot spots" by using the 100° diffuser on the front of the flash, which happens to match the underwater angle of view of my Inon UWL H100 M67 wet wide-angle lens.

Of course, due to the quality of the optics that I am using, I can get a significant amount of chromatic aberration and blue and yellowish-green fringing, however, most of these issues can be overcome with judicious use of Photoshop CS5 extended.

I tend to take most of my pictures with the following settings:
ISO:100 – very occasionally I use 200
Shutter Speed: 1/60th second

Blue Girdled Angelfish, Fan 38 East, Sawa Island, Wakatobi, Olympus XZ-1, Olympus PT 050 Housing, Inon UWL H100 M67 wet wide-angle lens, Sea & Sea YS-D1, ISO 100, f 4.5, 1/60 sec, manual

I tend to favour ISO 100, as values higher than 200, with a 10.1-megapixel sensor, tend to introduce an unacceptable level of "electronic noise" into the photo.

It results in apertures for wide angle shots of between 2.8 and 6.3 depending on the ambient light, however, I mostly "get away with this" due to the increased "depth of field" with the wide-angle lens and the reduced size of the sensor.

For the flash control, when I am using the Inon UCL 165 M67 wet macro lens, it tends to require the following settings:

Aperture: F 6.3 - 8.0 (maximum)

Neutral Density Filter: engaged

With the flash gun directly over the top of the centre of the top of the housing.

In the second paragraph, I mentioned my concerns with weight and excess luggage costs, well this system, minus the camera, batteries and chargers, in my Pelican case, weighs in at 6.85

Olympus XZ-1, Olympus PT 050 Housing, Inon UWL H100 M67 wet wide-angle lens, Sea & Sea YS-D1, ISO 100, f 6.3, 1/60 sec, manual

kilograms, which means that Qatar Airways allow me to have it as my "carry on" camera case; the camera being in my ordinary "carry on" luggage; along with my spare camera, spare Olympus housing and battery chargers.

I have used the system, in the past 8 years, in Wakatobi, Indonesia, Red Sea in Egypt and St Lucia and Grenada in the Caribbean. Of those destinations, Wakatobi has stood out for me for

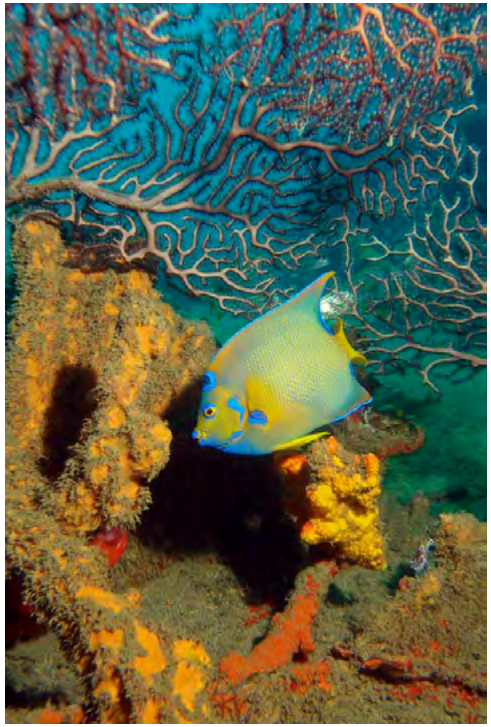
Soft Corals, Cornucopia, Sawa Island, Olympus XZ-1, Nauticam XZ-1 Housing, Inon UWL H100 M67 wet wide-angle lens, Sea & Sea YS-D1, ISO 100, f 5.6, 1/60 sec, manual

both varied photographic opportunities at the many dive sites and the facilities that the dive centre provides. Also, a trip on the Pelagian liveaboard gives opportunities to photograph mandarin fish & blue ring octopus. The dive sites in Soufriere Marine Park, in St Lucia, also offer some of the best photographic opportunities in the Caribbean, especially the wreck of the "Lesleem M".

At the end of the day, when deciding on what

Painted Warty Frogfish, Waitii Ridge, Tomia Island, Wakatobi, Olympus XZ-1, Olympus PT 050 Housing, Inon UWL H100 M67 wet wide-angle lens, Sea & Sea YS-D1, ISO 100, f 6.3, 1/60 sec, manual

underwater camera equipment you are going to buy, one has to ask oneself, "what am I going use my photos for?". If you are an amateur like me, you probably will want to print them, possibly up to A3 size and be able to have a slide show on a 50" TV. Well I can achieve all of those aims with my 10-year-old design system and at a very affordable price!!
Olympus XZ-1 Digital Compact Camera
Product type: Digital camera (for shooting and displaying)
Recording system:
Still pictures: Digital recording (RAW), JPEG (in accordance with Design rule for Camera File system (DCF))
Applicable standards: Exif 2.2, Digital Print Order Format (DPOF), PRINT Image Matching III, PictBridge
Sound with still pictures: Wave format
Movie: AVI Motion JPEG
Memory: Internal memory
SD/SDHC/SDXC memory cards
No. of effective pixels: 10.1 megapixels
Image pickup device: 1/1.6" CCD (primary color filter)



Queen Angelfish, Trou Diable, Soufriere Bay, St. Lucia, Olympus XZ-1, Olympus PT 050 Housing, Inon UWL H100 M67 wet wide-angle lens, Sea & Sea YS-D1, ISO 100, f 2.5, 1/60 sec, manual

Lens: Olympus lens 6 to 24 mm, f1.8 to 2.5 (equivalent to 28 to 112 mm on a 35 mm camera)
ND filter: 3 EV equivalent
Photometric system: Digital ESP, center-weighted, and spot metering using the camera image sensor
Shutter speed: 60 to 1/2000 sec., Bulb shooting
Shooting range: 0.6 m (2.0 ft.) to (W), 0.6 m (2.0 ft.) to (T) (normal)
0.1m (0.3 ft.) to (W), 0.3m (1.0 ft.) to (T) (macro mode)
0.01m (0.03 ft.) to 0.6m (2 ft.) (super macro mode)
Monitor: 3.0" organic EL display, 610,000 dots
Connector: USB/AV-out connector (multi-connector), HDMI micro connector (type D), accessory port
Automatic calendar system: 2000 up to 2099
Operating environment
Temperature: 0 °C to 40 °C (32 °F to 104 °F) (operation)
/-20 °C to 60 °C (-4 °F to 140 °F) (storage)
Humidity: 30 % to 90 % (operation)/10 % to 90 % (storage)
Power supply: One Olympus lithium ion battery (LI-50B)
Dimensions: 110.6 mm (W) × 64.8 mm (H) × 42.3 mm (D) (4.4 × 2.6 × 1.7 in.) (excluding protrusions)
Weight: 275 g (9.7 oz) (including battery, card, and cap)

Terry Crocker
terry.crocker@btinternet.com

Best Buoyancy

by the Backscatter Team

We consider buoyancy the number one reason divers struggle with underwater photography. A camera system with comfortable buoyancy is much easier to use, will result in better photos, make your dive more enjoyable, and protect the reef.

There is no one-size-fits-all formula for buoyancy, but there are some ground rules. First, make sure you understand the smaller your housing is, the more likely you'll need to add floats. Second, you'll want to determine if you're more comfortable with positive, negative, or neutral buoyancy and select the best buoyancy accessories to meet your needs. We'll walk you through the details below.

Buoyancy Vs Trim

First, we need to define two key terms in underwater photography housing use. "Buoyancy" is how heavy or light your camera feels in your hands. "Trim" is how much your housing twists forward or back in your hand.

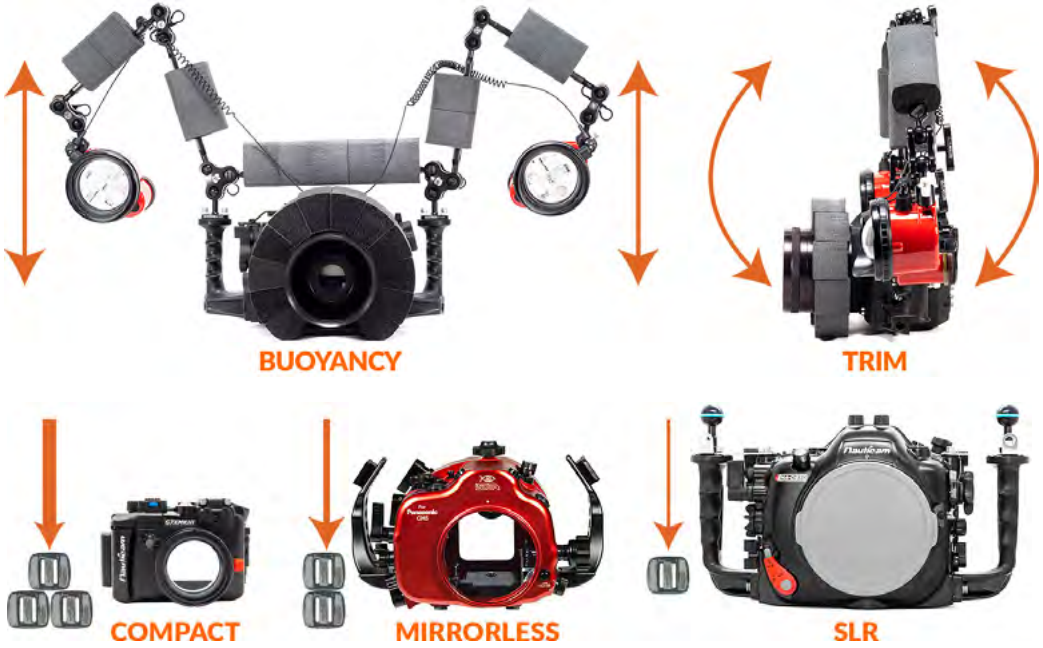
A perfect camera would feel weightless underwater (perfect buoyancy) and not further tire your wrists with it twisting up or down (perfect trim). If you've experienced these issues, this is the article for you.

Small cameras can be bricks underwater

Customers visit Backscatter to put their hands on housings and are always attracted to the most compact option. We always warn that "While it looks travel friendly, you'll need to add floats so that it's not as heavy as a brick underwater." Experienced underwater photographers quickly learn that smaller camera systems need a significant bulk of arm floats to make them enjoyable to use underwater. While compact housings may be small in travel size, they lack air space in the housing to make them easy to handle underwater. Adding additional lenses, focus lights, and hardware can increase this underwater weight. Buoyancy on the arms is a must and you'll definitely want additional buoyancy options if adding wet lenses.

Cinema housings are the largest for travel but are surprisingly fun to swim. Most cinema housings come with trim weights that can be positioned front or back to dial in perfect trim.

Diving with a perfectly neutral rig will make underwater photography more enjoyable and you more productive. Make the time to get your rig dialed in.



Positive Buoyancy Pros And Cons

If you're scuba diving, you typically don't want your system to be positively buoyant. When you pull down a positive camera, you'll go up and get annoyed. This can also result in potentially dangerous scenarios like having to chase your camera to the surface. It's also difficult to manage a system that wants to keep floating away from you. It takes additional energy and will result in more air consumption. If you're snorkeling or free diving, a slight positively buoyant system might be preferred as you could drop the camera in an emergency and retrieve it at the surface.

Negative Buoyancy Pros And Cons

A camera system that is too heavy will become fatiguing and increase your air consumption on Scuba. A heavy camera will affect your trim and balance in the water. As you push a heavy camera forward, you'll find that your head drops down and your feet go up. Fighting this constant change in body position will tire you out and increase your air consumption. Heavier systems can also lead to dangerous scenarios if you're compensating with excess air in your BC. If you need to drop the camera in an emergency, you'll quickly find yourself floating to the surface. However, some advanced freedivers prefer a slightly heavy camera to aid in their head first descent. These advanced freedivers prefer to "follow their camera down" but they are also willing to lose their camera if dropped in an emergency.

Perfectly neutral systems are easy to push through the water and offer less fatigue for day after day of use. Most importantly, for video shooters, dialing the buoyancy to neutral can result in very smooth camera movements. A perfectly neutral camera rig can actually be fun to use underwater as your camera can float next to you hands free. Just push your camera above you and it will just float there. You can let your hands go while you adjust your weight belt or fiddle with something else.

Different divers will prefer different weights to their systems. Most of the Backscatter staff set our camera systems between 0.5-pounds and 1.5-pounds (225 to 680 grams) negative. We find a slight bit of negative buoyancy allows us to maintain smooth camera moves but also allows us to set the camera on the bottom without it drifting away when we need to use our hands to assist another diver or deal with a situation. More than 1.5 pounds (680 grams) will start to strain arms and wrists.

WEIGHTS ON A DOME

WEIGHTS ON AN EXTENSION RING

Our professional clients prefer to first dial in their housing at neutral buoyancy by adding a float belt or float bar to just their housing. Then they add floats to their arm system to counteract the weight of their lights. This allows them to add or remove lighting systems without the fuss of reconfiguring arm floatation when they switch from with and without lights. While it's possible to get your housing and lights dialed on buoyancy, you'll need a second float configuration when switching from wide to macro.

Dome ports

A persistent problem with large domes is that the big air pocket wants to float to the surface and cause trim problems. This imbalance often strains the wrists of shooters and takes more energy to manage your camera. Acrylic dome ports are most prone to this problem. Large glass domes perform better as the extra weight of the glass help to counteract the nose up trim.

To combat the positive buoyancy of large domes, you can add 0.5-1 pounds (225-450 grams) of weight to the extension ring or the back of the dome. We offer stick-on lead weights and some divers even resort to neoprene ankle weights to help dial in trim. For Ikelite housings, a ballast system is available to hold a lead dive weight under the dome.

A note of caution: Most of the Backscatter staff just deal with the

twist, however some of our clients with wrist issues like trim weights. Add as little weight as possible and only if you really need it. Keep your weighting such that the dome still wants to trim up. This way if you drop your camera or need to set it down, the dome will trim up and will less likely incur costly scratches on the bottom.

Ikelite offers the Ikelite Trim Weight System to add weight and trim the dome port.

Wet Wide Lenses

Keep in mind, wet wide angle lenses don't have the same large air pocket that domes have. Most wet wide angle lenses will require a buoyancy collar. Collars specific to the Nauticam WWL-1 and the AOI UWL-09 PRO are available. The Nauticam WACP Wide Angle Conversion Port and the Nauticam WWL-C have built-in buoyancy to offset the underwater weight of the lenses.

Macro ports

With less air space, macro ports cause the opposite issue as dome ports. Macro ports want to sink, especially with flip holders and diopters attached. Camera systems with macro setups need more buoyancy. If good balance and sufficient buoyancy can't be achieved on your light arms, we recommend adding a buoyancy collar. Stix makes adjustable 10-float and 12-float collars that will bring your macro port closer to neutral and trim.

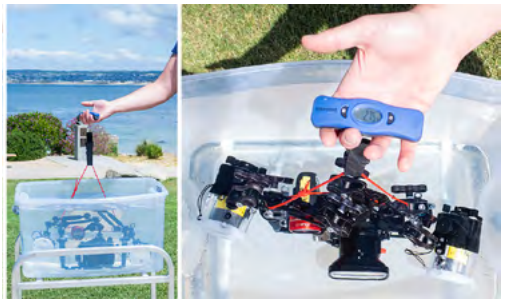
Tube Arms Vs. Foam Floats

The most common buoyancy solution is to add buoyancy to strobe or light arms. This can be done using high-density foam floats from Stix or static air-filled tube arms. Backscatter carries tube float arms from Ultralight, Nauticam, Isotta, and Aquatica in a wide variety of lengths and diameters. Each size will add a different amount of positive buoyancy to a camera system. Tube float arms are an easy way to add buoyancy to a heavy camera system. But this method has its drawbacks. Tube arms can't be adjusted. If you have a set of tube arms that work with one port, it may be too positive or too negative for use with another port. Backscatter staff prefers using Stix adjustable floats added to normal strobe arms. These floats allow you to add or remove floats to adjust between a heavy macro set-up or a more positive wide angle set-up.

Both tube and float arms come in a variety of sizes and lengths. See the product grid at the bottom of this article for a full list of sizes and buoyancy. Keep in mind that larger diameter tube arms require use of longer clamps such as the Ultralight Large Clamp and the Nauticam Long Clamp.

A Nauticam 70x200mm Carbon Fiber Float Arm provides 13oz / 370g of positive lift. An Ultralight 8-inch Arm with (2) Stix FUL-3 Jumbo Floats provides 12oz / 340g of positive lift, but a third Stix FUL-3 Jumbo Float can be installed for a total of 13oz /370g of lift.

Dial in your system



There are two ways to get your rig dialed in perfect. The easy option is to use our default arm and float combination and make sure you have extra floats on site. The other option is to go full nerd and actually measure how much floatation you need in your bathtub or trash can full of water.

www.backscatter.com

Doing the splits

by Phil Rudin

As many of our loyal UwP readers may know I am normally reviewing photography equipment for the magazine but during the past three months COVID-19 has kept many of us out of the water and access to test equipment has shrunk. As a result I will shift my focus a bit to writing more about mastering different disciplines of underwater photography along with the equipment and techniques involved.

I thought a great place to start would be at the surface with split shots which take us from the terrestrial world into the underwater world we all love so much.

Splits allow us in some cases to identify the location in which we are photographing, to capture wildlife and human activity at or near the surface plus much more. Many splits, also called Over/Under shots, are regularly awarded winners in a number of prestigious international photography contests held around the world.

During the 2020 UPY Underwater Photographer of the Year contest featured in UwP issue #113 out of the 5500 images entered by some 500 photographers fifteen of the winning shots were splits distributed over a verity of contest categories. In the 2020 DPG/Wetpixel Masters Imaging Competition the Best of Show and Wide Angle Unrestricted Winners were split shots.

Back in 1990 to be exact, David Haas, Ruth Petzold, myself and four others were lucky enough to attend a workshop in south Florida with celebrated underwater photographer David Doubilet.

Model Roman, Pool shot, Sony A7R II, Sony FE 16-35mm F/4 at 16mm, Nauticam NA-A7II housing, Nauticam 180 mm dome port, Ambient light, ISO 100, F/4, !/1000 sec

Among the many pearls of wisdom I took away from that week is that both the over and the under parts of a split shot need to be interesting if you want to engage the viewer. Ideally this involves bringing together several elements, first would be having both the top and bottom half of the image in focus. The prevailing wisdom in this regard is to use very wide rectilinear lenses or fisheye lenses, a very large dome port 200 mm or more and high F/numbers in the F/13 to F/22 range.

The next issue is getting a proper exposure for both the top and bottom parts of the image. The third issue is keeping the top half of the dome as free from water spots as possible. Next issue is to have a high enough shutter speed to freeze the subject and the surface water which is always in motion. Subject selection, location and water conditions should also be taken into consideration.

Car Wash Yucatan, Mexico, Sony A7R III, metabones adapter with Canon 8-15mm F/4L fisheye at 8mm, Acquapazza APSO-A7R3 housing with Inon Dome Port II with shade removed, two Ikelite DS-161 flashes, ISO 200, F/6.3 at 1/250th

Devils Ear Springs, Florida, Florida Freshwater Turtle, Canon EOS R, Canon 8-15mm F/4L fisheye at 15mm, Ikelite housing with eight inch dome port & Ikelite DS-161 flashes, ISO 400, F/13 at 1/200th sec, Notice the curved water horizon of the fisheye lens

Lens Selection

In the film days we were limited mainly to 18 mm to 20 mm rectilinear lenses of 100 degrees and 94 degrees respectively. These lenses were able to focus using an 200 mm (eight inch) port without needing a close-up lens of +2 to +4 diopter.

Zoom lenses at the time needed magnification to focus on the virtual image making them useless for splits. Many dome shades were built in so they would need to be shaved down for use with fisheye lenses.

In todays digital age we have a number of excellent super wide rectilinear zooms in the 11 mm to 14 mm range that will all focus in a large dome port without needing a closeup lens. We also have excellent fisheye and fisheye zoom lenses that focus down to a few millimeters and a verity of excellent dome ports with removable shades.

I have also been using 24 mm 84 degree AOV lenses or lenses zoomed to 24 mm for shooting splits of people. I find this AOV less distorting when very close to the subject.

Several of the lenses I have used for splits include for M43 Olympus 12 mm F/2, Olympus 12-40 mm F/2.8, Olympus 7-14 mm F/2.8 and Panasonic 7-14 mm F/4, Olympus 8 mm F/1.8 fisheye, Panasonic 8 mm F/3.5 and with full frame Canon 8-15 mm F/4, Nikon 8-15 mm F3.5-4.5, Sony 12-24 mm F/4, Sony 16-35 mm F/4, Sony 20 mm F/1.8, Sony 24 mm F/1.4 plus several more I can't recall at this moment. All of these lenses can get the job done when mated with the proper size dome port.

In the images attached to this review you will want to note the differences between shooting splits with rectilinear lenses and fisheye

lenses. Fisheye lenses both full frame and circular suffer from “barrel distortion” where subjects at the centre of the frame appear to bulge outwards, and straight lines curve wildly. With fisheye lenses the horizon (waterline) is much more noticeably curved either upward or downward as you move toward the edges of the frame. Wide rectilinear lenses also suffer the same distortion behind a dome but it is far less severe. As a result when I intend to shot splits in the vertical (portrait) orientation I always chose a rectilinear lens because the fisheye curvature is even more pronounced across the narrower frame.

Ginnie Springs, Florida, My Family Snorkeling, Olympus E-M1 Mark II, Olympus 8mm Fisheye, ISO-400, F/11, 1/250th sec, Ikelite Housing, Ikelite four inch dome, Two Underwater Ikelite DS-161 Strobes with Dome Diffusers, Notice the curved water horizon of the fisheye lens

Cenote Guide Miki, Das Ojos, Yucatan, Mexico, Acquapazza housing APSO-A7R3, 170mm dome port, Sony A7R III, Sony FE 16-35mm F/4 ZA lens at 17mm, two RGBlue System 02-2 lights, ISO 6400, F/9, 1/30th sec

Dome Port Selection

Since the film days the recommendation for splits has always been to use the largest dome port you have available. While most of us own dome ports in the 170 mm to 230 mm range much larger domes in the 300 mm to 600 mm (12” to 24”) range and beyond are being custom made specifically for shooting splits.

In the film days 35mm was the gold standard for underwater photography. Now we have a broader range of sensor sizes with the smaller sensors being more forgiving with smaller domes because of the greater depth of field they provide.

The reasons large ports are favored over smaller ones is that the larger the port the greater the surface area along the water line between the top and bottom half of the image. More surface area allows the water to flatten and smooth out resulting in a more natural transition between air and water. Even if you are shooting in less than flat waters the water motion is less obvious in the frame.

Larger ports extend the depth of the virtual image allowing greater distance between the lens and apparent subject increasing the corner sharpness. I have used dome ports as small as 100 mm to shoot splits with a fisheye lens and while fisheye lenses suffer less from corner sharpness issues all other problems associated with splits remain. I have also used both high quality acrylic ports and high quality optical glass ports and I have noticed more issues with reflections (ghosting) using acrylic ports than with glass. The most common issue is flare and having the engraved information on the front of the lens reflect back onto the sensor. Several manufacturers are selling flat black rings that thread onto different

thread size lenses or paste on to mitigate this issue.

I have used the lenses listed above with ports from the following manufactures Athena, Aquatica, Ikelite, Inon, Nauticam, Saga, Sea & Sea, Seatool and Zen Underwater in sizes from 100 mm to 230 mm.

When selecting a dome port for splits I would highly recommend getting one that has a removable dome shade. This may not present an issue with your current lenses but if you ever intend to use a circular fisheye lens you will be happy you invested in a removable shade. Every circular fisheye lens I am aware of will vignette in the dome port corners if the shade is not removed. Also some shades need to be removed prior to entering the water while others can be removed and reinstalled underwater.

While large acrylic dome ports are less expensive than equally sized optical glass ports they are also less than half the weight. This is an advantage for travel but problematic for splits because acrylic ports tend to turn nose up at the surface. Adding weight to the bottom of the dome shade will help resolve this issue by pulling the port down into the water.

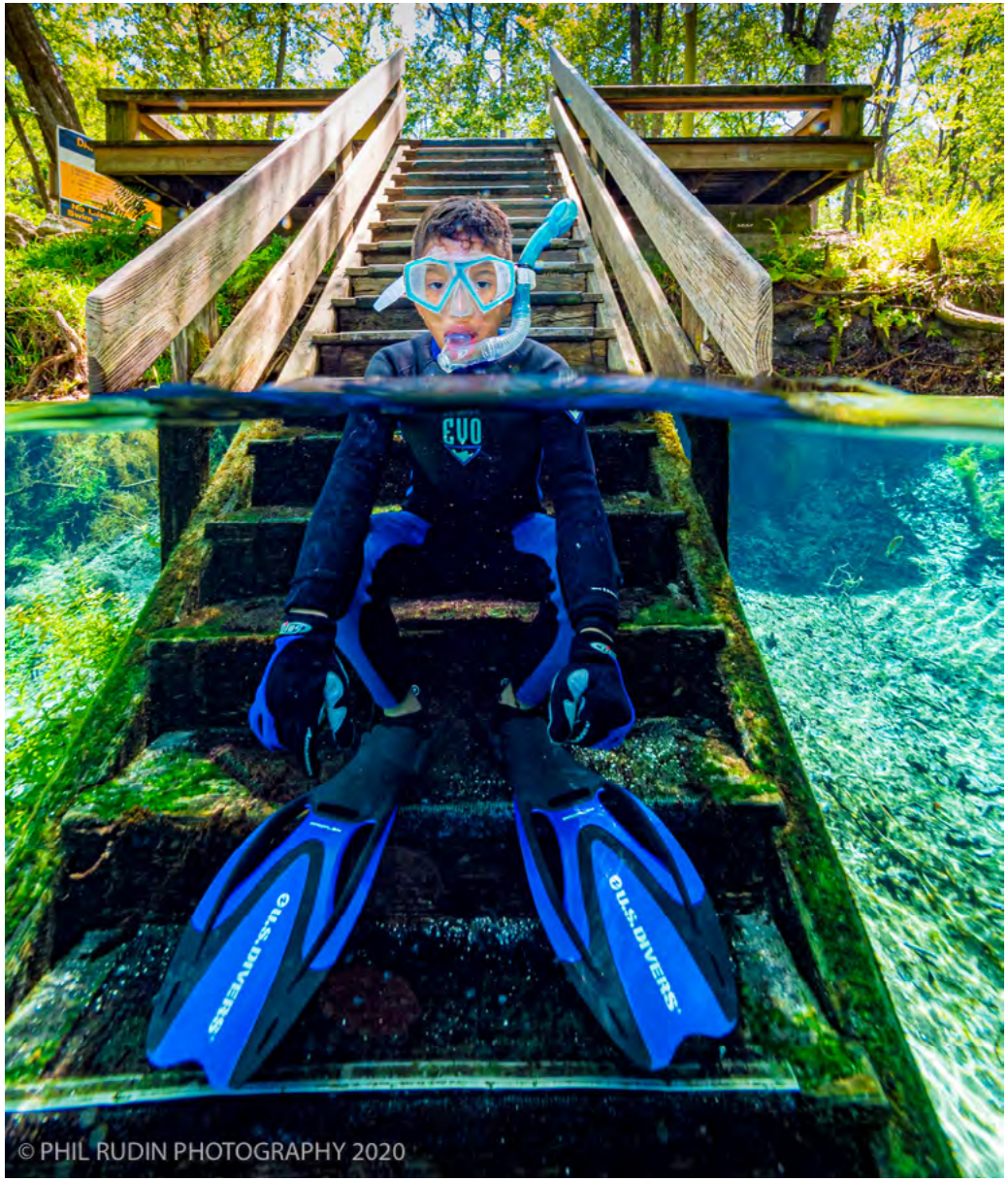
Depending on the lens and dome port combination chosen you may need to use port extensions between the port and housing. These port extensions will also effect the balance between housing and dome port requiring trim weights to be added for better balance. With smaller dome ports water spots on the top half of the dome will appear larger in the frame than the same size water spots on a large port. This is the result of forced perspective where the water spots are closer to the image sensor making the drop look bigger in the frame.

Getting Started Shooting Splits in Open Water

The ideal place to start shooting splits is in very calm, shallow, protected waters with excellent visibility. While I have shot thousands of splits in the open ocean the lion's share were of divers and dive boats world wide.

With all new underwater photography techniques and equipment I recommend starting the learning process in a swimming pool. The pool is a great place to experiment with camera settings, lenses, port sizes, extensions and lighting techniques. These pool sessions allow you to discover which of your equipment configurations work best and to master the skills needed to move on to open water.

As I mentioned above the prevailing wisdom when shooting splits is to use very wide rectilinear or fisheye lenses, a very large dome port



Model Roman, Little Devil Springs, Florida, Olympus E-M1 Mark II, Olympus 7-14mm F2.8 at 7mm, sec, Ikelite Housing, Ikelite eight inch full dome,Two Underwater Ikelite DS-161 Strobes with Dome Diffusers, ISO 320, F/6.3, 1/60th

Diver Selfie at Ginnie Springs, Florida, Canon EOS R, Canon 8-15mm F/4L fisheye at 8mm, Ikelite housing with eight inch dome port & Ikelite flashes, ISO 800, F/22 at 1/200th sec, Notice the curved water horizon of the fisheye lens in this case bowed towards the center of the lens

of 200 mm or more and high F/numbers in the F/13 to F/22 range on full frame. You can get away with F/numbers in the F/11 and above range for sub-full frame sensors. Let me reiterate that using high F/numbers with super wide lenses and large dome ports will, in a perfect world present the best case scenario for nailing focus both above and below the waterline. This combination should offer the best opportunity for that award worthy image that many dream about.

For those wanting to learn how to shoot splits for fun the parameters can be expanded a great deal to include most equipment capable of focusing above the waterline. This would not include water contact optics like Nikonos film lenses and wide conversion lenses designed specifically for underwater use only.

A great way to start learning is to use the equipment you already own that allows the widest AOV with the largest port you own. I would suggest starting in a pool photographing family and friends. Several of the issues you can master are selecting the best F/stop, shutter speed and ISO to give you the most depth of field while at the same time achieving proper focus and exposure while also freezing the action.

Remember you will have much more light at the surface than you do at depth so lowering ISO while maintaining a proper shutter speed is not hard.

I often switch from manual camera settings to

Model Rossina, Angelina Cenote, Yucatan, Mexico, Sony A7R III, Sony FE 12-24mm F/4 G zoom at 24mm, Nauticam housing, Zen 230mm dome port, two Inon Z-330 flashes, S-Turtle flash trigger, ISO 64, F/4, 1/125th sec

aperture priority settings using ISO 400 and an F/number of 16 to 22. This will normally get you into the 1/125th second or above range. This works quite well in open ocean water where you and the subject are always in motion.

I always attempt to have the sun at my back to avoid flare into the lens and for more even lighting. If you are using strobes push them down as far as you can into the water. The surface lighting is often going to be two or three stops brighter than the

underwater exposure.

I tend to meter for the above water exposure rather than the U/W part of the image. It is much easer to recover the under exposed side of the image than it is to deal with a two or three stop over exposure.

Regardless of what lens and port combination you are using one side of the image is likely to be a bit softer than the other side of the image. Choosing which side of the image you want to favor

Waiting to board, Cozumel, Mexico, Olympus E-M5, Panasonic Lumix 7-14mm F/4 at 7mm, Nauticam NA-EM5 housing with Zen 170mm dome port, two Inon Z240 flashes, ISO 200, F/10, 1/200th sec, Olympus Creative Pop Art Filter applied in camera

is important. With a model in the foreground I will always focus on the model and if the background is soft the model will still pop in the frame. I have used this technique with F/numbers as low as F/1.8 while shooting splits with models. If you have a beautiful shallow reef in the foreground and a distant island above focus for the reef.

With more static subjects like piers or other structures both sides of the image should be in proper focus if you get close.

Shooting sunsets with a foreground subject will require flash fill for the under side or for both sides if the subject is close to the lens like a shark at sunset from the dive platform.

Water droplets

Since the early days I have heard of dozens of ways to keep water droplets off the dome port. From Lemon Pledge on acrylic domes to spit and potato chunks rubbed on optical glass.

One solution for water droplets is to keep the top half of the dome port dry. This is much easer said than done but in controlled situations like a swimming pool or calm spring it can be done.

I have seen several split shooters using a child's life vest to support the housing and keep it above the waterline. Float arms pushed under the water also provide bouyancy to assist with keeping the housing raised above the water.

Inevitably the dome is going to get wet and

water droplets will form. After the potato or spit is applied I have found the most consistent way to remove the spots is to dip the entire dome under the water and then start shooting as you raise the dome back above the water level. For the first few seconds the water will shed off the dome before forming spots.

When relaying solely on ambient light I have even set the frame rate to 3 to 5 frames per second to catch the sweet spot where the water is shedding off the port. In the end you are likely to see water spots in your images at some point.

In post some water spots can be removed but others just can't without being obvious. In the end water spots should be thought of like backscatter where a bit is tolerable while too much is not worth dealing with. Also in post, shadow recovery and graduated filter tools can come in very handy for retrieving a more balanced exposure between the water and air sides of the image.

Whether your goal is to shoot splits for competition or just for fun in the pool with family these shots are always crowd pleasers and they allow you to tap into the more creative side of the brain.

I hope to be back in the water soon for more reviews of the latest underwater photography equipment for all skill levels and budgets.

Phil Rudin

www.instagram.com/philrudinphotography

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The Auto-Magic formula is now available in a Plexiglass filter that can be added or removed underwater.

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Creating pleasing images with inexperienced uw models

by Quico Abadal Ramon

COVID-19 kicked in, and so all diving activities on the island got completely knocked out. Dive shops closed, boats remained at the pier and the impossibility of renting a tank and have a shore dive made it even more frustrating for those who dream day and night of photographing the ocean, like me. Luckily we did not have any virus case on our little precious paradise, Koh Tao.

The island, a teeny-tiny spot on the map, it's located on the Gulf of Thailand. Very well known among divers and backpackers, it receives a crazy amount of people every year, from which most of them end up as certified divers. The scene changed completely: the streets and reefs of Koh Tao were empty, you could not hear the music from the nightclubs nor the diving boats going out at 6am. Dive sites untouched by human kind for weeks, letting the sea breath for a while. Nothing better for Mother Nature I must say.

So scubadiving was completely out of the picture, and snorkelling passed on to be my number 1 activity. I'm one of those who with a camera in their hands prefers to have a tank on their backs; however my freediving skills are not that bad, and so I still enjoy like a kiddo. My friends and I were going from beach to beach –sorry for those indoor "quaratiners"- and I'd always take the gear with me. My friends are NOT professional free divers; some even recreational recently certified scuba divers. However we managed to shoot very pretty images together. These are few tips that I consider most important when shooting with someone who is NOT an experienced freediver:

Be nice

First of all and most important, the vibe you set on the shooting is crucial. Being on front of camera is not easy and it can make people very uncomfortable. Working with an upset model will most definitely be reflected on your final work. So smile, make jokes, be polite, help in any possible way, be patient. Creating a nice atmosphere and motivating the model will be obvious on your images, especially when the models have no clue of what they're doing. Make it fun!

Lighting

The time of the day is very important indeed. I normally like to meet around 15:00 o clock, so I have enough margin to chat with the model and make everything clear before we jump into the water. Over here at Koh Tao at this time of the year, the sun starts hiding at around 18.30, so that leaves us around 3hours of shooting. You may think 3 hours is too much, however remember that we need to

rest between dive and dive. Also, I rather have extra time to take things easy and look at the scene properly, trying to get the best angles, instead of shooting pictures randomly hoping some will be ok. The model might also think 3 hours might be exaggerated, but if again you are having a good time, it will go quick!

I chose the afternoon because I love how the warm light beams go through surface, lighting up the subject in the softest way. Shooting underwater during midday is no mistake either, however if you take a portrait on surface during that time, then the light will be too harsh on your subject's face, creating ugly shadows all around. Morning also works fantastically; I'm just not an early bird.

The camera setup I've been using for these shots don't include strobes, and so the ambient light is everything. The image look will vary depending on how you play with the direction of the sunbeams. Typically we want the sun behind us, so it lights up the subject from its front, showing detail in shape and colour. On the contrary, shooting against the sun is another very much used technique. Back lighting your subject creates silhouettes, which can be very appealing to the eye if done correctly. It's important that the viewer distinguishes with no doubt the silhouette of the diver, rather than just a black thing that might be a diver or might be a potato. Easy way is making sure the body is well positioned, extremities well separated and no other dark factors on front nor behind our subject. Last but not least diagonal light shooting, playing with the angle in between front light and back light. The more you point at the sun with your lens, the stronger shadows will appear. I like to use this technique a lot when I want to add some drama on the picture. I'm also very keen on having the sun beams coming in the shot, making it so much more special and giving depth to the image. I might began the

shooting with front light technique, looking for details on the subject and location, and as time goes by and the sun gets lower, I start shooting more towards back light, looking for a more dramatic image.

Model tips

So we must remember that our models are NO experts either at modelling or at freediving, so it won't be easy for them to dive down even 10meters on one breath and remain photogenic along the way. Stay shallow and try to play with other factors. Also, if you are shooting with no strobes, it's definitely convenient to stay close to surface, especially during the last hours of sunlight, when the light is very pretty but not too strong.

I strongly recommend training yourself just a little bit on freediving, and so then you 'll be able to give some easy tips to your model on breathing and diving techniques. In my case, these models could already easily be underwater for over 30 seconds, which was more than enough to take the shots. On the pictures where the model is standing on the ground we used a different technique, blowing out air to descend, so we could both sink quickly. This feels a bit uncomfortable for everybody, since we run out of oxygen much faster, however it's very useful when shooting at very shallow depths. Having an extra weight can help too; although sometimes might not look too good… it really depends on what you are looking for.

Location

The underwater that surrounds the model can definitely be an extra value to our image. Choosing a place is fairly easy; when people look at your photo they got to go: " wow I so wanna go there! ". In some of these images I chose a very shallow wreck that creates that kind of feeling. Otherwise, sometimes it's just good to have your model on the sand, in the blue, on top of the reef… It really depends on what reactions you are looking for. Play around with all the possibilities.

Composition

I believe the art of composition definitely plays a big factor on the viewer's opinion of the image. Bad composition may distract the viewer from what's really important. It's easy to forget to compose the picture if we don't pay enough attention or if we are in a rush. My way of working is the following: I swim slowly along the location and looking at every corner. If I think some place has

potential, I then take a picture of the spot thinking how I'd like to model to appear on it. I show the model the image from my viewfinder along with an exact explanation of what I want. Many times I'd even simulate what I want them to do.

Here are some rules of basic composition that I use:

1. Amputations: never leave out of the frame part of your subject's body. Cutting off legs (and fins) or arms really ruins the composition of photography.

2. Subject position: depending on the shot, I sometimes leave the model on the centre of the image, other times I use the rule of thirds. Choose whatever looks more beautiful to you. I also think it's important that the model faces the right direction, which usually is towards the negative space.

3. Lines: when photographing an image that includes lines, I tend to make them start at the corner of the frame. This gives a pleasant look, while also directs the viewer to our main subject. This technique is very much used on land photography, so why not apply it to underwater photography?

Equipment

For these type of pictures any sort of camera works: DLSRs, mirrorless and compacts. I'm always keen to think, "it's the Indian, not the arrow". In my case I use an Olympus OMD EM-1 markII inside an Olympus housing (PT-EP14), along with the 8mm PRO f1.8 fish eye. Having a wide angle or a fish eye changes your game completely, so for those who use a compact camera

I highly recommend looking for a wet lens that opens your range of view.

One of the advantages of my set up is size. Using a small housing and domeport gives me the ability of getting into tiny places whereas with a DSLR would have been very tricky. However, split shots are way easier when having a larger dome port. I'm using the PPO-EP02 from Olympus, which is pretty small, and so sometimes split shots are challenging, especially when the sea is not completely flat. Setting up the camera to shoot as fast as possible helps a lot, although you'll have to go through hundreds of pictures. Another thing that will make it easier is setting the focus on continuous single point and putting it over your model.

When shooting wide angle, specifically split shots, we need to close our aperture. This results in sharper corners and both under and over subjects on focus. If I shoot with f1.8, I get a lot of light coming in, which is nice, however on split shots I will have the under part on focus and the over completely blurry. Sometimes that works, but usually it doesn't. In my personal case, I've got my camera sensor a bit scratched and so when I shoot with higher than f6.3, spots appear on my pictures, which later I delete on post processing, but it's honestly a pain in the ass so unless it's very necessary, I try not to cross the limit. I recommend you to shoot f.8 or higher and slightly push up ISO. This will result on better quality pictures, so one less thing you need to worry about.

And by the way, you don't necessarily need a wide angle. During my first year underwater I used a Sony a6000 and kit lens. Of course I shot with a different style, but I was very happy with the results. Adapt to your equipment and realise what advantages you have. If I had a compact I'd go a lot more for cool and closed up portraits, something I cannot easily do with my fish eye. So there is always a way to push up your game.

Post processing

This is a very personal matter. Some photographers believe that too much post processing takes out the magic of pure photography.

Others will happily use the digital tools available to enhance their images, like me. That doesn't mean you have to use all of the tools and make it look like Mars, although if you want to make it look like Mars then go ahead. I think there shouldn't be any limits. Do what looks good to you.

These are some basic steps I follow when editing with Lightroom. One of the most important factors to me is colour. To give the appropriate colours to the image you need to set up the correct white balance, so it doesn't look to green or to blue. Sometimes I manage to adjust colouring properly on most of the image, but still have some parts that

are too green. I will then use the brush for those specific areas, and so once they are selected, I then again use the white balance slider. When the colour is nice through the entire picture, I like to give a little extra contrast and clarity to enhance the image. I also use the brush tool on the model and give even more clarity and contrast. Cropping the photo and perhaps changing angles a bit, is something I also do to present a stronger composition. If you crop too much and have a low-resolution camera, noise might appear. To counter that and give a smoother touch, use the noise reduction slider.

Post processing is again very personal. I sometimes spend more time on the laptop VS underwater, but I genuinely enjoy it. Play around with all the possibilities, check how it'd look on black&white, rotate the picture upside down, push contrast higher – don't like it? – Then just pull it back, change the hue, add saturation… There are so many things you can do! One single picture can be presented in so many ways and express so many different feelings. There's never one only way, so enjoy the process.

Conclusion

The key to create pleasing images is to take it slow, always think before shooting, enjoy the process, get along with the model and make it fun. Be conscious of what you are doing; otherwise you are wasting everybody's time. It doesn't necessarily mean you need to exactly know what you want to end up with, but focus and pay attention to details. Don't be afraid of trying new things, but the opposite! Try everything new, get inspired by other photographers and add your spicy touch.

I hope these few tips make it easier for you. If something is not clear, feel free to contact me; I'd be very much happy to have a chat on any photography subject.

I'd like to finish by thanking my beautiful main models: Norman, Natalia and Cynthia, who always pushed stronger to stay longer.

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Don't settle for 2nd best

Film - No Filter No White Balance

Digital - No Filter Manual White Balance

Magic Filter Manual White Balance

Digital cameras have opened up new possibilities to underwater photographers. For available light photography manual white balance is an invaluable tool for restoring colours. But when you use it without a filter you are not making the most of the technique. You're doing all the hard work without reaping the full rewards. These three photos are all taken of the same wreck in the Red Sea. The left hand image was taken on slide film, which rendered the scene completely blue. The middle image is taken with a digital SLR without a filter, using manual white balance. The white balance has brought out some of the colour of the wreck, but it has also sucked all the blue out of the water behind the wreck, making it almost grey. The right hand image is taken with the same digital camera and lens, but this time using an original Magic Filter. The filter attenuates blue light meaning that the colours of the wreck are brought out and it stands out from the background water, which is recorded as an accurate blue.

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Shooting frogs in the dead of night

by Mark Kirkland

It's 2am on a chilly Wednesday morning in March. I'm covered head to toe in mud, lying on the edge of a pond in complete darkness. I'm waiting for the perfect moment to press the trigger of my camera which is sitting in a foot of water.

I've been here for over 5 hours, my flask is now only half full of tea and my bones are starting to shiver. It's my fifth consecutive night here and my patience remains intact….just. In a few hours the industrial estate behind me will become a bustle of noise as the working day starts. Above, the stars peek out from behind the clouds and in front of me, the glow of the tower block reflects in the black water.

The water is still, apart from the intermittent movement of life — sometimes a gentle splash then a lengthy silence; sometimes a crescendo of vocal noise culminating in a frenzy of activity before suddenly pausing in unison. The silence returns, sometimes for a minute, sometimes for an hour or more.

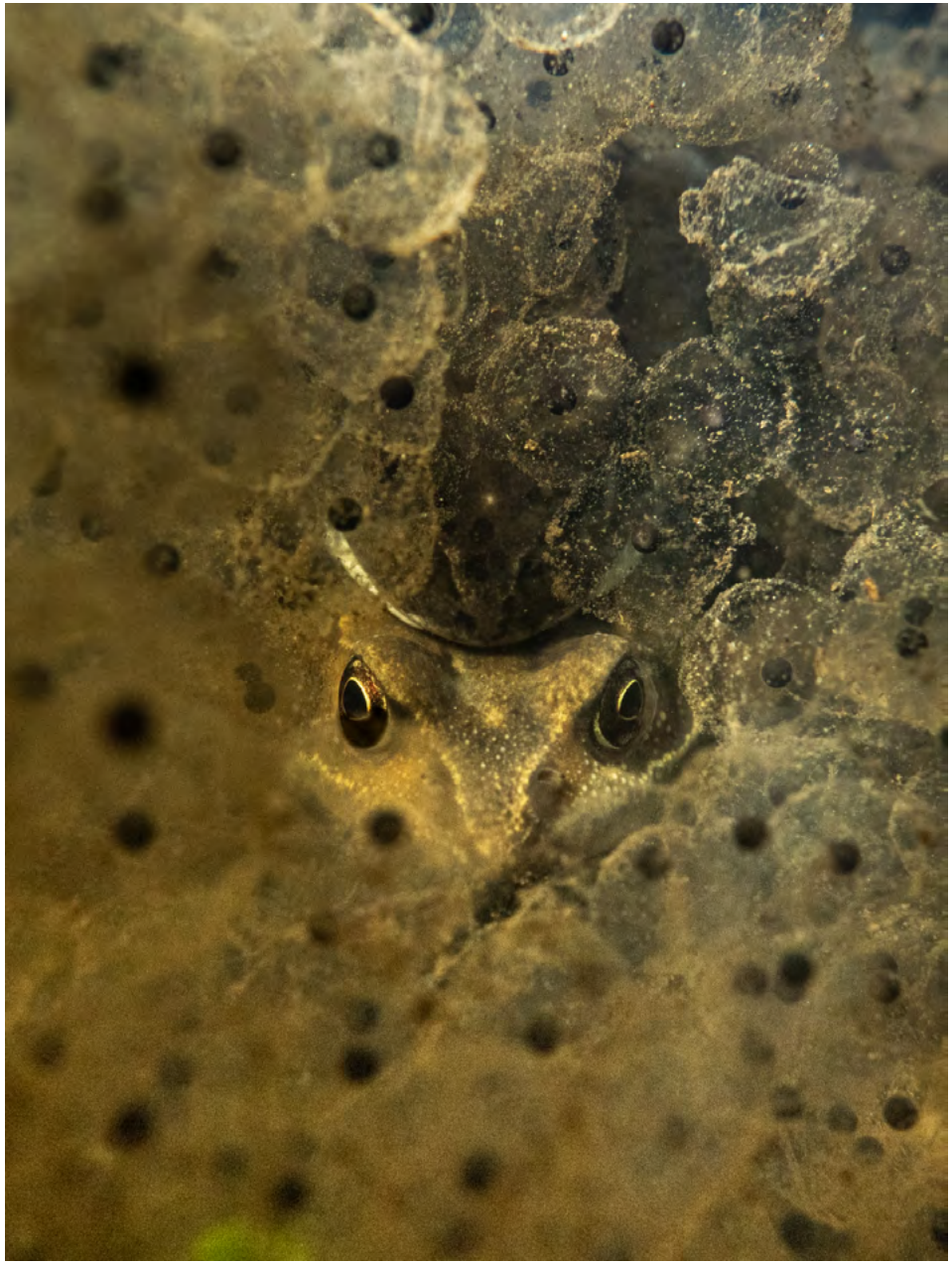
I've been a keen scuba diver for nearly 10 years, however, for the last 5 it's become a means to an end — the end being photographing the unseen wildlife of Scottish waters. Once I got my first underwater camera, the combination of creativity, unpredictability and that wee sense of adventure quickly got me hooked.

It's a niche and technically tricky endeavour, with relatively few people in the UK taking on the challenge. Despite this, there's a small group of accomplished underwater photographers in the UK with who I share ideas and inspiration. I'm always trying to push my photography beyond what I've tried before, creatively and in the subjects that I photograph. It's a combination of both that led me to this small haven of urban wildlife in the South of Glasgow, (without my dive gear of course).

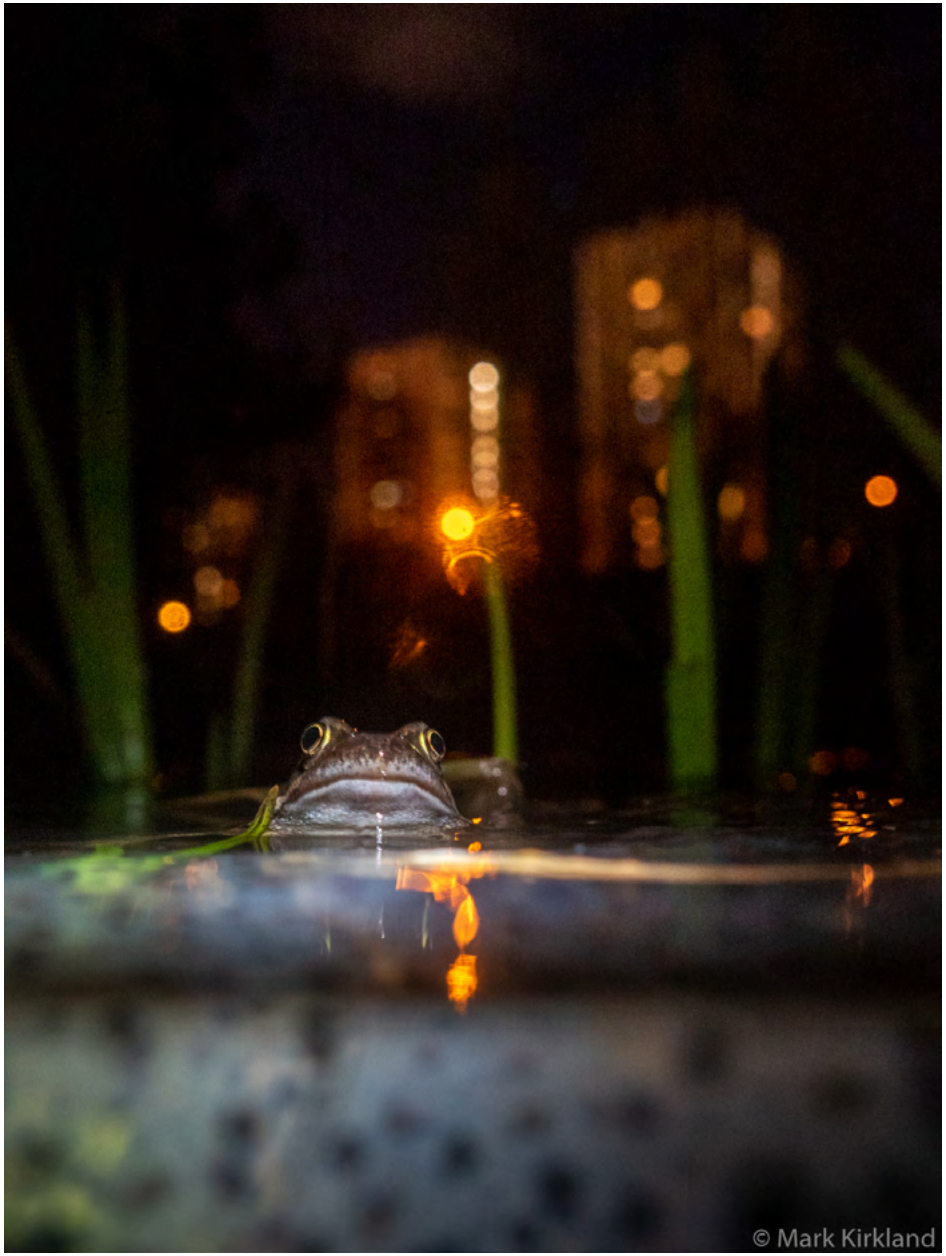
I first encountered the common frogs of Malls Mire in February 2018. It took some planning and luck to get here. With no knowledge of amphibians or freshwater habitats, I started my research by

A fisheye lens helps put the main subject into a wider context and was perfect for capturing the urban habitat at night. Olympus OMD EM5 MKii in Olympus PT-ETP13 housing. Two Sea and Sea YS-110a strobes. Panasonic 8mm fisheye.. Triggered with OI Share App. 5sec ISO 16 ISO 1000

I might be guilty of anthropomorphising here, but these two look thoroughly unimpressed with my intrustion. Olympus OMD EM5 MKii in Olympus PT-ETP13 housing. Sea and Sea YS-110a Strobe + homemade snoot. Olympus 14-42mm @14mm. . Triggered with OI Share App. 1/8 f3.5 ISO 1250



Common Frogs among the frogspawn can make for a more abstract image. Olympus OMD EM5 MKii in Olympus PT-ETP13 housing. Sea and Sea YS-110a Strobe + homemade snoot. TOlympus 14-42mm @14mm. Triggered with OI Share App. 1/50 f4.5 ISO 1250



You don't have to wait long for the character of these animals to come out. You can see why they appear in so many children's books! Olympus OMD EM5 MKii in Olympus PT-ETP13 housing. Sea and Sea YS-110a Strobe+ homemade snoot . Olympus 14-42mm @14mm. . Triggered with OI Share App. 1/4 f4 ISO 1250

This elegant poise shows the frogs powerful hind legs. Olympus OMD EM5 MKii in Olympus PT-ETP13 housing. Sea and Sea YS-110a Strobe + homemade snoot. Olympus 14-42mm @14mm. . Triggered with OI Share App. 1/125 f14 ISO 1250

(Right) In this shot I've tried to use the line of trees as a textured pattern in the background. I think it works to a degree. I'm trying to introduce more abstract elements into my photography. Olympus OMD EM5 MKii in Olympus PT-ETP13 housing. Sea and Sea YS-110a Strobe. Olympus 14-42mm @14mm 1/80 F14 ISO 200

(Far right) A frog surveys it's surroundings as the setting sun still bursts through the trees. At this point, they were well used to my presence. Olympus OMD EM5 MKii in Olympus PT-ETP13 housing. Sea and Sea YS-110a Strobe. Olympus 14-42mm @14mm 1/100 f18 ISO 500

downloading research papers and contacting local and national wildlife charities and environmental agencies for advice. Despite the great responses, I still needed that bit of luck to find the right location.

Common Frogs spend most of the year in underground burrows, only entering the water for a few days each year to mate. This happens when night-time temperatures rise above about 4°C, however, recent unpredictable weather has made this event hard to track. Over four weeks, I visited different locations every day — some a couple of hours drive away — only to find empty ponds (too early) or ponds already full of frogspawn (too late).

I found the Frogs at Malls Mire towards the end of the spawning season in 2018. It was probably the day I was ready to give up. It's a small area of community-managed mixed woodland and wetland in the South of Glasgow and just twenty minutes away from me. The location near the River Clyde makes it an important green corridor for urban wildlife.

I quickly learned that frog behaviour is as unpredictable as the weather is these days. Unlike larger toads, frogs are easily spooked and can go into hiding for long periods, so one sudden move was enough to have them scatter out of frame and into the muddy underwater flora. I found that they are also incredibly curious. After a few hours, they grew comfortable with my shadow looming above and they would gather around the water's edge until eventually, I'd have over fifty pairs of eyes staring at me. With gentle movements and patience, I was able to get my camera into the water and start taking photographs.

My head full of ideas and possibilities, since that first day, I could picture a photograph of the frogs underwater, with the tower blocks in the background. This 'split shot' photography (half underwater, half above water) is a tricky technique, sometimes used by photographers as a great way of putting something underwater into a wider context. It tells a more complete story. In this case, the intersection between hidden wildlife and its urban environment. Like most city wildlife, frogs are most active after dark and I wondered if I could add this extra layer to their story. I was intrigued by the idea of conveying another world on our doorstep that came alive as we slept.

Again, it's hard not to attribute human characteristics to these little creatures. I titled this image 'Proud Parent' and it came third in the UPY British macro category 2019. Olympus OMD EM5 MKii in Olympus PT-ETP13 housing. Sea and Sea YS-110a Strobe. Olympus 14-42mm @14mm 1/80 F14 ISO 200

I visited Malls Mire again in 2019, however nature, at it's predictably unpredictable best, served up a seriously muddy pond for the whole month with absolutely no chance of photography. This year the water was clear but it took four or five visits before the frogs emerged from their nearby burrows.

The shot I was trying to get over the next five nights combined multiple techniques: split photography; backlighting (where a flash is placed behind the subject); close focus wide angle (where you focus closely on a small object using a lens designed to capture wider scenes); and long exposure (usually used to photograph stars, it means the camera shutter stays open for at least a few seconds to get as much light in as possible — however, anything that moves is therefore blurry).

All of this was done using a (completely unreliable) remote trigger, which meant I could take the photo without touching the camera. I hit endless problems such as intermittent drizzly rain constantly ruining the top half of the shot, stirred-up mud, moisture in my underwater housing creating condensation on the lens, trying to focus in darkness (impossible), and trying to focus with torchlight (scares the frogs). The constantly changing weather meant I also had to frequently adjust my settings while trying not to move around too much.

Eventually, when the frogs, moon and clouds aligned perfectly, my remote trigger would inevitably fail. If it wasn't that, my flash wouldn't fire or my camera battery would die!

Despite more than 25 hours of trying, I didn't get an image that I'm completely happy with. The shots are full of imperfections and there are a lot of 'nearly, but not quite' moments. It's the perfect excuse to try again next year.

Granted, it's not everyone's idea of fun but for me, it was five nights well spent. Aside from the enjoyment I get out of photography, I hope that some of these images help to show an insight into the lives of amazing animals that we share our urban spaces with. You can't treasure what you don't know exists.

Mark Kirkland

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Drifters

by Mike Bartick

Our oceans are packed full of so many curious subjects and behaviors that something new can be experienced on almost each and every dive. One of my main drivers for exploring is looking for the unanswered questions that i'm continuously left with. It seems each time one question is answered, two more pop up behind it. On a reef or a sandy habitat many questions can be answered purely out of the reliability of seeing the same subject matter then observing them. However in the open ocean this type of experience is vastly different as many of the encounters are purely through chance and often brief.

Sadly, many divers only think of jellyfish in the context of being stung or as an inconvenience but the truth is that jellyfish have a huge story to tell too. Yes, jellies can and will sting the heck out of humans but hey, no one is asking you to go out and hug a jelly.

Jellyfish are a soft bodied class of sea faring gelatinous creatures, akin to living fossils and can be traced as far back as 600 million years. Jellyfish inhabit our oceans from the surface to the deepest measured dark zones, they are heartless, have no brain and generally speaking have no eyes. Yet these seemingly simple creatures have a complex life that ranges from a period of being sedentary to pelagic hunters and have persevered through the most extreme conditions that our planet has ever experienced.

When we think of jellyfish for the most part we basically think of an umbrella shaped glob with trailing tentacles that pulsates along through the water aimlessly, stinging things. For the most part this might be true but they are also quite beautiful in their own right. Like sea anemones, jellyfish are from the family of cnidarian and possess the stinging cells of nematocysts. These hair triggered cells are stored in the tentacles of the jellies and involuntarily discharge when coming into contact with anything, including other jellyfish.

Large Jellyfish act as a protective oasis for many subjects. Some take up a temporary residency there while others make it a more permanent. Jellyfish are photogenic and often times colorful making them a perfect target for underwater photography.

Nevertheless that doesn't hold true for all sea faring creatures. Some animals have grown immune to their venom and use them as shelter or feeding on them whenever possible. Various types of fish, turtles, anemones on the substrate even other jellyfish feed on jellies as a food source, while other animals have actually learned to live in harmony with these alien like beings.

Despite their dangers Jellyfish seem to be a

Jackfish are a common companion of jellyfish. At first these observations seemed random but in time i've realized that the jacks select very specific types of jellyfish.

Jackfish and a Thysanastoma jellyfish form long lasting bonds that mutually benefit each other.

favorite place for larval and adult fish to seek shelter. Its not uncommon to see different types of fish swimming alongside of them, resting on the bell or even swimming amongst their tentacles. Some larger jellyfish even act as drifting bio dome's with multiple subjects seeking shelter on them, crabs, shrimp even cephalopods.

Jackfish generally speaking, have a lengthy larval stage spending most of their lives alone. This makes them especially vulnerable to larger fish. To survive, many Jacks rely on speed and cunning, some have even adapted a very effective strategy of forming a temporarily symbiotic relationship with various jellyfish and are some of the more common fish to be seen drifting with them.

There are a couple of different theories surrounding the relationship between jacks and jellyfish due to different growth rates. One theory supports the idea of Jacks nomadically finding jellyfishes and spending a brief period of time together before moving on, while another theory is that a larval Jack selects the jellies at a very young stage then spend's a lengthier period of their lives with it as a partner.

Post larval Cotton Mouth Jack select specific type's of jellyfish when they are both still very small. In this image, the jelly is hardly large enough to cover the jacks chin, if it had a chin. The jack directs and pushes the jelly through the water which ultimately helps them both to feed.

The jelly makes better water contact, increasing its ability to kill more prey while the jack benefits from eating the scraps. This keeps the jelly fish healthy, boosts its ability to grow and in turn provides the perfect shelter for the jackfish. It also appears that some (Thysanastoma sp.) jellyfish have even developed a small flap on the underside of its bell that the jackfish use to their benefit for hiding and resting.

To see this partnership working in person is quite a spectacle. The jellyfish pulsates but moves rapidly through the water and out of synch with its own movements, like its turbocharged. Approaching from darker water, the jackfish seem to be attracted to our downline lights and the cloud of plankton that forms there. However, they don't like to be photographed very much and will tuck in and hide amongst the jellies

tentacles to avoid the bright flashing of our strobes. The jack definitely takes ownership of the jelly and is in full control of its direction and speed forcing us at times to fin at full power just to keep up. Often times the jack will quickly roll the jelly over using it to protect itself, like a pelagic Armadillo with stinging tentacles attached.

Thysanastoma jellyfish actually form a flap under their bell that can accommodate the jackfish and allow it to rest.

Filefish are also observed quite often with jellyfish however their relationship isn't quite as friendly nor are they as selective as the jacks. The filefish actually sustain themselves by

consuming the jellyfish over a period of time and are a natural predator. Filefish will also bully other less aggressive fish away from a jelly with repeated attacks, driving them off to fend for themselves. Driftfish on the other hand are an entirely different family of fish that very little is actually known about, mainly due to the difficulty of collecting them for study. Trawling is somewhat effective but doesn't really offer an accurate window into the behaviors of the subjects in the pull, particularly mutually beneficial behaviors such as this one.

Some of the smaller driftfish spend a longer period of time if not their entire lifecycle with jellyfish. The driftfishes roll is more passive then the jacks as for the most part they are unable to move or direct the jelly through the water however that doesn't mean their presence isn't mutually beneficial. Some will live just under the bell or move about the jellies tentacles acting as a lure and attracting would be predators that are then subdued and stung by the jellyfish and consumed, leaving scraps for the driftfish.

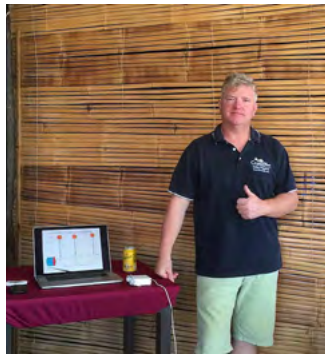
Cubazoid's like box jellyfish can be extremely dangerous to humans and fish alike. So when I saw the combination of the driftfish living in harmony

with this box jelly I was quite surprised, normally even the slightest contact with this type of jelly would spell out a painful death for the little fish but somehow these two driftfish seem getting along just fine.

Both were swimming in and out of the body of the bell probably picking out the fish scraps from the interior somehow avoiding contact and grabbing a free meal. This was my only experience seeing this combination together so once again, i'm left with more questions then answers.

The jellyfish family is huge and includes ctenophores or comb jellies not discussed above but should be recognized. For further reading check out "Jellyfish, A natural history" by Lisa-Ann Gershwin.

Mike Bartick
www.divecbr.com



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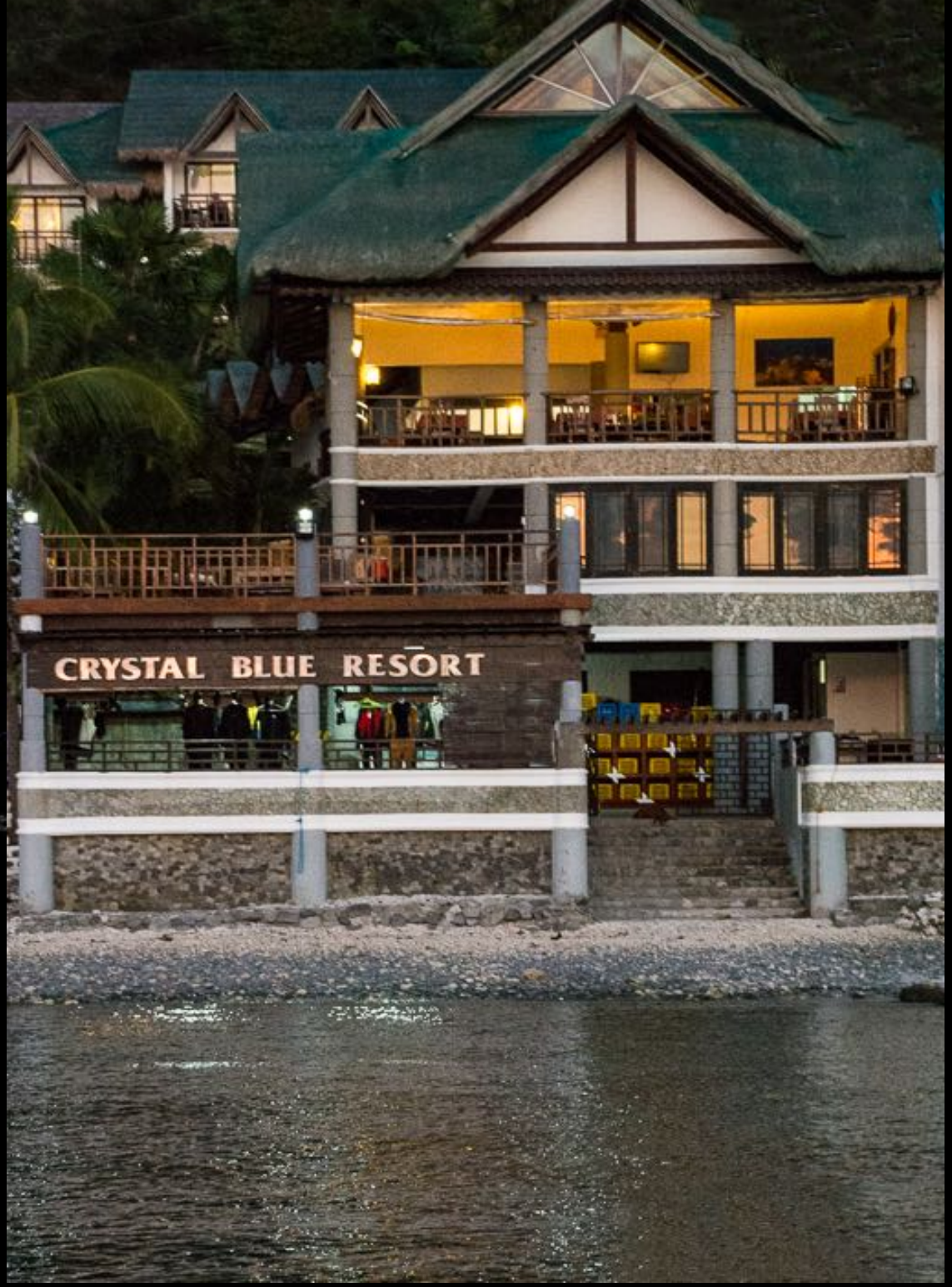


Bubble Cells Divers

by Andrey Ryanskiy

Nudibranchs or sea slugs are a favourite subject for underwater photographers. They amaze us with a variety of colors, shapes and shades. Usually underwater photographers begin with relatively large, brightly coloured species. These are chromodorids, which are easy to photograph on the surface of the sponges they feed on. It is much more demanding to shoot aeolid nudibranchs that feed on hydroids.

But there is a group of sea slugs, that until recently remained outside the orbit of interests for underwater photographers. And there are two main reasons for this. They are not easy to find and even more difficult to photograph. Meet the Bubble Cell Divers – sea slugs with unique feeding strategy!

All Sacoglossan sea slugs have an unusual feeding strategy. They puncture algal cells with their teeth and suck out the cell contents. But some Ercolania species are a very peculiar even among Sacoglossans. They are specialised feeders on Giant Bubbles alga that form clumps of enormous cells.

Slug punctures the Giant Bubble Cells, penetrates completely inside (head first!) and starts moving to and fro, devouring chloroplast layers.

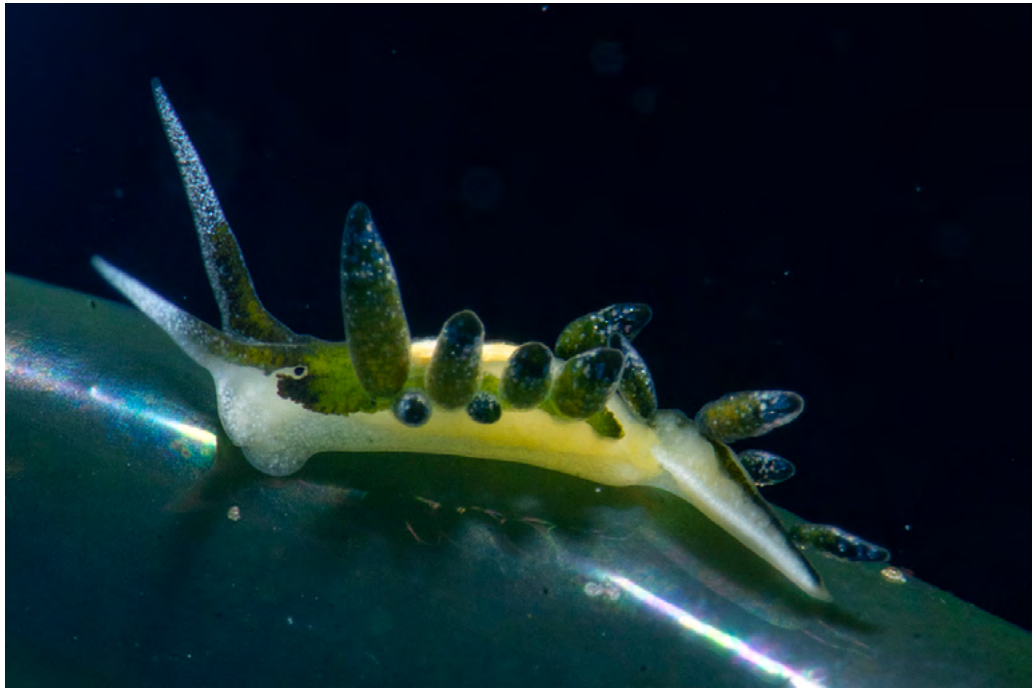
After several hours of work sell is almost empty. After 2-3 days it is decorated with egg clutches. The slug is still inside and the alga did not collapse. Time for our slug to leave this algal sack and to dive into another Bubble Cell. Alga cell (now empty) did not collapse even after sea slug is gone.

Sounds damn scientific. But even knowing all this, I was completely stunned when I first saw a ball of algae, inside of which tiny but beautiful sea slug quickly moved. The inner surface was covered with concentric rings of egg clutches. It was like a small planet with one inhabitant, in the middle of the dark infinity of a quiet night reef.

Only two species of such sea slugs have been described to date - Ercolania endophytophaga (1999) and Ercolania kencolesi (2007).

Civil science, as often happens today, is far ahead of official science

Ercolania endophytophaga



Ercolania endophytophaga

Ercolania kencolesi

in the search of new species. Dozens of undescribed species in popular photo guides on nudibranchs are the best confirmation of this. The same with Bubble Cell Divers - several probably new species are known from the Philippines and Japan. You see them here along with the two previously described.

I was lucky to find a very special place to photograph several different species of internal feeding Ercolania in their natural habitat.

Mactan is a coral island, that lies just off the coast of Cebu Island, Philippines. Due to its proximity to Cebu City and the international airport there, the diving infrastructure in Mactan is well developed with a lot of facilities, serving the flow of Korean divers, among them this destination is especially popular.

I saw several intriguing pictures in the web and arranged a couple of days in Mactan at the end of my usual two-month Philippine trip. Mactan has never been among the top destinations for macro photographers. Therefore, I was driven rather by curiosity than by expectation of new discoveries. It soon became clear that I was severely mistaken!

My guide first asked about my wish list and said that all these sea slugs should be spotted at night.

We planned two shore night dives starting from 6-30. The place was very busy - dozens of divers passed by, returning from training courses and excursions to neighbouring islands, music from the bar sounded, there were many boats around. Definitely not up to your idea of a place for serious super macro photography and finding rare critters.

Everything was different under water. It didn't take me long to understand two simple things. This place is one of the best. And I had something to compare, after thousands of dives on the best dive sites in Indonesia, the Philippines and Papua New Guinea. And my guide turned out to be a great professional, one of the best in business.

Two hours of the 1st dive passed quickly. We found several species of Ercolania, there were other interesting and rare sea slugs. I realised that I underestimated this place by planning only two days here. And I asked Alfie, my guide - can we make three dives tomorrow at night, not two?

Having received a positive answer, I gently asked about the chances for the fourth dive. Alfie was surprised, but remained positive, only warned that that no one had done four

Ercolania sp-Golden-Net

long night dives before.

These were beautiful and very productive dives, the last of them ended at about four after midnight next day. I clearly understood that I still have a lot to explore here and planned a week in Mactan during my next Philippine trip. And that was the right decision. We were able to find new sea slugs and better photographs previously seen.

Diving conditions on Mactan were completely unusual for me. Forget about a lot of time in the small boats. No need even to load your gear in the car. I booked a basic but spacious room just 5 meters from the massive concrete stairs - water entry for my night dives. Warm thirty-degree water added comfort to diving.

I was in Mactan in June and July. This time is considered as low season for diving in the Philippines. But occasional rains did not cause much trouble and did not create problems for diving.

My wife and I did not join Mactan usual trips to local dive sites. In the afternoon, we sometimes dived together, without a guide, just taking tanks. But a couple of times we booked a boat and explored other sites with Alfie. Some were interesting for the macro photographer, including the closest one, just 400 meters from our residence.

After six in the evening, everything subsided and we went down the steps to a completely different world. It was great to have a world-class macro dive site literally behind your porch!

Excellent conditions for diving leave no excuses for failures with photos. But shooting our sea slugs is far from easy.

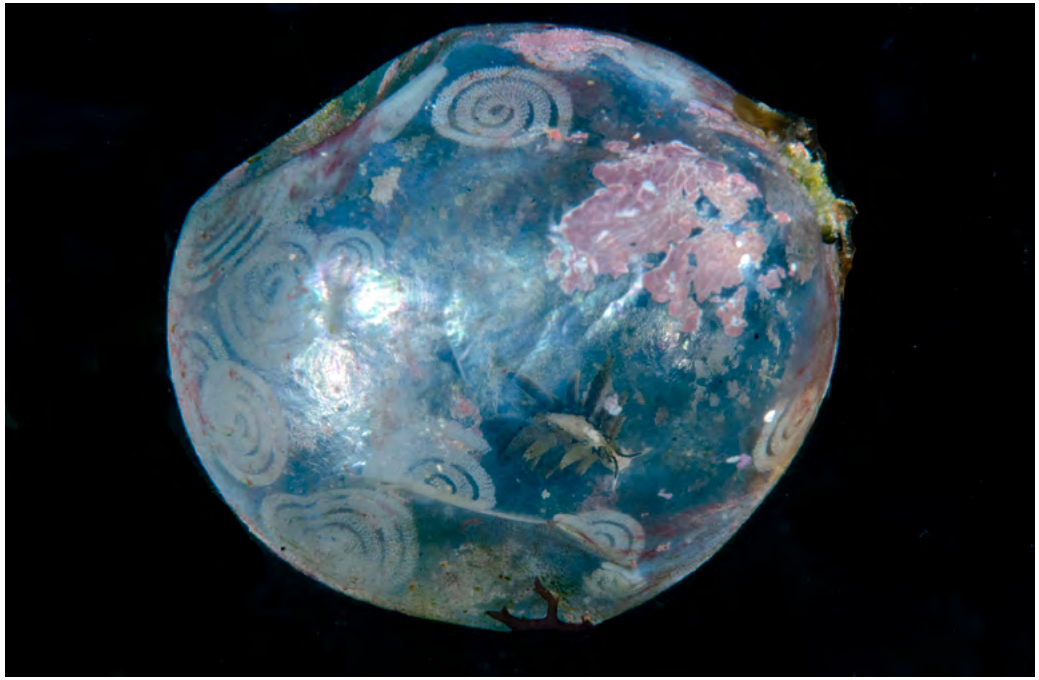
Shy and tiny (2-5 mm), they demand a full super-macro setup and a lot of patience. A powerful wet lens is a must.

I worked with SLR Nikon D7200 (105 mm) and +10 or +16 wet lenses. Aperture f32 or f36, to restore depth of field, dramatically narrowed by the high-magnification wet lens.

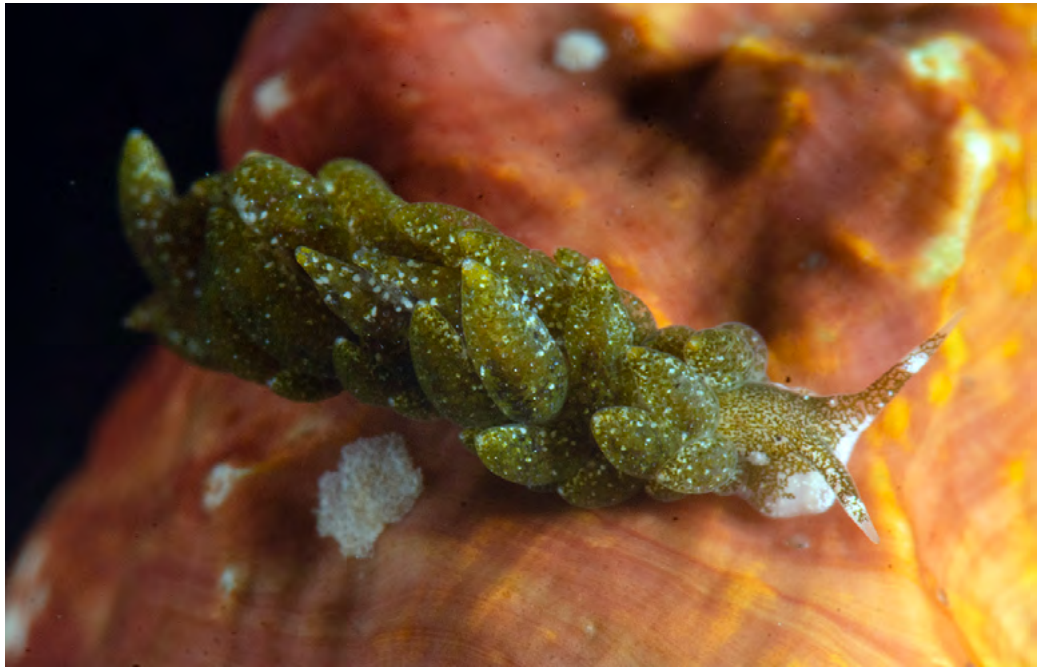
If you are taking your first steps in super macro photography, it is better to postpone the trip, until you attain a certain degree of automatism in choosing camera and flash settings. You must use the capabilities of your camera and wet lens to one hundred percent.

Do not forget that wet lenses

Ercolania sp-Green-Net
Ercolania sp-Yellow-Tipped



Ercolania endophytophaga
Ercolania sp-Tattoed



Giant Bubble Sell

Andrey and Diego

with high magnification always try to fool you, making you happy with the ease of focusing at a certain distance from the subject. Do not be fooled, keep moving the camera closer! And even closer! Catch the right moment when the lens is already starting to jerk, unable to focus. Now move the focusing light closer, increasing the brightness and contrast of the subject. And press the shutter button!

Photographing this means a lot of time as well. Luckily, Bubble Cell Divers are usually found not deep, between four and ten meters. It means that one hundred minutes dives are possible.

There are several species of Bubble Cells, preferred by our sea slugs. They include large alga cells of Valonia ventricosa, well known under the common names Bubble Algae or Sailor's Eyeballs. Boergesenia forbesii, or Bubble Green Seaweed (on the picture) is favourite diet for Ercolania kneeholes.

Please be careful not to disturb thes wonderful creatures. Do not damage their fragile Bubbles. Remember that these amazing slugs were crawling inside alga cells millions of years before the people learned how to make fire! The ocean belongs to its inhabitants and we are only guests.

The addition of macro diving makes Mactan an even better place for diving, not only for beginners, but also for advanced macro photographers. Weather conditions allow you to dive all year round.

This region is interesting for its capabilities not only for nudibranch lovers. It provides unique opportunities for rare fish lovers, especially gobies. But this is a theme for a separate publication.

The proximity of an international airport is also an advantage. To get to your comfortable hotel on the seashore an hour after landing is also a pleasant moment. As well as a good supermarket, and McDonald's (opened last year), a 10-minute walk from the hotel.

Special thanks for my dive guide Alfie Solano. You can find more unique photos of nudibranchs and sea slugs inside "Nudibranchs of the Coral Triangle Book". Happy bubbling!

Andrey Ryanskiy

https://gumroad.com/reefidbooks
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Life To Art

by Angela Webster & Elizabeth Solich

Angela Webster and Elizabeth Solich have joined forces to produce some amazing underwater art with a focus on the impact of human waste on the marine environment. Angela producing Fluid Art backgrounds and Elizabeth painting marine creatures dealing with waste materials.

Art enthusiast, Angela began to hone her skills initially with pencil drawings and sketches. It wasn't until her senior college years that Angela began to experiment with various art mediums including, clay, paint, and metal.

Angela discovered Fluid Art techniques later in life, and it is this style of painting and creating, where Angela feels her artistic freedom is best expressed.

As a volunteer of her local council, Angela has felt privileged to be able to volunteer at 2 local galleries as well as participate in several of the workshops conducted by Artists in Residence.

The possibilities of Fluid Art are endless which is why this technique is so very exciting and inspiring. Fluid Art, also known as Paint pouring, is a form of abstract art that uses acrylic paints of a runny (fluid) consistency that can be applied to a variety of surfaces in many different ways such as, pouring, dripping, swirling, glazing, dipping, blowing and swiping.

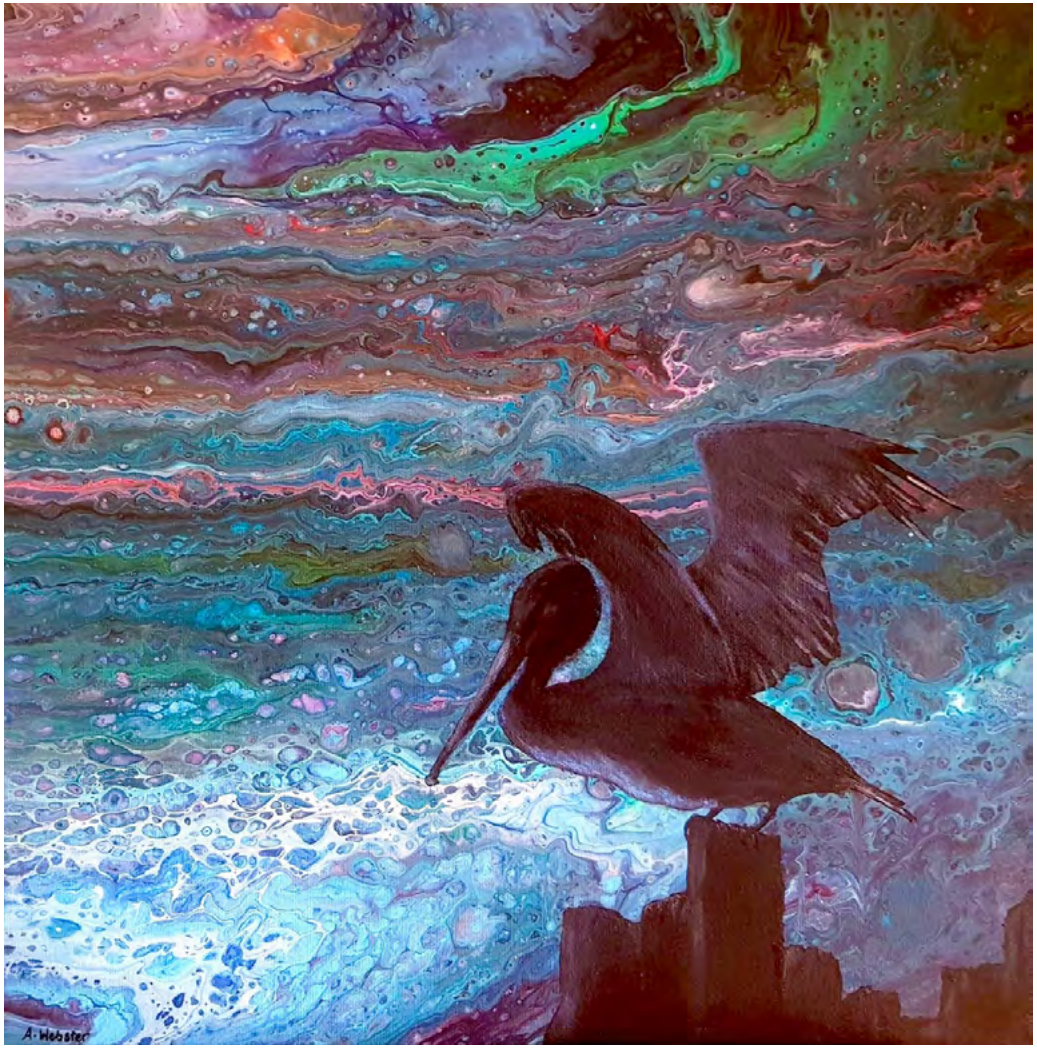
Different tools can also be utilised to manipulate the paint and different pouring mediums (PM's) incorporated into the paint will also vary the results. This painting style provides such versatility for the artist to create unique, stand-alone pieces (no two pours are ever the same!) or used as backgrounds for compositions.

The preparation of acrylic paint to make it fluid in the creation process, involves a level of pre planning to consider, the desired viscosity/fluidity of the paint, the type of pouring medium and paint; PM ratios and paint density (particularly heavy pigmented paints) may require different

Angela Webster and Elizabeth Solich COVID-19 photo with jointly created "Escaping The Paparazzi" (2020) Oil painting by Elizabeth Solich on fluid acrylic pour technique background by Angela Webster on canvas, selective varnishing 20x25cm

"Lost In A Forest" (2020) Acrylic pour by Angela Webster on canvas, ballon kiss technique, 40x50cm

"Aquarius" (2020) Acrylic pour by Angela Webster on canvas, ballon roll technique, 20x25cm



"Pelican" (2020) Acrylic pour by Angela Webster on canvas, flip cup technique, 40x50cm

paint / PM ratios. The interplay of colours for each technique is also a major consideration, depending on the desired result. Once the paint is prepared and the technique applied - the rest is 'wait and see what happens' because you never know with this style of painting. Quite often the best laid plans will have a very different outcome to the expectation. That's why it's so much fun !

Adelaide based artist and photographer, Elizabeth Solich, has been honing her skills in underwater

"Souped-Up Shark" (2020) Oil painting by Elizabeth Solich on canvas, recyclables, 30x40cm

"Where Is My School…?" (2020) Oil painting by Elizabeth Solich on canvas, recyclables, 40x50cm

photography for the past seven years. Originally an architecture student, Elizabeth blended her photography skills and underwater observations of the fauna and flora with her drawing and painting experience, bringing about a perfect marriage of her two passions. Her observations of marine fauna and flora allows Elizabeth to challenge boundaries, capturing the underwater world utilising environmentally aware story telling in the exploration of movement and composition.

In a powerful, previously created artwork "Souped-Up Shark" Elizabeth addressed shark finning as wasteful, inhumane and unsustainable. This is in a response to a high value and increased market for shark fins creating incentive for fishermen to take the fins and discard the rest of the animal, leaving room in the ship's hold for other more valuable meat like tuna or swordfish.

Another example of her sensitive approach to plastic waste is an artwork "Where is my school" where she utilised original soy sauce fish plastic containers and incorporated them into the art, reinforcing the environmental message. Every year hundreds of millions of Soy Sauce Sushi Fish end up in landfill and in our ocean. These bits of plastic can take up to 500 years to breakdown.

It has now become a common knowledge, that the plastic forks, knives and spoons are ranked among the most harmful types of marine debris to ocean animals. Elizabeth's response to this was another artwork depicting a frogfish hunting, utilising debris in the form of a plastic cutlery and called "No to plastic forks and knives".

Cedric, the character created at the earlier stage to bring attention to waste plastic straws that make their way into the ocean. Straws are either left on the beach, dropped on sidewalks and streets, fall off of boats

"No To Plastic Forks And Knives" (2020) Oil painting by Elizabeth Solich on canvas, recyclables, 30x40cm

"Cedric Finds A Plastic Straw" (2020) Oil painting by Elizabeth Solich on canvas, recyclables, 30x40cm

"Cedric Finds A Ring-Pull" (2020) Oil painting by Elizabeth Solich on canvas, recyclables, 30x40cm

or blow out of trash cans and transport vehicles. All it takes is a gust of wind or rain storm to push these straws into water ways and the ocean.

More examples of Elizabeth's little environmental manifestos, including a virtual gallery can be found on her oceanic soiree website and on social media like facebook or instagram.

The collaborative adventure and friendship between the two ladies started early January 2020. Angela was already mastering her skills using different acrylic pouring techniques, and Elizabeth was focused on oil paint based technics, trying to capture sea creatures in their natural habitat, against the backdrop or the recycled materials (fish can, ring-pulls, monoculars, plastic cutlery, plastic straw) to enhance an environmental awareness impacting marine life.

Elizabeth had just returned from the 2019 downunderpix underwater photography scuba diving expedition to Amed and Tulamben in Indonesia. She had compiled her photographs taken on the trip into a coffee book and showed it to work colleague Angela.

Discussion ensued in relation to the underwater world, marine pollution and artistic pursuits. As part of this, Angela asked: "How would you like to use my artwork and paint one of your wonderful

"I Can See Clearly Now, The Drain Is Gone" (2020) Oil painting by Elizabeth Solich on fluid acrylic pour & string pull technique background by Angela Webster on canvas, selective varnishing 20x25cm

characters over my acrylic background?" So, a new collaborative approach was born.

Through a mutual love of photography, the natural world and the diverse sea and landscapes, Angela and Elizabeth have combined their unique styles and selective mediums to collaborate on a number of projects that encapsulate their artistic passions. Once the acrylic background is finished, it gets a solid satin varnish, and then Elizabeth paints a very fast loose line drawing, which is then

"I Spy With My Little Eye" (2020) Oil painting by Elizabeth Solich on fluid acrylic pour technique background by Angela Webster on canvas, selective varnishing 30x30cm

filled with solid colour. The edges get adjusted as Elizabeth moves through the painting. When the oil paint dries, the final, environmental message carrying item/s get glued on to finish the artwork. Then the artwork receives a glossy or mat varnish for better separation from the background.

The painting of the Pyjama Squid titled "I Can See Clearly Now The Drain Is Gone" is a mindful response to The Guardian's article regarding CSIRO scientists discovering micro plastic pieces while analysing samples taken hundreds of kilometres offshore at the bottom of the Great Australian Bight, a so-called "pristine" biodiversity hotspot and marine treasure.

Susie, local ceramics artist in her studio Susie Designz in Urrbrae, SA, holding her new painting of a Pyjama Squid.

The very same technique was used for the painting of the Leafy Sea Dragon, titled "Escaping The Paparazzi" where Elizabeth captured in oil two Leafy Sea Dragons on a Angela's Fluid Art acrylic background. The artwork encapsulates a plausible theory that underwater photographers could be to blame for driving the elusive animal further offshore because of constant strobe activity.

Each of these artworks is an environmental statement addressing the vulnerability of our precious oceanic ecosystems. With the use of recycled plastic products, these talented artists make us vigilant about potential impacts on the vibrant underwater habitats that are bursting with life.

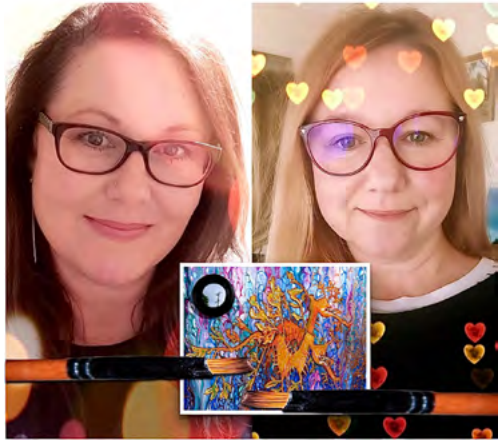
Susie, a local artist practicing both ceramics hand building and throwing techniques in her studio in Urrbrae, is the new owner of the Pyjama Squid painting: "I bought the painting of the pyjama squid because, as an artist and a diver, I love the humorous take on the underwater world that Elizabeth depicts. Elizabeth is great with shape, colour and texture and adding the found objects into the painting is both a humorous and environmental statement. All of her works have their own character and for me, they jump off the page and become part of the family.

The marriage of Elizabeth with Angela's work is stunning. The graceful volatility of the acrylic is

"Jazz Says Thank You" (2020) Oil painting by Elizabeth Solich on fluid acrylic pour technique background by Angela Webster on canvas, selective varnishing 15x15cm

a perfect interpretation of water under the surface, of the movement and the colours as the sunlight bends through the shifting water is clearly visible in Angela's work. I love this pairing and can see many more works together in the future."

Angela and Elizabeth have recently approached the Royal South Australian Society of Arts and summited a jointly developed artwork created in collaboration for 5th Biennial SALA RSASA, The Characters of the Fleurieu Exhibition.



Angela Webster & Elizabeth Solich

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Guidelines for contributors

The response to UwP has been nothing short of fantastic. We are looking for interesting, well illustrated articles about underwater photography. We are looking for work from existing names but would also like to discover some of the new talent out there and that could be you! UwP is the perfect publication for you to increase your profile in the underwater photography community.

The type of articles we're looking for fall into five main categories:

Uw photo techniques - Balanced light, composition, etc
Locations - Photo friendly dive sites, countries or liveaboards,
Subjects -, Anything from whale sharks to nudibranchs in full detail
Equipment reviews - Detailed appraisals of the latest equipment
Personalities - Interviews/features about leading underwater photographers

If you have an idea for an article,
contact me first before putting pen to paper.
E mail peter@uwpmag.com

How to submit articles

To keep UwP simple and financially viable, we can only accept submissions by e mail and they need to be done in the following way:

1. The text should be saved as a TEXT file and attached to the e mail
2. Images must be attached to the e mail and they need to be 150dpi

Size - Maximum length 20cm i.e. horizontal pictures would be 20 cm wide and verticals would be 20cm high.

File type - Save your image as a JPG file and set the compression to "Medium" quality. This should result in images no larger than about 120k which can be transmitted quickly. If we want larger sizes we will contact you.

3. Captions - **Each and every image MUST have full photographic details** including camera, housing, lens, lighting, film, aperture, shutter speed and exposure mode. These must also be copied and pasted into the body of the e mail.

Parting Shot 1

Sometimes “lady luck” is on your side when you are taking underwater photographs; this was definitely the case for me, when I was diving at a site called “Trail Blazer” from the Wakatobi Dive Resort on 21st November 2016.

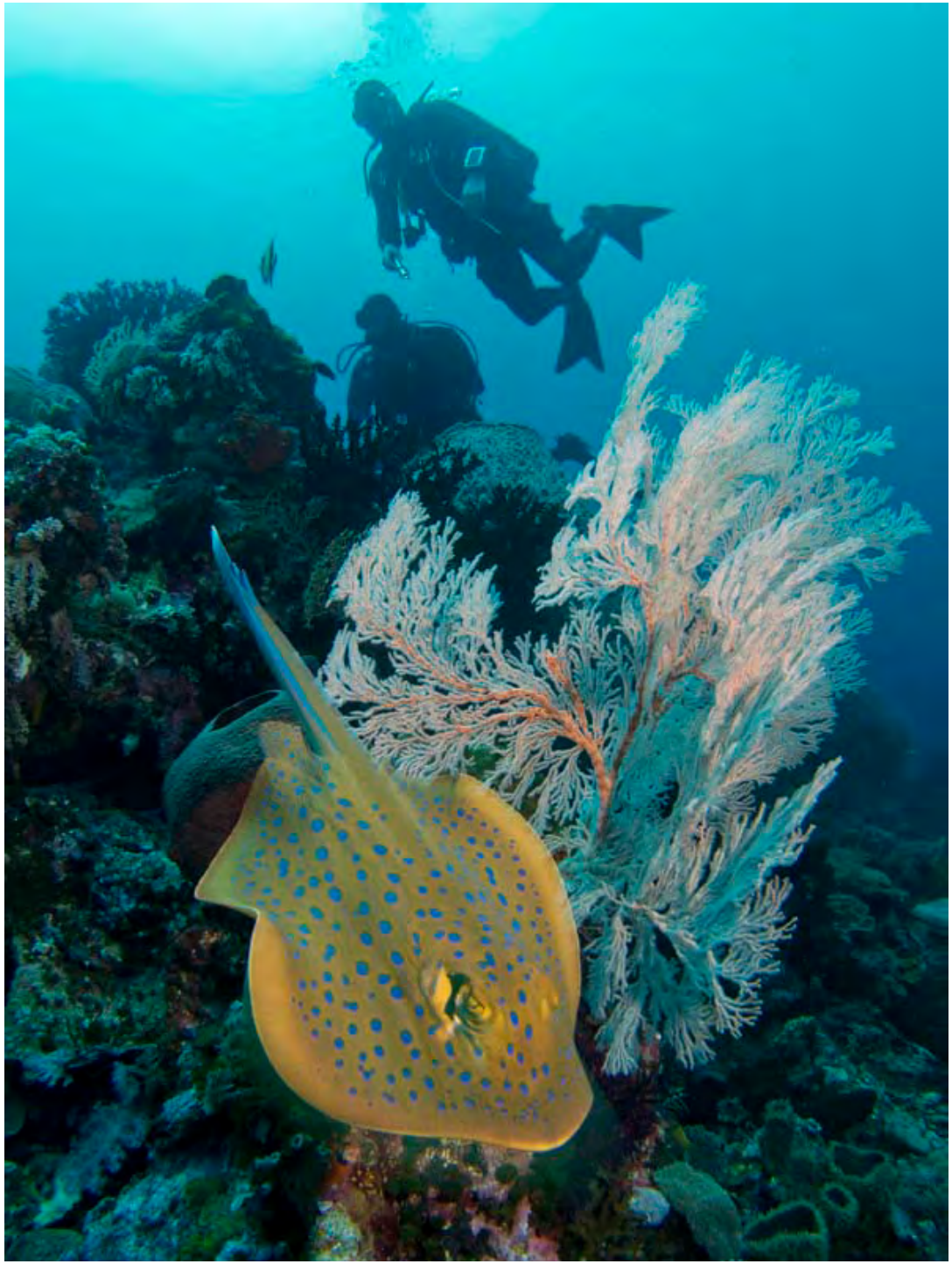
As I approached a ridge, I noticed a very nice pink fan coral, so I attached my Inon wet wide-angle lens and moved in the take the shot.

As I was about to take the photo, 2 divers came over a ridge from the opposite direction and appeared to be looking at the fan coral in the foreground, “excellent” I thought, that will further enhance the photo.

As I moved in for the final composition, I suddenly became aware of the end of the tail of a blue spotted stingray zooming past my left fist and into the picture at high speed from over the ridge also (top left to bottom right) just as I took the photo.

When I reviewed the shot on the back of my camera, I couldn’t believe what I saw; I had captured the Stingray “plumb centre” of the foreground of the photo and perfectly exposed.

Terry Crocker
terry.crocker@btinternet.com



“Photo bombing” Blue Spotted String Ray, Trail Blazer, Lintea Island, Wakatobi, Olympus XZ-1, Nauticam XZ-1 Housing, Inon UWL H100 M67 wet wide-angle lens, Sea & Sea YS-D1, ISO 100, f 3.5, 1/60 sec, manual

**Do you have a shot
which has a story within a story?
If so e mail it with up to 500 words of text
and yours could be the next Parting Shot.**

peter@uwpmag.com

Parting Shot 2

Anticipations were high as we listened to our first dive briefing at Critters at Lembeh Resort. Our dive guide asked us what we wanted to see during our week of diving at this famed muck diving capital. "It's all good," I said. "Whatever we see will be treat."

Generally, I am not a big fan of looking for specific creatures. A dive should not be a scavenger hunt, I have always felt. But deep inside I had my list of critters I had not seen before. "Well, I have never seen a rhinopia," I mustered the will to say. "So, if we happen to find one that would be great."

Each dive checked a box for a previously unseen critter. Flamboyant cuttlefish, check. Pigmy sea dragon, check. Emperor shrimp, check. Mating Mandarin fish, check. Rare nudibranchs, check, check, check. But, after almost a week of diving, no rhinopia.

Finally, on the morning of our last day, our dive guide came to me and announced that the dive site we planned to go to was known for rhinopias. "But there is a catch," he said. "They are deep." How deep is deep?" I inquired with some trepidation. "About 35 meters." My buddy and I looked at each other and grimaced. Normally, we like to stay shallow on our last day of diving.

Sensing our reluctance and disappointment, our dive guide immediately devised a plan. He said we would allow another group to go first. He would ask the other guide to let him know if and where they found a rhinopia and if so we would go down just long enough to get pictures.

About halfway through our dive we got the signal. We swam slowly but deliberately down a sandy slope to a grassy area at 35 meters. There we found three rhinopias, two orange and one purple. I worked each one of them and then zoomed in on playback to make sure I had a shot before surfacing.

"A brilliant plan beautifully executed," I told our guide once on the surface. Rhinopia, check!

Nikon D500 in Ikelite Housing. Nikon 60mm. Ikelite DS51 strobes. 1/160, f/13, ISO 200.

Andrew Cummings
https://pontos.smugmug.com/

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which has a story within a story?
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and yours could be the next Parting Shot.**
peter@uwpmag.com

Parting Shot 3

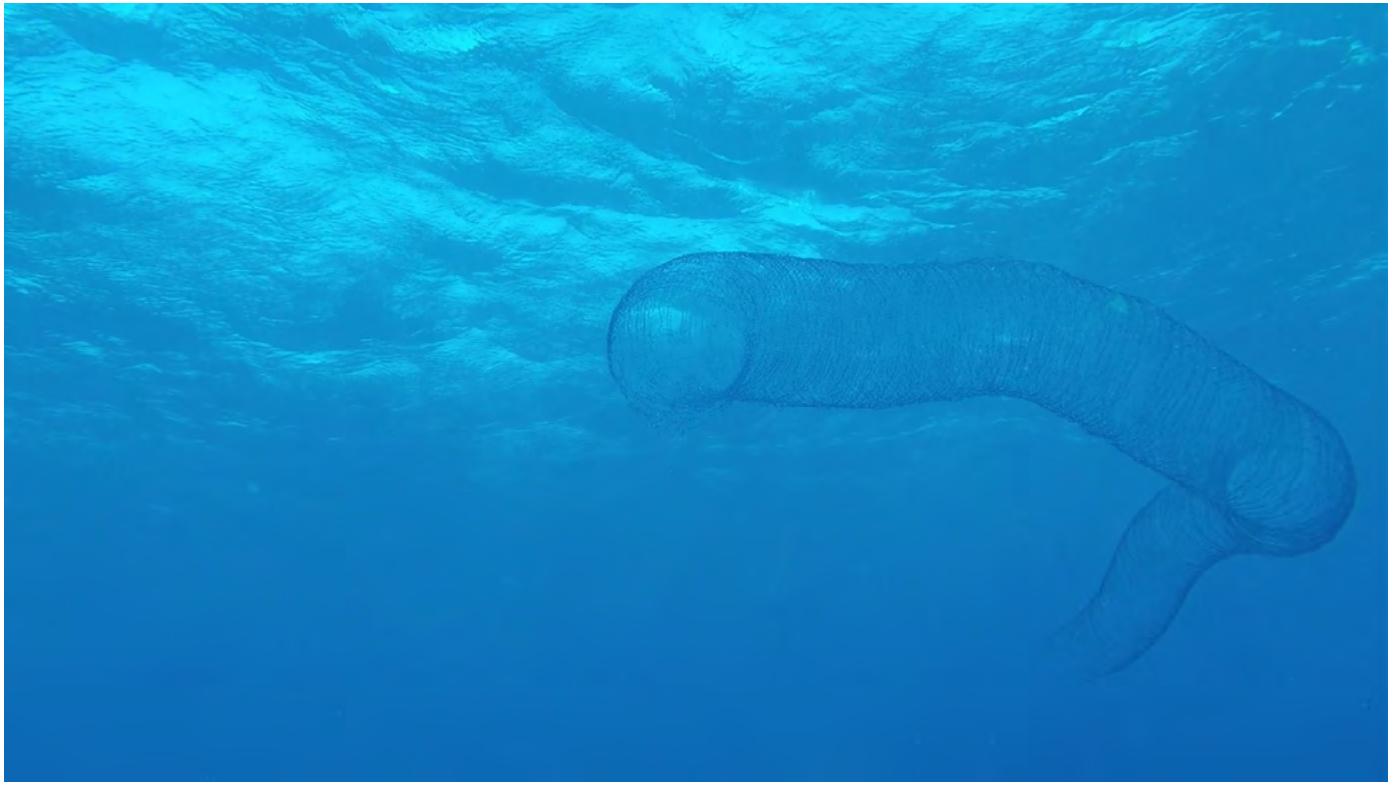
Living in The Kingdom Tonga had some benefits, especially for a diver.

I had arranged for a one-on-one dive with a local DM to Cathedral Cave on the island of 'Eua, opposite the main island of Tongatapu. The underwater entrance is on the north cliff shoreline and it emerges in a light filled cavern with surf above on the east coast. At the bottom is a long twisting lobster infested tunnel that was included as an extra.

The boat motors past the cliff, sometimes in wild seas. A quick backward roll while clutching your camera, thankfully just a GoPro5 on a stick with iTorch PRO6 at 2400 Lumen. While swimming down to the cave entrance at 20m., my DM pointed up to something indistinct. On finning closer I thought that the "Being" from the movie "Abyss" had emerged. I swam around it in about 7m. I knew I had encountered something very unusual, but what. It wasn't until I could get internet access the following day that I found out that it was a "Pyrosome".

Pyrosomes, genus Pyrosoma, are free-floating colonial tunicates that usually live in the upper layers of the open ocean in warm seas, although some may be found at greater depths. Pyrosomes are cylindrical or cone-shaped colonies up to 60 ft (18 m) long,[1] made up of hundreds to thousands of individuals, known as zooids. Colonies range in size from less than one centimeter to several metres in length. They are commonly called "sea pickles"

Tonga is next to the second deepest trench on the planet. The tubular being was a bout 5m. long and about 25cm in diameter. After my brief



Frame grab from the GoPro5 at 1080

70 seconds of video, I rejoined my DM for a tour of the lobster tunnel and eventually the light filled Cathedral, reminiscent of Gaudi's "Sagrada Familia". The safety stop was on the Drop Off outside the cave entrance, where large pelagic sometimes gather.

I was marooned house-husband in Nuku'alofa for 26 months and searched for wrecks, finding 2 wooden and 2 steel wrecks. I swam from the boat harbour entrance to past 'Little Italy' in my quest, plus dives off Kanokupolu in Maria Bay.

My bottle collection topped out at 17, one small china plate (Union Steam Ship Co, F Winkle and Co LTD – England) and one oblong china bowl(KT&K).

Duff Reef is a not to be missed dive, if just for the adrenalin surface action. Other not to be missed dives are on the northern islands of Vava'u (for caverns) and Ha'apai (for seamounts).

Richard Howes
Coolum2000@yahoo.com.au

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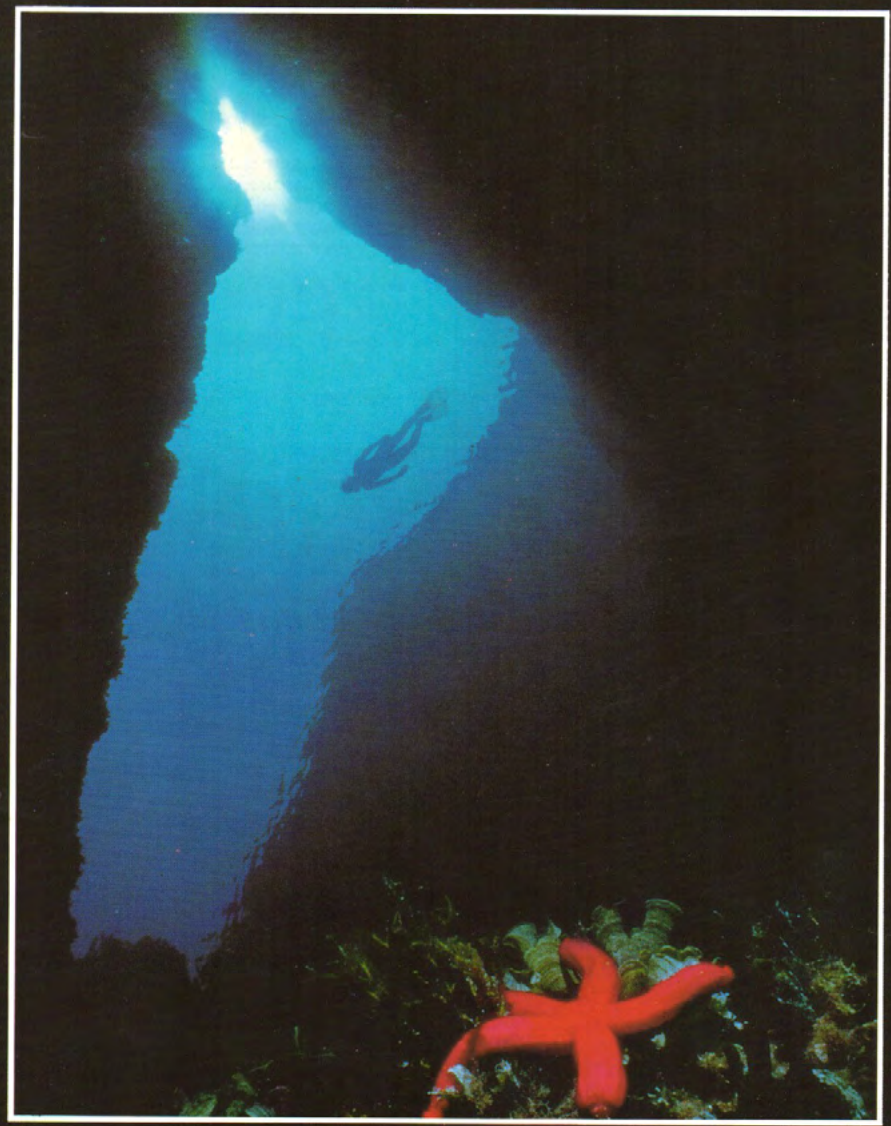
UP Supplement

UP2
Feb/Mar
1987

Issue 115/74

Underwater Photography



Underwater Photography
Magazine

Issue No 2. Feb-Mar 1987

Contents

Editorial

1987 promises to be a full year culminating in the Brighton International Film Festival in October. This is one of the oldest established events in the underwater photography calendar and promises to attract worldwide attention both in terms of visitors and entrants.In June the CMAS World Championships take place in Spain and the Editor and Peter Scoones have been chosen to represent Britain - an honour which we hope to repay by retaining the Team Trophy, won last time by Britain's Mike Portelly and Derek Berwin. At home, BSoUP is hoping for a bumper attendance for their "Splash-in" at Fort Bovisand on May 30th 1987, a year they are referring to as "The Year of the Image" where the emphasis is on picture taking rather than being dominated with equipment technicalities. We couldn't agree more and hope that the images spill onto UP's pages for us all to appreciate.

In the meantime, a Happy and Well Exposed New Year to you all.

Underwater Photography is published bi-monthly by Ocean Optics Ltd. [redacted]
01 381 6108. Telex 265871 MONREF G Attn WJJ204
Subscriptions are available by mail order. Annual costs are £15 UK, £18 Europe and £20 Overseas

Write UP's

Lawson Wood's Eyemouth bias?

Come on, Lawson, St Abbs is a great place but there's no need to exaggerate - why not stick to its obvious good points for photography, like the viz, the scenery and the Wolf fish?
I hope future articles on dive sites worth photographing will be equally enthusiastic but with more accurate marine biological information. Can you make it a regular series?
Sue Hiscock, Pembroke
*(Yes, regular it will be.*UP)

Praise be to UP

Your magazine came like a breath of fresh air. The colour reproduction and no punches pulled equipment tests are great. Peter Scoones article was first class so keep UP coming on the same format and you will have a success on your hands.
C. Hamilton
Liverpool
(Much appreciated comments and the cheque's in the post. UP editor)

Cautious praise for UP

I would like to add my good wishes and subscription to the pile that you are no doubt accumulating. I am not in the habit of writing gushing letters of praise to magazines, especially not the "thanks for a great mag" type, nevertheless I do feel moved to write something.
While I felt the first issue was fine, two points did occur to me: Firstly the "Basics" article is an obvious starting point and no doubt valuable to those setting out, however, if the series was allowed to develop over a period of time, going into the more advanced topics once the basics had been covered, it would make a guide to underwater photography the like of which had never been seen before. Secondly I realize that Ocean Optics is an importer of equipment but I hope that the magazine will review equipment imported or handled by others: the new Ikelite TTL flashguns for instance are likely to be just as interesting to Nikonos V users as Oceanic flashguns.
R. Skelt
Oxford
(You've tumbled our plot with the "Basics" articles which will build , develop and be bang up to date. Secondly, even though it is produced by Ocean Optics, UP will release news of all relevant products from any manufacturer who cares to submit details. We have written and spoken to all the UK companies to encourage them to send product details. With reviews rather than news/press releases, we would be shortsighted, from the magazine's point of view, to limit these to our own products and we have no intention of being biased in this or any other section of the magazine.

That "wrong" wreck

When I was at Ras Mohamed, I dived and photographed a wreck called the "Julanda". It looks very much like "that" wreck!
P. Collings
Northumberland
(Quite right, admits red faced Rowlands)

Buckingham Palace replies

We sent a copy of UP to Prince Andrew, The Duke of York, and received a kind letter of thanks.

UP on board Cousteau's Calypso

Anchored off Archway Island, the most southerly of the Poor Knights Islands, Calypso has an unmistakably attractive line but clearly visible are extra mooring lines from her stern which go ashore onto the Poor Knights - a nature reserve which supports at least one almost extinct species of marine bird. Landing is forbidden as any rodents would decimate not only the endangered species but also all of the other seabirds which nest on the Islands. These ropes were perfect vehicles for rats to leave Calypso and set up a devastating home on the Islands. Calypso was there for about 3 days before this was pointed out and the ropes were removed.

Engaged upon their 5 year "Voyage of Rediscovery", Captain Cousteau and his crew have begun their largest and most ambitious project, even by their own exacting standards, and were recently in New Zealand - a country which they had never previously visited- to film the varied underwater life from the near tropical north to the glacial south.

It was with fortuitous timing that UP Magazine ran into (no, not literally) Calypso, anchored off the Poor Knights Islands, 15 miles off the north east coast of North Island New Zealand. These islands are a nature and marine reserve both above and below the waterline and will form the centre of a future UP feature on the area but, for the time being, were the centre of attraction for 76 year old Captain Cousteau and his faithful team.

A bold approach to the vessel led to an introduction to the ship's resident underwater stills photographer, Norbert Wu, who was unable to invite us on board whilst they were at sea but suggested a meeting when they returned to Auckland Harbour in the next couple of days. This initial encounter was made all the more sweet when it was revealed that both Ocean Optics and The Underwater Photographers Handbook were institutions which were already known to the photographic crew. It was only by providing Norbert with a hastily stolen copy of "UP" magazine that the Calypso filming crew received the vital third ingredient to help them in their work....

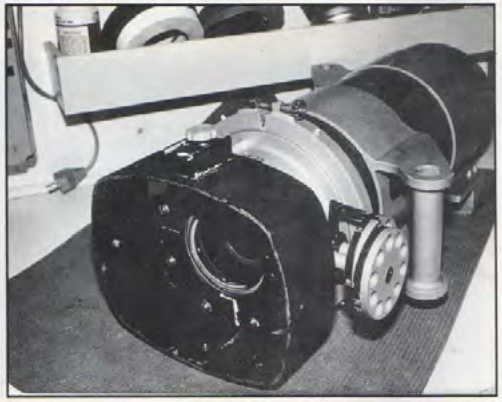
Auckland, the bustling unofficial commercial capital of New Zealand, was playing host to Calypso during her stay and had provided berthing facilities in the main docks right in front of the high rise office blocks which contribute to the Auckland waterline atmosphere without dominating it. How strange it must have felt for a French vessel to be berthed so close to where the Greenpeace's Rainbow Warrior had come to such a tragic end following an arrogant and almost farcical French sabotage attempt. It appears that the French can be oblivious to any such delicate situations and treat the future project as their next priority and tend not to dwell on past problems, when it suits.

However, laying aside all political sensitivity, UP's chance encounter on the ocean led to an invitation to go on board Calypso and look at the filming and photographic facilities which had , in the past, produced so many riveting underwater documentaries, the appeal of which had reached all levels of society throughout the world.

Of a usual crew of 27, the filming crew numbers just four - one land, one land sound and two underwater cameramen. The other 23 must be engaged in submersible maintenance (the yellow one we saw looked like the original used in the first series of Cousteau films back in the early '70's), helicopter support, on board catering, media presentation and, lastly, general diving duties.

On board Calypso, UP saw where the movie cameras are stored and loaded and came away with a brand new claustrophobic feeling never encountered in 15 years of poor viz diving. This was echoed by the crews quarters where even a cat would feel cramped so we presume the rest of Calypso's 130 foot presence must be devoted to scientific laboratories, observatories and complicated control centres (or maybe its the galley, food store and state rooms for on board and visiting dignatories). However, for a vessel whose sole aim is to produce underwater footage, this allocation of space seems well out of constructive proportion. The impression gained is that space is at a premium but the priorities for allocation of that space seem to be at odds with the work in hand.

In the hope that Nikon were using Calypso divers to field test the Nikonos V1, UP asked about the underwater still cameras but were shown a standard range of Nikonos equipment which would not be out of place in any keen amateur's carrying case. The main difference being that Nikon Japan provide Calypso with all the equipment they want/need! In addition there were camera's in housings and the usual array of underwater flashguns from most of the



major manufacturers but all the equipment had difficulty claiming a permanent place/locker of its own. The resulting level of unreliability (yes, they have just the same problems as us) could be blamed partly on this poor storage.

It turned out that, to our mind's incredibly, Norbert Wu was in fact the first full time underwater stills photographer ever to be aboard Calypso. His job is to produce material to illustrate a series of books planned to accompany the filming series. His presence was as a result of simply sending a portfolio of his work to the Calypso/Cousteau Society and being summonsed as a result. You don't get anywhere by sitting at home.

Accepting that stills are not as important as moving images to the Cousteau voyage, UP was shown their array of cine cameras which were all identical behind their dedicated lenses. Each camera has been designed to give the best optical performance without the need to be able to accept different lenses. Ultra-wide, standard and macro lens cameras cover the range needed to capture the action on 16mm film, lighting being provided by both self-contained and surface powered underwater movie lights. 8mm video, and in fact video of any kind, is only used on board Calypso for in-house use/information. The broadcast quality work is left to conventional 16mm film which has, and will for some time, prove both strangely economical and optically superior. These 16mm cameras looked the same as those used to film The Undersea World of Jacques Cousteau in the late 60's and early 70's. Are we to assume that little progress has been made in camera design and function since then? We also understand that the filming personnel were well established and had been on Calypso since the early days.

No definite filming schedule has been planned prior to the voyage. The brief is to dive the area and film what they find rather than go with specific shots in mind. This leaves Cousteau and the film crew with flexibility to react to local conditions.

Still in evidence are the designer back-packs each containing triple titanium bottles, the silver suits and divers helmets which complete the wardrobe.

Above decks once more and into the strong Auckland sunshine saw a small crowd of interested admirers lining the dock, drawn no doubt by the fascinations of yesteryear, by the irresistable attraction of the pioneer spirit and by the legend that the ship takes with her wherever she goes. That the products of her enterprise have been and will probably continue to be entertaining is beyond doubt but to those who know what it takes, especially with today's modern technology, the Calypso seems to have become the sledgehammer behind the nutcrackers efforts.

If state of the art equipment isn't the secret, maybe the time is right for a different or subtler approach which could come from any country and which could be just as successful but on a much smaller financial scale.

Ah well, bang goes another childhood myth.

Peter Rowlands

Top left
The on-board artist sems to specialise in characatures with the Boss clearly visible centre top. A translation would be appreciated (it'll no doubt be full of Calypso in-jokes) as the UP french department stopped at O level and can only "Oui ou Non" when called for.
Top right
The 16mm cine cameras were specially built using Bell and Howell movements. There are many units on board, each with dedicated lenses to keep simplicity and reliability to a maximum.
Below
The cover is removed from a set to reveal three light titanium bottles. These provide the capacity of a twin set with the weight of a single. Stylish silver paintwork completes the hi-tech image.

NEW VIDEO AND SLR HOUSINGS

Ocean Optics are now importing housings from Plastmeccanica, Italy. Their range includes housings for autowind compact cameras, 35mm SLR cameras and 8mm video cameras as well as a flashgun housing for use with SLR housings or Nikonos cameras.The two SLR housings will accomodate most cameras, even with a winder. The two video housings will take the Sony 8mm CV8AF and all those which look identical (there are several). All of the range are manufactured from injection moulded polycarbonate with substantial wall thickness and strong designs.

Prices being quoted are £60 for the compacts, £200 for SLR housings and £1200 for video 8.

A wide range of accesories are available from dome ports to mounting arms and lights.

The SLR housing (above) is available in two versions to fit most cameras and some with winders.
The video housings (left) can come complete with two banks of lights and a battery pack under the housing.

FISH ID BOOKS

Also from Ocean Optics are identification books and waterproof guide cards published by Jerry and Idaz Greenberg. Titles in the cards include Fishwatchers, Marine invertebrates, Beachcombers with field guides for Hawaii, Red Sea and The Great Barrier Reef. Prices are £2.95 each.

Two books are Sharks and other dangerous sea creatures (£4.95) and Beneath Tropic Seas (£7.95)

A waterproof Guide to corals and fishes is only £8.95 for 64 pages of colour identifying 260 species.

UP will review them all soon.

681 6108

SEA & SEA WIDE ANGLE LENS FOR NIKONOS

Sea & Sea have announced a new supplementary lens, the SWL 16 which will fit both the Nikonos and Motormarine 35 cameras.

The SWL 16 screws into the filter threads on a Nikonos 35mm lens, and increases the angle of coverage to 91° underwater.

The 35mm lens must be set at infinity and an aperture of between F5.6 and 22 should be used.

UP will be conducting a full review of the SWL 16 in the next issue so that's another reason to fill in your subscription form.....

The importers are Sea & Sea UK Ltd, Alexandra Lane, Torquay, Devon.

Sea & Sea UK inform us that with the arrival of the SWL 16, they will no longer be importing the Widelens 17.
In addition, they will not be importing the Motormarine 35 Splash camera as the UK price exceeds that of the SE version.
Finally, the SeaMeter amphibious light meter has ceased production and is no longer available.

More new gear

IKELITE NEWS

The Ikelite 1986/7 catalogue is available and includes details of several new products.

The first is a "CLICKER" which is useful for attracting your buddy's attention in swimming pools and up close in open water. Supplied with a hose clip, the Clicker is £6.95 in the UK.

A TTL conversion is available to update older Substrobe models 150 and 225. This includes modifying the rear module, a new inner front module and also the 5 pin socket. The lead is not included in the UK price of £150.

Other new products include an adaptor to allow Nikonos SB 103 and 102 flashguns to be used on the Ikelite Arm system. The UK price is £9.95.

The most interesting new product is the Nikonos TTL "T" connector which will allow any two TTL flashguns to be used on the Nikonos V. The connector can even allow different TTL flashguns to be connected i.e. Ikelite Substrobes and Nikonos SB flashguns. UK price £99.95. The Ikelite catalogue (£1 UK , £3 overseas) is available in the UK from Greenaway Marine, Post Office Lane, Broad Hinton, Swindon, Wiltshire. Tel 0793 73666/7

SCUBACHROME JOURNAL

This colourful quarterly publication is aimed at promoting the work of underwater photographers and keeping readers up to date with ideas on markets for work. Included with each issue is a "MARKETFLASH" sheet giving lists of publishers who are looking for underwater photographs together with the rates of pay and deadline dates.

The Scubachrome Journal is available mail order from Scuba Chrome, 4911 W. Grace Street, Tampa, FL 33607, US America. Annual rates are $30 for overseas and $25 for U.S.A. and Canada.

AQUAMATIC VHS EDITING SUITE

Peter Salmon of Aquamatic offers a facility to edit VHS tapes which is available for hire by the hour at their Hitchin premises. Video 8 format tapes can be transfered to VHS for editing and a character generator is on hand to add credit and caption sequences. For further details, contact Aquamatic, Unit E, 102 Bancroft, Hitchin, Herts. Tel 0462 52035(Eves)

AQUAVISION 8mm HOUSING

Reaching the UK at the end of February will be these aluminium housings for the Sony Handycam which have a built in wide angle lens to give 90° coverage both above and below the water. Boasting to be the smallest and lightest available, the Aquavision is indeed extremely compact and stongly designed. A complete outfit including the playback unit will fit into a standard Pelican case.

A bracket is available to attach a Nikonos onto the housing for those who want to capture all the action.

The Aquavision 8mm Handycam housing will be £850 from Ocean Optics Ltd, 4 Greyhound Road, London W6 8NX. Tel 01 381 6108.

AGFA Competition "Close ups"

A jubilant Brian Jubb from Scunthorpe won this issue's competiton with a very effective shot of a pipefish taken off Knolls Pin, Lundy Island in July 1986. Using a Nikonos 111 with 1:2 extension tube, Brian lit the shot with a £5 flash in a home made perspex housing. Its angle of coverage is narrow and has helped to improve this particular shot by making the subject appear from the darkness.

Using out of date Agfa CT18 film, the pipefish was in 45 feet (15m) of water with the viz around 15 feet (5 m). Camera settings were 1/60th sec @ F22 which gives a nice black background for extra impact.
26 slides were entered and Brian's was an obvious winner.

WIN 10 ROLLS OF AGFA FILM

Next issue's competition is for ACTIVE DIVER SHOTS where the diver is actually doing something i.e. photographing rather than just looking or pointing a torch. The shots can be from any waters and must be 35mm slides. Entry fee is £1.50 per slide.

Please pack them well to arrive before 10th March so get looking at your shots and you could win 10 rolls of Agfa slide film worth over £40.
Look for shots where the diver is prominent in the frame and where it is obvious what they are doing i.e. wrecking, photographing, measuring or similar.

4TH ANNUAL WORLD UNDERWATER PHOTOGRAPHIC COMPETITION, April 4/5th, Florida, USA.

OVER $5000 in prizes

The South Florida Underwater Photographic Society is seeking international photo entries for its 4th Annual World Underwater Photographic Competition. The competition is being held in conjunction with Oceans Miami Month and Ocean Pro '87 Film Festival held at Planet Ocean, Miami, Florida, USA on 4th and 5th of April 1987. Over $5000 in prizes along with plaques and ribbons will be awarded for 1st, 2nd and 3rd place in each of five categories plus a Best of Show. Categories will be Macro, Close up, Close focus-wide angle, Wide angle and Freshwater.

For an official entry form and rules, send an international postal coupon to South Florida Underwater Photographic Society, 1141 NE 142nd Street, North Miami, Florida 33161.

Entries must be received by March 10th 1987.

TOPSIDE PHOTO CONTEST

At Ocean Expo '87, (Details above) sea related shots are wanted to compete for prizes, plaques and ribbons. The winning entries will be published in the July/August issue of I.O.F.'s SEA FRONTIERS and will be shown at the Planet Ocean, Florida during April.

BSOUP SPLASH IN MAY 30TH

This annual event held at Bovisand, Plymouth has three sections - Black & White and Colour prints and "On the Day" where you expose a roll that day. The films are processed, projected, voted upon and the winners awarded all on the same day.

To encourage entries to the above competitions, details of the rules and entry forms are available from:
UP Magazine,
[redacted]
Please include an SAE.

All you have to do is control shutter speed and aperture before they control you

When taking pictures underwater using the available light filtering down from the surface, you have just two controls to set in order to obtain the correct exposure. The shutter speed and the aperture.

Both of these controls govern the amount of light which will reach the film so your job is to make sure that they combine to provide the correct amount. Too much and your shots will be overexposed; too little and they will be underexposed. Unfortunately, the human eye is not capable of judging levels of light to such a fine tolerance so we have several man made aids to help determine firstly what level the light is and secondly what aperture and shutter speed to use.

Before the days of the amazing electronic sophistication which is now miniaturised and built in to most modern cameras, photographers carried seperate light meters (and some still do) to measure the light level before each shot. In their most basic form they were a light sensitive cell which generated a small voltage when light fell on it. This current moved a delicate needle - the higher the light level, the higher the volyage created so the further the needle moved. Calibrating the system with a scale relative to the needle gave a number for the light level which could then be translated into the best combination of shutter speed and aperture. Aren't you glad you weren't around in the 'good old days'!

Man obviously improved on this crude measuring device and very soon there were light meters which combined all of the readings and gave the photographer the correct aperture and shutter speed to use to obtain the correct exposure. With modern cameras, most have such a meter built in and some have systems of such phenomenal complexity or sophistication (whichever way you feel) that it takes a long time to get to know how they work.

Nevertheless, regardless of all this modern development, all you still have to do is to get the exposure correct by choosing the right combination of shutter speed and aperture. (Now do you see how little photography above and below the water has *really* changed?)

In order to do this, you have something important to take in. Take 10 minutes to stop and concentrate on this next part. If you do, it will sink in, stay with you and improve your photography immediately. Right, here goes.

Two shots of the same subject show how altering the aperture will affect the depth of field without altering the focus. The top shot was at F2.8. At such a wide aperture there is very little depth of field and almost all of the rest of the photo is out of focus. The shutter speed was 1/500.
To enable F22 to be used to get the widest depth of field, the shutter speed had to be changed to let more light in. At 1/8th of a second at F22, the same amount of light reaches the film as before but, because the aperture has been stopped down to F22 the depth of field is much wider. This has resulted in all of the photo being sharp.

As was explained last issue, most cameras have a range of shutter speeds from 1 second through to 1/1000th of a second. This range is subdivided into equal parts as follows 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/125, 1/250, 1/500th sec. Each step towards 1/1000th reduces the amount of light reaching the film by half. (Going the other way, the amount doubles). This gives the photographer one of two controls to vary the amount of light reaching the film.

The other control is the aperture. Here, a diaphram in the lens governs the amount of light reaching the film. Apertures aren't as simply marked but usually go 2.8, 4, 5.6, 8, 11, 16 and 22. Going from 2.8 to 22, the light is halved with each step change (called "Stops'). Going the other way doubles the light each time.

Statisticians may now start to panic as they start to calculate the number of combinations of shutter speed and apertures which there could be but that's where the old fashioned light meter or in-camera meter come into use. What they do is to narrow the possibilities down enormously and give you a combination of shutter speed and aperture which will let the right amount of light onto the film and so give correct exposure.

Let's say for arguments sake that the meter reads 1/125th sec with F8 will be correct for a particular scene. If you change the aperture to F11, you will be halving the amount of light so the resulting shot will be '1 stop' underexposed. However, if you change the aperture to F11 and also alter the shutter speed to 1/60th, you will counteract each change and the result will be the same amount of light as with 1/125 @ 8 so the exposure will be correct. This ability to choose the combination represents the most important choice the photographer has to make.

If you want a sharp shot of a fast moving subject such as a shoal of fish, you will want to use a fast shutter speed. This reduces the amount of light so you must compensate with the aperture to let more in. If that was all there is to it, we could all go home now but when you 'open' the aperture up, you limit the amount which is in focus (called depth of field). This calls for much more critical focusing. So if you want sharp fast action shots, you have to put up with a limited depth of field.

On the other hand, if you want another shot to be sharp from foreground to background (say an underwater scene with a clump of soft coral in the foreground), you will have to 'close down' the aperture to increase the depth of field. As this reduces the light reaching the film, you will have to compensate by using a slower shutter speed. You will have to keep the camera still when you press the shutter to obtain a sharp result and, if the speed needed is longer than 1/30th you may need to consider using a tripod to hold the camera still enough to get a sharp shot.

Long winded although it may appear, this is the most important aspect to grasp and, once it sinks in, will become automatic in your thinking.

You can relax now and have the next two months to digest this information but think about this...."What happens if I want to take a shot of a fast moving subject and want it to be sharp from the foreground to the background?"

See you in April/May.

UP in the UK
Plymouth, Devon

Past the River Yealm towards Salcombe, the south facing shoreline is calm in a northerly wind and the large grained sand settles quickly. The result is above average viz and when its good elsewhere, its magic here. Plently of overhangs and swim throughs make for ideal backdrops to surround the diver. Add a focal point in the form of a powerful torch and you have a scene worth a few frames of anyone's camera. Nikonos 111, 15mm lens, OS 2003, 1/30th @ F8. Kodachrome 64. Depth 10 metres.

It is not by chance that Plymouth is a worldwide centre for marine biology, home of the UK's largest dive centre and a setting off point for most Atlantic and round-the-world yachts, not to mention providing the Navy's main shipyard . Her location and the surrounding waters contribute to make Plymouth a most productive location on the south coast for divers and especially underwater photographers.

Situated at the end of the M5 motorway, Plymouth is the furthest point in the south west which can be easily and quickly reached from anywhere in the country. Going a few miles further to Falmouth in Cornwall could add a couple of hours to your journey, so windy are the roads.

Impressive dive sites are available throughout the area and even the quality of the shore diving is excellent having produced many award winning shots over the years. For the majority of visitors, Fort Bovisand is the first port of call for either accomodation, food, boat launching or air. 6 miles outside of Plymouth, the facilities provided at the Fort are very comprehensive indeed and, for the underwater photographer who wants to see results quickly, there's even a full darkroom facility available for hire by the hour. As this is used by a wide variety of people, you would be best advised to bring your own developing chemicals and equipment for photographic safety.

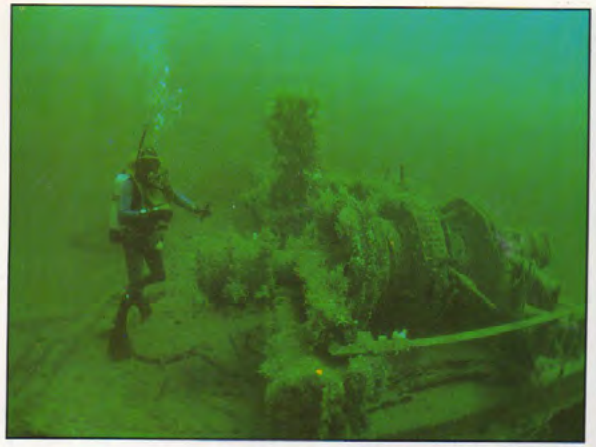
Fort Bovisand runs some weekend courses on underwater photography but its main function is to train North Sea oil divers and catering for both amateur and commercial divers can cause a conflict of interest at times.

Extremely popular during the summer and especially at Bank Holidays, Bovisand is nevertheless capable of absorbing a large number of divers without feeling too crowded. Parking is a bit tight sometimes but you will only be a short walk from the water wherever you manage to find a space.

Hard boats pick up from the harbour and whisk groups away into the Channel but, for the underwater photographer, the shoreline around the Fort provides easy access for macro photography and diver shots in calmer weather.

The outer wall of the harbour used to be packed with marine life and animals but the commercial boys decided to test underwater scrubbing equipment and wiped it clean a few years ago. See what we mean about amateur and commercial differences? Fortunately, just a short swim out from the harbour and past the junkyard seabed, there is some very pleasant shore diving where an underwater photographer will be kept engrossed for many rolls of film.

Subject to being churned up in a south-westerly, this area is shallow (not much more than 10 metres) and is a collection of rocky outcrops seperated by sandy gullies. The kelp can be a nuisance during the summer but once you get under it you will find a wide variety of marine life from shrimps to blennies and from anemonies to tunicates. There's even a few small overhangs to encourage you to get under them and have the sun sparkling through from the background. This is especially useful if you are into double exposures and need an easy supply of starburst sunlight.



Above: *30 metres down with available light on 50 asa film! Wreck of the Elk, Nikonos V 16mm (180°), 1/8th @ F4*
Above right: *Exaggerated with a wide angle lens, the anchor chain leads you back into the shot. Camera to subject 15 feet, same as above but Kodachrome 64 1/125 @ F22*

In the summer months, cuttlefish come inshore to mate and they are seen in numbers during July just off the harbour. Look for them half buried in the sand as well as in open water.

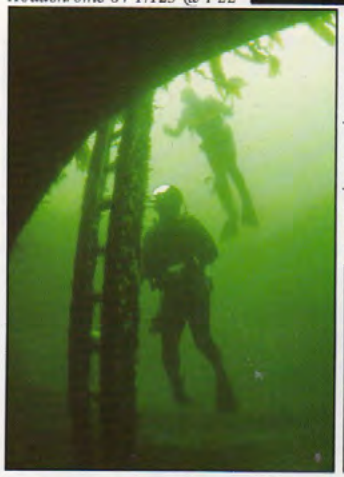
For underwater photographers, Fort Bovisand is the home of the famous rock pool whose reputation has spread far and wide. Situated just in front of the bar area, don't look for it expecting to find a luxurious space of easily accessible water for, at first sight, the rock pool is a major disappointment. It is small, divided into two and is only accessed by clambering down some ankle twisting terrain.

However, once you are there, and as long as you've got the place to yourself, you will have a perfect underwater studio where the water settles and clears when the tide recedes and does not fill again from the ocean for several hours.

One of the pools is a maximum of 3 metres while the other averages around one metre so many photographers tend to leave their fins behind to safeguard the water clarity.

Some stunning shots have been taken in the rock pool where the stringweed in the shallower pool reaches up to the surface and is especially attractive when slightly backlit on a bright sunny day. For marine life, it depends from year to year what is there to shoot but tunicates, anemonies and small marine life are nearly always in evidence. The added bonus is that you never know what the next tide will deposit so its always worth a look.

Being so shallow and controlled, the rock pool is an area where underwater photographers can spend many productive hours when the open water may be far from welcoming.



Left: *Never mind the grain, feel the mood. With 1000 asa and your camera on Auto, hold it steady and shoot into the gloom. These new supersensitive films are not only fast but also remarkably sharp and colourful. Taken at 20 metres by available light, flash would have killed the effect/mood. 16mm full frame fisheye on a Nikonos V with 1000asa Agfa slide film. 1/8th sec @F4.*
Below: *Bovisand on a busy day but we all manage to get cameras wet and expose film.*

The gullies just out from the rock pool are remarkable shore dives on calm clear days when you can encounter open water marine life without having to go offshore.

For those who want the thrill of open water, the Plymouth area can offer more variety than most places and, although a south westerly will restrict access to most sites, there is always a lee shore of some kind for you to get your cameras wet.

For wreck photographers, there are several within a short boat trip. The most dived is the James Egan Layne which never seems to get exceptional vizibility but which can be ideal for wreck images and close ups as the shallower superstructure is covered in marine growth. As with most wrecks, using flash tends to destroy the atmosphere so, next time, try using a really fast film like 1000 or 1600 asa and take shots by available light. If you have an automatic camera, set it to auto and F5.6 and hold the camera steady against a solid piece of wreckage. Looking into the larger holds of the wreck will probably give a shutter speed of 1/2 second so keep still! Trial and error is the name of this game but you'd be amazed what these superfast films can produce.

You never know what you'll see in Plymouth. Diving on the same site throughout the year shows how the marine life varies from month to month. In September, there were dogfish in numbers. The above shot was with a Pentax LX in a Hugyfot housing. 50mm macro lens, Subatec S100 flash 1/75th @ F8. Camera to subject is 4 feet. Nikonos cameras are at their best when using ultrawide angle lenses or extension tubes. Here the intricate detail of a Devonshire cup coral has been captured with 1:1 extension tube lit from the top by an Oceanic OS 2000, 1/60th @ F22. Both shots : Original film Ektachrome 64 copied 1:1 onto b&w negative and printed onto Multigrade paper.

You start to get pictures of areas you couldn't see at the time!

There are a host of other wrecks in the area for you to capture on film. They vary from the pleasantly shallow to the pointlessly deep so you have your choice.

For the fish photographer, there are colourful cookoo wrasse and gold sinnies which tend to stick to the rocky areas as well as the more open water species such a pollock and the occasional John Dory. Seasonally motivated squid come and go as they deposit their eggs in shallow water while pipefish hovver in and around the kelp, just long enough to allow a close up frame to be strategically located.

On the sand, dragonets dart around and stop suddenly and then move off too quickly for you to frame and focus. The best technique seems to be to bury the close up frame in the sand and wait for a dragonet to land in the field of view. Its a bit frustrating when they seem to avoid exactly where you want them to go but, with patience, you should manage a few shots within a few minutes so its well worth persevering.

For macro photography, the Plymouth waters are a Garden of Eden with blankets of multi-coloured jewell anemonies (especially prolific off the Breakwater and around the Shag Stone), Devonshire Cup Corals whose outstretched tentacles make them surprisingly large(1:2 extension tubes are best) and all manner of marine life. Both Jewells and Cup Corals are at their best when photographed from the side but they don't always chose a convenient location so look around before firing away. Incidently, if anyone knows how to calculate if these anemonies will be 'out', please let me know. They don't seem to follow a sensible pattern .

For diver shots, Plymouth has great potential with several caves for framing, even a few arches (off Blackstone Point) and one or two steep drop offs (Hilsea Point). The water to the east of Plymouth past the River Yealm tends to be clearer as the sand is large grained and settles quickly and the rocks are devoid of the silt attracting growth. Access and visibility are best after periods of northerly winds.

Mentioning Plymouth without refering to the Eddystone may seem a bit lacking but it will be covered in a future issue of UP.

In general terms, the water clarity is workable on all but the most stormy weekends. However, the run-off rain from Dartmoor brings a muddy flow which can take days to settle but, with a tidal flow into a wide section of the English Channel, these waters do seem to clear up far quicker than expected.

With the onshore facilities and the varied waters, Plymouth combines most of the qualities needed by underwater photographers. These qualities are all on display when BSoUP holds its annual Splash-in (May 30th this year) and the On the Day Section sees the shots taken during the day being projected at Fort Bovisand during the same evening. To see such a variety of images come out of the area all in one day is an annual confirmation that Plymouth continues to provide the ingredients we need to produce top underwater images. But try to keep it to yourself.

Peter Rowlands

Main Plymouth Dive shops:

Fort Bovisand Centre, Bovisand, Plymouth PL9 0AB Tel 0752 48021
Sound Diving, Queen Anne's Battery, Plymouth Tel 0752 670674
Sandford & Down, 24 Pier Street, West Hoe, Plymouth Tel 0752 266248

UP goes Gozo

with David Nardini and Charles Hood

A plain narrow gully is a useful photographic prop, especially when you light the sides ever so lightly to give the result much more depth. Nikonos 111, 15mm lens and OS 2003 on low power. 1/60th @ F11.
One problem when shooting up like this, especially with a single hose valve, is your bubbles getting in shot. Some argue that they add extra impact if they are in shot whilst others prefer no bubbles for that pure underwater alone feeling. Definitely out are the thin stream of bubbles which come from leaking guages and wrist seals on dry suits.

At the entrance to the Inland Sea, it is common to find jellyfish near the surface. In contrast to solid objects, which would become silhouettes with the sun behind them, the inside of this translucent jellyfish is lit by the sun's rays and still allows the sun to burst through. (For further details on jellyfish shots see David Georges article on Page 24). Taken with a 15mm lens on a Nikonos 111 loaded with HR 100 slide film, the subject is no more than 6" from the lens! No artificial light was added to the exposure of 1/60th sec @ F22. Being so close, the photographer can 'persuade' the subject into aesthetic positions. It is always best to take several frames on such subjects as both you, your subject and the background are constantly moving.

There is no doubt that the Mediterranean Sea will never provide the "perfect studio" environment provided by the more exotic locations such as the Red Sea; it does however make available spectacular underwater formations which, with a little imagination can turn a relatively barren site into a very productive area indeed. We chose the Maltese islands firstly because they can cater for a small group of underwater photographers who want to go about their business without feeling tied to specific time-tables and sites, and secondly it provides an ideal winter/spring break without having to go on your knees to your bank manager.

The Maltese islands lie between Sicily and Libya, a set of three islands, Malta, Gozo and Comino. Gozo was chosen because of the diversity of underwater seascapes; however, the accessibility in some areas would put even Chris Bonington to the test!

All travel arrangements (which were very comprehensive) and equipment hire were booked through Vacances Gozo Ltd. The watersport orientated Calypso Hotel is a short walk from the Dive Centre where unlimited air supply is available. We chose the unaccompanied "dive package" which together with the inclusive car hire allowed us to concentrate on the better photographic sites at our own leisure and, most importantly, it enabled us to familiarise ourselves with an area and its natural varying light conditions. The dive centre has negligible photographic gear for hire and no apparent repair facilities. E6 processing on the island is dubious and will take a minimum of 2 days through the local photography shop. The hotel has 240v with standard British sockets and ample fresh water. The food is much better than in the Red Sea and for night-owls there's a Travolta-hip-swinging-cave!

Gozo is approximately 9 by 3 miles and therefore the longest car journey will be 20 minutes maximum. The best area is the Northwest tip where varied and scenic land tipology reflects what will be found below the surface. A good example is the Blue Hole, a blow hole about 10 metres in diameter and 15 metres deep. Given moderate sea conditions the surface waters are mirror like offering sensational wide-angle shots with near perfect sun bursts. At one end there is a natural arch and, at the other, a cave. We found both of these of limited use and concentrated on the hole itself, experimenting on silhouettes and surface reflection shots. This is a popular site with divers and it is therefore better to wait until they have gone or preferably get in before them. With regards to lighting, midday is best for silhouettes and late afternoon for reflections.

Following the underwater ridge to the west you will reach Crack Cave, a narrow tunnel rising from 20 metres to 6 metres. The cave itself could produce some interesting images, however we concentrated on the surrounding area which is rich in canyons and boulders of dramatic size. We would like to stress at this point that images have to be created by sympathetic use of subtle lighting with careful framing due to poor marine life.

Not blessed with a profusion of life for the macro photographer, Gozo and Maltese waters do have a plentiful supply of these small anemonies under most overhangs and darker areas. They aren't usually out during the day but at dusk and into the night they open up for lenses.Fuji HR100 film in a Nikonos 111 with an Oceanic 1:2 extension tube. Lit by a Marlin flash 1/60 @ F22

Unlike coral seas,where colour is abundant in most subjects, Gozo sites have to be "worked" to maximise the shapes found underwater. This concept is similar to that applied in Black and White photography where the contrast and shapes eventually produce the image rather than the diversity in colour which may detract from the composition itself. So there you have it; look for it and capture it.

The Inland Sea is basically next door to the Blue Hole and easily accessible. It consists of an inland "lake" connected to the open sea via a 150m tunnel half submerged and with a maximum depth of 25 metres. This is tripod country! Because of the depths involved careful planning is required. The most useful areas are the two entrances which offer a curtain of light outlined by the vast openings. With the help of a model or the ever present jelly fish, a variety of cliche silhouettes can be produced. The light levels are low and there is limited marine life. A tripod may be used for atmospheric images; it's amazing what film can reproduce that the eye never sees.

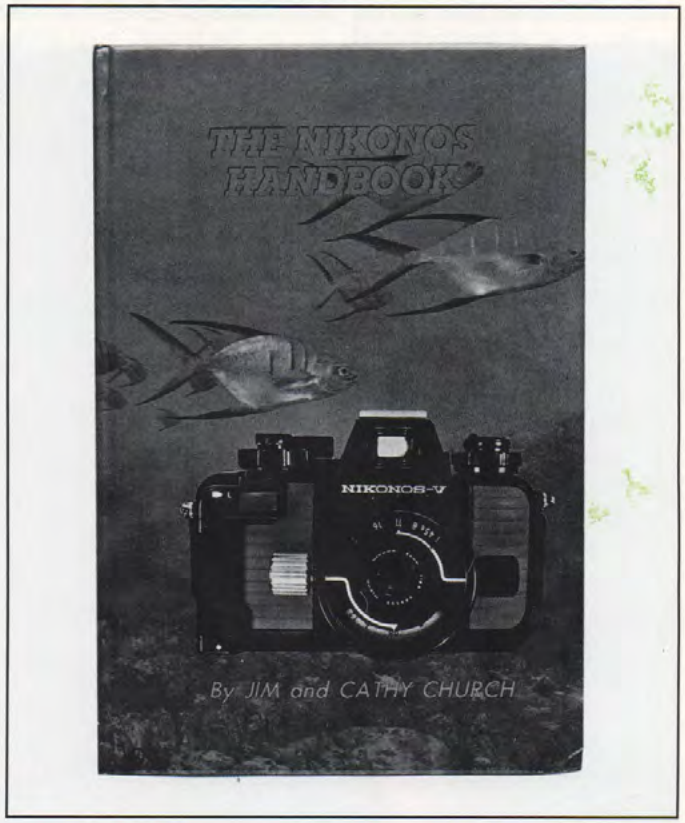
The Maltese islands are not renowned for their lush scenery so you must make the most of what you find. By shooting towards evening when the sun is low in the sky, the surface sparkle becomes more dappled and, as the sun gets lower and lower, its colour goes from yellow to orange and eventually to deep red. As most dive tours are out of the water by then, the opportunity for different shots can be limited. Nikon F2 in an aluminium housing. 20mm lens at F8. OS 2003 flash.

All the above sites are very poor for close-up photography, unlike Reqqa Reef which is only a short drive from the Calypso Hotel along the north coast of Gozo. Accessibility is not its strongest point, however, its vertical walls are rich in small marine life. Deeper (30 metres +), shy groupers can be found making them difficult to capture on film. Fish portraits are hard to produce due to the local enthusiasm for spear fishing which make the fish very diver conscious.

The facilities available take care of the "divers" needs, the underwater photographer will have to work at the rest; the waters are clear, with good underwater scenery. This lends itself to the use of introduced props which the photographer may use to enhance these basic characteristics. Good shooting!

David Nardini and Charles Hood

THE NIKONOS HANDBOOK BY JIM and CATHY CHURCH



Having been produced in one model or another for nearly 30 years, the Nikonos is the most widely used amphibious camera underwater and has the most comprehensive range of accessories. It is responsible for some of the finest images ever taken underwater and Nikon have led the optical field with lenses such as the 15mm wide angle and, more recently, the 20mm.

With such a wide audience, there is a need for a book written by unbiased underwater photographers. Fred Roberts did it in the past with "Nikonos Photography - The Camera and the System" and Jim and Cathy Church followed with The Nikonos Book.

As the models changed from 111 to 1VA and eventually to V, the Nikonos made each book obsolete but the latest from Jim and Cathy Church is bang up to date (unless the V1 is on the way?) with full details of the Nikonos V and all its accessories.

This hardback book contains 167 pages dedicated to the camera system which has, in part, helped Jim and Cathy to earn part of their living from underwater photography. You can feel through their words and delivery that they really do use Nikonos cameras for all of their information is based on experience rather than a casual interpretation of the instruction manuals.

As their previous book dealt with the Nikonos 11 and 111, their latest version deals only with models 1V and V. The contents are extremely thorough and easy to follow and will be an invaluable aid to fit in any camera bag as well as being a constant source of information at any time.

Showing you firstly how to prepare the system ready for use underwater, they go on to describe available light shooting, manual strobe exposures, auto strobes and finally TTL strobes. In each of these sections there are colour shots to illustrate the points in the text and there is also a series of small tests to make sure you are absorbing the information. I understand that Jim and Cathy are teachers by profession and this is reflected in their stage by stage approach which is most effective with such a potentially complicatible subject.

Following the strobe details, you are shown how to get the best from each of the Nikon produced lenses - 35, 28 and 80mm. The majority of the book then deals with wide angle, close up and extension tube photography which are, after all, the three areas where the Nikonos excels.

Each of the sections is well illustrated with both colour and black and white shots as well as helpful diagrams and drawings. Both Jim and Cathy have travelled extensively so they have a variety of interesting material.

No book on underwater photography could ever claim to be telling the truth if there wasn't a section on maintenance and, more especially, on saving flooded equipment. The Nikonos Handbook is without doubt the most comprehensive when it deals with the heartbreaking job of stripping a camera or lens after a flood. For those who have not had the feeling, don't get too smug. The chances of having a flood at some stage in your career are high so this book is a must for that occasion. Step by step guides are given for the Nikonos 1V and V as well as the 28 and 35mm lenses and both the old and new 15mm's.

Although concentrating mainly on the Nikon products, there is a section towards the rear where non-Nikon products are mentioned. This is a small section which should have been expanded if the book is to be of use to everyone. Nikon may claim to produce the best quality but many people have price as their main priority and so choose equipment from independent manufacturers.

This aside, The Nikonos Handbook is to be considered almost essential to any Nik 1VA and V user who really wants to get the most from their equipment and keep it in fully working order. The UK price is £19.95.

Double Exposures

UP shows how 2 into 1 will go

The top shot was taken in Guernsey using a 15mm lens on a Nikonos IVA loaded with Ektachrome 64 film. 125th sec @ F11. Interested more in the surface detail and atmosphere, Georgette didn't realise that this would turn out to be such a useful shot! The anemonie was taken with a Nikonos Close up outfit on a Nikonos IVA and lit with an SB101. 1/90th sec @ F16. Shot in the waters around Lundy, this was one of Georgette's first dives with a camera in UK waters.
The two images were then copied to give the desired scale. This meant duping the slides at less than 1:1 so the surrounding areas were masked with black card to avoid unwanted detail. An advantage of doing this , as shown here, is that vertical sections can be taken out of horizontal originals.

The production of double exposures underwater as was shown in the last issue of UP can be a tricky business which requires forethought and planning. As was mentioned in the article, there is a simpler way to achieve them so let's go back to basics and see how you can produce double images which are just as effective but which you can produce without going underwater!

To produce double exposures, you will need to know how to copy or 'dupe' slides. It sounds very technical but is in fact a simple job and is particularly useful if you want to submit slides to a library or agency but still want to use them for shows etc. Also its a safe way to preserve your original shots if they are rare or personal favourites which you do not want to be handled unneccessarily.

To dupe a slide, all you do is place it on a diffused light source and rephotograph it using low contrast slide duplicating film. There are several commercially made slide duplicators which incorporate the light source, slide holder and a column on which to mount the camera. These are expensive (around £200) but make the whole process much more controllable. Most dupes are same size (1:1) so you will need a reflex camera and lens which can cope with this. A 50mm macro lens with a 50mm extension tube will make 1:1 dupes and can even enlarge sections by altering the focus.

A much simpler alternative is to buy a slide copying attachment for your SLR camera. These are much less expensive (about £40) and have a slide holder and diffuser built onto the end of a lens system which attaches to your camera. The slide can be illuminated by using an electronic flash, sunlight or a tungsten light source depending on the type of duplicating film you use.

To produce copies as near to the original, two special low contrast duplicating films are made by most of the major film manufacturers. They are for use with either artificial/tungsten light or daylight/electronic flash. The colour balance of these two types of light source is different so the right film must be used with the right light source for the correct colour balance. For fine tuning of the colour balance, filters can be placed between the light source and the slide.

If you only want to make a few dupes, the best film would be Kodak SO 366 film sold in 36 exposure rolls for use with daylight/electronic flash. The tungsten dupe film is just as good but is only sold in 100 foot lengths! As all of the duplicating films are E6 process, you can process them yourself or have them done at any chemist/photolab.

The next step is to look through your existing slide material for suitable shots. The most effective double exposures tend to be verticals so look for those first. For the foreground, choose a subject which is at the bottom of the frame and which has the top half as dark as possible. For the background/second exposure, you want the opposite - a light coloured top half with a dark bottom part. You then copy the first shot, cock the shutter without winding on the film (most SLR's have this facility) and then take a second exposure with the second image in the slide holder. The result will be a double exposure where the foreground detail in the first shot has been superimposed into the dark area at the bottom of the second image. When you expose slide film, the dark areas are where the emulsion has not been altered by light and so are capable of recording another exposure.

Once you have experimented with a few basic images and seen what is possible, this versatile and simple technique will breathe new life into a host of previously ordinary images and will encourage you to think of newer, fresher images.

Don't be too ambitious with your first attempts. If your subjects are too large in the frame, they will probably overlap on the double exposure and destroy the illusion so, to begin with, keep the forground subject quite small until you get used to the parameters.

The biggest initial hurdle is to decide which two images will go well together. It isn'nt possible to put two slides on top of each other to see the eventual effect as the dark area on one slide will block the image on the other slide!. However, if you use or know someone with an audio visual outfit, you will be able to project one slide onto the screen and then fade in the second image into the dark area. This is very effective and saves a lot of experimentation. You can even see the effect of varying the exposure on one of the images to mute it or highlight it! Once you have got used to the recognising the sort of shots which lend themselves to double exposures, you can be more adventurous.

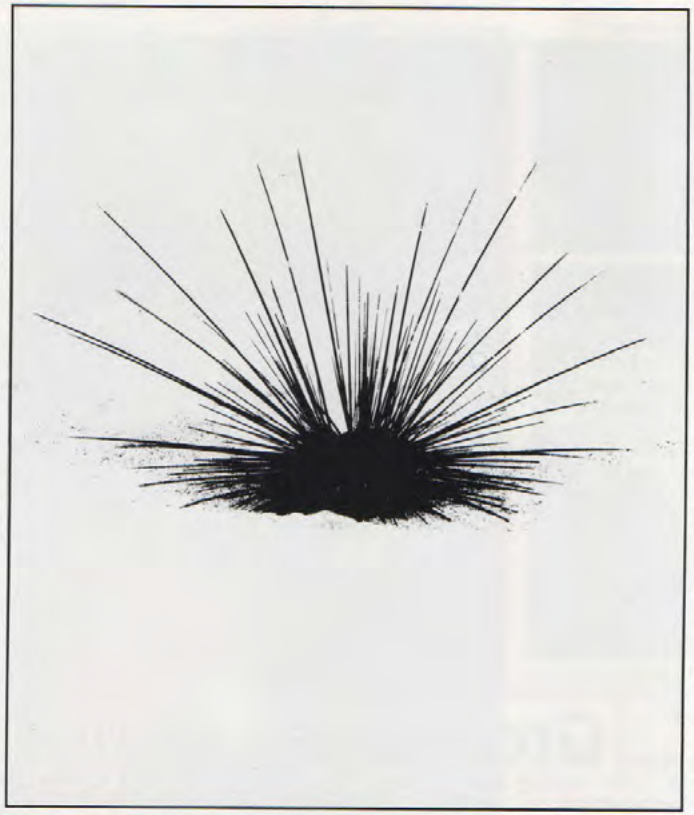
The format of the original shots need not be limited if you copy/enlarge a section from a shot. You can then take a vertical section out of a horizontal shot (as Georgette Douwma has in the double exposure opposite), you can even turn them round to suit the composition. From there, you can get fancy when you make the copies by subtle shading to remove any unwanted detail in the areas you wish to be dark.

The possibilities of double exposures are endless. It's time that isn't; but the sight of a successful double image produced from two slides which you thought were destined for the bin is a stimulus which will have you looking through your existing material with a new and inventive eye.

Images- **GeorgetteDouwma**
Text -**Peter Rowlands**

How was it done?

Peter Scoones gets among the urchins



Anyone who has ever tried to photograph the long spined black sea urchin will know how difficult it is to get any detail into the animal without overexposing the rest of the picture. Together with the consequences of discovering their presence other than by visually, they tend to be a subject best passed by.

I was passing by a specimen one day, unusually isolated out on the white sand. I noted in passing that against the bright sand it looked even blacker. The image must have been quite a strong one for it stayed with me for the rest of the dive. On my way back I took a closer look and it impressed me how graphic it appeared.

Next dive my companion must have thought me mad when I stopped on the sand and spent the time attempting to remove the filaments of distracting crud from a decidely suspicious urchin.

The picture envisaged was to be a high contrast black on white, the shape of the creature to be isolated.

The camera I was using, Mamiya RB67 with a 50mm wide angle lens, was loaded with Tri-X black and white film. In order to keep all of the urchin sharp, I required a small aperture to give the large depth of field. Also a deep blue filter was fitted to equalise the difference between the bright sand and the blue background.. To get the angle I wanted, it was neccessary to dig a shallow hole to get the camera lens level with the urchin. Have you tried to dig a hole in sand underwater?

Having got the camera into position I found that there seemed to be a problem with focus, the urchin kept going 'soft'. Each time I refocussed, it went out again; also the spines were becoming agitated, upsetting the symmetry. The urchin had been quite happy sitting peacefully out on the sand but all this activity must have made him nervous about its exposed position and the nearest large object to provide shelter seemed to be me and my camera. It's surprising how fast an urchin can move if it has the mind! After some time elbowing backwards, belly to sand, pursued by an increasingly speedy urchin, I had to give up. But I couldn't be beaten by an urchin so the game was on! There were several other urchins on the sand but few with a clear background. It seemed that they were ganging up on me.

I selected a likely specimen and placed the camera down in approximately the right position. I then swam off down range to clear the offending urchins. This requires considerable skill and finger co-ordination, the clearance was not achieved without injury.

Returning to the camera, the subject urchin had succumbed to the obvious magnetic influence that my camera seemed to have for all urchins and was cuddled up to the lens, my approach provoking frenetic activity spinewise. It was time to 'fall back and regroup'. The new attack plan was to employ a stealth technique and to shoot from further away. This required an expedition ashore to fit a longer lens.

On shore, the sight of my purposeful march to camera bag provoked the usual sarcastic comments; "Had a flood?", "Out of film?", "Flash not working?". As I changed my lens, it dawned on them that I might have found something really interesting so the questions changed to "What is it?", "Where is it?", "What depth?'. "I'll tell you later. Its probably gone now, you'd never find it unless you knew it's there".

90mm standard lens fitted, I returned to the battlefield. The first urchin was still where I had left it. I settled on the sand some fifteen feet away and 'made like a flat fish', hiding behind the camera, not to be seen. Set exposure, set aperture, focus! Miles too far away.

Gentle fin/elbow forward, eye to viewfinder. Closer, the urchin starts to wave its spines. Pause. Calm returns. Slower forward. Nearly there, more spine waving, a little closer and now wait for the urchin to settle. Now!

1/15th second at F22 with an 80b filter, Tri-X b&w negative film deliberately overexposed by two stops to increase the surrounding density without recording detail in the urchin itself. The negative was then printed onto Grade 4 high contrast paper. Depth 10 feet off Lanzarote.

Is there life after diving? Try BSoUP

says Chairman Brian Pitkin

Most divers are asked many times why it is that they spend so much time and effort getting wet. The sensation of being weightless, free to move in any direction with the minimum of effort can be described, but what it is actually like and what can be seen underwater can only be hinted at. In this context, one of the most rewarding pursuits, for any diver, must surely be underwater photography.

To capture on film the diverse and colourful marine life, long forgotten wrecks, or the way the sunlight streams through the surface layers isn't that difficult with the camera equipment now available. Your slides or prints will not only provide you with a lasting reminder of your dives, but enable you to share your underwater experiences with others.

You purchase your equipment and read the manuals. What next? Perhaps BSoUP can help. Our monthly meetings in London include a BASIC COURSE given by experienced underwater photographers. There are talks on cameras, lenses and angles, close ups and macro, maintenance, composition and fault finding. In fact everything you need to know to get your first year in underwater photography off to a successful start. The talks aren't too technical, only a minimum knowledge of picture taking is assumed.

For those who have mastered these basic techniques, BSoUP holds a monthly competition called FOCUS ON. Different categories each month ensure that a wide selection of some of the best underwater photographs around are shown on the screen. This year, the categories include still life, natural light, fish, people, against the light, macro, patterns, planktonic life and composites. The first three slides each month all compete in a final in October for a major prize.

In addition, each monthly meeting includes a MAIN FEATURE where invited speakers generally show their own work - either slides, audio visuals or films. This year, amongst others, the British Team taking part in the CMAS World Championships will be showing their entry; Belgians Jos Audenaerd and Vic Verlinden, winner and runner-up in the Dutch-Belgian Championships last November, will be showing their audio visuals; Mike Valentine, who filmed the underwater sequences for the film 'Castaway' will be talking about film making for cinema and TV. These main events offer the more experienced a chance to improve and give everyone the opportunity to see just what can be achieved.

BSoUP organises an annual 'Splash-in' at Plymouth, Devon to be held on May 30th this year which includes a unique 'On the Day' competition. For anyone who has never won an award in a major competition, BSoUP also organises a Beginners Portfolio Competition for the Diver Trophy in November and, for those who have, an Open Portfolio Competition in December. A bi-monthly newsletter, IN FOCUS, is sent to all members. This includes Society news, lecture notes, features on underwater photography, competition announcements and classified adverts.

So you see, BSoUP caters for everybody's needs, be they outright beginners to seasoned professionals, and all for just £10 (UK members) or £15 (Overseas members) a year.

BSoUP meetings are held at 7.45pm for 8.00pm in the Sherfield Buiding, Imperial College, London on the third Thursday of each month. For further details, send an SAE to The Secretary, BSoUP, [redacted] London WC1

Now you see them, now you don't

Photography of floating gelatinous animals with Dr David George

Most underwater photographers spend a great deal of time grubbing around on or near the bottom when diving. One can hardly blame them, for they would not expect to find much in the way of photogenic subjects, apart from fish, in the water column between the surface and the seabed. The water is, however, teeming with life (plankton) during much of the year. Unfortunately many of the organisms found in this region are too small to be recorded successfully with the underwater camera systems currently available. Luckily, plankton does have larger representatives which, in some cases, may reach a metre or more in length. Such examples as the jellyfish and comb-jellies are comparatively well known in the UK and Mediterranean waters and those diving in the tropics may find in addition such creatures as the salps (floating sea squirts).

The bodies of all these neutrally-buoyant beautiful creatures are fragile and gelatinous, consisting of at least 95% water and in many cases are virtually transparent, thus providing a less than ideal subject for underwater photography. Problems are compounded by the fact that those animals with little pigment in their tissues provide a very low contrast target relative to the background when viewed horizontally, especially if illuminated uniformly by daylight from above. Divers operating in the murky waters of the UK face the additional problem of the subject being partly obscured by suspended particle matter. These problems are not insurmountable, however, and the underwater photographer can get excellent shots of such animals as jellyfish and salps if the correct equipment is used and a few elementary techniques are mastered.

Above:*The transparent medusa (Aequorea aequorea) , lit from the side and slightly behind by electronic flash shows its internal structure and a comb jelly it has captured with its trailing stinging tentacles. Nik 11 with 28mm lens + Close Up lens and framer. Kodachrome 64. Southwest Ireland.* Below:*The gelatinous translucent tissues of the jellyfish (Cyanea lamarckii) have been shown to best advantage by illuminating it from the side and behind. Nik 11 with 28mm lens. Ektachrome 64. Plymouth.*

EQUIPMENT

Almost any housed SLR camera can be used as long as it is equipped with a suitable macro lens. Housed SLR's have the advantage of being able to focus on subjects over a great distance and size range. The reflex "sportsfinder" on reflex cameras is not easy to use, however, when the photographer is suspended in mid water and trying to keep a small, often transparent object in view long enough to focus and operate the shutter release mechanism. In practice, even specialist plankton photographers with housed cameras often use framing devices when photographing relatively small subjects. In some ways, the most commonly used underwater camera, the Nikonos, is well suited to plankton photography, the lack of reflex viewing being of little consequence and the need to use a framing device could be considered an advantage. A salp or jellyfish, unlike a fish, does not object, apparently, to having a frame placed around it to ease the photographers problems of focusing and composing the picture!

In order that a full range of planktonic animals can be photographed, the owner of a basic Nikonos will need to acquire two sets of accessory equipment. To photograph very small medusae and comb-jellies, a set of extension tubes and framers will be required. Most manufacturers provide sets which will produce photographs at 1/2 or 1/3 life size (1:2 or 1:3 reproduction), at life size (1:1) and at twice life size (2:1). The disadvantage of such a system is that only one extension tube or combination of tubes can be used at any one time because the tube is positioned behind the lens and thus cannot be changed once the camera is beneath the water surface.. However, since the system relies on a preset focussing distance, it is very easy to use, the photographer simply manoevering so that the subject is in the desired position between the framer prongs, before releasing the shutter.

The second set of equipment is needed to bridge the gap between the field covered by the extension tubes and that covered by the standard lens of the camera when focussed at its minimum distance of 0.8m (2.75 ft). One such set (commonly known as a close up kit) supplied by Nikon comprises a supplementary lens which fits over the front of the camera lens, a distancing bar, and a series of field frames to be used in combination with different lenses. It can be used with either the 35, 28 or 80mm Nikonos lenses. The Nikon outfit (and similar ones supplied by other manufacturers) is ideal for photographing many jellyfish, medusae and salps. The rectangular frames of the Nikon kit replicate the shape of the 35mm transparency (or negative) and thus are particularly useful devices inside which to compose the subject before taking the picture.

Some of the biggest jellyfish and salp chains will not fit inside even the largest of the frames supplied with the close up lens (28mm lens frame). However, this is not a major problem as the supplementary close up lens can be removed underwater and the camera used in the normal way. An optical viewfinder with a parallax correcting device is invaluable in these circumstances to enable reasonably accurate framing at the greater distances involved. I have found that the 28mm lens is the most versatile when using the supplementary close up lens in front of it, whereas the 35mm lens is undoubtedly the most useful with extension tubes. If the Nikonos operator is able to carry two cameras on a dive, then he should have no trouble in coping with all the sizes of gelatinous plankton that are likely to be seen.

Above. *Just enough light has penetrated through the tissues of this compass jellyfish (Chrysaora hysoscella) when illuminated with electronic flash from the side and behind to show the gelatinous nature of the body as well as the characteristic pigment patterns on the bell. Nik 11 with 28mm lens. Kodachrome 64. Lundy.*

Below. *This horizontal shot in natural light of the semi-transparent common jellyfish (Aurelia aurita) is relatively successful because it was taken just beneath the surface on a calm day. Nik 111 with 35mm lens and Subawider. Ektachrome 200 in the Red Sea*

LIGHTING

The underwater photographer can either use natural light when recording planktonic animals or introduce an artificial light source such as electronic flash. In my experience, a combination of the two light sources rarely seems to be successful when photographing semi-transparent organisms in mid-water, although it works perfectly well with more solid subjects such as fish. One of the easiest techniques when using natural light is to position yourself beneath, and slighly to one side of the transparent or semi-transparent subject and shoot in the direction of, but not directly towards, the light source. Under normal conditions with a more substantial subject, this would produce a silhouette, but, with a transparent animal, only some of the light is blocked by the tissue and an excellent photograph which highlights the internal structure of the animal may be obtained. This type of natural light photograph can be taken at depths of several metres below the surface in clear waters. The more horizontal the position of the photographer becomes in relation to the subject, the closer he will have to be to the surface to get acceptable results in natural light because of the problems of low contrast mentioned earlier.

Nevertheless, using this technique, semi-transparent light coloured subjects such as the common jellyfish can be photographed adequately on a calm day when light is diffusing evenly through the surface water film. Natural light photographs taken looking down onto transparent subjects are unlikely to succeed.

In anything other than clear water, an artificial light (preferably an electronic flashgun) is essential. The flashgun need not be large, all that is required is that it is sufficiently powerful to allow apertures of F11-22 to be used. This ensures that the depth of field is adequate for most subjects. Animals should be illuminated on more or less the same plane from the side or from slightly behind. This technique has several advantages over frontal lighting, not the least being good contrast, enhanced edge definition and illumination of the internal surfaces of the animal against a dark background. With the light source(s) in this position, backscatter from particles in the water between the lens and the subject is reduced to a minimum.

Now you see them, now you don't.....

Looking up and obliquely towards a natural light source has produced this photograph of a chain of salps (Salpa maxima) with their internal structure visible. Nikonos 11 with 28mm lens and Close up lens and framer. Kodachrome 64 in the Red Sea

Some photographers prefer to have their flashgun(s) in a fixed position relative to the subject (at an angle of about 60° to the optical axis), but I advocate hand-holding the gun in slightly different positions in a series of bracketed shots. This means, of course, that the photographer must be able to hold and operate the camera with one hand. In the case of the earlier Nikonos models, the addition of a thumb release and a baseplate with a handle makes this a simple operation. The later models do not need such a handle.
Larger jellyfish tend to have a greater amount of pigment in their tissues; even so, in most cases, it is a mistake to illuminate them from in front, sidelighting producing far more effective results as a certain amount of light still permeates through the tissues.

NOW ITS UP TO YOU

Photography of delicate planktonic animals is not easy and many failures may occur before your techniques are perfected. Using the simple methods described above and a medium speed high resolution film such as Kodachrome 64, your chances of success are likely to increase.

Dr David George

How to photograph marine animals and plants will be a regular UP feature so make sure of your copy. Subscribe today.

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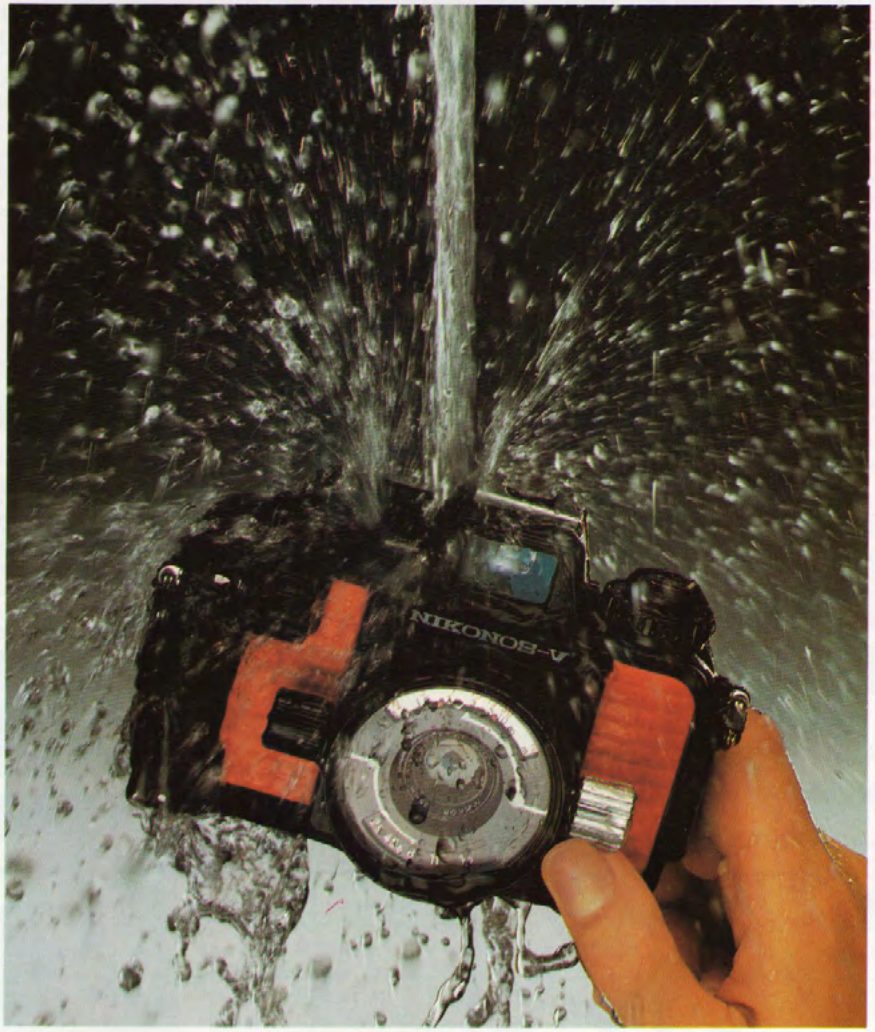

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Short Ends

CALLING ALL UNDERWATER PHOTOGRAPHERS FROM PLYMOUTH TO LAND'S END

Mark Webster of Photec is trying to organise an association of underwater photographers in the southwest peninsular. This would be designed to bring together interested individuals, for mutual benefits, who perhaps do not get the most out of their underwater photography in the normal diving club environment. Activities would include regular meetings, diving excursions, local competitions and exhibitions and a general pooling of knowledge and experience. Anyone interested living in the area should contact Mark on Falmouth (0326) 318307 or write to him at 42 Trelawney Road, Falmouth, Cornwall, TR11 3LX

DEEP SEA JIVERS

The colour shot featured in the last issue has been reproduced in both the Sun Sunday colour supplement and in Time Out, a widely read London events magazine. A black and white version appeared in the Times and there will be a feature in Camera Weekly Magazine.

PETER SCOONES WINS JACQUES DUMAS TROPHY

78 photographers from 24 countries submitted prints for this prestigous competition which Peter won and collected a $5000 prize.
Other photographers who were selected to have their work exhibited were from Italy, Germany, Canada and Portugal. Let's hope Peter's successes continue when he represents Britain at the World Championships in June.

COVER SHOT

Taken by David Nardini in Gozo, this double image started by shooting the silhouetted diver on a 15mm lens fitted to a Nikonos 111 which was loaded with Fuji HR100 slide film. Exposure was 1/60th sec @ F16 taken at midday to have the sun in the desired position.

The foreground was kept black and the starfish was added later in the darkroom. This was taken with the same outfit but lit with a modified OS 2000 flash to give a concentrated beam of light which leaves it on a dark background.

VIDEO APOLOGIES

To all those readers who subscribed so that they could read the video article promised last issue, could you please wait until next issue? as we felt that going on board Calypso deserved to be kept topical and so jumped the queue. The advantage is that three new housings should be arriving so we'll have a chance to produce a detailed review.

NIKONOS V WINNER

The fact that you are reading this and don't know who's won the Nikonos V (generously provided by Nikon UK) means that you weren't the lucky one!

The winner, who already knows, is Susan Clark from Hexham in Northumberland. She works at the Dove Marine Laboratory in Newcastle upon Tyne engaged on reaserch linked to Newcastle University. Until now Susan has used a Canon SLR in an Ikelite housing. Her favourite lenses are the 50mm macro for close ups of marine life and and 28mm for wide angle shots.

She was over the underwater moon.

UP and coming next issue

UP on the Lady Jenny V
Combine the diving around Sharem with a well established dive boat, Lady Jenny V, add underwater photography and we must have a feature to impress you.

UP in the UK visits Lundy Island
This marine reserve is not easy to get to but when you do it's an underwater photographer and naturalists haven. BSoUP Chairman Brian Pitkin takes you there and shows the sites.

Video in depth
UP brings you the latest news and reviews two new housings from Italy and Canada. The Italian ones allow reflex viewing while the Canadian ones have ultra wide optics.

Decompression meters tested
We know they can't take pictures but these instruments seem to be made for underwater photographers. You concentrate on the shots while they take care of your diving?

Basic Course
There are more underwater cameras available now than ever before. UP helps you choose the right one for you with sensible advice on what you need.

Plus Product News, How was it done?, Competition winners, Classifieds, Short Ends and a great deal more. Subscribe and succeed.

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